PLN-i08-OSS

Succession

OSS-affecting Features in iSN08

Advance Feature Guide

ISN08 Standard 01.03 March 2005

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Succession

OSS-affecting Features in iSN08

Advance Feature Guide

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Version 01.03, re-release of the Standard version of this document for ISN08 due to churn. Updates have been made to multiple features, and the following feature has been added since the Standard release:

- CS2K: A00007749--MG9000 ABI Support for LGCO, LGCOi

February 2005

Version 01.02, release of the Standard version of this document for ISN08. The following features have been added since the Preliminary release:

- CS2K: A59039138 -- (Visual) Message Waiting Indicator (V)MWI/CFX
- CS2K: A00005822--AOC Support over H.323
- CS2K: A00006731--Handle Flash on Exit
- CS2K: A00007040--Int'l R2 CAS Framework - Error handling support
- CS2K: A00007146--CM Audits and Carrier grade for Intl. FDCP CAS on CS2K
- World Trade: A00005315--Calling Number Delivery for PRI, ISUP & CS-1
- World Trade: A00006407--China ISUP Enhancement
- World Trade: A00007790--P-phone expansion for CICM lines

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Version 01.01, release of the Preliminary version of this document for ISN08.

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About this document

Overview

This document supports Nortel's International Carrier VoIP Solutions ISN08 release. It describes ISN08 features that affect inputs to or outputs from the solutions. These changes, therefore, affect the use of the Operations Support System (OSS) for ISN08. The document includes copies of feature descriptions used in software design.

Information in this document is believed to be accurate at the time of publication, but it is subject to change. Use of this document should be restricted to resource planning and estimating for ISN08. Do not use this document to make changes to existing software.

How this document is organized

This document is divided into the following sections:

- *Global features*. This section contains a table listing the OSS-affecting features which apply to both the North American and International markets. These features are documented in detail in equivalent North American documents (see "Related documents", below).
- *Activity mapping table*. The table relates the activity identifier associated with each International-only feature to:
  - — the product/application/network element, or market area affected
  - — affected software object types (data schema, for example)
- *New or changed* for ISN08. This section provides a table for each software object type, as follows:
  - — Office parameters
  - — Logs and faults
  - — Operational and Performance Measurements (OMs and PMs)

- Data Schema tables or MIBs
- User Interface (commands)
- Service Orders
- AMA/billing
- Software Optionality Control (SOC)

Each table gives a summary of the changes caused per feature. Within each table, features are arrranged by product/application, network element, or market.

- *Feature descriptions*. This section provides feature descriptions, based on design documents. These are organized by product/application/network element, or market.
- *Appendices* that support specific product lines, such as MG9K

Related documents

Global information that applies to both the North American and the International markets can be found in the following North American (SN06.2) documents:

- PLN-082AT-OSS, *SN08 OSS Advance Feature Guide (ATM)*
- PLN-08IP-OSS, *SN0 OSS Advance Feature Guide (IP)*

The documents contain details of OSS-affecting features that apply to both SN08 (North America) and ISN08 (International), referenced from section “Global features” in this document.

Other relevant descriptions contained in the North American documents are as follows:

- Audio Provisioning Server
- Compact Call Agent
- CMT
- SAM21 (Logs/faults as an Appendix)
- CS2000 XA-Core
- GWC
- SPM (all variants)
- Storm
- MG 9000 (OMs/PMs as an Appendix)
- Network Patch Manager (NPM)

- CS 2000 Core Manager
- TOPS
- Passport 8600
- Passport 15000 (Alarm logs as an Appendix)
- MDM (Alarm logs as an Appendix)
- PNM
- UAS (Logs/faults as an Appendix)
- USP (Logs/faults and OMs/PMs as an Appendix)
- OSSGate User Guide

Audience

This document is intended for Nortel Networks personnel, third-party OSS vendors, and customers who need to plan resources and estimate network impacts for this release.

How to check the version and issue of this document

The document release information on the title page and the footers of this document indicate the version and issue, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time a document is revised but re-released in the same software release cycle. For example, the second release of a document in the same software release cycle would be 01.02.

Writing conventions

Descriptions of commands, parameters, and responses in this document use the following conventions:

Input prompt

An input prompt (> or #) indicates that the information that follows is a command:

>LIST

Commands and fixed parameters

Commands and fixed parameters that are entered at the MAP terminal are shown in uppercase letters:

>LIST ALL

Variables

Variables that are entered at a MAP terminal are shown in lowercase letters:

>TABLE table_name

Global features mapping

This section contains a table that lists the OSS-affecting features that apply to both the International and North American markets. The table shows which International solutions the features apply to and the software object types/areas impacted (such as logs, data schema, OMs, etc.). These features are covered in the following North American documents:

- SN08 OSS Guide (IP), PLN-08IP-OSS
- SN08 OSS Guide (ATM), PLN-08AT-OSS

SN08 Solutions		Solutions Affected					SW object types/areas impacted							
Product, Application, or Market	ACTID	Int'l PT-AAl2	Int'l PT-IP	Int'l IAC	Int'l IAW	Int'l UA-IP	Logs/Faults	Data Schema	Office Parms	ServOrd	User Interf/HMI	OMs/PMs	AMA/Billing	Optionality
MG 9000	A00006450	X									X			
MG 9000	A00006906					X	X							
CS 2000-GWC	A00007101		X	X	X	X					X			
CS2K Mgmnt Tools	A00007102		X	X	X	X	X				X			
MG 9000	A00007107					X						X		
CS2K Mgmnt Tools	A00007242			X	X						X			
CICM	A00007244				X	X				X				
CICM	A00007253				X	X				X				
CS 2000-TOPS	A00007271		X				X	X	X			X		
IEMS	A00007359		X	X	X						X			
CS 20000	A00007424		X	X	X	X	X							
CS 2000-TOPS	A00007713	X	X				X				X			
CS 20000	A00007790	X	X					X						
CS 20000 Compact	A00008431		X	X	X	X	X				X			

ISN08 Activity mapping table

Introduction

This document contains advance information about differences in operations, administration, maintenance, and provisioning (OAM&P) for International Release 7 (ISN08). The purpose of this document is to provide early information about new, modified or deleted items related to OSS-impacting areas.

The table below shows the mapping from the activity identifier (ACTID) associated with each new feature to the following:

- the associated product, application, network element, or market
- the international solution that the feature affects, of the following:
  - International PT-AAL2
  - International PT-IP
  - International IAC
  - International IAW
  - International UA-IP
  - Internation DMS
- the software object type or area that the feature affects, of the following:
  - Logs/faults
  - Data schema tables/MIBs
  - Office parameters
  - Service orders (ServOrd)
  - User interface/human-machine interface
  - Operational and performance measurements (OMs/PMs)
  - Automatic Message Accounting (AMA)/billing
  - Software Optionality Control (SOC)

Activity Mapping Table: Solutions Affected

		SN08 Solutions					
PRODUCT or APPLICATION	ACTID	Int'l PT-AAL2	Int'l PT-IP	Int'l IAC	Int'l IAW	Int'l UA-IP	Int'l DMS
Call Server 2000	A59039138						X
Call Server 2000	A00005822		X				
Call Server 2000	A00006731						X
Call Server 2000	A00007040		X				
Call Server 2000	A00007146		X				
Call Server 2000	A00007749					X	
Global Svcs. Plat	A00005980						X
Global Svcs. Plat	A00005981						X
World Trade	A00005315				X		X
World Trade	A00005932						X
World Trade	A00005962						X
World Trade	A00006064						X
World Trade	A00006271						X
World Trade	A00006387						X
World Trade	A00006407		X		X		
World Trade	A00006636						X
World Trade	A00006660						X
World Trade	A00006661						X
World Trade	A00006662						X
World Trade	A00006666						X
World Trade	A00006980						X
World Trade	A00007255						X
World Trade	A00007349						X
World Trade	A00007383						X
World Trade	A00007793			X			
World Trade	A00007794			X			
World Trade	A00007796			X			
World Trade	A00007807			X			

Activity Mapping Table: Software object types or areas impacted

SN08 Solutions		SW object types / areas impacted							
PRODUCT or APPLICATION	ACTID	Logs/Faults	Data Schema	Office Parms	ServOrd	Commands/User Interf/HMI	OMs/PMs	AMA/Billing	Optionality
Call Server 2000	A59039138		X		X				
Call Server 2000	A00005822								X
Call Server 2000	A00006731		X		X				
Call Server 2000	A00007040	X							
Call Server 2000	A00007146	X							
Call Server 2000	A00007749		X						
Global Svcs. Platform	A00005980		X			X			
Global Svcs. Platform	A00005981		X			X			
World Trade	A00005315		X						
World Trade	A00005932		X						
World Trade	A00005962		X						
World Trade	A00006064								X
World Trade	A00006271					X			
World Trade	A00006387		X						
World Trade	A00006407		X						
World Trade	A00006636								X
World Trade	A00006660		X						
World Trade	A00006661		X						
World Trade	A00006662					X			
World Trade	A00006666					X			
World Trade	A00006980		X						
World Trade	A00007255		X	X					
World Trade	A00007349		X						
World Trade	A00007383		X						X
World Trade	A00007793		X						
World Trade	A00007794					X			
World Trade	A00007796					X			
World Trade	A00007807		X						

New or changed for iSN08

Introduction

This section of the document contains tables which give an overview of the feature-based changes occurring in this release for:

- Office parameters
- Logs/faults
- Operational measurements (OMs) and performance measurements (PMs)
- Data Schema tables or MIBs
- User interface (commands)
- Servord
- AMA/billing
- Software Optionality Control (SOC)

Within each table, the changes are arranged by associated product, and the activity identifier (ACTID) of the feature which causes the change.

Office Parameter changes overview

The following office parameters are new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document.

Summary of new or changed Office Parameters

Office Parm Name	New or Changed	Description
Product = World Trade		
DEFAULT_MWI_XLA_ENTRY	**Deleted**	**A00007255 (DMS) removes this office parameter. The functionality is moved to the EMWI tuple in table ISERVOPT as a parameter with the same name.**

Logs/faults changes overview

The following logs or faults are new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document..

Summary of new or changed Logs/Faults for ISN06

Log/Fault Type	Log/Fault Name	New/Modified/Deleted, ACTID and Solution
Product = CS 2000		
	TBD	A00007040 (Int'l PT-IP) provides error handling support for FDCP CAS in CS2K by handling errors encountered and reported by the Media Gateway (MG) to the Media Gateway Controller (MGC) during CAS call processing. The logs generated on encountering these errors are basically trunk logs. Refer to the FN of this feature for an example.
AUDIT logs	AUDT108 AUDT109 AUDT110	A00007146 (Int'l PT-IP) modifies the following audit logs to apply to FDCP CAS trunks. The logs occur when the audit system recovers trunk members that have state mismatches. • AUDT108 is generated when a trunk audit discovers that a trunk without data is other than TK_UNEQUIPPED or when the trunk state does not match the condition bits. • AUDT109 is generated when the trunk audit corrects trouble conditions. • AUDT109 is generated when a trunk audit detects a terminal trunk state that is invalid.
Product = Global Services Platform		
GIN logs	GIN301	A00005980 (DMS) introduces the following new Trouble and new Reason for the INAP CONNECT RouteList decoding failures: • A new Trouble Decription has been defined for RouteList parameter-related troubles that may require a GIN301 Log. This new Trouble Description is: 'Error whilst processing RouteList parameter' • A new Reason Decription has been defined for the GIN301 Log to be printed in the case when none of the BusinessLineIDs provided in the RouteList parameter are datafilled in Table RTELMAP. This new Reason Description is: 'No Valid (datafilled) Business Line ID in RouteList Parm''

Operational Measurements/Performance Measurement changes overview

The following Operational Measurements or Performance Measurements are new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document.

Summary of new or changed OMs/PMs

OM Group or PM name	New or Changed	Description
Product = World Trade		
EIN2	Changed	A00007796 (Int'l IAC) adds register EINEDP27H, incremented when CallAccepted EDP is encountered.

Data Schema tables/MIBs changes overview

The following Data Schema tables or MIBs are new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document.

DS Table/MIB	Changed or New
Product = CS 2000	
IBNFEAT (changed)	Feature A59039138 (DMS) adds the new announcement field MWT_ANNOUNCEMENT to the MWT feature in table IBNFEAT.
IBNLINES (changed)	A00006731 (DMS) modifes this table to add new OPTLIST option EOF.
Product = Global Services Platform	
RTELMAP (new)	A00005980 (DMS) creates table RTELMAP which allows the customer to define, for each used BusinessLineID, the OVR Table and the Index in that OVR Table that will be used in routing. This mapping will be used to define the physical route(s) to associate with a BusinessLineID received in the INAP CONNECT RouteList parameter.
GSERVINF (changed)	A00005981 (DMS) adds a new field named PATH_OF_ENTRY under INITDP_OPTION.
Product = World Trade	
CGPNBLDR CGBLDADD CGBLDDGL CGBLDDIG CGBLDNI CGBLDPI (changed)	A00005315 (DMS, Int'l IAW) modifes these 6 tables to support calling party number manipulation. Also, outgoing ISUP trunks and CS-1 agents are supported. For outgoing ISUP trunks, the screening is also triggered from CGPNBLDR option in table TRKOPTS like outgoing PRI trunk; for outgoing CS-1 agent, the screening is triggered from CGNBD_IN option in table TRKOPTS.

DS Table/MIB	Changed or New
CGBLDSIN (new)	A00005315 (DMS, Int'l IAW) introduces table CGBLDSIN (SMALLINT Screening) to enhance the screening mechanism so that the incoming agent can be judged.
RECEIVER (specific datafill required)	A00005932 (DMS) enhances the digit collection in DISA features which are CEPT Call Forwarding Remote Access (CFRA) and CEPT Remote Access (CEPTRA). Digits are collected via UTR if possible, then by DTMF if possible, then by loopback trunks if needed. Specific datafill is required in table RECEIVER to enable DTMF digit collection.
CUSTSTN (changed)	A00005962 (DMS) modifies the CNDBO option by adding subfield CNDBOTYPE.
ISERVOPT (changed)	A00006387 (DMS) introduces new service option QFT_SUS_RES_SUPPORT of type Y or N. When set to Y, SUS/RES messages are generated for ETSI ISUP QFT to Line calls when the terminating Line goes on-hook and off-hook respectively.
CUSTSTN CALLCNTL CGPNSCRN CDPNSCRN BCSCRN CDPNLSCR CGRPSCRN CKTSCRN CPCNSCRN CPNNSCRN IPISCRN NCOSSCRN NOASCRN OLISCRN RDRISCRN ISERVOPT (changed)	A00006407 (DMS) modifies the following tables: • CUSTSTN--adds new option CCNTLIDX with entry SCRN_INDX. • CALLCNTL--adds new screen option 'OCN' and 'RGN,' new DIGMAN_PARM 'OCN' and 'RGN,' and new CALLCNTL_OPTIONS 'NOA.' • The 13 screening tables listed add new DIGMAN_PARM 'OCN' and 'RGN,' and new CALLCNTL_OPTIONS 'NOA.' • ISERVOPT adds new option 'CISUPAMA.'
LCMINV (changed)	A00006660 (DMS) modifies the following fields: • FRTYPE--FRAME_NAME range now includes "DDRM". • EQPEC--LCM_PEC range now includes "DDRMPC". • LCMTYPE--LCMTYPESEL range now includes "DDRM".
AMAOPTS (changed)	A00006980 (DMS) introduces option MC130_FOR_CLF which allows the customer to append the Module Code 130 on tandem or terminating DMS-100 offices when a call is normally clear forwarded before the terminator goes off hook.

DS Table/MIB	Changed or New
ISERVOPT (changed)	**A00007255 (DMS) adds new tuple EMWI with field** DEFAULT_MWI_XLA_ENTRY which indicates that the incoming TCAP message for ETSI MWI request is translated according to entered line attribute. This functionality is transferred from the office parameter of the same name.
CPCCHAR (changed)	**A00007349 (DMS) modifies this table by adding in the PROTOCOL field the FDCP protocol for MFC trunks using the FDCP platform**.
ISERVOPT (changed)	**A00007383 (DMS) adds new entry DNH_OPTS in the field SOPTSKEY,** new entry DNH_OPTS in the field SOPTSVAR/subfield OPTION, and two new boolean subfields *PILOT_CHARGE*, *PILOT_DISPLAY* added to entry DNH_OPTS in field SOPTSVAR/OPTION.
LTCINV and RMMINV (changed)	**A00007749 (Int'l UA-IP) modifies these tables as follows**: • LTCINV--field CSLNKTAB is modified such that PLGC (the international variant of LGC) is allowed to have the EXTDS512 optional attribute assigned to it. • RMMINV--field CSPMINFO is modified such that when an RMM Selector of RMMLTC is entered, the allowed C-side PM types now include PLGC.
SERVINFO (changed)	**A00007793 (Int'l IAC) makes the following changes:** • **adds new suboption CORRELATIONID_ TRANSPORT with value IN_CRID under new subfield EXTERNAL_SRF_INFO_OPTION to the existing SRF_INFO option**. • **adds new value DACOM_EXT as an option to the existing INITDP_EXT_INFO subfield under the existing INITDP_EXTENSIONS option**.
ISUPSVC (changed)	**A00007807 (Int'l IAC) introduces the new services named ADDRESSING_METHOD (with option SEPARATE_DIRECTORY_NUMBER) and MARKET** (with option KOREA).

User Interface (commands) changes overview

The following User Interface GUIs or Commands are new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document,

Field	Command/User Interface Description
Product = Global Services Platform	
EINTRACE tool (changed)	A00005980 (DMS) enhances this tool to display RouteList parm and its contents if it is received in an INAP CONNECT operation.
GTRAVER tool	A00005980 (DMS) enhances this tool to prompt to enter a BusinessLineID if expected from SCP, subsequently printing the routing steps based on that BusinessLineID, if received in an INAP CONNECt RouteList parameter.
EINTRACE: OPEN command (changed)	A00005981 (DMS) enhances the EINTRACE: OPEN command for an INITDP Message with Path Of Entry parameter.
Product = World Trade	
Call Forwarding features	**A00006271 (DMS)** makes available the activation, deactivation and interrogation of CFB per Key (Call Forwarding Busy per Key), CFD per Key (Call Forwarding Don't Answer per Key) and CFK (Call Forwarding Unconditional per Key) features based on the CEPT Dialing Sequence.
DDRMDIR directory (new)	**A00006661 (DMS) creates the DDRMDIR directory with commands of QUIT, POST, LISTSET, TRNSL, TST, BSY, RTS, OFFL, DISP, NEXT, QueryPM, and ABTK.**
DDRMLEM command (new)	**A00006662 (DMS) creates the CI command DDRMLEM,** whose function is to transform the Physical View of a DDRM line's location (shelf, LC, slot) into the Logical View (line subgroup, circuit)**.**
IN Collect Call Support (changed)	**A00**007794 (Int'l IAC) adds support for the following: • CallSegmentID parameter in ETC operation • ETC (Leg2) and ETC (CallSegId 2) for connection to an external IP • DFCWA (leg2) and DFCWA (CallSegId 2) for disconnection from the external IP

Service Order changes overview

The following Service Order information is new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document..

Summary of new or changed Service Orders

Area	New or Changed	ServOrd Description
Product = CS 2000		
LCC and options	**Changed**	A00006731 (Int'l PT-IP, Int'l UA-IP, Int'l IAC, Int'l IAW, DMS) adds new line option EOF which can only be assigned to an LCC of IBN.
	New prompt	Feature A000059039138 (DMS) creates a new SERVORD prompt called MWT_ANNOUNCEMENT.

AMA/billing changes overview

No new or changed AMA/billing is seen in these features for ISN08.

Summary of new or changed AMA/billing

AMA/billing item	New or Changed	Description
Product = World Trade		

Software Optionality Control (SOC) changes overview

The following SOC information is new or changed for ISN08. More complete descriptions appear in the Feature Descriptions section of this document.

Summary of new or changed SOCs

SOC code	New or Changed	Description
Product = CS 2000		
(See description_	Changed	A00005822 (Int'l PT-IP) adresses two AOC services: ***AOC-D*** and ***AOC-E***. These services are deployed for originating agents connected to the CS2000 over H.323. For the AOC calculation, the CS2K node has to be configured to determine and apply the tariffs (nodal configuration or combined CGP/CDP. To enable this feature, the following SOC codes must be activated: • *NETK0024* Network AOC Tariff • NSUP0020 NAOC/PCA Supp Svcs • NSUP0023 PCA SW Metering Support for Billing • PBXT0011 ETSI PRI Info • PBXT0018 QSIG AOC
Product = World Trade		
XLAS0056	New	A00006064 (DMS) creates this state SOC, CCR Screen Enhancement. When this SOC is ON, CCR screening for Third Party Billed Calls should not occur for called number datafilled THIRDPTY option with FEATINFO VALIDATE selector.
NETK0086	New	Per A00006636 (DMS), when this state SOC is ON, the first ITX message is generated 500 msecs after the RIU/ANM message is sent and therefore short duration calls can be charged for both the SSUTR2 and SPIROU terminating calls.
SVB10035	New	Per A00007383 (DMS), this SOC code enables DNH Pilot Number information for CLI and Billing.

Integrated EMS Functionality

Integrated EMS Northbound Interfaces

General Information

The Integrated EMS provides a consolidated location to manage the Fault, Configuration, Performance Collection and Security account domains for devices (Network Elements, Element Managers, Management Applications and Platforms) in a CS 2000 central office. A brief description of its capabilities include the following:

- Topology: The Integrated EMS provides a graphical representation of the managed devices in a central office. The IEMS client comes with default views (Network Elements, Element Mangers, Applications and Platforms) of the managed network and provides flexible interfaces that allow a craftperson to create customized views of the network. The alarm state of each of the managed devices in the Integrated EMS topology is dynamically depicted by the associated background color (Red= Critical, Red=Major, Amber=Minor, Yellow=Warning, Green=Clear) of the managed device.
- Fault: The Integrated EMS aggregates the event streams received from the various EMSs, NEs, applications, and platforms that it manages. It normalizes the events received from these streams and forwards the events over its northbound interfaces (such as SCC2, NTSTD, SNMP, and SYSLOG). The Integrated EMS alarm and event browsers provide a consolidated real-time and historical view of the events that have occurred in a CS 2000 central office. It provides tools to view and page through the events and alarms in a common graphical interface. The Alarm and event browsers provide a wide range of features to manage, sort, filter and view events in a single centralized location. For detailed information on the IEMS fault management features please refer to the Integrated EMS Fault Management document (NN10334-911).
- Performance: The Integrated EMS provides a centralized location for collecting, storing and forwarding performance data in a CS 2000 central office. Its performance collection sub-system provides some basic tools for viewing and graphing the collected performance attributes. In addition, it

does provide interfaces to configure the generation of threshold alarms for the collected Operation Measurement data. For detailed information on the IEMS performance management features please refer to the Integrated EMS Performance Management document (NN10327-711).

- Configuration: The Integrated EMS provides a centralized location to launch the various Succession Configuration management interfaces. For detailed information on the IEMS performance management features please refer to the Integrated EMS Configuration Management document (NN10330-511).
- Security: The Integrated EMS provides a centralized graphical interface to configure and manage the user accounts in a Succession Central Office. The Integrated EMS Security subsystem provides centralized authentication and authorization server for many of its managed devices. It also provides centralized security logging for successful and failed authentications. In addition it provides Single Sign-on support enabling a user to log in to the IEMS client once and access multiple Succession Management interfacse without requiring the user to re-enter a userid and password. For detailed information on the IEMS Security management features please refer to the Integrated EMS Security and Administration document (NN10336-611).

IEMS Northbound Fault Interface

User Setup, Administration, and Customization of Views

For information on initial setup and customization of the Northbound fault feed from IEMS see:

- IEMS Fault Management Guide - NN10334-911

Device Fault Mapping References for Northbound Interface

The following table shows the log identification criteria for each device, manager, and application supported by IEMS. Log references for table entries defined in *italics* can be found in:

NN10275-909 - Succession Fault Management Logs Reference (volumes 1-3)

See the table below for additional fault documentation

Fault Correlation for SN08 Devices

	NB format -> **Device/EM**	**Documentation Log Key**	**Document Reference**
1	***"Audio Provisioning Server (APS)"***	Specific Problem	NN10328-911 MS 2000 Series Fault Management

	NB format -> **Device/EM**	**Documentation Log Key**	**Document Reference**
2	**"Call Agent Core"**	log name and log number	see " Fault documentation for Call Agent Core :"
3	***"Call Agent Platform"***	Log name and number	NN10087-911 Call Agent Fault Management
4	***CBM*** ***See "CS2000 Core Manager"***	log name and number	**See "CS2000 Core Manager"**
5	***CEM***	log name and number	NN10334-911- I Integrated EMS Fault Management
6	**"Centrex IP Call Manager (CICM)"**	log name and number	NN10233-911 CICM Fault Management
7	***"CS2000 Core Manager"***	log name and number	NN10082-911 CS 2000 Core Manager Fault Management
8	***FPM***		
9	***"Gateway Controller (GWC)"***	Log name and number	NN10090911 GWC Fault Management
10	***"GWC Manager"***	log name and number	PLN-08AT OSS SN08 OSS Guide (ATM) PLN-08IP OSS SN08 OSS Guide (IP)
11	***IEMS***	log name and number	NN10275-909v3: Succession Fault Management Logs Reference Volume 3
12	**"Media Application Server (MAS)"**	Event Id	NN10303-111 MCP 2.0 MAS Meetme Basics NN10297-111 MCP 2.0 MAS Adhoc Basics
13	**"Multimedia Communication Server (MCS)"**	log name and log number	NN10247-111 Multimedia Communication Server 5200 System Management Console User Guide

	NB format -> Device/EM	Documentation Log Key	Document Reference
14	**"Multi-Service Data Manager (MDM)"**	log name and number	NN10092-911 Passport 15000 and MDM in Succession Networks Fault Management (PT-AAL1/UA-AAL1)
15	**MDM for BSC** **see "Multi-Service Data Manager (MDM)"**	log name and number	see **"Multi-Service Data Manager (MDM)"**
16	**MDM - carrier** **see "Multi-Service Data Manager (MDM)"**	log name and number	see **"Multi-Service Data Manager (MDM)"**
17	**MDM Client-Server** **see "Multi-Service Data Manager (MDM)"**	log name and number	see **"Multi-Service Data Manager (MDM)"**
18	**"MultiService Switch 7400, 15000, 20000"**	log name and number	NN10092-911 Passport 15000 and MDM in Succession Networks Fault Management (PT-AAL1/UA-AAL1)
19	***"Media Gateway 9000 (MG9000)"***	Logname and number	NN10325-900 ATM/IP Fault Management
20	***"MG9000 Manager"***	logname and number	NN10074-911 MG9000 Fault Management
21	**"MS2000 Series Node"**	logname and number	NN10328-911 MS2000 Fault Management
22	***"Network Patch Manager (NPM)"***	logname and number	N10084911 CS2000 Management Tools Fault Management
23	**"Passport 8600"**	logname and number	241-6003-110 Passport 8600 Device Integration Cartridge User Guide
24	**"QoS Collector Application (QCA)"**	logname and number	NN10083-911 Communication Server 2000 Fault Management
25	***"SAM21 Element Manager"***	logname and number	NN10089-911 SAM21 Shelf Controller Fault Management

	NB format -> Device/EM	Documentation Log Key	Document Reference
26	***"SAM21 Shelf Controller"***	logname and number	NN10089-911 SAM21 Shelf Controller Fault Management
27	***"SDM Platform"***	logname and number	NN10081-911 SDM Fault Management
28	**"Session Server Manager"**	logname and number	NN10332-911 Session Server Fault Management
29	***"Succession Server Platform Foundation Software (SSPFS)"***	logname and number	NN10440-450 Upgrading a Carrier VoIP Network
30	***"Storage Manager (STORM)"***	logname and number	NN10088-911 Storm Fault Management
31	***"Universal Audio Server (UAS)"***	logname and number	NN10275-909 v3 Succession Fault Management Logs Reference NN10073-911 UAS Fault Management
32	**"Universal Signaling Point (USP)"**	Specific Problem: Log Group=<text> & Log Number=<number> Note: Log GroupID is not used	NN10071911 USP Fault Management
33	**"XACore"**	Logname and number	297-8991-510 XA-Core Maintenance Manual

IEMS Northbound Fault Specifications

Fault events are available from any of four Northbound interfaces. Log formats supported in this release are: NTSTD, SCC2, Syslog, and SNMP. A description of each of these interfaces is given in the sections that follow.

OSS clients can receive faults in **SCC2** and **NTSTD** formats from IEMS by initiating a TCP socket connection to designated ports on the IEMS server. When a connection attempt is made by a remote host, the IEMS validates the connecting OSS as an authorized client. It then forwards all logs that satisfy the configured filter criteria to the OSS. The port numbers and remote clients eligible to connect to these log streams are configured by the administrator.

***Note:* In legacy environments, the ECORE option was used to include the originating node name in the log header for SCC2 and NTSTD formats. This option is NOT supported with Nortel Networks Carrier VoIP solution. All references to ECORE in the following sections will assume this option is disabled.**

Faults can be delivered to hosts via **SNMP** by configuring the IP address and port of the remote management application.

***Note 1:* By default, the following attribute values are used for configuring SNMP northbound fault feed. The administrator can change the above attribute values. Refer to the "Changing SNMP attributes for SNMP fault feeds" section to modify these values.**

***Note 2:* • SNMP port: 8001**

***Note 3:* • read community: public**

***Note 4:* • write community: public**

***Note 5:* • SNMP version: v2c**

The standard **Syslog** interface can also be configured as a fault stream for remote management systems.

The following table summarizes the characteristics of the four Northbound fault feeds from IEMS.

IEMS Northbound Fault Stream Characteristics

Fault format	Port	OSS Connection	Stream type	IEMS Config required
NTSTD	8555	Incoming. IEMS waits for connection by remote host	ACSII stream over TCP, push	OSS IP address or hostname
SCC2	8556	Incoming. IEMS waits for connection by remote host	ACSII stream over TCP, push	OSS IP address or hostname

Fault format	Port	OSS Connection	Stream type	IEMS Config required
SNMP	user-defined on remote listener	IEMS forwards SNMP faults as SNMP traps to OSS. OSS can also query IEMS for active alarm data. By default, the following attribute values are used for configuring SNMP northbound fault feed. The administrator can change the attribute values. **Default Settings:** SNMP port: 8001 read community: public write community: public SNMP version: v2c	SNMP trap events (UDP), push	IP address and port of listener on OSS
Syslog	designated port for Syslog service (514)	IEMS forwards log events to remote host	ACSII data over UDP, push	syslog.conf requires forwarding entry for log facility **Fault:** local7.notice **Audit:** local0.notice **Security:** local3.notice

Each fault interface is discussed in the sections that follow.

Northbound SCC2 Specification

SCC2 is an ACSII stream delivered to a Northbound receiving application. The stream is delivered over a TCP socket and is configured by the administrator.

This section provides a detailed description of the SCC2 log format delivered by IEMS.

SCC2 Format Summary:

<Alarm Severity><Minute Indicator><Log Name><Log Number><Threshold>< Sequence Number><Event Type><Event Label><Equipment Identifier><Body Text>

SCC2 Header Formats

SCC2 Header format:

```
12345678901234567890123456789012345678901234567890123456789012
3456789
---------|---------|---------|---------|---------|---------|--
-------
aabb\ccccdddeffff\gggg\h.../i.../j...
---------|---------|---------|---------|---------|---------|--
-------
```

1. The backslash sign (\) signifies a space.
2. The forward slash sign (/) signifies a space that only appears if the preceding optional field exists.
3. The periods (...) signify variable length data.
4. The 'greater than' sign followed by periods (>...) signifies variable length indentation determined by the application.
5. The vertical lines do not appear on the actual report, they are used for presentation purposes in the above figure.
6. This notation only represents the header and does not include the application data area (i.e. the rest of the log report).

An example of a SCC2 log header is given below. It is also used in explaining the individual fields in the log header.

SCC2 Log Header Example:

```
* 03 PM  128+0417 TBL  ISTB LIU7 348
            ISTb     From InSv
```

SCC2 Field Descriptions

Fld	Name	Description	Example
a	**Alarm Severity**	The severity level of the log report. This is a 2 character field left justified and padded with blanks. Possible values are: '*C' = critical alarm, '**' = major alarm, '* ' = minor alarm, ' ' = no alarm.	'*'
b	**Minute Indicator**	This value represents the minutes after the hour. It consists of 2 numeric characters, right justified and padded with zeroes. It ranges from 00 to 59.	'03'
c	**Log Name**	This value can be 2 to 4 non blank characters. Within this fixed 4 characters, it is left justified and padded with blanks.	'PM '

Fld	Name	Description	Example
d	**Log Number**	This value is always 3 digits ranging from 000 to 999. It is right justified and padded with zeroes. For PROTOLOGs (i.e. TRAP, SWERR, INIT, INFO, and LOCK logs) it is a string of 3 spaces.	‘128'
e	**Threshold**	Indicates whether a threshold was set for the given log report. A threshold can be temporarily set by using LOGUTIL.Thresholding will survive any restart by turning on the office parameter threshold_is_sampling in table OFCVAR and datafilling threshold value for individual log report in table LOGCLASS and RLOGCLAS on the CallServer. If THRESHOLD_IS_SAMPLING is on (Y), a log report is generated for every n-th instance of the log report generated. If threshold_is_sampling is off (N), every log report after the n-th report is generated. Possible values are: '+' = a threshold was set, ' ' = no threshold was set.	'+'
f	**Sequence Number**	This field defines the unique sequence for each log report. It is right justified and padded with zeroes. It represents 4 numeric characters ranging from 0000 to 9999.	'0417'
g	**Event Type**	Log report event type which is a string of 4 uppercase characters, left justified and padded with blanks. This field is defined by the applications that generate the log report. Possible values include: ' ', 'CBSY', 'EXC ', 'FAIL', 'FLT ', 'INFO', 'INIT', 'LO ', 'MANB', 'OFFL', 'PASS', 'PBSY', 'RTS ', 'SUMM', 'SYSB', 'TBL ', 'TRAN', 'TRAP', 'UNEQ'.	‘TBL '
h	**Event Label**	A variable length character string that represents application event description. It is an optional field.	'ISTB'
		The following fields are defined by the applications that generate the log report. These fields are optional and independent of each other.	
i	**Equipment Identifier**	A conditional equipment identifier determined by the application. It is a variable length character string.	'LIU7 348'

Fld	Name	Description	Example
j	**Body Text**	Application specific log body text starts here. This may contain several lines. Each new line is indented by eight spaces. Most log bodies start with a carriage return character so that none of it appears on the header line.	'ISTb From InSv'

Examples of Logs with SCC2 Header

The sample logs below are shown for example only. They are syntactically correct but field contents may vary.

1 Gateway Controller example

```
**14 GWC 307 7250 TBL  GWC Fault
      Location: GWC-2-UNIT-0
      NotificationID: 4
      State: Raise
      Category: Communications
      Cause: Communications subsystem failure
      Time: Jan 23 15:15:59 2004
      Component Id: GWC=GWC-2-UNIT-0;Version=PGC92BA;Unit=
      unit_0;Software=NODE MTC
      Specific Problem: EM not responding, provisioned data
      loaded from local Flash
      Description: Element Manager communication failure.
```

2 Call Server example:

```
56 LINE138 3778 INFO TRMT
       SLOA 21 1 02 01    DN 2145202111
     TREATMENT SET = BUSY   CALLED NO =           5202111
       CALLID= 01BE 036D
```

Northbound NTSTD

NTSTD is an ACSII stream delivered to a Northbound receiving application. The stream is delivered over a TCP socket and is configured by the administrator.

This section provides a detailed description of the NTSTD log format delivered by IEMS.

NTSTD Format Summary:

<Office Identifier><Alarm Severity><Threshold><Log Name><Log Number><Time MMMMDD hh:mm:ss>< Sequence Number><Event Type><Event Label><Equipment Identifier><Body Text>

Standard Header Formats

```
ECORE Format OFF:
------------------------------------------------------------------
-------
123456789012345678901234567890123456789012345678901234567890123
3456789
---------|---------|---------|---------|---------|---------|--
-------
a...#cccdeeeefff\ggghh\ii:jj:kk\llll\nnnn\o.../p.../q...
---------|---------|---------|---------|---------|---------|--
-------
```

Notes:

1. The placeholder represented by the pound sign (#) is non-existent if both office parameter log_office_id and ecore_format in table OFCVAR are turned off. The pound sign (#) represents a space in other cases (i.e. log_office_id is datafilled and ecore_format is turned off; and whenever ecore_format is turned on regardless of log_office_id).
2. The backslash sign (\) signifies a space.
3. The forward slash sign (/) signifies a space that only appears if the preceding optional field exists.
4. The periods (...) signify variable length data.
5. The vertical lines do not appear on the actual report, they are used for presentation purposes in the above figure.
6. This notation only represents the header and does not include the application data area (i.e. the rest of the log report).

An example of a standard log header is given below. It is also used in explaining the individual fields in the log header.

Standard log header example:

```
SCP2B *+  PM128 OCT20 10:03:42 0417 TBL  ISTB LIU7 348
             ISTb     From InSv
```

NTSTD format field descriptions

Fld	Name	Description	Example
a	**Office Identifier**	Identifies the switch generating the Identifier log. This is an optional field. It is output if the office parameter log_office_id in table OFCVAR on the CallServer is datafilled. It has variable length from 0 up to 12 characters.	'SCP 2B'
b	**Ecore Node Name**	Originating node name where this log Node Name report is generated. It is an eight character field, its contents are left justified and padded with blanks. It is contained in the header if the office parameter ecore_format in table OFCVAR is turned on. ***As of SN07, this option is not supported***	'CM '
c	**Alarm Severity**	The severity level of the log report. This is a 3 character field right justified and padded with blanks. Possible values are: '***' = critical alarm, ' **' = major alarm, ' *' = minor alarm, ' ' = no alarm.	' *'
d	**Threshold**	Indicates whether a threshold was set for the given log report. A threshold can be temporarily set by using LOGUTIL. Thresholding will survive any restart by turning on the office parameter threshold_is_sampling in table OFCVAR and datafilling threshold value for individual log report in table LOGCLASS and RLOGCLAS on the CallServer. If threshold_is_sampling is on (Y), a log report is generated for every n-th instance of the log report generated. If threshold_is_sampling is off (N), every log report after the n-th report is generated. Possible values are: '+' = a threshold was set, ' ' = no threshold was set.	'+'
e	**Log Name**	This value can be 2 to 4 non blank characters. Within this fixed 4 characters, it is right justified and padded with blanks.	' PM'
f	**Log Number**	This value is always 3 digits ranging from 000 to 999. It is right justified and padded with zeroes. For PROTOLOGs, (ie. TRAP, SWERR, INIT, INFO and LOCK logs) it is a string of 3 spaces.	'128'

Fld	Name	Description	Example
g	**Month Indicator**	Consists of 3 uppercase characters ranging from 'JAN' to 'DEC' that represent the month.	'OCT'
h	**Day Indicator**	Consists of 2 numeric characters ranging from 01 to 31 that represent the day of the month	'20'
i	**Hour Indicator**	Consists of 2 numeric characters ranging from 00 to 23 that represent the hour of the day.	'10'
j	**Minute Indicator**	Consists of 2 numeric characters ranging from 00 to 59 that represent the minute of the hour.	'03'
k	**Second Indicator**	Consists of 2 numeric characters ranging from 00 to 59 that represent the second of the minute.	'42'
l	**Sequence Number**	This field defines the unique sequence for each log report. It is right justified and padded left with zeroes. Represents 4 numeric characters ranging from 0000 to 9999.	'0417'
n	**Event Type**	Log report event type which is a string of 4 uppercase characters, left justified and padded with blanks. This field is defined by the applications that generate the log report. Possible values include: ' ', 'CBSY', 'EXC ', 'FAIL', 'FLT ', 'INFO', 'INIT', 'LO ', 'MANB', 'OFFL', 'PASS', 'PBSY', 'RTS ', 'SUMM', 'SYSB', 'TBL ', 'TRAN', 'TRAP', 'UNEQ'.	'TBL'
o	**Event Label**	A variable length character string that represents application event description. This field is optional.	'ISTB'
		The following fields are defined by the applications that generate the log report. These fields are optional and independent of each other.	
p	**Equipmnt Identifier**	A conditional equipment identifier determined by the application. It is a variable length character string.	'LIU 7 348'
q	**Body Text**	Application specific log body text starts here. This may contain several lines. Each new line is indented by eight spaces. Most log bodies start with a carriage return character so that none of it appears on the header line.	'ISTb From InSv'

Examples of Logs with Standard Header

The sample logs below are shown for example only. They are syntactically correct but field contents may vary.

1 Gateway Controller example:

```
RTPU07BU  **  GWC307 Jan23 20:14:38 7250 TBL  GWC Fault
          Location: GWC-2-UNIT-0
          NotificationID: 4
          State: Raise
          Category: Communications
          Cause: Communications subsystem failure
          Time: Jan 23 15:15:59 2004
        Component Id: GWC=GWC-2-UNIT-0;Version=PGC92BA;Uni
          t=unit_0;Software=NODEMTC
          Specific Problem: EM not responding, provisioned
          data loaded from local
          Flash
        Description: Element Manager communication failure.
```

2 Call Server example:

```
RTPU07BR     LINE138 Jan23 16:56:30 3778 INFO TRMT
         SLOA 21 1 02 01    DN 2145202111
         TREATMENT SET = BUSY   CALLED NO =              5202111
         CALLID= 01BE 036D
```

Northbound Syslog

Syslog is a standardized UDP protocol defined by the IETF working group: **Syslog Protocol (RFC 3164): http://www.ietf.org/rfc/rfc3164.txt**

This ACSII fault stream is delivered to a Northbound receiving Syslog host over the local 7 facility. On the IEMS server, Syslog routing is configured through the SSPFS command line interface. This interface manages any required changes to syslog.conf.

This section covers the vendor-specific information on the format and content of Syslog messages not covered under RFC3164.

The following shows a breakdown of the components of the MSG portion of a Syslog message provided by the IEMS Northbound interface:

<Time> <Host> IEMS:
_V2_**~I=**<NodeId>**~H=**<Host>**~A=**<ApplicationName>**~S=**<Seq.Number>

~~ <LogName><LogNumber> <AlarmSeverity> <EventType> <Label> ^M
<LogBody>

The following Syslog message will be used to discuss the structure of Syslog messages from IEMS :

```
Feb 23 12:38:54 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=4317~~
MGEM302 NONE TBL  MG9K InvalidEMIPAddress^M        Location: MG9k EM
Comm Network^M        Notification Id: 17180020453^M        State:
Cleared^M      Category: communications^M      Cause: Communications
Subsystem Failure^M         Invalid EM IP Address - An invalid EM IP
address has been set on the GW^M        Component Id: MG9k EM Comm
Network^M        specificProblem: Invalid EM IP Address - An invalid
EM IP address has be^M        en set on the GW^M        Description:
An invalid EM IP address has been set on the GW
```

Note: See " MG9000 Manager" for comparison of this log in all IEMS Northbound formats.

RFC3164 MSG Fields

Each Syslog message is prefixed by a timestamp and hostname. These fields are shown in *italics* in the example above. Section 4.1.2 of RFC3164 defines these fields as follows:

The **TIMESTAMP** field is the local time and is in the format of "Mmm dd

hh:mm:ss" (without the quote marks) where:

Mmm is the English language abbreviation for the month of the year with the first character in uppercase and the other two characters in lowercase. The following are the only acceptable values:

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

dd is the day of the month. If the day of the month is less than 10, then it MUST be represented as a space and then the number. For example, the 7th day of August would be represented as "Aug 7", with two spaces between the "g" and the "7".

hh:mm:ss is the local time. The hour (hh) is represented in a 24-hour format. Valid entries are between 00 and 23, inclusive. The minute (mm) and second (ss) entries are between

00 and 59 inclusive.

A single space character MUST follow the TIMESTAMP field.

The **HOSTNAME** field will contain only the hostname, the IPv4 address,

or the IPv6 address of the originator of the message. The preferred value is the hostname. If the hostname is used, the HOSTNAME field MUST contain the hostname of the device as specified in STD 13 [4].

It should be noted that this MUST NOT contain any embedded spaces.

The Domain Name MUST NOT be included in the HOSTNAME field. If the IPv4 address is used, it MUST be shown as the dotted decimal notation as used in STD 13 [5]. If an IPv6 address is used, any valid representation used in RFC 2373 [6] MAY be used.

A single space character MUST also follow the HOSTNAME field.

IEMS Header

After the timestamp and hostnames fields, the following constants can be found in the next two fields - separated by a space:

IEMS: Indicates the start of fault-specific information

_V2_ - Syslog format version

Immediately following this tag are several attributes specified as name-value pairs (NVPs). NVP tags are prefixed by a tilde '~'<tag>=<value> for easy identifcation by downstream parsers.

NVPs for IEMS Syslog message

Tag name	Description	example
~I	Node Identifier	~I=
~H	Host name of	~H=znc0s0jh
~A	Reporting Application name	~A=IEMS
~S	Log Sequence number	~S=4317
~~	Indicates start of formatted log header from originator. **Note: This indicator is NOT actually an NVP. It is followed by a single space character	~~ MGEM302 NONE TBL MG9K InvalidEMI PAddress

Parsing Conventions for Formatted Log Data:

The format of the log header and body follow a number of conventions to facilitate parsing by downstream applications:

1. Line feeds in message text are identified by the ^M character sequence (this denotes a sequence of the two printable characters: caret and upper case M).
2. The log header start can be identified by the ~~ sequence followed by a space. The header is delimited by the line feed indicator (discussed in the previous bullet).
3. The log body is separated into lines using ^M sequences defined in bullet 1. Each line is prefixed with eight (8) space characters.
4. Line length (including leading spaces) will not exceed 80 characters . See example log above.
5. All text in the log header and body will consist of printable ACSII characters.
6. Blank lines are not allowed in the formatted log message. This includes both header and body components.

Log Header

The log header consists of the following fields. These fields map to the corresponding fields defined in both SCC2 and NTSTD.

A typical log header will appear in the following format ('\' indicates a space character):

~~\<logname><lognumber>\<AlarmSeverity>\<EventType>\<Label>^M<LogBody>

Log Header fields in Syslog message

Name	Description	Example
Log Name	This value can be 2 to 4 non blank characters. Within this fixed 4 characters, it is right justified and padded with blanks.	' MGEM'
Log Number	This value is always 3 digits ranging from 000 to 999. It is right justified and padded with zeroes. For PROTOLOGs, (ie. TRAP, SWERR, INIT, INFO and LOCK logs) it is a string of 3 spaces.	'302'

Name	Description	Example
Alarm Severity	This field defines the alarm severity and consists of one of the following text strings: NONE, MINOR, MAJOR, CRIT	'NONE'
Event Type	Log report event type which is a string of 4 uppercase characters, left justified and padded with blanks. This field is defined by the applications that generate the log report. Possible values include: ' ', 'CBSY', 'EXC ', 'FAIL', 'FLT ', 'INFO', 'INIT', 'LO ', 'MANB', 'OFFL', 'PASS', 'PBSY', 'RTS ', 'SUMM', 'SYSB', 'TBL ', 'TRAN', 'TRAP', 'UNEQ'.	'TBL '
Label	A variable length character string that represents application event description. This field is optional.	'MG9K InvalidEMIPAddress'
Log Body	Application specific log body text starts here. This may contain several lines. Each new line is indented by eight spaces and delimited by the ^M (caret-M) character sequence.	' Location: MG9k EMCommNetwork**^M** Notification Id: 17180020453**^M** State: Cleared**^M** Category: communications**^M** Cause: Communications SubsystemFailure**^M** Invalid EM IP Address - An invalid EM IP address has been set on the GW**^M** Component Id: MG9k EMCommNetwork**^M** specificProblem: Invalid EM IP Address - An invalid EM IP address has be**^M** en set on the GW**^M** Description: An invalid EM IP address has been set on the GW'

Notes on Log Body Text

The remainder of the message consists of the log body. The message text in this portion of the message is defined by the originating source. The presentation of this text is constrained only by the rules outlined in "Parsing Conventions for Formatted Log Data:" on page 99.

Note: See **Syslog Protocol (RFC 3164): http://www.ietf.org/rfc/rfc3164.txt** for full details on this specification.

Security and Audit logs

IEMS Security and Audit logs are managed through Syslog and can be forwarded to a remote Syslog host in the same way as fault events. Note that some Solaris applications forward security logs to authlog (/varlog/authlog). Sample content of each follow:

Audit log sample (/var/log/auditlog):

```
Jan 16 10:37:55 sspfs_svr ID[SUNWcluster.pmf.1020]: "CorbaNotification" requeued
Jan 16 10:38:06 sspfs_svr ID[SUNWcluster.pmf.1018]: "CorbaNotification" Failed to stay
up.
Jan 16 10:38:06 sspfs_svr ID[SUNWcluster.pmf.1019]: "CorbaNotification" restarting too
often ... sleeping 30 seconds.
Jan 16 10:38:36 sspfs_svr ID[SUNWcluster.pmf.1020]: "CorbaNotification" requeued
Jan 16 10:38:46 sspfs_svr ID[SUNWcluster.pmf.1018]: "CorbaNotification" Failed to stay
up.
Jan 16 10:38:46 sspfs_svr ID[SUNWcluster.pmf.1019]: "CorbaNotification" restarting too
often ... sleeping 30 seconds.
Jan 16 10:39:16 sspfs_svr ID[SUNWcluster.pmf.1020]: "CorbaNotification" requeued
Jan 16 10:41:42 sspfs_svr ID[SUNWcluster.pmf.1018]: "snmpp" Failed to stay up.
Jan 16 10:42:16 sspfs_svr ID[SUNWcluster.pmf.1018]: "ompush" Failed to stay up.
Jan 16 10:42:41 sspfs_svr ID[SUNWcluster.pmf.1018]: "CorbaNotification" Failed to stay
up.
Jan 16 10:42:41 sspfs_svr ID[SUNWcluster.pmf.1020]: "CorbaNotification" requeued
Jan 16 10:42:49 sspfs_svr ID[SUNWcluster.pmf.1018]: "PropServer" Failed to stay up.
```

Security log sample (/var/log/securitylog):

```
Feb  6 22:03:16 wnc0s0qh IEMS: IEMS class_security.ver01 STAT=SUCCESS  SRC.USR=root
EVNT.TYPE =Authentication
Feb  6 22:03:16 wnc0s0qh last message repeated 1 time
Feb  9 14:34:33 wnc0s0qh IEMS: IEMS class_security.ver01 STAT=SUCCESS  SRC.USR=root
EVNT.TYPE =Authentication
Feb  9 14:34:33 wnc0s0qh last message repeated 1 time
Feb  9 15:36:20 wnc0s0qh IEMS: IEMS class_security.ver01 STAT=SUCCESS  SRC.USR=root
EVNT.TYPE =Authentication
Feb  9 15:36:20 wnc0s0qh last message repeated 1 time
```

```
Feb 11 10:15:53 wnc0s0qh IEMS: IEMS class_security.ver01 STAT=SUCCESS  SRC.USR=root
EVNT.TYPE =Authentication
Feb 11 10:15:53 wnc0s0qh last message repeated 1 time
```

Security log sample (/var/log/securitylog):

Dec 15 06:48:37 comp5iems su: 'su oracle' succeeded for root on /dev/???

Dec 15 06:48:56 comp5iems sshd[12755]: Accepted publickey for root from 192.168.47.2 port 64329 ssh2

Dec 15 08:42:36 comp5iems su[1200]: 'su root' failed for maint on /dev/pts/4

Dec 15 08:42:53 comp5iems su[2685]: 'su root' succeeded for maint on /dev/pts/4

The following table shows a summary of all Syslog facilities used by IEMS.

> ***Note:*** Only *Fault, Audit, and Security* streams are supported for use by downstream systems. Shaded entries are intended for support purposes only.

IEMS Northbound Syslog Facilities

Log Stream	Log file location on IEMS Server	Syslog facility
Fault	/var/log/iemsCustomerlog	local7
Audit	/var/log/auditlog	local0
Security	/var/log/securitylog /var/log/authlog/, auth (facility)	local3
Customer log	/var/log/customerlog	local1
Debug	/var/log/debuglog	local2
SSPFS	/var/log/sspfslog	local4
NPM	/var/log/npm_designlog	local5

Northbound SNMP - IETF MIB specification

IEMS provides an SNMP interface that forwards faults in trap messages and responds to SNMP requests.

The SNMP Northbound interface is based on an the IETF RFC 3877 standard which includes features such as alarm synchronization not available with NTSTD or SCC2.

This section provides a high-level description of how to support the IETF Alarm MIB draft defined in the DISMAN working group of the IETF. See the

MIBs on the server in the locations specified in the table below. In this document, IEMS is the agent implementing the MIBs for the manager at the OSS level.

MIB Loading Sequence

The MIB loading sequence for a manager application is as follows:

These MIBs are available on the IEMS server in the locations noted in the following table.

MIB Loading Sequence

Load Order	MIB Name	IEMS Server File location
1	SNMPv2-CONF	(Not required by the IEMS server)
2	SNMPv2-SMI	/opt/nortel/iems/current/mibs
3	SNMPv2-TC	/opt/nortel/iems/current/mibs
4	SNMPv2-MIB	/opt/nortel/iems/current/mibs SNMPv2-MIB.txt
5	SNMP-FRAMEWORK-MIB	/opt/net-snmp/share/snmp/mibs/ SNMP-FRAMEWORK-MIB.txt
6	INET-ADDRESS-MIB	/opt/net-snmp/share/snmp/mibs/ INET-ADDRESS-MIB.txt
7	RFC1212	(Not required by the IEMS server)
8	RFC1155-SMI	/opt/nortel/iems/current/mibs
9	RFC1213-MIB	/opt/nortel/iems/current/mibs RFC1213-MIB.txt
10	RMON-MIB	/opt/nortel/iems/current/mibs/cicm RMON-MIB.txt
11	TOKEN-RING-RMON-MIB	/opt/nortel/iems/current/mibs/cicm TOKEN-RING-RMON-MIB.txt
12	RMON2-MIB	/opt/nortel/iems/current/mibs/cicm RMON2-MIB.txt
13	ALARM-MIB	/opt/nortel/iems/current/mibs/usp/ ALARM-MIB-disman-18.txt

Load Order	MIB Name	IEMS Server File location
14	IANA-ITU-ALARM-TC	/opt/nortel/iems/current/mibs/usp/ IANA-ITU-ALARM-TC-disman-18.txt
15	ITU-ALARM-TC	/opt/nortel/iems/current/mibs/usp/ ITU-ALARM-TC-disman-18.txt
16	ITU-ALARM-MIB	/opt/nortel/iems/current/mibs/usp/ ITU-ALARM-MIB-disman-18.txt
17	ITU-IANA-ALARM-TC	/opt/nortel/iems/current/mibs/usp/ ITU-IANA-ALARM-TC-disman-04.txt
18	NOTIFICATION-LOG-MIB	/opt/nortel/iems/current/mibs/usp/ NOTIFICATION-LOG-MIB-rfc3014.txt
19	NORTEL-MIB	/opt/nortel/iems/current/mibs/usp/nortel.mib
20	NORTEL-GENERIC-MIB	/opt/nortel/iems/current/mibs/usp/ nortelGenericMIBs-smi2.mib
21	ENTITY-MIB	/opt/nortel/iems/current/mibs/usp/ ENTITY-MIB-entmib-03.txt
22	ENTITY-STATE-MIB	/opt/nortel/iems/current/mibs/usp/ ENTITY-STATE-MIB-entmib-01.txt
23	NORTEL-ALARM-EXT-MIB	/opt/nortel/iems/current/mibs/usp/ nortel_alarm_ext_smi.txt
24	NORTEL-NMI-MIB	/opt/nortel/iems/current/mibs/usp/ nortelNMI-smi2.smi
25	NORTEL-NMI-ALARM-CLEAR-MIB	/opt/nortel/iems/current/mibs/usp/ nortelNMIalarmClear_smi.txt

Support for the IETF Alarm MIB is new to IETF. The MIBs defined by the DISMAN working group of IETF are designed to allow surveillance of network elements. We have used this set of MIBs to present the state of our

softswitch. The ALARM MIB presents a set of tables that contain the current alarm information for the device. The alarm MIB does not prescribe the notifications used to set and clear alarms on the device.

Nortel has provided an extension MIB to allow a manager to monitor the system alarm changes through SNMP notifications. These notifications are the primary interface for monitoring faults in the Succession node.

Nortel Alarm Extension MIB

This MIB defines notifications used for alarm asserts and clears in addition to data type definitions and tables related to notifications that can be sent.

A complete listing and description of our fault management MIB may be found in “IEMS Appendix 2: Nortel Alarm Extension MIB”.

TABLE SUPPORT IN NORTEL ALARM EXTENSION MIB

The table nnExtAlarmActiveTable along with the AlarmActiveTable contains all the information required to resynchronize the northbound SNMP agent and to give the OSS a complete view of the active alarms within the scope of the Integrated EMS.

The *nnExtAlarmStateTable* is not supported at this time.

NOTIFICATION SUPPORT IN NORTEL ALARM EXTENSION MIB

All notifications defined in this MIB are supported. All OIDs defined within the notifications are also populated. The alarm notifications include sequence numbers so the SNMP manager can determine if a message is missed. Specific formats are supported as described in the following table.

Alarm Notifications Varbinds

Variable name	Format	OID
alarmActiveResourceId	OID	.1.3.6.1.2.1.118.1.2.2.1.10
alarmActiveDateAndTime	DateandTime	.1.3.6.1.2.1.118.1.2.2.1.2
alarmActiveDescription	Human readable string	1.3.6.1.2.1.118.1.2.2.1.11
nnExtAlarmActiveEventType	Enum	.1.3.6.1.4.1.562.29.6.1.1.1.1
nnExtAlarmActiveProbableCause	Enum	.1.3.6.1.4.1.562.29.6.1.1.1.2
nnExtAlarmActiveAdditionalText	String	.1.3.6.1.4.1.562.29.6.1.1.1.3
nnExtAlarmActiveDocumentation Pointer	String: up to 4 chars + 3 digits	.1.3.6.1.4.1.562.29.6.1.1.1.4

Variable name	Format	OID

nnExtAlarmActiveResourceDescription	compType=compname;
	subcompType=subcompName;
	….. for as many levels of hierarchy is required to identify the alarmed entity
		.1.3.6.1.4.1.562.29.6.1.1.1.5

nnExtAlarmActiveManualClear	enum	.1.3.6.1.4.1.562.29.6.1.1.1.6
nnExtAlarmActiveSequenceNumber	Numeric	.1.3.6.1.4.1.562.29.6.1.1.1.7

These varbinds are included in all 5 of the alarm notifications supported by the Integrated EMS. As defined all notifications in SNMP, *sysUpTime* and the OID of the notification are included in the varbinds for all notification types (see the following table). Each of the notifications signifies a different severity of the specified alarm. Notifications are defined for critical, major, minor, warning and cleared alarms. The notifications are defined in the table below.

Trap OIDs and Alarm Severity

Trap OID	Severity
.1.3.6.1.4.1.562.29.6.1.0.306	nnExtAlarmMessage
.1.3.6.1.4.1.562.29.6.1.0.305	nnExtAlarmCritical
.1.3.6.1.4.1.562.29.6.1.0.304	nnExtAlarmMajor
.1.3.6.1.4.1.562.29.6.1.0.303	nnExtAlarmMinor
.1.3.6.1.4.1.562.29.6.1.0.302	nnExtAlarmWarning
.1.3.6.1.4.1.562.29.6.1.0.301	nnExtAlarmClear

The nnExtAlarmMessage notifications can be used to send informational messages from IEMS. Because these notifications are information, reliability is not addressed. As illustrated in the table below, we populate with information in the message header and bodytext of our NTSTD and CUSTLOG feeds.

Message Notification Varbinds

Variable name	Format	OID
nnExtAlarmMessageResource	OID	.1.3.6.1.4.1.562.29.6.1.3.1.1

Variable name	Format	OID
nnExtAlarmMessageResourceDescription	String	.1.3.6.1.4.1.562.29.6.1.3.1.2
nnExtAlarmMessageDateAndTime	DateAndTime	.1.3.6.1.4.1.562.29.6.1.3.1.3
nnExtAlarmMessageDocumentationPointer	String	.1.3.6.1.4.1.562.29.6.1.3.1.4
nnExtAlarmMessageInfo	String	.1.3.6.1.4.1.562.29.6.1.3.1.5
nnExtAlarmMessageResource	OID	.1.3.6.1.4.1.562.29.6.1.3.1.1

OTHER DEFINITIONS IN THIS MIB

This MIB also defines OSI state variables that are not defined in the IETF Entity State MIB. These variables and tables are not supported at this time.

IETF RFC 3877 MIB Tables

There are several tables introduced by the IETF Alarm MIB Model. This document will discuss each table and intended use.

ALARM MODEL TABLE

This table defines the notifications used by IEMS to express alarm events. Notifications to communicate alarm asserts and clears have been defined by NortelNetworks in a separate MIB. These new notifications are defined in “Nortel Alarm Extension MIB” on page 105.

This table is not currently supported. This table is a static table and we will look to support this in some future release. This table provides model documentation to OSSes.

ALARM ACTIVE TABLE

This table contains a list of active alarms on IEMS and is supported. It, along with 2 other tables - the alarm active variable table and the Nortel Alarm Extension Table - provide a complete view of the active alarms within the scope of the Integrated EMS.

Indexes into this table are: *alarmListName, alarmActiveDateAndTime, alarmActiveIndex*. AlarmListName matches the index nlmLogName for nlmLogTable from RFC3014 (Notification Log MIB). For our Succession IEMS table we use the string "Nortel_fault".

The following table describes expected values for entries in this table.

IETF Alarm Active Entry

Sequence Field	Default Value
alarmListName	Nortel_fault
alarmActiveDateAndTime	none
alarmActiveIndex	Numerical index defined by agent, unique in table
alarmActiveEngineID	IEMS agent engine ID in SNMPv3; empty string in SNMPv2
alarmActiveEngineAddressType	Inet address type (IPv4)
alarmActiveEngineAddress	IPv4 address of active IEMS agent
alarmActiveContextName	“”
alarmActiveVariables	12 = number of fields in our alarm set notifications + 2 mandatory entries per alarm
alarmActiveNotificationID	OID of notification sent for this alarm set
alarmActiveResourceId	OID that describes this entry in the Active Alarm Table
alarmActiveDescription	none
alarmActiveLogPointer	not implemented - default = 0.0
alarmActiveModelPointer	not implemented - default = 0.0
alarmActiveSpecificPointer	not implemented - default = 0.0

ALARM ACTIVE VARIABLE TABLE

Alarm Active variable table contains the varbinds for all the active alarm notifications. The indexes to the table are: *alarmListName, alarmActiveIndex, alarmVariableIndex*. For each alarm in the alarm active table there will be 12 entries in the alarm active variable table. The index *alarmVariableIndex* will be from 1 to 12 (also from 1 to alarmActiveVariables in the alarmActiveTableEntry). The notifications contain some varbinds that are not in the standard table so the OSS can index into this table to get the additional data. (Similarly, the OSS can index into the Nortel Extension Active Alarm Table for the additional information as well.)

Fields in this table for each alarm are as follows:

Alarm Active Variable Table

Alarm Active Variable Entry	Notification Varbind	Default Value
alarmActiveVariableIndex 1	sysUpTime	sysUpTime

Alarm Active Variable Entry	Notification Varbind	Default Value
alarmActiveVariableIndex 2	snmpTrapOID	snmpTrapOID
alarmActiveVariableIndex 3	alarmActiveResourceId	OID that describes this entry in the Active Alarm Table
alarmActiveVariableIndex 4	alarmActiveDescription	none
alarmActiveVariableIndex 5	alarmActiveDateAndTime	none
alarmActiveVariableIndex 6	nnExtAlarmActiveEventType	none
alarmActiveVariableIndex 7	nnExtAlarmActiveProbableCause	none
alarmActiveVariableIndex 8	nnExtAlarmActiveAdditionalText	none
alarmActiveVariableIndex 9	nnExtAlarmActiveDocumentationPointer	This is often logname & number
alarmActiveVariableIndex 10	nnExtAlarmActiveResourceDescription	none
alarmActiveVariableIndex 11	nnExtAlarmActiveManualClear	none
alarmActiveVariableIndex 12	nnExtAlarmActiveSequenceNumber	none

ALARM CLEAR TABLE

This table provides an interface for SNMP managers to clear alarms on devices which support this operation. Manual clears are performed with SNMP SET operations using the alarmActiveIndex of the alarm to be cleared. See section “ Manual Clear” on page 119 for details.

ACTIVE ALARM STATS TABLE

Not supported.

ITU ALARM ACTIVE TABLE

Not supported.

ITU ALARM ACTIVE VARIABLE TABLE

Not supported.

ITU ALARM ACTIVE STATS TABLE

Supported.

NLM LOG TABLE (RFC 3014)

NLM Log Table is defined in IETF RFC 3014. Implementation of the MIB is provided to support incremental resynchronization of the OSS. The OSS SNMP managers can reach into the nlmLogTable to get missed events. See Notification Log MIB (RFC 3014): http://www.ietf.org/rfc/rfc3014.txt?number=3014.

The Notification Log MIB has 3 different MIB groups:

- configuration parameters dealing with log storage and reporting
- statistics of log reporting
- the actual history of notifications

Configuration

Configuration defines the size and the aging criteria of the *nlmLogTable*. Table *nlmConfigLogTable* also defines the named log entries supported in the nlmLogTable. We use a specific named log entry for allowing fault resync. This table also defines filtering of these logs.

Each entry in the config log table contains: *nlmLogName, nlmConfigLogFilterName, nlmConfigLogEntryLimit, nlmConfigLogAdminStatus*. This table enables Alarm notification resynchronization. The first and only entry in this table has an *nlmLogName* that matches the *alarmListName* index for the active alarm tables above. This index is "Nortel_fault."

nlmConfigLogFilterName is defined as "default". We do not support the correlation of this value to any specific data in the *snmpNotifyFilterTable* in the SNMP Notification MIB.

nlmConfigLogEntryLimit defines the size of the log table. This defines the number of alarm events that are available to the SNMP manager through the SNMP agent. Since there is only one entry in this table for Nortel_fault, this value is over-ridden by *nlmConfigGlobalEntryLimit*.

> ***Note:*** It is recommended that *nlmConfigGlobalEntryLimit* be set to a minimum value as it maintains this history in memory. Do **not** set this value to zero. Setting this value to zero will lead to unlimited entries being saved and lead to potential resource issues in the system.

nlmConfigLogAdminStatus is set to enabled (1).

nlmConfigLogOperStatus is set to noFilter (3).

nlmConfigLogStorageType is a storageType OID. Data associated with this entry is considered volatile and will be lost when the agent is restarted.

SNMP sets for the configuration items in this table are not supported.

Statistics

The statistics group contains two scalars and a table. The table is required for the resync algorithm. The table *nlmStatsLogTable* augments the *nlmConfigLogTable* and has only two values in each entry: *nlmStatsLogNotificationsLogged* and *nlmStatsLogNotificationsBumped*. Because this table augments the *nlmConfigLogTable*, the index for these notifications uses the same key - "Nortel_fault"

nlmStatsLogNotifications for the named logs in Nortel_fault is the sequence number (*nnExtAlarmActiveSequenceNumber*) sent in Integrated EMS notifications of the faults. This also provides the secondary index into the *nlmLogTable* for notifications that have been missed - as detected through sequence numbers in those notifications.

It is the responsibility of the SNMP agent sending fault notifications to increment the *nlmStatsLogNotificationsLogged* and include the value in the varbinds of that notification as documented.

nlmStatsGlobalNotificationsBumped defines the number of logs that have been removed or “bumped” from the log table due to the limits imposed by the *nlmConfigGlobalEntryLimit* setting.

Log Table

The *nlmLogTable* contains the history of notifications sent to the manager. The indices are: *nlmLogName* and *nlmLogIndex*. *nlmLogName* is "Nortel_fault" and the *nlmLogIndex* is the sequence number in the proprietary notifications.

This section defines two tables: *nlmLogTable* and *nlmLogVariableTable*. The first provides the indices for retrieving missed notifications, and the second contains the varbinds for the notifications. We have 2 different size alarm notifications (in terms of number of varbinds)- alarm assert notifications are all the same size, and alarm clear notifications are slightly smaller (1 varbind). Only alarm notifications are stored in the log table, message notifications are not logged in this table.

The structure and implementation of the *nlmLogVariableTable* is the same as that of the *alarmActiveVariableTable* and is not described further.

Connecting to the NB feed:

The default SNMP Port in which the agent is listening is 8001. This port is configurable through the IEMS client. User can also disable the SNMP agent if he wishes. OSS has to register its SNMP manager host and port to which the traps are to be sent.

Connection Reliability

There are several scenarios which must be considered by an SNMP manager to ensure that the alarms presented at the OSS layer will be in sync with the actual alarms maintained on the device. Resynchronization will be required when either the OSS or the IEMS system goes through a restart, or when a lost trap is detected. See section " Message Sequences and Manager Operations" on page 117 for details on resynchonization of active alarms.

Lost Traps

If the OSS detects a lost trap via an out-of-order sequence number, the OSS must either try to recover the lost sequence numbers from the notification log table or re-synchronize from the the active alarm table. The notification log MIB will contain the last 25 traps sent. If the sequence number delta is within this range, the notification log table can be used to obtain missed traps. Otherwise, a read of the active alarm table must be used to determine the active alarms in the system.

Additionally, OSS can poll the sequence number of the last alarm or clear sent from the agent. The sequence number of last notification sent will be in the *nlmStatsLogNotifications* table in the *nlmStatsLogNotificationsLogged* variable in the "Nortel_fault" entry as described above.

> ***Note:*** Since there is only one entry in this table, the scalar *nlmStatsGlobalNotificationsLogged* can also be used to obtain this value.

SNMP Alarm Events & Correlation

The *alarmActiveResourceID* uniquely identifies an alarm occurrence in the system. To correlate a clear notification to the appropriate assert, the *alarmActiveResourceID* must be used.

Event Types and ProbableCauses

Each alarm notification and record in the alarm table includes event type and probable cause. Values for these fields are define in the IANA-ITU-ALARM-TC MIB table. These values come from both the X.7xx and M.3100 series of standards.

Alarm Event Type Format:

IANAItuEventType - Valid values for this entry are provided here for convenience.

other (1),

communicationsAlarm (2),

qualityOfServiceAlarm (3),

processingErrorAlarm (4),

equipmentAlarm (5),

environmentalAlarm (6),

integrityViolation (7),

operationalViolation (8),

physicalViolation (9),

securityServiceOrMechanismViolation (10),

timeDomainViolation (11)

Probable Cause Format:

IANAItuProbableCause - Valid values for this entry are provided here for convenience.

aIS (1), callSetUpFailure (2), degradedSignal (3), farEndReceiverFailure (4), framingError (5), lossOfFrame (6), lossOfPointer (7), lossOfSignal (8), payloadTypeMismatch (9), transmissionError (10), remoteAlarmInterface (11), excessiveBER (12), pathTraceMismatch (13), unavailable (14), signalLabelMismatch (15), lossOfMultiFrame (16), receiveFailure (17), transmitFailure (18), modulationFailure (19), demodulationFailure (20), broadcastChannelFailure (21), connectionEstablishmentError (22), invalidMessageReceived (23), localNodeTransmissionError (24), remoteNodeTransmissionError (25), routingFailure (26), backplaneFailure (51), dataSetProblem (52), equipmentIdentifierDuplication (53), externalIFDeviceProblem (54), lineCardProblem (55), multiplexerProblem (56), nEIdentifierDuplication (57), powerProblem (58), processorProblem (59), protectionPathFailure (60), receiverFailure (61), replaceableUnitMissing (62), replaceableUnitTypeMismatch (63), synchronizationSourceMismatch (64), terminalProblem (65), timingProblem (66), transmitterFailure (67), trunkCardProblem (68), replaceableUnitProblem (69), realTimeClockFailure (70), antennaFailure (71), batteryChargingFailure (72), diskFailure (73), frequencyHoppingFailure (74), iODeviceError (75), lossOfSynchronisation (76), lossOfRedundancy (77), powerSupplyFailure (78), signalQualityEvaluationFailure (79), tranceiverFailure (80), protectionMechanismFailure (81), protectingResourceFailure (82), airCompressorFailure (101), airConditioningFailure (102), airDryerFailure (103), batteryDischarging (104), batteryFailure (105), commercialPowerFailure (106), coolingFanFailure (107), engineFailure (108), fireDetectorFailure (109), fuseFailure (110), generatorFailure (111), lowBatteryThreshold (112), pumpFailure (113), rectifierFailure (114), rectifierHighVoltage (115), rectifierLowFVoltage (116), ventilationsSystemFailure (117), enclosureDoorOpen (118), explosiveGas (119), fire (120), flood (121), highHumidity (122), highTemperature (123), highWind (124),

iceBuildUp (125), intrusionDetection (126), lowFuel (127), lowHumidity (128), lowCablePressure (129), lowTemperatue (130), lowWater (131), smoke (132), toxicGas (133), coolingSystemFailure (134), externalEquipmentFailure (135), externalPointFailure (136), storageCapacityProblem (151), memoryMismatch (152), corruptData (153), outOfCPUCycles (154), sfwrEnvironmentProblem (155), sfwrDownloadFailure (156), lossOfRealTimel (157), applicationSubsystemFailure (158), configurationOrCustomisationError (159), databaseInconsistency (160), fileError (161), outOfMemory (162), softwareError (163), timeoutExpired (164), underlayingResourceUnavailable (165), versionMismatch (166), adapterError (500), applicationSubsystemFailture (501), bandwidthReducedX733 (502), callEstablishmentError (503), communicationsProtocolError (504), communicationsSubsystemFailure (505), configurationOrCustomizationError (506), congestionX733 (507), coruptData (508), cpuCyclesLimitExceeded (509), dataSetOrModemError (510), degradedSignalX733 (511), dteDceInterfaceError (512), enclosureDoorOpenX733 (513), equipmentMalfunction (514), excessiveVibration (515), fileErrorX733 (516), fireDetected (517), framingErrorX733 (518), heatingVentCoolingSystemProblem (519), humidityUnacceptable (520), inputOutputDeviceError (521), inputDeviceError (522), lanError (523), leakDetected (524), localNodeTransmissionErrorX733 (525), lossOfFrameX733 (526), lossOfSignalX733 (527), materialSupplyExhausted (528), multiplexerProblemX733 (529), outOfMemoryX733 (530), ouputDeviceError (531), performanceDegraded (532), powerProblems (533), pressureUnacceptable (534), processorProblems (535), pumpFailureX733 (536), queueSizeExceeded (537), receiveFailureX733 (538), receiverFailureX733 (539), remoteNodeTransmissionErrorX733 (540), resourceAtOrNearingCapacity (541), responseTimeExecessive (542), retransmissionRateExcessive (543), softwareErrorX733 (544), softwareProgramAbnormallyTerminated (545), softwareProgramError (546), storageCapacityProblemX733 (547), temperatureUnacceptable (548), thresholdCrossed (549), timingProblemX733 (550), toxicLeakDetected (551), transmitFailureX733 (552), transmiterFailure (553), underlyingResourceUnavailable (554), versionMismatchX733 (555), -- The following are defined in X.736 authenticationFailure (600), breachOfConfidentiality (601), cableTamper (602), delayedInformation (603), denialOfService (604), duplicateInformation (605), informationMissing (606), informationModificationDetected (607), informationOutOfSequence (608), keyExpired (609), nonRepudiationFailure (610), outOfHoursActivity (611), outOfService (612), proceduralError (613),

unauthorizedAccessAttempt (614), unexpectedInformation (615), other (1024).

Northbound Fault Mapping

The following table shows the correlation between the fields of the supported Northbound fault feeds.

Northbound Fault Format Summary

Row#	IEMS Schema	SYSLOG	NTSTD	SCC2	SNMP
1.	Severity 1= critical 2 = major 3 = minor 4= warning 5 =clear 6 = info	Alarm Severity CRIT =1, MAJOR =2, MINOR =3, NONE =4,5,6 None	1 = '***' 2 = '** ' 3 = '* ' 4,5,6 = ' ' 6 = ' '	1 = '*C' 2 = '**' 3 = '* ' 4,5,6 = ' ' 6 = ' '	Based on the severity the concerned alarm, appropriate notification will be sent. nnExtNotificationPrefix : .1.3.6.1.4.1.562.29.6.1.0 **Alarm Events:** nnExtAlarmCritical = 1 .1.3.6.1.4.1.562.29.6.1.0.305 nnExtAlarmMajor = 2 .1.3.6.1.4.1.562.29.6.1.0.304 nnExtAlarmMinor = 3 .1.3.6.1.4.1.562.29.6.1.0.303 nnExtAlarmWarning = 4 .1.3.6.1.4.1.562.29.6.1.0.302 nnExtAlarmClear = 5 .1.3.6.1.4.1.562.29.6.1.0.301 **Non-alarm Events:** nnExtAlarmMessage = 6 .1.3.6.1.4.1.562.29.6.1.0.306
2.	Time(long)	MMM DD hh:mm:ss -> UTC time	MMM DD hh:mm:ss UTC time	UTC -> Minute Indicator	**Alarm event:** alarmActiveDateAndTime .1.3.6.1.2.1.118.1.2.2.1.2 **Non-alarm event:** nnExtAlarmMessageDateAndTime .1.3.6.1.4.1.562.29.6.1.3.1.3

Northbound Fault Format Summary

Row#	IEMS Schema	SYSLOG	NTSTD	SCC2	SNMP
3.	LogName	Report Name	LogName	LogName	Log name&number shown in varbind **Alarm event:** nnExtAlarmActiveDocumentationPointer .1.3.6.1.4.1.562.29.6.1.1.1.4 **Non-alarm event:** nnExtAlarmMessageDocumentationPointer .1.3.6.1.4.1.562.29.6.1.3.1.4
4.	LogNumber	ReportNumber	LogNumber	LogNumber	Log name&number shown in varbind **Alarm event:** nnExtAlarmActiveDocumentationPointer .1.3.6.1.4.1.562.29.6.1.1.1.4 **Non-alarm event:** nnExtAlarmMessageDocumentationPointer .1.3.6.1.4.1.562.29.6.1.3.1.4
5.	Threshold	-	Threshold '+' set ' ' not set	Threshold '+' set ' ' not set	not supported
6.	ID(Integer)	NotificationID	NotificationID	NotificationID	last integer in the OID specified by: alarmActiveResourceID .12.78.111.114.116.101.108.95.102.97.117.108.116.25.50.48.48.52.45.49.45.56.44.51.58.50.49.58.53.55.46.49.44.43.48.53.58.51.48**.10**
7.	Sequence Number	Generated Sequence Number	Global Sequence Number (generated)	Global Sequence Number (generated)	**Alarm event:** nnExtAlarmActiveSequenceNumber .1.3.6.1.4.1.562.29.6.1.1.1.7
8.	EventType	EventType	EventType	EventType	**Alarm event:** not supported
9.	EventLabel	EventLabel	EventLabel	EventLabel	not supported

Northbound Fault Format Summary

Row#	IEMS Schema	SYSLOG	NTSTD	SCC2	SNMP
10.	Equipment Identifier	Location:	Location:	Location:	**Alarm event:** nnExtAlarmActiveResourceDescription .1.3.6.1.4.1.562.29.6.1.1.1.5 **Non-alarm event:** nnExtAlarmMessageResourceDescription .1.3.6.1.4.1.562.29.6.1.3.1.2
11.	Probable Cause	Cause	Cause	Cause	**Alarm event:** nnExtAlarmActiveProbableCause .1.3.6.1.4.1.562.29.6.1.1.1.2
12.	Category	Category:	Category:	Category:	**Alarm event:** nnExtAlarmActiveEventType .1.3.6.1.4.1.562.29.6.1.1.1.1
13.	Specific Problem	Specific Problem	Specific Problem	Specific Problem	**Alarm event:** alarmActiveDescription: .1.3.6.1.2.1.118.1.2.2.1.11
14.	NotificationID	not sent	not sent	non sent	not sent
15.	ComponentID	ComponentID	ComponentID	ComponentID	**Alarm event:** nnExtAlarmActiveResourceDescription .1.3.6.1.4.1.562.29.6.1.1.1.5 **Non-alarm event:** nnExtAlarmMessageResourceDescription .1.3.6.1.4.1.562.29.6.1.3.1.2
16.	BodyText	BodyText	BodyText	BodyText	**Alarm event:** alarmActiveDescription: .1.3.6.1.2.1.111.1.2.2.1.11 **Non-alarm event:** nnExtAlarmMessageInfo: .1.3.6.1.4.1.562.29.6.1.3.1.5

Message Sequences and Manager Operations

Raise Alarm

This sequence applies t the following alarm event types:

- nnAlarmWarning
- nnAlarmMinor

- nnAlarmMajor
- nnAlarmCritical

1 IEMS forwards alarm from device. The trap contains references to the 12 varbinds depicted in Table , “Alarm Active Variable Table,” on page 108.

2 The OSS receives the alarm and notes the resource ID of the alarm event to allow correlation with a subsequent alarmClear event. IEMS adds the alarm entry to the *alarmActiveTable*, *alarmActiveVariableTable*, and *nnExtAlarmActiveTable*. The *nlmLogTable* and *nlmLogVariableTable* also maintain a rolling log of the last n alarm events received - where n is defined by the variable *nlmConfigGlobalEntryLimit*.

Clear Alarm

1 IEMS forwards clearAlarm event from device. The trap contains references to all varbinds listed in Please refer to “ Alarm Active Variable Table” on page 108. except for *nnExtAlarmActiveManualClear* - which is not included in this message.

2 The OSS receives the clear event and matches its resource ID in **alarmActiveResourceId** against the ID of its corresponding alarm event in the alarmActiveTable.

The corresponding alarm entry is removed from all active alarm tables:

alarmActiveTable

alarmActiveVariableTable

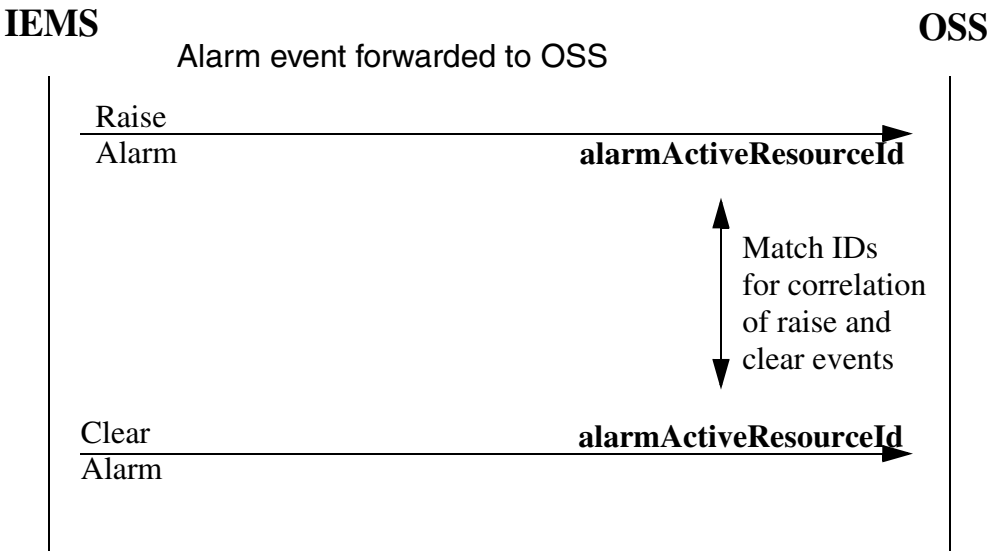
nnExtAlarmActiveTable

An entry is made in the log notification tables for the CLEAR event.

nlmLogTable

nlmLogVariableTable

Alarm Raise & Clear Correlation



Manual Clear

Each alarm event contains information that indicates whether it can be manually cleared. The value in the varbind *nnExtAlarmActiveManualClear* makes this determination and can have the following values:

other (1),

forbidden (2),

required (3),

optional (4)

Note: Alarms with a value of *forbidden* in this field cannot be manually cleared.

Eligible alarms can be manually cleared by sending a SET request to the alarm clear interface variable *nortelNMIalarmClear (*.1.3.6.1.4.1.562.29.1.8.1*)* in the NORTEL_NMI-ALARM-CLEAR-MIB. The alarm to be cleared can be specified by using the *alarmActiveIndex* of the target alarm. The value of the *alarmActiveIndex* is stored as the last element in the *alarmActiveResourceId*.

Example: An alarm is generated and stored in the *alarmActiveTable* with the following values:

alarmsListName:**Nortel_fault**

alarmActiveDateAndTime:2004-1-8,3:21:57.1,+05:30

alarmActiveIndex:**10**

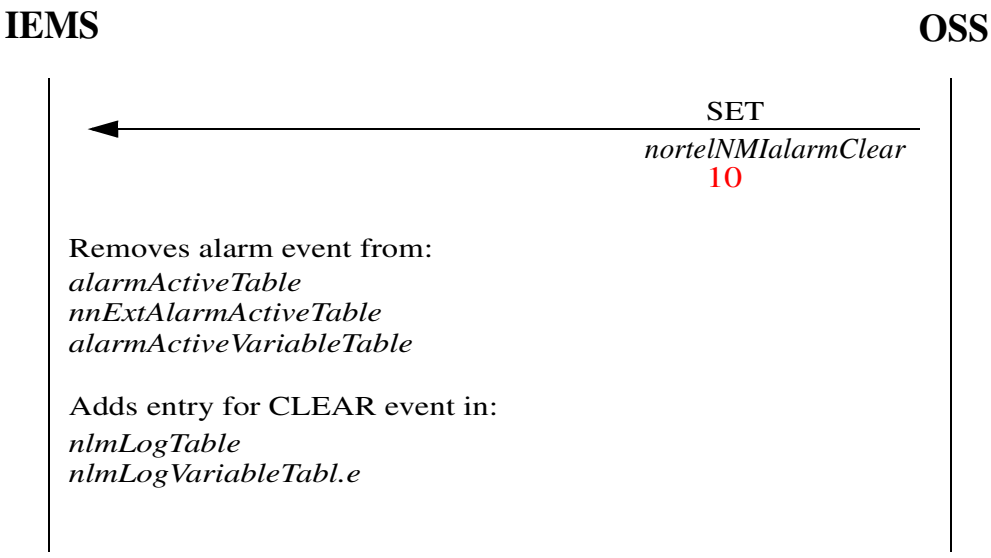
The resulting alarmAcitveResourceId will be:

alarmAcitveResourceId.**12.78.111.114.116.101.108.95.102.97.117.108.116.**25.50.48.48.52.45.49.45.56.44.51.58.50.49.58.53.55.46.49.44.43.48.53.58.51.48.**10**

Note: *alarmActiveResourceId* is shown fully encoded.

The SET request will be sent with a value of 10. The corresponding alarm entry is removed from the alarmActiveTable,alarmActiveVariableTable, and nnExtAlarmActiveTable. A corresponding entry for the manual clear is then made in *nlmLogTable* and *nlmLogVariableTable.* See the following figure.

Manual Clear of Alarm Event



Detecting System Restarts

Before an alarm event is forwarded to a downstream manager, the IEMS assigns the current system up-time of the server to the alarm contents. As discussed previously, it can be found in the *sysUpTime* varbind of the alarm. On restart of the IEMS server, this value is initialized to 0 to signal downstream systems of the event. The OSS can use *sysUptime* to monitor system restarts as follows:

Correlation with sequence numbers

Since *sysUpTime* will always increase with each sequential alarm event, restart conditions can be detected if the following condition is met:

(*sysUpTime* of current event) < (*sysUpTime* of previous event)

Restart Recovery

When the OSS determines that IEMS has been restarted, it must perform a full reload of the active alarms in the system to synchronize its data with the agent. See "Full Resync of Active Alarms" on page 121 for details.

Detection of Missing Logs

Each alarm event generated by IEMS contains a unique sequence number that can be used to detect lost notifications. Once an OSS identifies a missing sequence number, it can be re-queried from the IEMS server if the following condition is met:

(sequence# of latest event) - (sequence# of missing event)

<= *nlmConfigGlobalEntryLimit (*default = 25*)*

If this condition is met, then the missing log can be recovered. See " Incremental Resync of missing logs".

Otherwise, a full resynchronization of the alarm tables will be required. See "Full Resync of Active Alarms" on page 121.

Full Resync of Active Alarms

There are two scenarios for which an SNMP manager will be required to perform a complete reload of the active alarms from IEMS:

- on startup of the management application
- when missing alarm notifications are sufficiently old to have been rotated out of the *nlmLogTable*. This table maintains a snapshot of the most recent 25 alarm events. If the missing sequence number cannot be found in this table, then a reload of all active alarms is required.

Active alarm data resides in:

alarmActiveTable

nnExtAlarmActiveTable

A full table read must be performed on the varbinds in Please refer to " Required Varbinds for Active Alarm resync" on page 121. to perform the resync:

Required Varbinds for Active Alarm resync

Varbind	OID
snmpTrapOID	.1.3.6.1.6.3.1.1.4.1
alarmActiveResourceId	.1.3.6.1.2.1.118.1.2.2.1.10
alarmActiveDateAndTime	.1.3.6.1.2.1.118.1.2.2.1.2
alarmActiveDescription	.1.3.6.1.2.1.118.1.2.2.1.11

Varbind	OID
nnExtAlarmActiveEventType	.1.3.6.1.4.1.562.29.6.1.1.1.1
nnExtAlarmActiveProbableCause	.1.3.6.1.4.1.562.29.6.1.1.1.2
nnExtAlarmActiveAdditionalText	.1.3.6.1.4.1.562.29.6.1.1.1.3
nnExtAlarmActiveDocumentationPointer	.1.3.6.1.4.1.562.29.6.1.1.1.4
nnExtAlarmActiveResourceDescription	.1.3.6.1.4.1.562.29.6.1.1.1.5
nnExtAlarmActiveManualClear	.1.3.6.1.4.1.562.29.6.1.1.1.6
nnExtAlarmActiveSequenceNumber	.1.3.6.1.4.1.562.29.6.1.1.1.7

Note: These varbinds are retrieved from the *alarmActiveVariableTable*

The manager can perform a full resync with the *alarmActiveTable* in a similar way to that used when performing an incremental resync from the *nlmLogVariableTable* (see " Incremental Resync of missing logs"). As stated earlier, each alarm entry in the *alarmActive* table has a corresponding entry for all of the alarm components in the *alarmActiveVariable* table. The complete set of alarm data can be retrieved for each alarm by first retrieving the *alarmActiveIndex* of the entry in the *alarmActiveTable*, and then using this index to request its corresponding entries from the *alarmActiveVariableTable*. These steps can be summarized as follows:

1. Poll the IEMS server for the latest sequence number. Issue a GET request on *nlmStatsLogNotificationsLogged*. Perform steps 2 to 3until all alarms have been retrieved from IEMS.
2. Derive the list of indices to the *alarmActive* table by performing a series of GETNEXT requests on any one of its columns. The *alarmActiveIndex* for entries can be parsed from this data.
3. For each *alarmActiveIndex* derived in step 2, determine the alarm type perform a GET request on the *alarmActiveVariableTable* all index fields for the alarm type. The specific index fields requested will be based on the alarm type specified by the *snmpTrapOID* in index 2. See " Incremental Resync of missing logs" for a description of varbinds used in the different event types. This step essentially performs repeated incremental resync operations until complete.
4. Based on the alarm type determined is step 3, request all varbinds (GET) in the *alarmActiveVariableTable* for the constructed index

   alarmListName = Nortel_fault

   alarmActiveIndex = (derived in step 2)

   alarmActiveVariableIndex (1-n) - depends on alarm type found in step 3

Note: The *alarmActiveVariableTable* and *nlmLogVariableTable* contain the same indexed alarm information and are accessed in similar ways. The main difference between the two is that *alarmActiveVariableTable* uses the *alarmActiveIndex* as one of its key components, whereas the *nlmLogVariableTable* uses the sequence number.

Incremental Resync of missing logs

An OSS can monitor sequence numbers from alarm events to detect missing notifications. If a missing notification is found (as described in " Detection of Missing Logs"), then it can be queried from the *nlmLogVariableTable* using the sequence number.

1. OSS detects missing sequence number
2. Missing alarm events can be recovered from the *nlmLogVariableTable* using the sequence number. Depending on the alarm event type, different numbers of varbinds will be present in the table for the entry.

The following table shows an example of the varbinds that would be used to recover a missing RAISE event with a sequence number of "***1390***". RAISE events include the following alarm types:

nnExtAlarmWarning (.1.3.6.1.4.1.562.29.6.1.0.302)

nnExtAlarmMinor (.1.3.6.1.4.1.562.29.6.1.0.303)

nnExtAlarmMajor (.1.3.6.1.4.1.562.29.6.1.0.304)

nnExtAlarmCritical (.1.3.6.1.4.1.562.29.6.1.0.305)

Table , "nlmLogVariableTable varbinds for recovery of lost CLEAR notification," on page 125 shows an example of the varbinds that would be used to recover a missing CLEAR event with a sequence number of "***1390***". CLEAR events are specified by the following OID:

nnExtAlarmClear (.1.3.6.1.4.1.562.29.6.1.0.301)

The alarm type can be determined by examining the value of the snmpTrapOID of the missed alarm. For both alarm types, this value is assigned index 2 of the nlmLogVariable table and can be queried with the OIDs shown in the following table. The alarm type will determine the mapping for the remining fields in the notification message.

nlmLogVariableTable varbinds for recovery of lost RAISE notification

nlmLogVariableTable Index Variable	OID (nlmLogName = "Nortel_fault" (encoded) Sequence# = 1390 Index = 1 - 12)	Notification Varbind Represented
nlmLogVariableIndex 1	nlmLogVariableTimeTicksVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.1	sysUpTime
nlmLogVariableIndex 2	nlmLogVariableOidVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.2	snmpTrapOID
nlmLogVariableIndex 3	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.3	alarmActiveResourceId
nlmLogVariableIndex 4	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.4	alarmActiveDescription
nlmLogVariableIndex 5	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.5	alarmActiveDateAndTime
nlmLogVariableIndex 6	nlmLogVariableInteger32Val.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.6	ituAlarmEventType
nlmLogVariableIndex 7	nlmLogVariableInteger32Val.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.7	ituAlarmProbableCause
nlmLogVariableIndex 8	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.8	ituAlarmAdditionalText
nlmLogVariableIndex 9	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.9	nnItuAlarmActiveDocumentationPointer
nlmLogVariableIndex 10	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.10	nnItuAlarmActiveResourceDescription

nlmLogVariableTable varbinds for recovery of lost RAISE notification

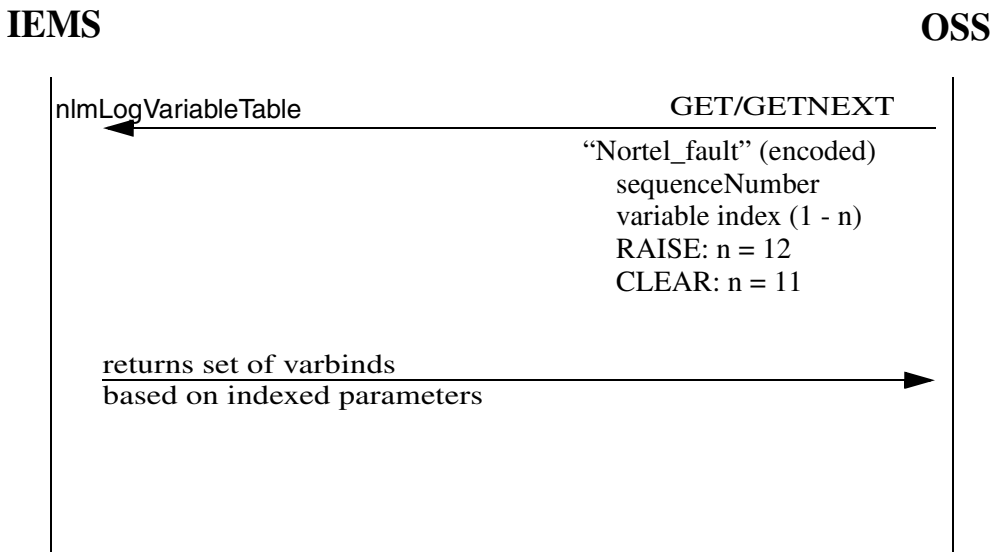
nlmLogVariableTable Index Variable	OID (nlmLogName = "Nortel_fault" (encoded) Sequence# = 1390 Index = 1 - 12)	Notification Varbind Represented
nlmLogVariableIndex 11	nlmLogVariableInteger32Val .12.78.111.114.116.101.108 .95.102.97.117.108.116.**1390**.11	nnItuAlarmActiveManualClear (**not** present in CLEAR events, see next table)
nlmLogVariableIndex 12	nlmLogVariableInteger32Val .12.78.111.114.116.101.108 .95.102.97.117.108.116.**1390**.12	nnItuAlarmActiveSequenceNumber

nlmLogVariableTable varbinds for recovery of lost CLEAR notification

nlmLogVariableTable Index Variable	OID (nlmLogName = "Nortel_fault" (encoded) Sequence# = 1390 Index = 1 - 11)	Notification Varbind Represented
nlmLogVariableIndex 1	nlmLogVariableTimeTicksVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.1	sysUpTime
nlmLogVariableIndex 2	nlmLogVariableOidVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.2	snmpTrapOID
nlmLogVariableIndex 3	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.3	alarmActiveResourceId
nlmLogVariableIndex 4	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.4	alarmActiveDescription
nlmLogVariableIndex 5	nlmLogVariableOctetStringVal.12.78.111.114.116.101.108.95.102.97.117.108.116.**1390**.5	alarmActiveDateAndTime
nlmLogVariableIndex 6	nlmLogVariableInteger32Val .12.78.111.114.116.101.108 .95.102.97.117.108.116.**1390**.6	ituAlarmEventType

nlmLogVariableTable Index Variable	OID (nlmLogName = "Nortel_fault" (encoded) Sequence# = 1390 Index = 1 - 11)	Notification Varbind Represented
nlmLogVariableIndex 7	nlmLogVariableInteger32Val .12.78.111.114.116.101.108 .95.102.97.117.108.116.**139 0**.7	ituAlarmProbableCause
nlmLogVariableIndex 8	nlmLogVariableOctetStringV al.12.78.111.114.116.101.1 08.95.102.97.117.108.116.**1 390**.8	ituAlarmAdditionalText
nlmLogVariableIndex 9	nlmLogVariableOctetStringV al.12.78.111.114.116.101.1 08.95.102.97.117.108.116.**1 390**.9	nnItuAlarmActiveDocumentationPointer
nlmLogVariableIndex 10	nlmLogVariableOctetStringV al.12.78.111.114.116.101.1 08.95.102.97.117.108.116.**1 390**.10	nnItuAlarmActiveResourceDescription
nlmLogVariableIndex 11	nlmLogVariableInteger32Val .12.78.111.114.116.101.108 .95.102.97.117.108.116.**139 0**.11	nnItuAlarmActiveSequenceNumber

Recovery of missing alarm by sequence number



Northbound Performance Interface

IEMS Performance Interface Specification

The Northbound performance interface provides the customer a single reporting interface for the managed network. This has been acheived through the defintion of a “Common Performance Record format” (CPR-F). The common format maps operational statistics from across network elements to a common set of metrics to provide a network-level view of performance.

The Common Performance Record format specification is defined using a standardized XML interface. It provides a full definition of the normalized containment hierarchy describing performance statistics for reporting network components. PM collection jobs configured in IEMS can report device metrics in either XML or CSV formats.

The following is a list of devices that support collection of performance data in the SN08 release, PP8600, STORM, MS2000, Session Server-Trunks (platform PMs only), MAS, MCS, MCS Mgr, FPM, MG15000, SAM21, IEMS, UAS, GWC, USP, MG9K, and SSPFS.

XML

If XML is selected as the output format, then the data is collected and saved as an ACSII file in the format defined by the CPR-F XML Schema Document. The format specification below provides a full description of the normalized representation of PM data for supported network elements.

Conversion to CSV

When CSV output is configured in the collection job, data is initially transformed to the XML format described above. An additional step then converts the XML file to its corresponding CSV representation. There is no loss of information during this process. Net content represented by each output is identical.

The next section defines the CPR-F in terms of its XML structure followed by a discussion of its *conversion* to CSV format.

Also, collected CSV and XML performance files can be transfered from IEMS to an OSS system by configuring a transfer job for the performance files. The transfer can be done using FTP or SFTP.

For more information on configuring, retrieving, and transfering performance measurements through IEMS, see NN10327-711 - IEMS Performance Management Guide.

The Common Performance Record Format

Overview

The Common Performance record is an XML document specified using an XML Schema Document (XSD).

There are two major aspects to encoding performance measurements – identifying the source of the measurements within the network and recording the measurement data itself.

The CPR-F uses an XML containment structure to indicate the source point in the network of the performance measurements. A typical performance measurement may have originated in an NE and then been passed up to an element management system (EMS). The EMS in turn may have passed the measurements along to an Operations Support System (OSS).

For this particular case, the common record would contain an XML element representing the management system (the OSS) which ultimately received the set of performance measurements. Within this OSS element would be an element representing the EMS which forwarded the measurements to the OSS.

And within this EMS element, there would be an XML element representing the NE (network element) from which the PMs were obtained. The NE element may itself contain another XML element representing the sub-component in the NE which generated the measurement.

The measurement data itself would also be encoded in one or more XML elements. These data elements would be contained within the sub-component element above.

XML Elements

The common performance record format uses thirteen major elements to encode performance information:

The *PMFile* element is the top-level element and contains all other elements.

The *System* element, *Entity* element and *SubEntity* element are used to relate the measurements to some origination point in the network and to capture their path through the management systems.

The *SingleValues* & *SingleValue* elements, the *GroupOfValues* & *GroupValue* elements and the *Table, Labels, Label, RowOfValues* & *RowValue* elements may all be used to capture the performance measurement information itself.

Encoding Source Identification for Performance Measurements

A performance measurement (PM) originates in some device in the network which records the measured value. This measurement may be combined with

other measurements within the device and forwarded to a management system. The management system may combine the PMs from many devices into a single grouping and may forward this grouping of PMs to some superior management system. Again this superior management system may combine groupings of measurements from many domains in the network and forward the combined package of measurements to yet another management system.

This path that PMs take as they move from the network device level to the management level is encoded in the CPR. Three elements are used to indicate this path:

System element

Entity element

SubEntity element.

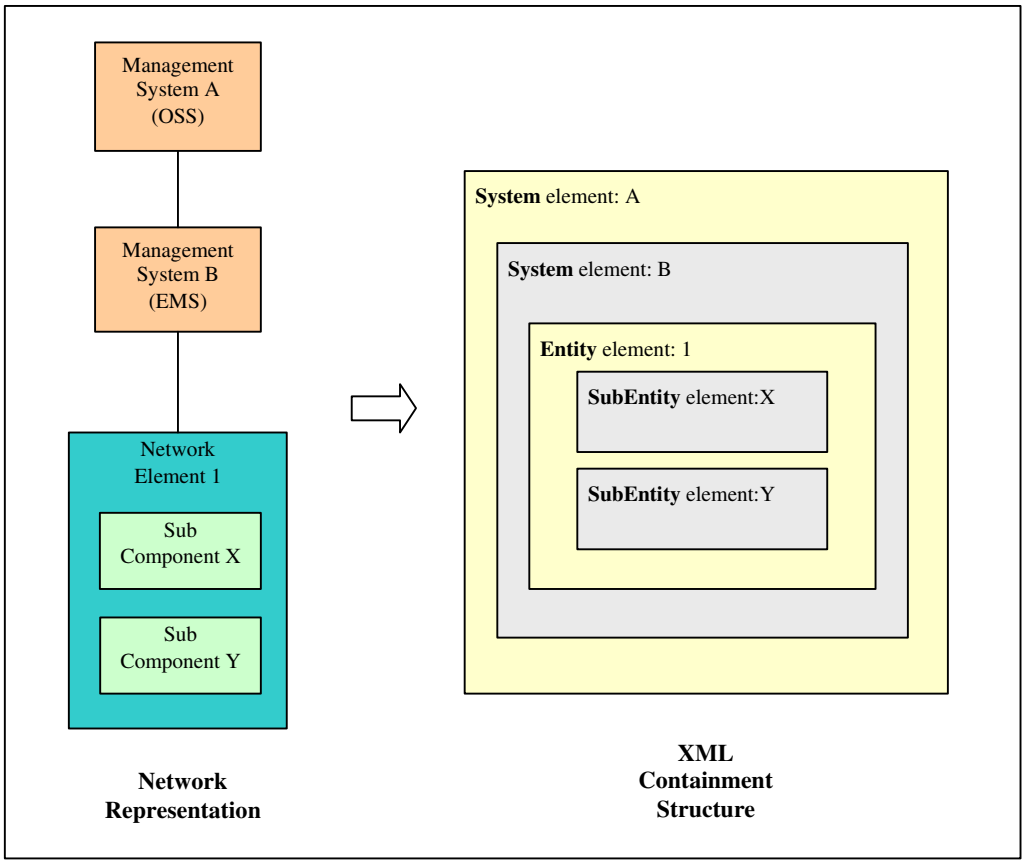
The intent of the Entity element is to represent the NE itself. What constitutes an NE and what device granularity determines an NE is an implementation choice for any particular product or technology. The System, Entity and SubEntity form a hierarchy. In this hierarchy, the Entity element may appear only once.

A Network Element may contain many sub-components and these sub-components may themselves contain sub-components and so on to some arbitrary level of decomposition. The SubEntity element represents a sub-component within the NE. A SubEntity element may contain other SubEntity elements to reflect the component structure within the NE. What constitutes a sub-component within an NE is, again, an implementation choice for any particular product or technology.

A set of performance measurements may traverse one or more management systems as it travels to some final destination system. Each of these intermediate management systems may be represented by a System element. A System element may contain another System element encoding the sequence of management systems which handle the performance measurement data.

The CPR may be emitted by a management system or by a network element. When an NE emits the record, the top-most XML element within the PMFile element will be an Entity element representing the NE which is sending the measurements. When a management system emits the CPR, the top-most XML element within the PMFile element will be a System element representing the management system.

OSS/EMS/NE hierarchy encoded in XML elements



Encoding the Performance Measurement Data

Measurement Descriptors

In general, a performance measurement is some number which is bound to a measurement identifier such as: numberOfPackets = 23145. As well as these two items, a performance measurement may contain contextual information indicating the circumstances under which the measurement was taken or giving some further information as to the meaning of the measurement or its interpretation. The following information items are used in the common performance record format to describe measurement information:

Measurement Identifier: This is the name or label which uniquely identifies the measurement.

Measurement Value: This is (generally) the numerical value of the measurement (such as an integer or decimal number). Or it could be a string or some enumerated value

Measurement Kind: There are two kinds of performance measurement: ‘snapshot’ and ‘period-based’.

A ‘snapShot’ measurement is one in which the measurement quantity (for example, some counter in a network device) is sampled at an instant in time and is being reported to the management system. There is no time significance attached to this sampled value. To derive information from a snapshot value, it may need to be compared to some previous snapshot of the counter or gauge and conclusions drawn about the change, if any, between the two values.

In contrast, a period-based measurement represents the value of some measurement quantity in the network device over a specified period of time. The measurement value relates only to activity which occurred within the measurement period.

Capture Time: This is the time at which the measurement value was captured. For a period-based measurement, this is the time at which measurement accrual stopped. For a snapshot measurement, it represents the time at which the measurement was sampled.

Interval Duration: This is the length of the time interval governing the performance measurement. For a period-based measurement, this interval is the duration between the time the measurement was started and the time the measurement was stopped. For a snapshot measurement, the interval indicates the duration between the time the current value was sampled and the time of the previous sample.

Last Record: If true this indicates that the performance measurement is the last value for the reporting time interval (indicated in IntervalDuration).

Reliability: This is an indicator of the quality or reliability of the measurement. It can take values such ‘valid’, ‘invalid’ and so on.

Unit: This names the unit in which the measurement is expressed (for example, packets, bytes and so on).

Value Type: This indicates the type of data contained in the Measurement Value. It can take on values such as ‘integer’, ‘decimal’, ‘string’ and so on).

Register Type: A register is the generic name given to the hardware or software capability in an NE which actually records the performance measurement. For numeric values the RegisterType property indicates whether the register behaves as a counter or a gauge or some other numeric register. (A counter is a register which accumulates a count of some defined event such as

the arrival of a packet. A gauge is a register which holds a state of usage sample – for example, the number of items in a queue).

Maximum Value: This property indicates the highest value the register can hold.

Reset Time: This is the register reset time. For numeric values this is the date/time when the register was last reset to zero.

Monitored Time: This indicates the actual duration of the period over which the measurements were taken. This property is used for cases where the actual measurement period is less than the period indicated in the Interval Duration value.

Intervals Covered: As an efficiency mechanism, it may be decided not to forward measurements when they have a value of zero at the end of the measurement period (for example, no events of interest occurred in the measurement period). This practice is called zero-suppression. In the case where a zero suppression representation is used, this attribute specifies the number of consecutive intervals over which a zero value was obtained for the measurement.

Table and Group Identifiers

Performance measurements may be stored within the common format as tables of values or as groups of values. The properties below are used to identify these tables and groups.

Table Identifier: This is the name or label for a particular table of measurements. This property is only used in the Table element.

KeyOfRow: This is a property specific to a column label used in representing tabular measurements. When it has a value of ‘true’ it indicates that this particular column of the table contains the key of the row of data values. The key is the identity of the object to which the row measurements pertain. This would generally refer to a sub-component in the network element.

Group Identifier: This is the name or label for a particular group of measurements. This property is only used in the GroupOfValues element.

Supplementary Identifiers

In many cases the identity of a network element, NE sub-component or performance measurement can be expressed in a single identifier. In other cases the identity will be contained in a number of individual identifiers. The approach taken in the common performance record format is to use supplementary identifiers to hold any additional identification information required in an element.

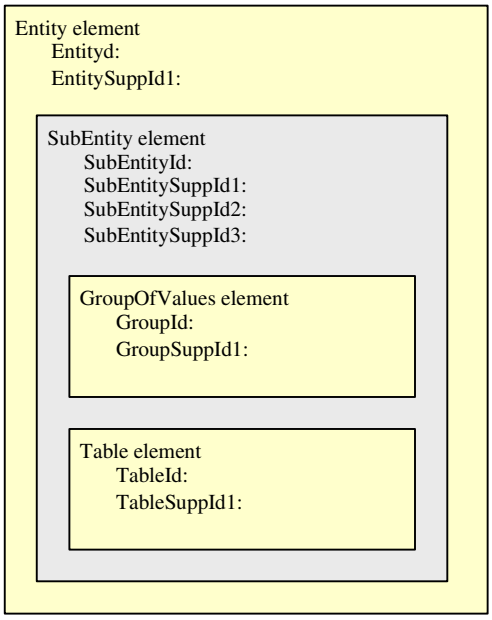
In the case of an *Entity* element (which is used to hold measurements for a particular NE), there are two identifiers: an EntityId (Entity Identifier) and an EntitySuppId (Entity Supplementary Identifier).

Likewise, the *SubEntity* element (which holds measurements for a sub-component of the NE) has a SubEntityId and three supplementary identifiers – SubEntitySuppId1, SubEntitySuppId2 and SubEntitySuppId3. Note that in the case of the *SubEntity* supplementary identifiers, it is not stipulated in which order or in which combination they are to be used. This is left as an implementation decision for any particular product/technology.

The performance measurement itself has a supplementary identifier – MeasureSuppId1. Both the *Table* element and *GroupOfValues* element also have a supplementary identifier – respectively TableSuppId1 and GroupSuppId1.

Some of these identifiers are mandatory and some are optional. See section "Optionality" on page 138 for more information.

Example of Identifiers and Supplementary Identifiers



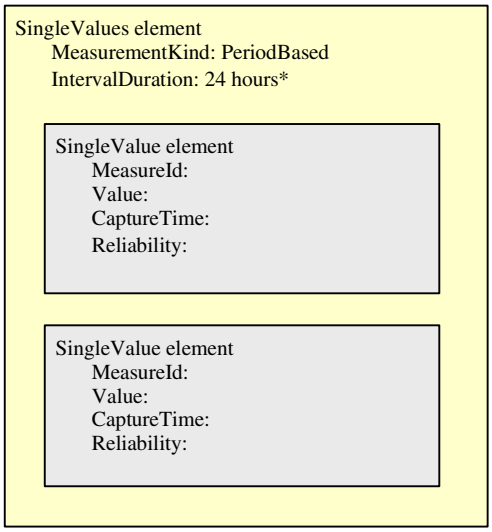
Measurement Elements

There are three ways to encode performance measurements in the common format – using a *SingleValues* approach, a *GroupOfValues* approach or a *Table* approach.

Single Values Approach

With this approach each performance measurement is considered as a standalone value with no explicit relationship to any other measurement value which may accompany it. Each measurement is encoded in a *SingleValue* element. One or more *SingleValue* elements are contained in a *SingleValues* element which specifies the kind of measurements contained within it (period-based or snapshot) and the interval duration for those measurements (for example, whether they are measurements for a 5-minute, 15-minute or 24-hour interval).

A SingleValues element containing two values



Group Values Approach

Like the SingleValues element, the GroupOfValues element contains one or more individual measurements. However, there is an explicit relationship between the measurements in the element. They are part of a group of measurements with a collective identity. The GroupId value contains the identity of the group. As with the SingleValues element, the GroupOfValues element specifies the kind of measurements it contains and their interval duration. In addition, many of the individual measurement properties such as CaptureTime and Reliability are common to the group and these are encoded once in the GroupOfValues element itself rather than being encoded for each measurement in the individual GroupValue element.

A GroupOfValues element containing two measurements

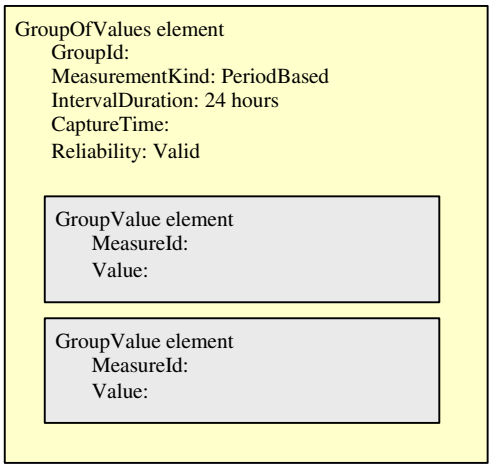
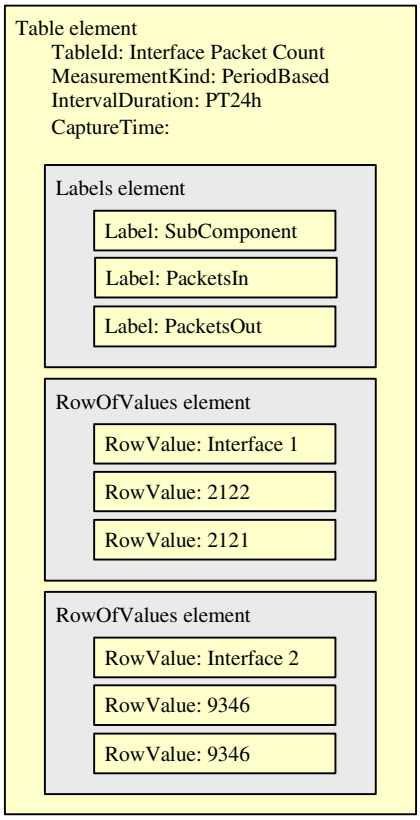


Table Approach

The table approach encodes performance measurements in a tabular format. A Table element will contain a Labels element to hold the column headings for the table. The Table element will also contain one or more RowOfValues elements. Each RowOfValues element contains a row of individual data items with a one-to-one correspondence to the labels in the Labels element. One or more of the data items in a row may contain key information indicating the source of the measurements (that is, the data item will identify the sub-component from which the measurements were taken). This facet is indicated using the KeyOfRow property in the Label element.

A table may be explicitly identified using a TableId property or it may be an anonymous table with no name.

A Table element containing two rows of values



Interface Packet Count Table

SubComponent	PacketsIn	PacketsOut
Interface 1		

Top Level Properties

The performance measurements encoded in the common format constitute an XML string. This set of values will have high level properties in common. These are captured in the PMFile element. The term ‘file’ as used below is intended to designate the XML string containing the performance measurements.

MeasurementCategory: This property describes the type of measurements contained within the PM file (its value is always "PM" indicating the file contains performance measurements).

PMReportType: This describes the type of performance measurement report contained in the file (for example, this property could be used in the case where it is desired to distinguish between different types of PM reports).

FileCreationTime: This specifies the date/time when the PM file was created.

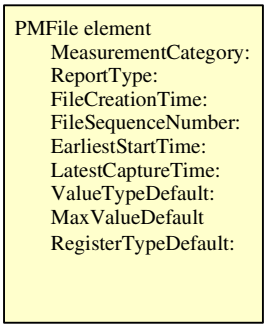
FileSchema: The FileSchema contains information which describes the format of a source non-CPR format PM file or the mapping file used to translate the source file into the common format.

FileSequenceNumber: The position of this file in some sequence of related PM files.

EarliestStartTime: This is set to the start time of the earliest measurement contained in the file.

LatestCaptureTime: This is set to the capture time of the latest measurement in the file.

PM File element contents



Default Values

ValueType, MaxValue and RegisterType are three properties which may be specified for a measurement (See Measurement Descriptors on page 11). It is possible to set defaults for these values in the file using the ValueTypeDefault, MaxValueDefault and RegisterTypeDefault properties in the top-level *PMFile* element. The scope of these default values is the entire PM file.

It is also possible to specify one or more of ValueType, MaxValue and RegisterType for each *SingleValue* element, each GroupValue element or each *Label* element (contained in a *Table* element). This local specification overrides the default value in *PMFile* for the particular element which contains the local specification.

If the property is not locally specified in the *SingleValue*, *GroupValue* or *Label* element, then the default value specified in the *PMFile* element is used.

If a default property is not specified in the PMFile element, then the following implicit default values are assumed. These implicit values function as if they were explicitly specified in PMFile.

RegisterTypeDefault:"counter"

ValueTypeDefault: "integer"

MaxValueDefault: 4,294,967,295 (that is, 232 – 1)

Optionality

It is possible to qualify a performance measurement with very many properties as shown above. Most of these properties are optional and are used in specific technologies or are needed to accommodate specific product performance management practices.

The following is the minimum set of properties required to identify a performance measurement. These are the required properties in a PM file:

PMFile Element: MeasurementCategory

System Element: SystemId

Entity: EntityId

SubEntity: SubEntityId

SingleValues Element: MeasurementKind

SingleValue Element: MeasureId; Value; CaptureTime

GroupOfValues Element: GroupId; CaptureTime; MeasurementKind

GroupValue Element: MeasureId; Value

Table Element: CaptureTime; MeasurementKind

Labels Element: N/A

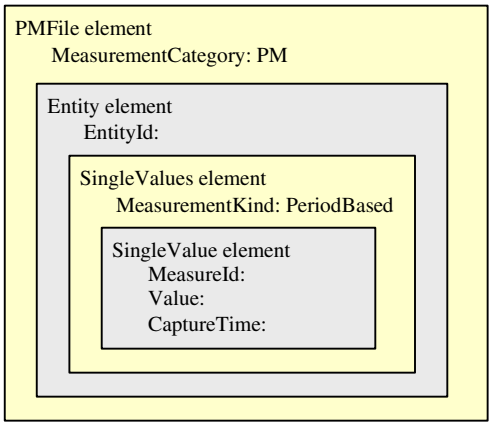
Label Element: N/A

RowOfValues Element: N/A

RowValue Element: Value

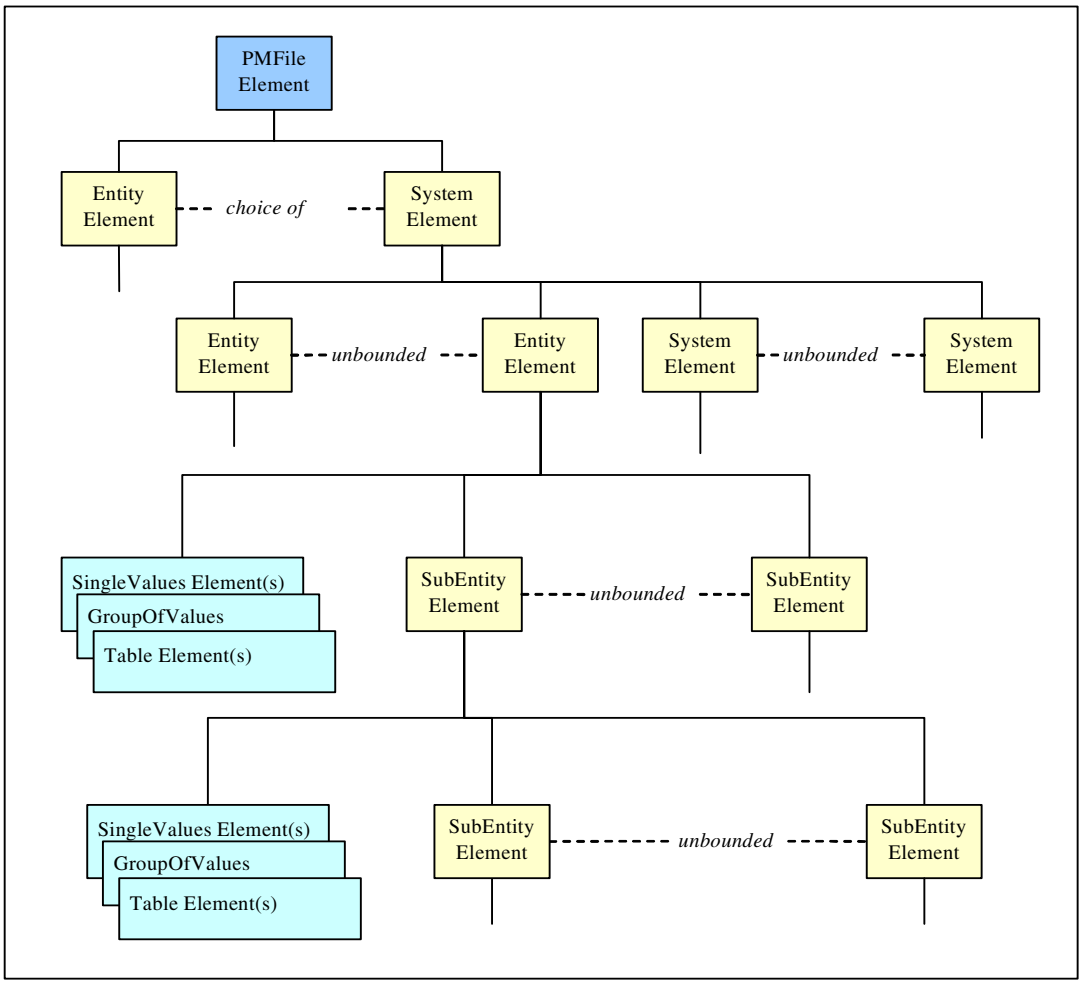
So a minimal CPR file would look like this:

Minimal Common Record Performance Record file



The figure below shows the hierarchical relationship of the major XML elements in the common performance record.

Hierarchy of the major XML elements



Attribute and Element Encoding

In the common performance record format some information is encoded as element data while other information is encoded using attributes. The approach followed is that attributes are used to encode metadata while elements are used for instance values.

Metadata is data which describes or qualifies some piece of information in terms of its class. So, in the common performance record, the *MeasurementKind* property differentiates between period-based measurements and snapshot measurements. This property is coded as an attribute.

Data which identifies or describes a specific instance of information rather than a class of information is encoded using an element. So the CaptureTime

property describes the time instant when a specific measurement was taken and so is not metadata. It is encoded as an element.

It also needs to be mentioned that the common performance record format adopts the approach of encoding the measurement name or label using an XML element. For instance:

Example 1: <MeasureId> numberOfPackets </MeasureId>

This is in contrast to the approach of directly coding the measurement name as an element tag:

Example 2: <numberOfPackets> </numberOfPackets>

The requirement for the common performance record format is to have standard fields for measurement information which could be used across all of Nortel (see the Performance Strategy requirements on page 5). This has been achieved using the current approach as shown in Example 1 above.

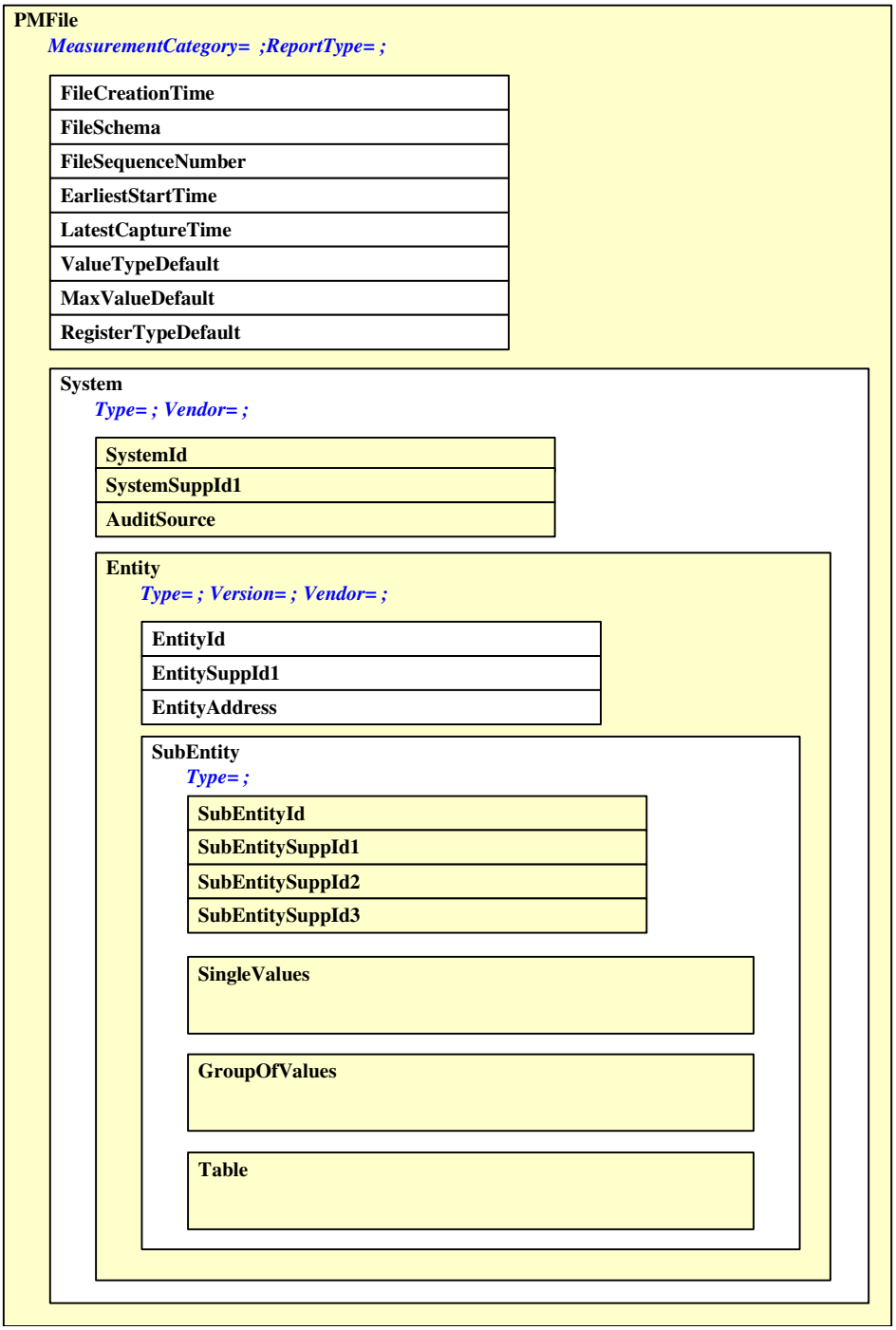
In order to use a direct coding of the measurement name as the element tag (Example 2 above) would require alignment across Nortel on the identification and semantics of all performance measurements which could possibly be encoded in the common performance record format. This alignment task has not been undertaken yet. It is envisaged that upon completion of such a convergence, the common performance record would be able to evolve to use measurement identifiers as tag names.

An additional concern is sometimes raised concerning the use of tables in the common performance record format. From a theoretical viewpoint, these tables are considered to constitute a lower quality of XML encoding than other means of encoding the data. However the common performance record format has opted to allow a tabular representation of data for pragmatic reasons. Tabular format measurement data has been the norm in most products for many years. Many operations systems expect their performance data to arrive in this customary format. In addition, industry standards for performance measurements such as 3GPP (Third Generation Partnership Project) mandate the use of tables for transporting performance data.

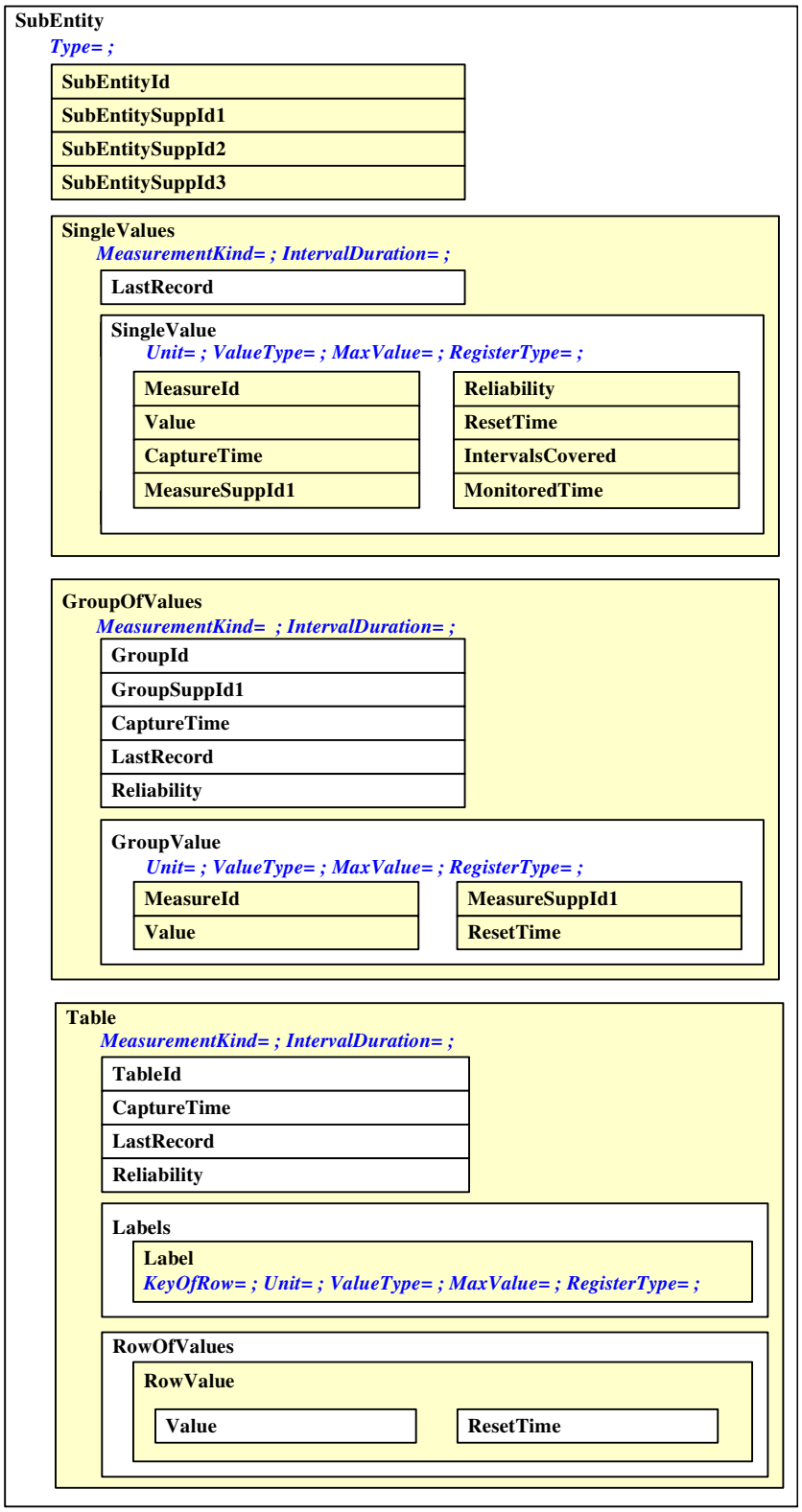
Layout of Elements and Attributes in the Common Format

The two figures below indicate which properties are expressed as elements and which are expressed via attributes. The figures represent one of many combinations of element types which are possible in the common performance record format. (Attributes are shown as *blue italicized* text. Elements are represented as boxes).

Layout of elements & attributes in the Common Performance Record



Layout of elements & attributes in the CPR-F (cont'd)



Common Performance Record Comma Separated Values (CSV) format

The following is an abbreviated generic description of the CPR CSV format. The CPR format is designed to be parsable into or from CPR XML format without loss of information.

The following elements are treated as ‘blocks’: PMFile, System, Entity, SubEntity, Table, GroupOfValues, SingleValues.

The start and end of these elements are marked or indicated in CSV with unique ‘Begin’ and ‘End’ markers. The format of an element block is as follows:

{element_name}=Begin

… CSV heading row for attributes & child text element nodes children of <element> …

… CSV value row for attributes & child text element nodes of <element> …

… recursive handling of all complex sub-elements (element children that are not text nodes) …

{element_name}=End

For each element, a specific property (attribute or text element) has been selected as the identifier for that element. The identifier will always appear as the *first* of the comma separated values in the CSV representation of that element.

Values that contain commas are enclosed in double quotes in CSV format.

Element blocks and identifiers

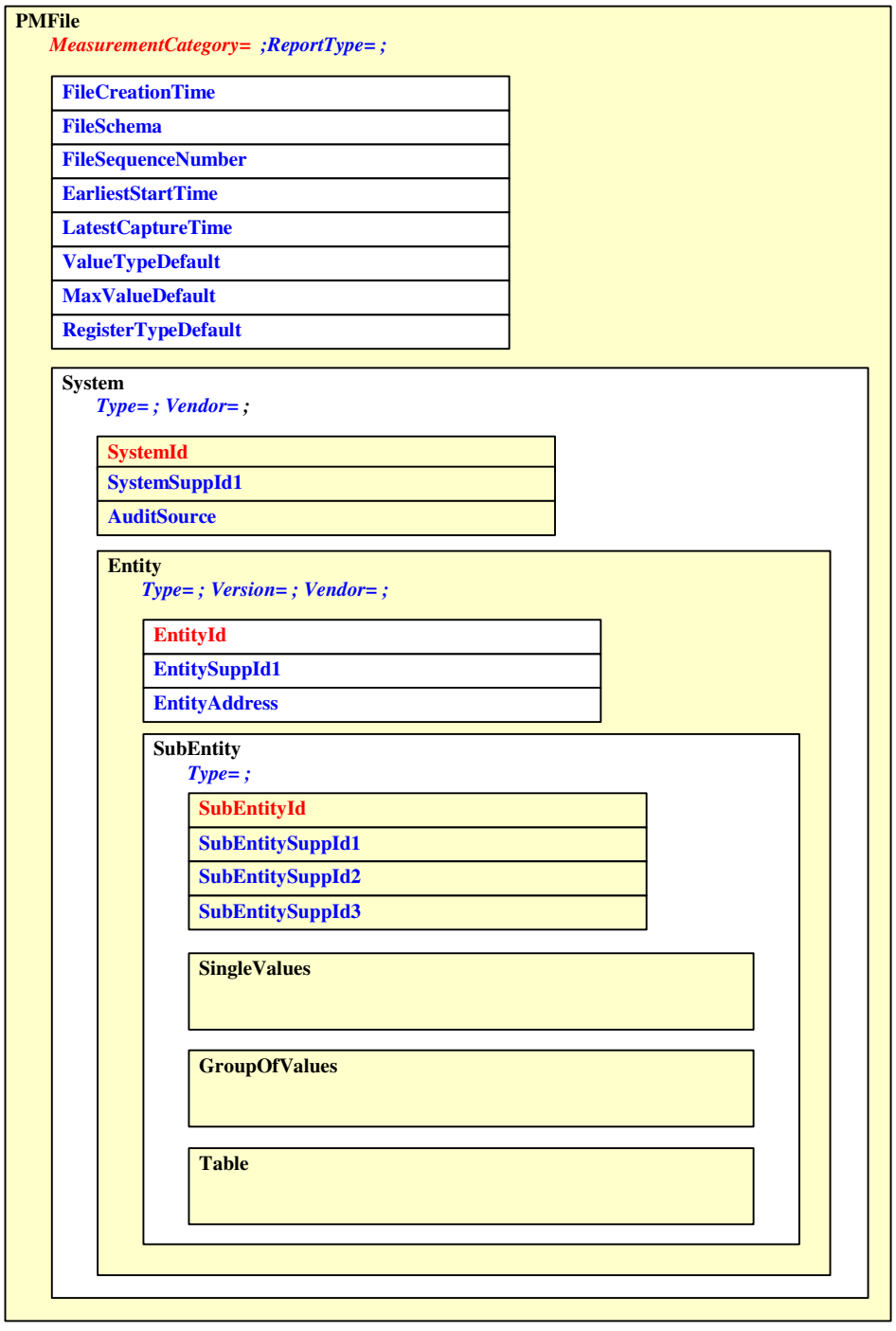
Element	Block?	Identifier
PMFile	Y	MeasurementCategory
System	Y	SystemId
Entity	Y	EntityId
SubEntity	Y	SubEntityId
Table	Y	TableId
Labels	N	Label
RowOfValues	N	RowValue/Value

Element	Block?	Identifier
GroupOfValues	Y	GroupId
GroupValue	N	MeasureId
SingleValues	Y	MeasurementKind
SingleValue	N	MeasureId

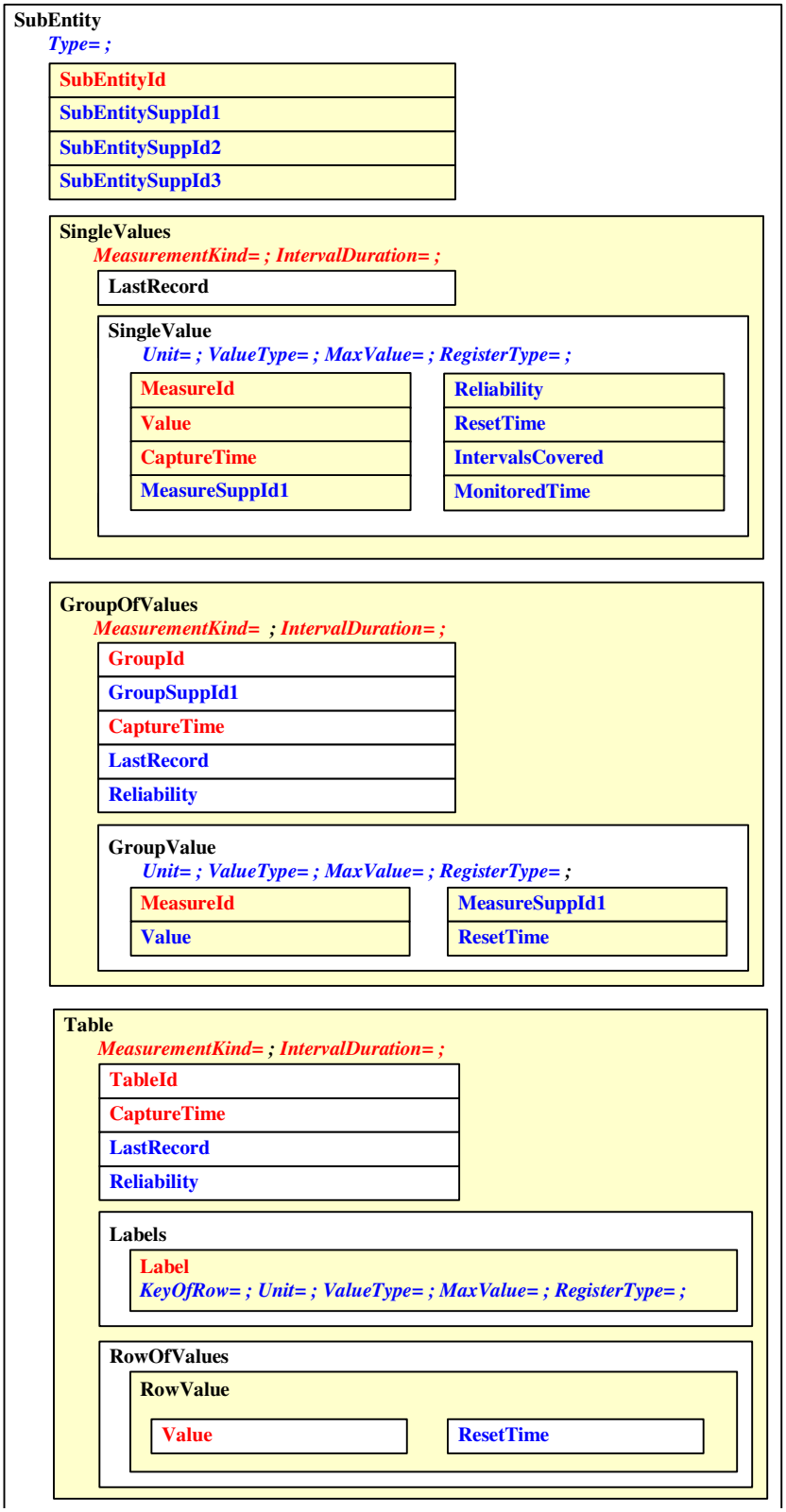
As not all identifiers are in fact mandatory, when the identifier is not found in the XML being translated the value of _Unnamed_ is used in the CSV output where the value of the identifier would normally appear.

For reference, "Layout of elements & attributes in the Common Performance Record" and "Layout of elements & attributes in the CPR-F (cont'd)" (which had been presented earlier) are shown below. The two figures indicate which properties are considered identifiers for each element, and therefore will always appear as the first comma separated value within a row. (Mandatory identifiers are shown in red. Optional identifiers are shown in blue. Attributes are shown as *italicized* text. Elements are represented as boxes.)

Layout of Elements & Attributes in the CPR-F



Layout of elements & attributes in the CPR-F (cont'd)



CSV Table example

```
    PMFile=Begin
PM,commonFormat.xsd,2004-06-23T13:01:14EST

System=Begin
NortelNetworks/IEMS

Entity=Begin
47.165.168.120,CICM

Table=Begin
.iso.org.dod.internet.mgmt.mib-
    2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry,Snapshot,5
    ,2004-06-23T13:00:00EST
usrHistoryControlInterval,usrHistoryControlIndex,usrHistoryControlStatus,usrHi
    storyControlOwner
900,5,1,CICM-120A
Table=End

Table=Begin
.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPerfR
    efMIB.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry,Snapshot,5,200
    4-06-23T13:00:02EST
nnPerfMetricValue,nnPerfMetricSources,nnPerfMetricDataType,nnPerfMetricGroup,n
    nPerfMetricName,nnPerfMetricRefIndex
0,2,1,CICM,ActiveConnections,5
0,2,1,CICM,PercentageCpuUsed,4
0,2,1,CICM,PercentageMemoryUsed,3
0,2,1,CICM,NumberOfLogs,2
0,2,1,CICM,ActiveSessions,1
Table=End
Entity=End
System=End
PMFile=End
```

Table attributes & text elements values

Labels attributes & text elements values

RowOfValues attributes & text elements

CSV SingleValues example

```
PMFile=Begin
PM,commonFormat.xsd,2004-06-23T17:30:21EST

System=Begin
NortelNetworks/IEMS

Entity=Begin
47.174.74.179,Session Server

SingleValues=Begin
Snapshot,5
sysDescr,2004-06-23T17:26:20EST,.iso.org.dod.internet.mgmt.mib-2.system,Linux sp2k-1
2.4.22-samxts #1 Thu May 13 01:48:09 EDT 2004 i686,Valid
snmpOutPkts,2004-06-23T17:26:20EST,.iso.org.dod.internet.mgmt.mib-2.snmp,8639,Valid
snmpInBadVersions,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid
snmpInBadCommunityNames,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,1,Valid
snmpInTotalReqVars,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,9689,Valid
snmpOutTraps,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid
snmpInBadCommunityUses,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid
snmpInPkts,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-2.snmp,8652,Valid
snmpInTotalSetVars,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid
snmpInASNParseErrs,2004-06-23T17:26:21EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid
hrSystemDate,2004-06-23T17:26:22EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,0,Valid
hrSystemUptime,2004-06-23T17:26:22EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,1315598,Valid
hrSystemProcesses,2004-06-23T17:26:22EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,170,Valid
snmpSilentDrops,2004-06-23T17:26:22EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid
SingleValues=End

Entity=End
System=End
PMFile=End
```

Note on CSV Examples

All CSV examples are with header information suppressed by default. This is the default behavior for all CSV performance reports in the SN08 release.

To have the header information included in the CSV performance reports, the user must change the “suppress-headers” option from “true” to “false”. The “suppress-headers” option is located in the cprxml2csv.properties file in the /opt/nortel/iems/current/resources directory.

CSV with header information example:

PMFile=Begin

MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime

PM,commonFormat.xsd,2004-06-23T12:45:04EST

System=Begin

SystemId

NortelNetworks/IEMS

Entity=Begin

EntityId,Type

47.165.168.120,CICM

Table=Begin

TableId,MeasurementKind,IntervalDuration,CaptureTime

.iso.org.dod.internet.mgmt.mib-2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry,Snapshot,5,2004-06-23T12:40:00EST

Label,Label,Label,Label

usrHistoryControlInterval,usrHistoryControlIndex,usrHistoryControlStatus,usrHistoryControlOwner

Value,Value,Value,Value

900,5,1,CICM-120A

Table=End

Table=Begin

TableId,MeasurementKind,IntervalDuration,CaptureTime

.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPerfRefMIB.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry,Snapshot,5,2004-06-23T12:40:01EST

Label,Label,Label,Label,Label,Label

nnPerfMetricValue,nnPerfMetricSources,nnPerfMetricDataType,nnPerfMetricGroup,nnPerfMetricName,nnPerfMetricRefIndex

Value,Value,Value,Value,Value,Value

0,2,1,CICM,ActiveConnections,5

0,2,1,CICM,PercentageCpuUsed,4

0,2,1,CICM,PercentageMemoryUsed,3

0,2,1,CICM,NumberOfLogs,2

2662732,2,1,CICM,ActiveSessions,1

Table=End

Entity=End

System=End

PMFile=End

Note: **Collected performance files (in CSV and XML format) can be forwarded from the IEMS server to an OSS system by configuring an IEMS transfer job. Transfer jobs can be configured to to forward these files using FTP or the secure SFTP protocols.**

Inventory/Topology Interface

Overview

The IEMS provides the ability to perform an ACSII dump of provisioned network inventory/topology information for use by 3rd party systems. The snapshot is initiated from the IEMS user interface and outputs full configuration details of the component hierarchy to the IEMS server as a text file. By default, the data is placed in the file */opt/nortel/iems/current/logs/inventoryData.txt.* This information can then be retrieved and processed by third parties. For a full description of the format and content of these topology listings see the section titled “Dumping Inventory Details” in:

NN10330-511 - Integrated EMS Configuration Management

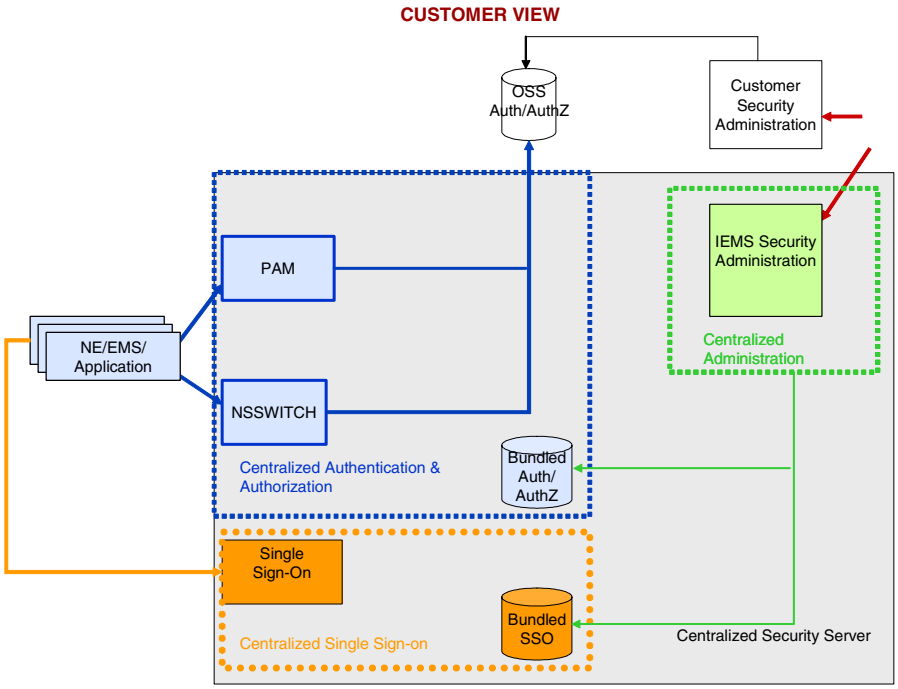
Network Security

Centralized Security Administration (Network Security)

Overview

The Integrated EMS provides a comprehensive security architecture based on PAM (Pluggable Authentication Module) and NSSwitch (Name Services Switch). The following figure shows the Nortel Networks VoIP Security Architecture.

Centralized Security Architecture



Features

This architecture provides the following features:

- Support for central administration of user accounts and user groups
- Support for central authentication: authentication of centrally administered user accounts is performed by the IEMS Security Server.
- Support for central authorization: authorization information needed to support user access control is securely managed and provided by the IEMS Security Server.
- Support for Single Sign-on (SSO)- This capability enables the user to access multiple network elements, applications, and features from a single login session. Session information for a user is shared between IEMS and network elements supporting SSO.
- Customer Plug-ability - provides the ability for third parties to plug-in its own Authentication/Authorization solutions on IEMS. Client authentication and authorization information are provided by the customer's security backend via the IEMS Security Server.

The following table lists the devices and applications supporting these features:

Authentication and Authorization

Central Security Administration -Supported Devices

Network Element/EMS Platforms	Device Authentication Method	Device Reference Documentation
USP	HTTPS	USP Security and Administration, NN10159-611
Passport 8600	Radius	Configuring and Managing Security, 314724-B
SSPFS CS 2000 Management Tools (ossgate, sam2em, gwcem, uasem, apsem, lmm, tmm, Audio Provisioning Server (APS) Network Patch Manager (NPM) MG 9000 Manager	Radius	ATM/IP Solution-level Security and Administration, NN10402-600
Integrated EMS	HTTPS	Integrated EMS Security and Administration, NN10336-611
GWC	PAM Proxy	?
Integrated EMS	HTTPS	Integrated EMS Security and Administration, NN10336-611
CICM Manager	HTTPS	Integrated EMS Security and Administration, NN10336-611
SDM	Radius	?
MDM and MDM Operator Client, PAM and Sun ONEIS	Radius	?
MG15000 (previously PVG)	Radius	?
CEM	PAM Proxy	?
MG9K	Radius	?

The following table lists Integrated EMS single sign-on launch points.

Integrated EMS single sign-on launch points

Network element/EMS platform/application	Integrated EMS launch point
USP	USP Command Line
	USP Manager
Passport 8600	PP8600 Command Line
SSPFS	CS 2000 Management Tools
CS 2000 Management Tools	
Audio Provisioning Server (APS)	
Network Patch Manager (NPM)	
MG 9000 Manager	
SAM21 Manager	SAM21 Manager
UAS Manager	UAS Manager
LMM	LMM
TMM	TMM
OSSGate	OSSGate
	BPT Servlet
	BPT Command Line
MG9000 Manager	MG9000 Manager
MG9000 Mid-Tier	
APS	APS Manager
	APS Application
NPM	NPM
	NPM Command Line
QOS	QOS Command Line
CEM	CEM
SSPFS	SSPFS

Network Elements and Applications can be configured to use Centralized Security Administration. To enable a device to use Centralized Security Administration, the device must be configured to use the IEMS central security server to authenticate users and access user profile information.

The IEMS Central Security Server uses PAM (Pluggable Authentication Module) to process the authentication requests and NSSwitch (Name Services Switch) to return user privilege and user profile information to Network Elements and Applications.

PAM Services

PAM provides authentication services for clients in the managed network. Customers have the option to use the PAM services that come pre-bundled with the security server or to provide their own. When customers use the PAM services provided by the IEMS Security Server, the user accounts are managed via the IEMS security and administration GUI.

When a request is forwarded to the IEMS PAM SPI (PAM Service Provider), then authentication is performed against data provisioned and administered by the Security Administration application on the IEMS client.

Conversely, when a PAM services are provided by a customer, incoming authentication requests are forwarded to the customer SPI for resolution against their remote database.

NSSwitch Services

NSSwitch provides services to obtain group and profile information for users. Centralized access to network resources depends on the definition of a common set of user groups to map security access for each user. The Nortel Networks solution provides a number of predefined user groups to address the full range of OAM&P functions required across a managed network. For a full discussion of these user groups and their categorization, see *NN10281-600 - ATM/IP Administration and Security.*

Customers can configure NSSwitch to use the service pre-bundled with IEMS or, as with PAM services, provide their own service remotely. When the pre-bundled service is used, group and user profile information is administered via the IEMS security and administration GUI. See NN10336-611 - IEMS Administration and Security.

If NSSwitch services are configured on a third party system, it is important to note that this security solution supports *only* the NSSwitch group and password databases. Although other database types may be defined in NSSwitch, they are not used by the central security feature.

See the References section for additional information on PAM and NSSwitch.

Single Sign-on (SSO)

The Single Sign-on feature allows users transparent access to multiple network elements and applications through a single login.

Once a user has been successfully authenticated for the first time (by user login), an SSO token is created by the IEMS security server that will be used to authenticate the same user on subsequent login attempts.

Network Elements and Applications use a Single Sign-On (SSO) interface on the Central Security Server to request SSO tokens whenever authentication is required.

For full details on the interface specification, see *NN10336-611 - IEMS Administration and Security.*

Configuring Security Administration

Managing Accounts

It is recommended practice that all user accounts be managed centrally with the following exceptions:

- accounts required to provide emergency access to a device.
- super user accounts (for example ‘root’ users)

For more information on adding a centrally managed user, refer to the "Adding New Users" section of *IEMS Administration and Security.*

Note: Detailed procedures for these steps can be found in *NN10336-611 - IEMS Administration and Security.*

Configuring Centralized Security Administration on NEs and EMS Platforms

An OSS must configure NEs and EMS Platforms to use centralized security administration. To enable centralized security administration on a device, the OSS must follow the procedures outlined for the device. For security configuration information for a specific device, look for its listing in the “Supported Devices” section of this document.

Note: Detailed procedures for these steps can be found in *NN10336-611 - IEMS Administration and Security.*

IEMS Suported Devices

The sections that follow contain a directory to provide customers a quick reference to device-specific information on faults, performance, interfaces, and other user documentation. The intended purpose is to allow customers to correlate IEMS Northbound interface events and behaviors with their originating source.

Each device in the listings below provide sample logs from all four Northbound fault streams: SCC2, NTSTD, Syslog, and SNMP. With the exception of the SNMP fault feed, these samples are shown as they appear from the Northbound interfaces.

Understanding SNMP Fault samples

Since SNMP has no inherent display format, each event is presented in a format that displays the short name of the MIB variables populated by the event:

<short MIB variable Name> => <value>

for example:

nnExtAlarmActiveResourceDescription =>
IEMS=nc0rtp2127.us.nortel.com-MS2000;

The following table provides a mapping of the displayed "short" variable name to its full form as well as its associated OID.

OID Short Name Mapping in SNMP Log Samples

Short name	**sysUpTime**
Long name	**system.**sysUpTime.0
OID	.1.3.6.1.2.1.1.3
Short name	**snmpTrapOID**.0
Long name	**.iso.org.dod.internet.snmpV2.snmpModules.snmpMIB.snmpMIBObjects.snmpTrap.**snmpTrapOID.0
OID	.1.3.6.1.6.3.1.1.4.1
Short name	**alarmActiveResourceId**
Long name	**alarmMIB.alarmObjects.alarmActive.alarmActiveTable.alarmActiveEntry.**alarmActiveResourceId
OID	.1.3.6.1.2.1.111.1.2.2.1.10
Short name	**alarmActiveDateAndTime**

Long name	**alarmMIB.alarmObjects.alarmActive.alarmActiveTable.alarmActiveEntry.**alarmActiveDateAndTime
OID	.1.3.6.1.2.1.111.1.2.2.1.2
Short name	**alarmActiveDescription**
Long name	**alarmMIB.alarmObjects.alarmActive.alarmActiveTable.alarmActiveEntry.**alarmActiveDescription
OID	.1.3.6.1.2.1.111.1.2.2.1.11
Short name	**nnExtAlarmActiveEventType**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveEventType
OID	.1.3.6.1.4.1.562.29.6.1.1.1.1
Short name	**nnExtAlarmActiveProbableCause**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveProbableCause
OID	.1.3.6.1.4.1.562.29.6.1.1.1.2
Short name	**nnExtAlarmActiveAdditionalText**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveAdditionalText
OID	.1.3.6.1.4.1.562.29.6.1.1.1.3
Short name	**nnExtAlarmActiveDocumentationPointer**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveDocumentationPointer
OID	.1.3.6.1.4.1.562.29.6.1.1.1.4
Short name	**nnExtAlarmActiveResourceDescription**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveResourceDescription
OID	.1.3.6.1.4.1.562.29.6.1.1.1.5
Short name	**nnExtAlarmActiveManualClear**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveManualClear
OID	.1.3.6.1.4.1.562.29.6.1.1.1.6

Short name	**nnExtAlarmActiveSequenceNumber**
Long name	**enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmActiveTable.nnExtAlarmActiveEntry.**nnExtAlarmActiveSequenceNumber
OID	.1.3.6.1.4.1.562.29.6.1.1.1.7
Short name	**nnExtAlarmMessageResource**
Long name	**.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmMessageTable.nnExtAlarmMessageEntry.**nnExtAlarmMessageResource
OID	.1.3.6.1.4.1.562.29.6.1.3.1.1
Short name	**nnExtAlarmMessageResourceDescription**
Long name	**iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmMessageTable.nnExtAlarmMessageEntry.**nnExtAlarmMessageResourceDescription
OID	.1.3.6.1.4.1.562.29.6.1.3.1.2
Short name	**nnExtAlarmMessageDateAndTime**
Long name	**iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmMessageTable.nnExtAlarmMessageEntry.**nnExtAlarmMessageDateAndTime
OID	.1.3.6.1.4.1.562.29.6.1.3.1.3
Short name	**nnExtAlarmMessageDocumentationPointer**
Long name	**iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmMessageTable.nnExtAlarmMessageEntry.**nnExtAlarmMessageDocumentationPointer
OID	.1.3.6.1.4.1.562.29.6.1.3.1.4
Short name	**nnExtAlarmMessageInfo**
Long name	**iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nnExtAlarmMIB.nnExtAlarmObjects.nnExtAlarmMessageTable.nnExtAlarmMessageEntry.**nnExtAlarmMessageInfo
OID	.1.3.6.1.4.1.562.29.6.1.3.1.5

Call Agent Core

This section contains IEMS Northbound log samples and device documentation references for the Call Agent Core.

Call Agent Core Fault Interface

Fault documentation for Call Agent Core :

- NN10275-909 - Succession fault Management logs Reference
- NN10083-911 - Communication Server 2000 Fault Management

DMS Standard (North America)

- 297-8021-840 - North American DMS100 Log Report Reference Manual Volumes 1 to 8

International Succession

- 297-9051-8401 - DMS100 Log Report Reference Manual Volumes 1 to 7

Fault Mapping for Call Agent Core

The following criteria can be used for looking up information on specific faults for Call Agent Core.

Fault Correlation for Call Agent Core

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Call Agent Core	log name and log number	log name and log number	log name and log number	log name and log number	see section " Fault documentation for Call Agent Core :"

Northbound Fault Formats for Call Agent Core

SCC2

The following is an example of a Call Agent Core log in SCC2 format:

```
56 LINE138 3778 INFO TRMT
      SLOA 21 1 02 01    DN 2145202111
      TREATMENT SET = BUSY   CALLED NO =                    5202111
      CALLID= 01BE 036D
```

NTSTD

The following is an example of a Call Agent Core log in NTSTD format:

```
RTPU07BR     LINE138 Jan23 16:56:30 3778 INFO TRMT
        SLOA 21 1 02 01    DN 2145202111
        TREATMENT SET = BUSY   CALLED NO =                          5202111
        CALLID= 01BE 036D
```

SNMP

The following is an example of a Call Agent Core log in SNMP format:

```
system.sysUpTime.0 => 19:51:46
snmpTrapOID.0 => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr;
nnExtAlarmMessageDateAndTime => 2004-1-23,11:56:30.0,
nnExtAlarmMessageDocumentationPointer => LINE138
nnExtAlarmMessageInfo =>   56 LINE138 3778 INFO TRMT                SLOA 21 1 02 01
DN 2145202111
        TREATMENT SET = BUSY   CALLED NO =                          5202111
        CALLID= 01BE 036D
```

Syslog

The following is an example of a Call Agent Core log in Syslog format:

```
Feb 23 11:57:27 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=3835~~ LINE138 NONE INFO
TRMT^M       SLOA 21 1 02 01    DN 2145202111 ^M       TREATMENT SET = BUSY   CALLED
NO =                         5202111 ^M        CALLID= 01BE 036D
```

Performance

OM and PM Documentation references for Call Agent Core

- NN10149-711 - Communications Server 2000 Performance Management

DMS Standard (North America)

- 297-8021-814P1 - North American DMS-100 Operational Measurements Reference Manual Volumes 1 to 6

International Succession

- 297-9051-8141 - DMS-100 Family Operational Measurements Reference Manual Volumes 1 to 6

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

Performance measurements for Call Agent Core are available from the CS2K Core Manager. See NN10149-711 - Communications Server 2000 Performance Management for more information.

XML

The following is an example of Performance data for Call Agent Core in XML format:

Note: *The IEMS northbound performance interface does not support this device..*

CSV

The following is an example of Performance data for Call Agent Core in CSV format:

Note: *The IEMS northbound performance interface does not support this device..*

GUI/CLUI Documentation for Call Agent Core

The Call Agent Core provides both command-line and MAP-based interfaces accessed through the CS2000 Core Manager.

GUI/CLUI Launching and User procedures

- NN10018-111 - CS2000 Core Manager Basics

  see section “Accessing the Core”

Related documents

- NN10197-111 - Communication Server 2000 Basics
- NN10193-511 - Communication Server 2000 Configuration Management
- NN10127-811 - Communication Server 2000 Accounting Management
- NN10171-611 - Communication Server 2000 Security and Administration
- 297-5051-921 - SuperNode Data Manager DDMS ASCII CI Gateway User Guide
- 297-5161-022P1 - Advanced Intelligent Network Service Enablers SIG Volumes 1 to 3
- 297-8021-350P1 - North American DMS-100 Translations Guide Volumes 1 to 25

- 297-8021-351P1 - DMS-100 Data Schema Reference Manual (volumes 1 to 12)
- 297-8021-801 - DMS-100 Feature Guide
- 297-8021-808P1 - DMS-100 SERVORD Reference Manual
- 297-8021-808P2 - DMS-100 SERVORD Reference Manual
- 297-8021-814P1 - DMS-100 Operational Measurements Reference Manual (volumes 1 to 6)
- 297-8021-840P1 - DMS-100 Logs Reference Manual (volumes 1 to 6)
- 297-8021-855P1 - DMS-100 Office Parameters Reference Manual (volumes 1 to 3)
- 297-8991-810 - XA-Core Reference Manual

Call Agent Platform

This section contains IEMS Northbound log samples and device documentation references for the Call Agent Platform.

Call Agent Platform Fault Interface

Fault documentation for Call Agent Platform :

- NN10087-911 - Call Agent Fault Management

Fault Mapping for Call Agent Platform

The following criteria can be used for looking up information on specific faults for Call Agent Platform.

Fault Correlation for Call Agent Platform

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Call Agent Platform	logname and number	logname and number	logname and number	logname and number	NN10087-911 Call Agent Fault Management

Northbound Fault Formats for Call Agent Platform

SCC2

The following is an example of a Call Agent Platform log in SCC2 format:

```
* 41 CCA 355 6064 FLT  Jam Inactive Unit
        Unit Number : 0, ACTIVE
        Description : Inactive JAMMED
```

NTSTD

The following is an example of a Call Agent Platform log in NTSTD format:

```
COMPACT06BT   *  CCA355 JAN21 18:41:14 1864 FLT   Jam Inactive Unit
        Unit Number : 0, ACTIVE
        Description : Inactive JAMMED
```

SNMP

The following is an example of a Call Agent Platform log in SNMP format:

```
system.sysUpTime.0 => 1 day, 4:49:05
snmpTrapOID.0 => nnExtAlarmMinor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.49.44.54.58.52.49.58.49.52.46.48.44.8995
alarmActiveDateAndTime => 2004-1-21,6:41:14.0,
alarmActiveDescription => DeviceSpecificInfo=Unavailable;Unit Number : 0, ACTIVE
Description : Inactive JAMMED
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => CCA 355
nnExtAlarmActiveResourceDescription => IEMS=47.142.128.16-CS2K-Mgr;
nnExtAlarmActiveManualClear => 3
nnExtAlarmActiveSequenceNumber => 9104
```

Syslog

The following is an example of a Call Agent Platform log in Syslog format:

```
Jan 21 19:41:06 wnc0s0qh IEMS: _V2_~I=~H=wnc0s0qh~A=IEMS~S=2860~~  CCA355 MINOR FLT
Jam Inactive Unit^M      Unit Number : 0, ACTIVE ^M      Description : Inactive JAMMED
```

Performance

OM and PM Documentation references for Call Agent Platform

- NN10153-711 - Call Agent Performance Management

Northbound OM/PM Formats

Performance measurements for Call Agent Platform are available only from the Call Agent Manager interface. See NN10153-711 - Call Agent Performance Management for more information.

XML

The following is an example of Performance data for Call Agent Platform in XML format:

Note: *The IEMS northbound performance interface does not support this device..*

CSV

The following is an example of Performance data for Call Agent Platform in CSV format:

Note: *The IEMS northbound performance interface does not support this device..*

GUI/CLUI Documentation for Call Agent Platform

GUI Launching and User procedures

- NN10175-611 - Call Agent Administration and Security

Related documents

- NN10023-111 - Call Agent Basics
- NN10109-511 - Call Agent Configuration Management

Core Element Manager (CEM)

This section contains IEMS Northbound log samples and device documentation references for the Core Element Manager.

CEM Fault Interface

This section will provide references to customer documentation for Fault, Performance, Topology, GUI/CLUI, and Security for CEM.

Fault documentation for CEM :

The document that describes CEM faults is CEM Logs and OMs - Integrated EMS Fault Management, NN10334-911- I .

Fault Mapping for CEM

The following criteria can be used for looking up information on specific faults for CEM.

Table 1 Fault Correlation for CEM

NB format -> Device/EM	SCC2	NTStd	SNMP	Syslog	Document Reference
CEM	Description log name and log number	Description log name and log number	Device specific info	Description log name and log number	NN10334-911- I

Northbound Fault Formats for CEM

SCC2

The following is an example of a CEM log in SCC2 format:

info event:

```
58 CSEM600 0069 INFO Log
    Equip Id: 250Q C7SP
    Notification Id: 0000042693
    Category: communications
    Cause: unableToSSTreply
    ComponentId: C7SP
    LogKey: CCS224
    Description:
    "RTPU08AZ| |   | |CCS224|JAN19|13:57:30|8844|INFO|No reply SST Invd CGPA

        SSN  = 100,
        CGPA: VALID    ANSI7  43 0 1 ANSI7 252 050 006
            GTNAME: INVALID  UNKNOWN  208 164 94 00 OCTET
            DIGITS:
    |1106161126"
```

alarm raise or clear:

```
* 00 CSEM300 0083 TBL  Alarm set
      Equip Id: 250Q SDM-0
      Notification Id: 0000042700
      Category: processingError
      Cause: applStatusChange
      ComponentId: SDM-0
      LogKey: SDM550
      Description:
      "RTPU08AZ| |** | |SDM550|JAN19|13:59:04|8861|INFO|Node Status Change
            Node:   SDM 0
            Status:  ** ISTb      from  ** ISTb
            Reason: DCE unavailable alarm
      |1106161220"
```

NTStd

The following is an example of a CEM log in NTStd format:

info event:

```
znc0s0jh     CSEM600 JAN19 13:58:58 0071 INFO Log
      Equip Id: 250Q MPC-1
      Notification Id: 0000042694
      Category: equipment
      Cause: mpcINFO
      ComponentId: MPC-1
      LogKey: MPC101
      Description:
      "RTPU08AZ| |   | |MPC101|JAN19|13:57:43|8845|INFO|MPC_INFORMATION_REPORT
          REASON = 19
            UNABLE TO DOWNLOAD MPC.  FILE-ID NOT FOUND.
            MPC = 1

      |1106161138"
```

alarm raise or clear:

znc0s0jh * CSEM300 JAN19 14:00:20 0083 TBL Alarm set
Equip Id: 250Q SDM-0
Notification Id: 0000042700
Category: processingError
Cause: applStatusChange
ComponentId: SDM-0
LogKey: SDM550
Description:
"RTPU08AZ| |** | |SDM550|JAN19|13:59:04|8861|INFO|Node Status Change
Node: SDM 0
Status: ** ISTb from ** ISTb
Reason: DCE unavailable alarm
|1106161220"

SNMP

The following is an example of a CEM log in SNMP format for **event**:

info event:

sysUpTime. => 1:56:59

snmpTrapOID. => nnExtAlarmMessage

nnExtAlarmMessageResource => .0.0

nnExtAlarmMessageResourceDescription =>
IEMS=250Q@rtpu@47.142.94.68;MPC-1

nnExtAlarmMessageDateAndTime => 2005-1-19,1:58:58.0

nnExtAlarmMessageDocumentationPointer => MPC101

nnExtAlarmMessageInfo => 58 CSEM600 0071 INFO Log

"RTPU08AZ| | |
|MPC101|JAN19|13:57:43|8845|INFO|MPC_INFORMATION_REPORT
REASON = 19

UNABLE TO DOWNLOAD MPC. FILE-ID NOT FOUND.

MPC = 1

|110616

clear alarm:

sysUpTime. => 4:50:21

snmpTrapOID. => nnExtAlarmClear

mib-2. =>
.1.3.6.1.2.1.118.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.11
6.20.50.48.48.53.45.49.45.49.57.44.49.58.53.51.58.53.50.46.48.44.45906

mib-2. => Õ54

mib-2. => DeviceSpecificInfo=;"RTPU08AZ| |** |
|SDM550|JAN19|13:52:37|8807|INFO|Node Status Change

Node: SDM 0

Status: ** ISTb from ** ISTb

Reason: DCE unavailable alarm

|1106160832"

nnExtAlarmActiveEventType => 3

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer =>

nnExtAlarmActiveResourceDescription =>
IEMS=250Q@rtpu@47.142.128.85;

nnExtAlarmActiveSequenceNumber => 4629

minor alarm:

sysUpTime. => 1:58:22

snmpTrapOID. => nnExtAlarmMinor

mib-2. =>
.1.3.6.1.2.1.118.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.11
6.19.50.48.48.53.45.49.45.49.57.44.50.58.48.58.50.48.46.48.44.2

mib-2. => Õ

mib-2. => DeviceSpecificInfo=applStatusChange;"RTPU08AZ| |** |
|SDM550|JAN19|13:59:04|8861|INFO|Node Status Change

Node: SDM 0

Status: ** ISTb from ** ISTb

Reason: DCE unavailable alarm

|1106161220"

nnExtAlarmActiveEventType => 3

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => SDM550

nnExtAlarmActiveResourceDescription =>
IEMS=250Q@rtpu@47.142.94.68;SDM-0

nnExtAlarmActiveManualClear => 2

nnExtAlarmActiveSequenceNumber => 3

major alarm:

sysUpTime. => 4:50:22

snmpTrapOID. => nnExtAlarmMajor

mib-2. =>
.1.3.6.1.2.1.118.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.11
6.19.50.48.48.53.45.49.45.49.57.44.50.58.48.58.50.49.46.48.44.45917

mib-2. => Õ

mib-2. => DeviceSpecificInfo=sdmBaseMaintenance;"RTPU08AZ| |** | |SDM317|JAN19|14:00:19|8862|TBL | SDM Base Maintenance

DCE problem detected

Reason: sec client service failed: Waited for 5 minutes and DCED had

not initia

nnExtAlarmActiveEventType => 3

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => SDM317

nnExtAlarmActiveResourceDescription => IEMS=250Q@rtpu@47.142.128.85;SDM-0

nnExtAlarmActiveManualClear => 4

nnExtAlarmActiveSequenceNumber => 4630

critical alarm:

Syslog

The following is an example of a CEM log in Syslog format:

info event:

Aug 1 18:30:17 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=0444~~ CSEM600 NONE INFO Log^M Equip Id: 250Q C7SP^M Notification Id: 0000048176^M Category: communications^M Cause: unableToSSTreply^M ComponentId: C7SP^M LogKey: CCS224^M Description:^M "RTPU08AZ| | | |CCS224|JAN20|00:32:43|8642|INFO|No reply SST Invd CGPA^M ^M SSN = 100,^M CGPA: VALID ANSI7 43 0 1 ANSI7 252 050 006 ^M GTNAME: INVALID UNKNOWN 208 164 94 00 OCTET ^M DIGITS: ^M |1106199239"

alarm raise or clear:

Aug 1 18:30:27 znc0s0jh IEMS:
_V2_~I=~H=znc0s0jh~A=IEMS~S=0451~~ CSEM300 MINOR TBL Alarm set^M Equip Id: 250Q SDM-0^M Notification Id: 0000048178^M Category: processingError^M Cause: applStatusChange^M ComponentId: SDM-0^M LogKey: SDM550^M Description:^M "RTPU08AZ||**||SDM550|JAN20|00:32:53|8644|INFO|Node Status Change ^M Node: SDM 0^M Status: ** ISTb from ** ISTb ^M Reason: DCE unavailable alarm^M |1106199249"

Performance

OM and PM Documentation references for CEM

- Not supported in SN08

Northbound OM/PM Formats

N/A

GUI/CLUI Documentation for CEM

GUI Launching and User procedures

- Adding a Core Element Manager - Integrated EMS Configuration Management NN10330-511
- Launching a Core Element Manager - Integrated EMS Basics, NN10329-111
- CEM Overview and GUI description - Integrated EMS Basics, NN10329-111

Related documents

- Adding a Core Element Manager - Integrated EMS Configuration Management NN10330-511
- Launching a Core Element Manager - Integrated EMS Basics, NN10329-111
- CEM Logs and OMs - Integrated EMS Fault Management, NN10334-911-
- CEM Overview and GUI description - Integrated EMS Basics, NN10329-111 and Solution-level Configuration or Solution-level Overview (number tbd)
- CEM Restore - Solution level Security and Administration, NN10402-600
- Synchronous Backup Manager procedures - Solution level Security and Administration, NN10402-600

Centrex IP Call Manager (CICM)

This section contains IEMS Northbound log samples and device documentation references for the CICM.

CICM Fault Interface

Fault documentation for CICM :

- NN10334-911-- IEMS Fault Management

Fault Mapping for CICM

The following criteria can be used for looking up information on specific faults for CICM.

Fault Correlation for CICM

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
CICM	logname and number	logname and number	logname and number	logname and number	NN10334-911 - IEMS Fault Management

Northbound Fault Formats for CICM

SCC2

The following is an example of a CICM log in SCC2 format:

* 02 CICM359 0001 FLT CICM Fault

Location: 47.165.168.120

Notification Id: 7

State: Raised

Category: equipment

Cause: equipmentMalfunction(15)

Time: Jun 17 09:02:08 2004

Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Card;Card=7

Specific Problem: Card 7 has an alarm.

Description: Card Alarm

?

**02 CICM500 0002 FLT CICM Fault

Location: 47.165.168.120

Notification Id: 5

State: Raised

Category: equipment

Cause: unspecifiedReason(118)

Time: Jun 17 09:02:08 2004

Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Chassis

Specific Problem: Chassis card state change report for slot 7 in state

1

Description: Chassis Card State Change

?

**02 CICM339 0003 FLT CICM Fault

Location: 47.165.168.120

Notification Id: 6

State: Raised

Category: equipment

Cause: lANError(25)

Time: Jun 17 09:02:13 2004

Component Id: CICM=CICM-120A;NodeType=Cicm

Specific Problem: Have not received a message from Node B for 1.5*ALARM

_POLL_PERIOD Seconds. CPU_CARD_DOMAIN_A

Description: No Message Received From B

NTSTD

The following is an example of a CICM log in NTSTD format:

```
test   * CICM359 JUN17 09:02:08 0004 FLT  CICM Fault
         Location: 47.165.168.120
         Notification Id: 7
         State: Raised
         Category: equipment
         Cause: equipmentMalfunction(15)
         Time: Jun 17 09:02:08 2004
         Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Card;Card=7
```

```
        Specific Problem:  Card 7 has an alarm.
        Description: Card Alarm


test  ** CICM500 JUN17 09:02:08 0005 FLT  CICM Fault
        Location: 47.165.168.120
        Notification Id: 5
        State: Raised
        Category: equipment
        Cause: unspecifiedReason(118)
        Time: Jun 17 09:02:08 2004
        Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Chassis
        Specific Problem:  Chassis card state change report for slot 7 in state
        1
        Description: Chassis Card State Change


test  ** CICM339 JUN17 09:02:13 0006 FLT  CICM Fault
        Location: 47.165.168.120
        Notification Id: 6
        State: Raised
        Category: equipment
        Cause: lANError(25)
        Time: Jun 17 09:02:13 2004
        Component Id: CICM=CICM-120A;NodeType=Cicm
        Specific Problem:  Have not received a message from Node B for 1.5*ALARM
        _POLL_PERIOD Seconds. CPU_CARD_DOMAIN_A
        Description: No Message Received From B
```

SNMP

The following is an example of a CICM log in SNMP format:

```
sysUpTime. => 19:40:36
snmpTrapOID. => nnExtAlarmClear
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.50.57.44.49.48.58.50.57.58.48.46.51.44.11927
alarmActiveDateAndTime => 2004-6-29,10:29:0.3
alarmActiveDescription => DeviceSpecificInfo=lANError(25);Location: 47.165.168.120
Notification Id: 6
```

State: Raised

Category: equipment

Cause: lANError(25)

Time: Jun 17 09:02:13 2004

Component Id: CICM=CICM-120A;NodeType=Cicm

Specific Problem: Have not received a message from Node B for 1.5*ALARM_POLL_PERIOD Seconds. CPU_CARD_DOMAIN_A

Description: No Message Received From B

nnExtAlarmActiveEventType => 4

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => CICM339

nnExtAlarmActiveResourceDescription => IEMS=47.165.168.120-CICM_Card_A;CICM=CICM-120A;NodeType=Cicm

nnExtAlarmActiveSequenceNumber => 1

sysUpTime. => 19:40:37

snmpTrapOID. => nnExtAlarmClear

alarmActiveResourceId => .1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48.48.52.45.54.45.50.57.44.49.48.58.50.57.58.48.46.52.44.11925

alarmActiveDateAndTime => 2004-6-29,10:29:0.4

alarmActiveDescription => DeviceSpecificInfo=equipmentMalfunction(15);Location: 47.165.168.120

Notification Id: 7

State: Raised

Category: equipment

Cause: equipmentMalfunction(15)

Time: Jun 17 09:02:08 2004

Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Card;Card=7

Specific Problem: Card 7 has an alarm.

Description: Card Alarm

nnExtAlarmActiveEventType => 4

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => CICM359

nnExtAlarmActiveResourceDescription => IEMS=47.165.168.120-CICM_Card_A;CICM=CICM-120A;NodeType=Cicm;Component=Card;Card=7

```
nnExtAlarmActiveSequenceNumber => 2


sysUpTime. => 19:40:37

snmpTrapOID. => nnExtAlarmClear

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.50.57.44.49.48.58.50.57.58.48.46.53.44.11926

alarmActiveDateAndTime => 2004-6-29,10:29:0.5

alarmActiveDescription => DeviceSpecificInfo=unspecifiedReason(118);Location:
47.165.168.120

Notification Id: 5

State: Raised

Category: equipment

Cause: unspecifiedReason(118)

Time: Jun 17 09:02:08 2004

Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Chassis

Specific Problem:  Chassis card state change report for slot 7 in state 1

Description: Chassis Card State Change


nnExtAlarmActiveEventType => 4

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => CICM500

nnExtAlarmActiveResourceDescription => IEMS=47.165.168.120-CICM_Card_A;CICM=CICM-
120A;NodeType=Cicm;Component=Chassis

nnExtAlarmActiveSequenceNumber => 3


sysUpTime. => 19:40:48

snmpTrapOID. => nnExtAlarmMinor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.18.50.48
.48.52.45.54.45.49.55.44.57.58.50.58.56.46.48.44.11934

alarmActiveDateAndTime => 2004-6-17,9:2:8.0

alarmActiveDescription => DeviceSpecificInfo=equipmentMalfunction(15);Location:
47.165.168.120

Notification Id: 7

State: Raised

Category: equipment

Cause: equipmentMalfunction(15)

Time: Jun 17 09:02:08 2004

Component Id: CICM=CICM-120A;NodeType=Cicm;Component=Card;Card=7
```

```
Specific Problem:  Card 7 has an alarm.
Description: Card Alarm


nnExtAlarmActiveEventType => 4
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => CICM359
nnExtAlarmActiveResourceDescription => IEMS=47.165.168.120-CICM_Card_A;CICM=CICM-
120A;NodeType=Cicm;Component=Card;Card=7
nnExtAlarmActiveManualClear => 1
nnExtAlarmActiveSequenceNumber => 4
```

Syslog

The following is an example of a CICM log in Syslog format:

Jun 29 10:40:34 2004 ComponentId: 47.165.168.74-CICM-Mgr_Card_B Specific Problem: Connection Lost Description: IEMS Unable to communicate with managed device

Jun 29 10:50:40 2004 ComponentId: 47.165.168.120-CICM_Card_A Description: IEMS regained communication with the managed device

Performance

OM and PM Documentation references for CICM

- N10327-711 - IEMS Performance Management

Northbound OM/PM Formats

Performance measurements for CICM are available only from the CICM Manager interface. See NN10327-711 - IEMS Performance Management for more information.

XML

The following is an example of Performance data for CICM in XML format:

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>

- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance" xsi:noNamespaceSchemaLocation="**commonFormat.xsd**" MeasurementCategory="**PM**">

<FileCreationTime>2004-06-23T12:30:00EST</FileCreationTime>

- <System>

<SystemId>NortelNetworks/IEMS</SystemId>

- <Entity Type="**CICM**">

<EntityId>47.165.168.120</EntityId>

- <Table MeasurementKind="**Snapshot**" IntervalDuration="**5**">

<TableId>.iso.org.dod.internet.mgmt.mib-2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry</TableId>
<CaptureTime>2004-06-23T12:25:01EST</CaptureTime>
- <Labels>
<Label>usrHistoryControlInterval</Label>
<Label>usrHistoryControlIndex</Label>
<Label>usrHistoryControlStatus</Label>
<Label>usrHistoryControlOwner</Label>
</Labels>
- <RowOfValues>
- <RowValue>
<Value>900</Value>
</RowValue>
- <RowValue>
<Value>5</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM-120A</Value>
</RowValue>
</RowOfValues>
</Table>
</Entity>
</System>
</PMFile>

CSV

PMFile=Begin

PM,commonFormat.xsd,2004-06-23T13:01:14EST

System=Begin

NortelNetworks/IEMS

Entity=Begin

47.165.168.120,CICM

Table=Begin

.iso.org.dod.internet.mgmt.mib-2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry,Snapshot,5,2004-06-23T13:00:00EST

usrHistoryControlInterval,usrHistoryControlIndex,usrHistoryControlStatus,usrHistoryControlOwner

900,5,1,CICM-120A

Table=End

Table=Begin

.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPerfRefMIB.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry,Snapshot,5,2004-06-23T13:00:02EST

nnPerfMetricValue,nnPerfMetricSources,nnPerfMetricDataType,nnPerfMetricGroup,nnPerfMetricName,nnPerfMetricRefIndex

0,2,1,CICM,ActiveConnections,5

0,2,1,CICM,PercentageCpuUsed,4

0,2,1,CICM,PercentageMemoryUsed,3

0,2,1,CICM,NumberOfLogs,2

0,2,1,CICM,ActiveSessions,1

Table=End

Entity=End

System=End

PMFile=End

GUI/CLUI Documentation for CICM

GUI Launching and User procedures

Related documents

Passport 8600

This section contains IEMS Northbound log samples and device documentation references for the Passport 8600.

Passport 8600 Fault Interface

Fault documentation for Passport 8600 :

- 241-6001-502 MDM Device Alarms Reference Guide
- 241-6003-110 - Passport 8600 Device Integration Cartridge User Guide

Fault Mapping for Passport 8600

The following criteria can be used for looking up information on specific faults for Passport 8600.

Fault Correlation for Passport 8600

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Passport 8600	logname and number	logname and number	logname and number	logname and number	241-6003-110 - Passport 8600 Device Integration Cartridge User Guide

Northbound Fault Formats for Passport 8600

SCC2

The following is an example of a Passport 8600 log in SCC2 format:

```
**59 PP  330 0010 TBL  PP Fault
        Location: pp8600;47.142.106.1
        State: Raised
        Category: equipment
        Cause: Link Oscillation detected
        Time: Aug 09 15:59:14 2004
```

```
        Component ID: PP8600=47.142.106.1; portIndex=198
        Specific Problem: RC Link Oscillation
        Description: LinkOscillation: portIndex = 198
        .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.4.1.2272.1.21.0.8
        .1.3.6.1.2.1.1.3.0: 50 days, 17 hours, 4 minutes, 39 seconds.


  03 PP  318 0011 INFO PP Fault
        Location: pp8600;47.142.106.1
        State: Cleared
        Category: communications
        Cause: communication regained
        Time: Aug 09 16:03:38 2004
        Component ID: PP8600=47.142.106.1; ifIndex=89
        Specific Problem: Generic Link Status
        Description: Link Up: ifIndex = 89( AdminStatus = up OperationStatus = u
        p)
        .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.6.3.1.1.5.4.0
        .1.3.6.1.2.1.1.3.0: 50 days, 17 hours, 9 minutes, 3 seconds
```

NTSTD

The following is an example of a Passport 8600 log in NTSTD format:

```
MY_OFFICE  **   PP330 AUG09 15:59:14 0010 TBL  PP Fault
        Location: pp8600;47.142.106.1
        State: Raised
        Category: equipment
        Cause: Link Oscillation detected
        Time: Aug 09 15:59:14 2004
        Component ID: PP8600=47.142.106.1; portIndex=198
        Specific Problem: RC Link Oscillation
        Description: LinkOscillation: portIndex = 198
        .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.4.1.2272.1.21.0.8
        .1.3.6.1.2.1.1.3.0: 50 days, 17 hours, 4 minutes, 39 seconds.


MY_OFFICE       PP318 AUG09 16:03:38 0011 INFO PP Fault
        Location: pp8600;47.142.106.1
```

```
State: Cleared
Category: communications
Cause: communication regained
Time: Aug 09 16:03:38 2004
Component ID: PP8600=47.142.106.1; ifIndex=89
Specific Problem: Generic Link Status
Description: Link Up: ifIndex = 89( AdminStatus = up OperationStatus = u
p)
.1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.6.3.1.1.5.4.0
.1.3.6.1.2.1.1.3.0: 50 days, 17 hours, 9 minutes, 3 seconds.
```

SNMP

The following is an example of a Passport 8600 log in SNMP format:

```
sysUpTime.0 => 2:55:28
snmpTrapOID.0 => nnExtAlarmMajor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.19.50.48
.48.52.45.50.45.52.44.53.58.53.56.58.52.54.46.54.44.90024
alarmActiveDateAndTime => 2004-2-4,5:58:46.6
alarmActiveDescription => DeviceSpecificInfo=;Link Down: ifIndex = 175 ( AdminStatus
= down OpeationStatus = down )
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => PP  398
nnExtAlarmActiveResourceDescription => IEMS=47.142.130.66-PP8600;3
nnExtAlarmActiveSequenceNumber => 2709
```

Syslog

The following is an example of a Passport 8600 log in Syslog format:

```
Aug  9 15:58:57 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=3342~~   PP317 MAJOR TBL
PP Fault^M      Location: pp8600;47.142.106.1^M      State: Raised^M      Category:
com
munications^M     Cause: loss of communication^M     Time: Aug 09 15:58:56 2004^M
Component ID: PP8600=47.142.106.1; ifIndex=89^M        Specific Problem: Generic Li
nk Status^M       Description: Link Down: ifIndex = 89( AdminStatus = down
OperationStatus^M         = down)^M        .1.3.6.1.6.3.1.1.4.1.0:
.1.3.6.1.6.3.1.1.5.3.0^M        .1.
```

```
3.6.1.2.1.1.3.0: 50 days, 17 hours, 4 minutes, 22 seconds.


Aug  9 15:59:14 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=3343~~   PP318 NONE INFO
PP Fault^M      Location: pp8600;47.142.106.1^M      State: Cleared^M      Category:
co

mmunications^M        Cause: communication regained^M        Time: Aug 09 15:59:14
2004^M      Component ID: PP8600=47.142.106.1; ifIndex=198^M       Specific Problem:
Generic

 Link Status^M        Description: Link Up: ifIndex = 198( AdminStatus = up
OperationStatus = ^M     up)^M     .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.6.3.1.1.5.4.0^M
.1.3.

6.1.2.1.1.3.0: 50 days, 17 hours, 4 minutes, 39 seconds.
```

Performance

OM and PM Documentation references for Passport 8600

Not available at time of publication

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance for Passport 8600 in XML format:

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>

- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance" xsi:noNamespaceSchemaLocation="**commonFormat.xsd**" MeasurementCategory="**PM**">

<FileCreationTime>2004-06-23T17:35:01EST</FileCreationTime>

- <System>

<SystemId>NortelNetworks/IEMS</SystemId>

- <Entity Type="**PP8600**">

<EntityId>47.142.130.66</EntityId>

- <SingleValues MeasurementKind="**Snapshot**" IntervalDuration="**5**">

- <SingleValue>

<CaptureTime>2004-06-23T17:30:01EST</CaptureTime>

<MeasureId>snmpInvalidMsgs</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.snmpV2.snmpModules.snmpMPDMIB.snmpMPDMIBObjects.snmpMPDStats</MeasureSuppId1>

<Value>0</Value>

<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:01EST</CaptureTime>
<MeasureId>snmpOutPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>311026</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:01EST</CaptureTime>
<MeasureId>snmpOutTraps</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:01EST</CaptureTime>
<MeasureId>snmpInTotalSetVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>15</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:02EST</CaptureTime>
<MeasureId>snmpInPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>320467</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:03EST</CaptureTime>
<MeasureId>snmpInTotalReqVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>1412075</Value>
<Reliability>Valid</Reliability>

</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:03EST</CaptureTime>
<MeasureId>snmpInASNParseErrs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>2</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:03EST</CaptureTime>
<MeasureId>snmpInBadVersions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:30:04EST</CaptureTime>
<MeasureId>snmpInBadCommunityUses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>

CSV

The following is an example of Performance for Passport 8600 in CSV format:

```
PMFile=Begin
PM,commonFormat.xsd,2004-06-23T17:25:00EST

System=Begin
NortelNetworks/IEMS
```

```
Entity=Begin
47.142.130.66,PP8600


Table=Begin
.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcStat.rcStatTable.rcStat
Entry,Snapshot,5,2004-06-23T17:20:15EST
rcStatFrameTooShorts,rcStatStgForwardTransitions,rcStatRouteInDiscards,rcStatBridgeI
nDiscards
0,0,0,0
0,0,0,0
253,0,0,0
0,0,0,0
74,0,0,0
0,0,0,0
0,0,0,0
560,0,0,0
591,0,0,0
544,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
566,0,0,0
0,0,0,0
0,0,0,0
208,0,0,0
698,0,0,0
586,0,0,0
0,0,0,0
547,0,0,0
537,0,0,0
582,0,0,0
553,0,0,0
28,0,0,0
582,0,0,0
173,0,0,0
574,0,0,0
544,0,0,0
544,0,0,0
0,0,0,0
```

```
0,0,0,0
563,0,0,0
558,0,0,0
589,0,0,0
513,0,0,0
575,0,0,0
350,0,0,0
0,0,0,0
45,0,0,0
0,0,0,0
552,0,0,0
0,0,0,904
0,0,0,577
8,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,1678
669,0,0,0
0,0,0,0
0,0,0,0
0,0,0,30614
1,0,0,15253
0,0,0,0
0,0,0,0
0,0,0,0
13,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
17,0,0,0
0,0,0,0
```

```
49,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,1911
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
556,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
283,0,0,0
Table=End


Table=Begin
.iso.org.dod.internet.mgmt.mib-2.ospf.ospfIfTable.ospfIfEntry,Snapshot,5,2004-06-
23T17:20:14EST
ospfIfEvents
9
```

```
1

3

1

5

1

1

Table=End



Table=Begin

.iso.org.dod.internet.mgmt.mib-2.ospf.ospfNbrTable.ospfNbrEntry,Snapshot,5,2004-06-
23T17:20:14EST

ospfNbrEvents,ospfNbrIpAddr

5,47.142.130.67

Table=End



SingleValues=Begin

Snapshot,5

snmpInvalidMsgs,2004-06-
23T17:20:13EST,.iso.org.dod.internet.snmpV2.snmpModules.snmpMPDMIB.snmpMPDMIBObjects
.snmpMPDStats,0,Valid

snmpOutPkts,2004-06-23T17:20:13EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,310853,Valid

snmpOutTraps,2004-06-23T17:20:13EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInTotalSetVars,2004-06-23T17:20:13EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,15,Valid

snmpInPkts,2004-06-23T17:20:13EST,.iso.org.dod.internet.mgmt.mib-2.snmp,320294,Valid

snmpInTotalReqVars,2004-06-23T17:20:13EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,1411445,Valid

snmpInASNParseErrs,2004-06-23T17:20:14EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,2,Valid

snmpInBadVersions,2004-06-23T17:20:14EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid

snmpInBadCommunityUses,2004-06-23T17:20:14EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid

rcSysBufferUtilPeakTime,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,0
,Valid

rcSysSwitchFabricUtil,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,0
,Valid
```

```
rcSysNVRamUsed,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,0
,Valid

rcSysBufferUtilPeak,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,0
,Valid

rcSysCpuUtil,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,9
,Valid

rcSysBufferUtil,2004-06-
23T17:20:14EST,.iso.org.dod.internet.private.enterprises.rapidCity.rcMgmt.rcSystem,0
,Valid

SingleValues=End


Entity=End


System=End


PMFile=End
```

GUI/CLUI Documentation for Passport 8600

GUI Launching and User procedures

- 316341-B Rev 00 - Installing and Using Device Manager
- 314723-B - Configuring Network Management

Related documentation

- 314724-B - Configuring and Managing Security
- 314997-B - Read Me for Security
- 316341-A - Installing and Using Device Manager
- 313189-C - Getting Started
- 315545-B - Managing Platform Operations and Using Diagnostics Tools
- 314723-B - Configuring Network Management
- 314721-B - Configuring BGP Services
- 316433-B - Configuring QoS and IP Filtering
- 314720-C - Configuring IP Routing Operations
- 314725-B - Configuring Layer 2 Operations: "VLANs," Spanning "Tree," Multilink Trunking
- 314719-B - Configuring IP Multicast Routing Protocols

- 316343-A - Configuring IGMP for User Authentication (IGAP)
- 314722-A - Configuring IPX Routing Operations
- 314995-A - Configuring the Web Switching Module with Device Manager
- 316350-A - Using the SSL acceleration module with the Web switching module for the 8600 Series switch
- 315015-B - System Messaging Platform Reference Guide
- 315023-B - Using the Packet Capture Tool

Gateway Controller (GWC)

This section contains IEMS Northbound log samples and device documentation references for the GWC.

GWC Fault Interface

Fault documentation for GWC :

- NN10090-911 - GWC Fault Management

Fault Mapping for GWC

The following criteria can be used for looking up information on specific faults for GWC.

Fault Correlation for GWC

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
GWC	logname and number	logname and number	logname and number	logname and number	NN10090-911 GWC Fault Management

Northbound Fault Formats for GWC

SCC2

The following is an example of a GWC log in SCC2 format:

```
**14 GWC 307 7250 TBL  GWC Fault
        Location: GWC-2-UNIT-0
```

```
        NotificationID: 4
        State: Raise
        Category: Communications
        Cause: Communications subsystem failure
        Time: Jan 23 15:15:59 2004
        Component Id: GWC=GWC-2-UNIT-0;Version=PGC92BA;Unit=unit_0;Software=NODE
        MTC
        Specific Problem: EM not responding, provisioned data loaded from local
        Flash
        Description: Element Manager communication failure.
```

NTSTD

The following is an example of a GWC log in NTSTD format:

```
COMPACT06BT  **  GWC307 Jan23 20:14:38 7250 TBL  GWC Fault
        Location: GWC-2-UNIT-0
        NotificationID: 4
        State: Raise
        Category: Communications
        Cause: Communications subsystem failure
        Time: Jan 23 15:15:59 2004
        Component Id: GWC=GWC-2-UNIT-0;Version=PGC92BA;Unit=unit_0;Software=NODE
        MTC
        Specific Problem: EM not responding, provisioned data loaded from local
        Flash
        Description: Element Manager communication failure.
```

SNMP

The following is an example of a GWC log in SNMP format:

```
system.sysUpTime.0 => 23:10:15
snmpTrapOID.0 => nnExtAlarmMajor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.51.44.51.58.49.52.58.51.56.46.48.44.42848
alarmActiveDateAndTime => 2004-1-23,3:14:38.0,
alarmActiveDescription => DeviceSpecificInfo=;Location: GWC-2-UNIT-0 NotificationID:
4
```

```
State: Raise

Category: Communications

Cause: Communications subsystem failure

Time: Jan 23 15:15:59 2004

Component Id: GWC=GWC-2-UNIT-0;Version=PGC92BA;Unit=unit_0;Software=NODEMTC

Specific Problem: EM not responding, provisioned data loaded from local Flash

Description: Element Manager communication failure.

nnExtAlarmActiveEventType => 5

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => GWC 307

nnExtAlarmActiveResourceDescription => IEMS=znc0s0j6;GWC=GWC-2-UNIT-
0;Version=PGC92BA;Unit=unit_0;Software=NODE

nnExtAlarmActiveManualClear => 0

nnExtAlarmActiveSequenceNumber => 9028
```

Syslog

The following is an example of a GWC log in Syslog format:

```
Feb 23 15:15:56 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=7307~~  GWC307 MAJOR TBL
GWC Fault^M        Location: GWC-2-UNIT-0^M        NotificationID: 4^M        State:
Raise^M        Category: Communications^M        Cause: Communications subsystem
failure^M        Time: Jan 23 15:15:59 2004^M        Component Id: GWC=GWC-2-UNIT-
0;Version=PGC92BA;Unit=unit_0;Software=NODE^M       MTC^M       Specific Problem: EM
not responding, provisioned data loaded from local^M       Flash^M       Description:
Element Manager communication failure.^M
```

Performance

OM and PM Documentation references for GWC

- NN10156-711 - GWC Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for GWC in XML format:

```
<TableId>.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPe
rfRefMIB.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry</TableId>

<CaptureTime>2004-12-15T00:11:58EST</CaptureTime>
```

- <Labels>
<Label>nnPerfMetricRefIndex</Label>
<Label>nnPerfMetricName</Label>
<Label>nnPerfMetricGroup</Label>
<Label>nnPerfMetricDataType</Label>
<Label>nnPerfMetricSources</Label>
<Label>nnPerfMetricValue</Label>
</Labels>
- <RowOfValues>
- <RowValue>
<Value>13</Value>
</RowValue>
- <RowValue>
<Value>Peer connections attempted during interval</Value>
</RowValue>
- <RowValue>
<Value>Measurement</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>2937</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>4</Value>
</RowValue>
- <RowValue>
<Value>Total Gateways Provisioned</Value>
</RowValue>
- <RowValue>
<Value>Measurement</Value>
</RowValue>

- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>10</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>12</Value>
</RowValue>
- <RowValue>
<Value>Peer connections completed during interval</Value>
</RowValue>
- <RowValue>
<Value>Measurement</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>2936</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>11</Value>
</RowValue>
- <RowValue>
<Value>Peer connections failed during interval</Value>
</RowValue>
- <RowValue>

```
<Value>Communications</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>Large GWs in Disabled State</Value>
</RowValue>
- <RowValue>
<Value>Communications</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>8</Value>
</RowValue>
</RowOfValues>
</Table>
```

CSV

The following is an example of performance data for GWC in CSV format:

Note: *The IEMS northbound performance interface does not support this device..*

GUI/CLUI Documentation for GWC

GUI Launching and User procedures

- NN10026-111 - GWC Basics
- NN10112-511 - GWC Configuration Management
- NN10178-611 - GWC Security and Administration

Related documents

Integrated EMS (IEMS)

IEMS Fault Interface

This section will provide references to customer documentation for Fault, Performance, Topology, GUI/CLUI, and Security for the IEMS managed object.

Fault documentation for IEMS :

- NN10275-909v3: Succession Fault Management Logs Reference Vol. 3
- NN10334-911: Integrated EMS Fault Management

Fault Mapping for IEMS

The following criteria can be used for looking up information on specific faults for IEMS.

Table 1 Fault Correlation for IEMS

NB format -> Device/EM	SCC2	NTStd	SNMP	Syslog	Document Reference
IEMS	Log name and log number (Log Names: EMSS, IEMS, EMJS)	Log name and log number (Log Names: EMSS, IEMS, EMJS)	Log name and log number (Log Names: EMSS, IEMS, EMJS)	Log name and log number (Log Names: EMSS, IEMS, EMJS)	NN10275-909v3

Northbound Fault Formats for IEMS

SCC2

The following is an example of a IEMS log in SCC2 format:

Sample Raise:

*C55 IEMS398 0006 FLT Communication Lost
Location: 47.142.94.68
NotificationID: 0
State: Raised
Category: Communications
Cause: Communications subsystem failure
Time: Dec 13 13:55:15 2004
ComponentId: znc0s0jh-SSPFS-Unit-0
Specific Problem: Connection Lost
Description: IEMS Unable to communicate with managed device

Sample Clear:

55 IEMS399 0007 FLT Communication Regained
Location: 47.142.94.68
NotificationID: 0
State: Cleared
Category: Communications
Time: Dec 13 13:55:22 2004
ComponentId: znc0s0jh-SSPFS-Unit-0
Description: IEMS regained communication with the managed device

NTStd

The following is an example of a IEMS log in NTStd format:

Sample Raise:

office_name *** IEMS398 DEC13 13:55:15 0006 FLT Communication Lost
Location: 47.142.94.68
NotificationID: 0
State: Raised
Category: Communications
Cause: Communications subsystem failure
Time: Dec 13 13:55:15 2004
ComponentId: znc0s0jh-SSPFS-Unit-0
Specific Problem: Connection Lost
Description: IEMS Unable to communicate with managed device

Sample Clear:

office_name IEMS399 DEC13 13:55:22 0007 FLT Communication Regained
Location: 47.142.94.68
NotificationID: 0
State: Cleared

Category: Communications
Time: Dec 13 13:55:22 2004
ComponentId: znc0s0jh-SSPFS-Unit-0
Description: IEMS regained communication with the managed device

SNMP

The following is an example of a IEMS log in SNMP format:

Sample Raise:

system.sysUpTime.0 => 7:01:55
snmpTrapOID.0 => nnExtAlarmMajor
alarmActiveResourceId =>
.1.3.6.1.2.1.118.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.19.50.48
.48.52.45.49.50.45.49.51.44.50.58.52.58.56.46.51.44.649
alarmActiveDateAndTime => 2004-12-13,2:4:8.3,
alarmActiveDescription => IEMS Unable to communicate with managed device
nnExtAlarmActiveEventType => 1
nnExtAlarmActiveProbableCause => 6
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => IEMS398
nnExtAlarmActiveResourceDescription => IEMS=IEMS-Mgr;znc0s0jh-SSPFS-Unit-0
nnExtAlarmActiveManualClear => 2
nnExtAlarmActiveSequenceNumber => 7

Sample Clear:

system.sysUpTime.0 => 7:01:55
snmpTrapOID.0 => nnExtAlarmClear
alarmActiveResourceId =>
.1.3.6.1.2.1.118.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48.48.52.45.49.50.45.49.51.44.50.58.52.5
8.50.50.46.48.44.649
alarmActiveDateAndTime => 2004-12-13,2:4:22.0,
alarmActiveDescription => DeviceSpecificInfo=;IEMS regained communication with the managed device
nnExtAlarmActiveEventType => 1
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => IEMS399
nnExtAlarmActiveResourceDescription => IEMS=IEMS-Mgr;znc0s0jh-SSPFS-Unit-0
nnExtAlarmActiveSequenceNumber => 8

Syslog

The following is an example of a IEMS log in Syslog format:

Sample Raise:

Dec 13 13:55:15 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=4093~~ IEMS398 CRIT FLT Communication Lost^M Location: 47.142.94.68^M NotificationID: 0^M State: Raised^M Category: Communications^M Cause: Communications subsystem failure^M Time: Dec 13 13:55:15 2004^M ComponentId: znc0s0jh-SSPFS-Unit-0^M Specific Problem: Connection Lost^M Description: IEMS Unable to communicate with managed device

Sample Clear:

Dec 13 13:55:22 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=4094~~ IEMS399 NONE FLT Communication Regained^M Location: 47.142.94.68^M NotificationID: 0^M State: Cleared^M Category: Communications^M Time: Dec 13 13:55:22 2004^M ComponentId: znc0s0jh-SSPFS-Unit-0^M Description: IEMS regained communication with the managed device

Performance

OM and PM Documentation references for IEMS

•

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

CSV

The following is an example of Performance data for IEMS in CSV format:

PMFile=Begin

MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime

PM,commonFormat.xsd,2004-12-13T13:02:14EST

System=Begin

SystemId

NortelNetworks/IEMS

Entity=Begin

EntityId,Type

47.142.94.68,IEMS

Table=Begin

TableId,MeasurementKind,IntervalDuration,CaptureTime

thirtyMinCollectionJobTable,Snapshot,30,2004-12-13T13:02:05EST

Label,Label,Label,Label

thirtyMinCollectionJobID,thirtyMinCollectionJobName,thirtyMinCollection JobStartTime,thirtyMinCollectionJobExecutionTime

Value,Value,Value,Value

1,iems_collect,1102960860226,2676

Table=End

Table=Begin

TableId,MeasurementKind,IntervalDuration,CaptureTime

tableSpaceTable,Snapshot,30,2004-12-13T13:02:04EST

Label,Label,Label

tableSpaceName,usedTableSpaceInBytes,usedTableSpaceInPercent

Value,Value,Value

IEMS_TS,18808832,3

IEMS_EVENT_TS,5963776,1

IEMS_PERF_TS,1835008,0

Table=End

Table=Begin

TableId,MeasurementKind,IntervalDuration,CaptureTime

deviceEventRateTable,Snapshot,30,2004-12-13T13:02:04EST

Label,Label,Label,Label

deviceID,deviceName,eventRate,eventRateDetails

Value,Value,Value,Value

2,znc0s0tm.us.nortel.com-GWC-Mgr,1,106 events received in 61480 milliseconds.

1,SNMP,0,2 events received in 61480 milliseconds.

Table=End

SingleValues=Begin

MeasurementKind,IntervalDuration

Snapshot,30

MeasureId,CaptureTime,MeasureSuppId1,Value,Reliability

systemRestartCount,2004-12-13T13:02:03EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.system,3,Valid

numOfActiveClients,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.client,3,Valid

numOfEventsFromUnknownCustlogDevices,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,0,Valid

eventQueueSize,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,0,Valid

numOfEventsFromUnknownSNMPDevices,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,2,Valid

avgEventThroughputRate,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,1,Valid

numOfEventsFromUnknownDevices,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,2,Valid

maxEventThroughputRate,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,5,Valid

numOfDiscardedEvents,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,0,Valid

numOfEvents,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,6036,Valid

numOfEventsAdded,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.event,111,Valid

numOfAlarmsCleared,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,0,Valid

numOfMajorAlarms,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,28,Valid

numOfWarningAlarms,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri

cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,0,Valid

numOfCriticalAlarms,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,48,Valid

numOfAlarmsAdded,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,106,Valid

numOfMinorAlarms,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,7,Valid

numOfActiveAlarms,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.fault.alarms,83,Valid

numOfDBCleanUpPolicyExecutions,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.database,0,Valid

numOfAttributesCollected,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,3796,Valid

numOfReportsJobsProvisioned,2004-12-13T13:02:04EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,0,Valid

numOfTransferJobsProvisioned,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,0,Valid

numOfCollectionJobsProvisioned,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,0,Valid

numOfAttributesCollectedOverThisInterval,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,2992,Valid

numOfFailedReportJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance,0,Valid

numOf24HrSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,0,Valid

numOf30MinSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,1,Valid

numOf12HrSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,0,Valid

numOf15MinSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,0,Valid

numOf60MinSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,0,Valid

numOf5MinSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.successfulCollectionJobs,0,Valid

numOf15MinPartialSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.partialSuccessfulCollectionJobs,0,Valid

numOf60MinPartialSuccessfulJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri

cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.partialSuccessfulCollectionJobs,0,Valid

numOf5MinPartialSuccessfulJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.partialSuccessfulCollectionJobs,0,Valid

numOf24HrPartialSuccessfulJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.partialSuccessfulCollectionJobs,0,Valid

numOf30MinPartialSuccessfulJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.partialSuccessfulCollectionJobs,0,Valid

numOf12HrPartialSuccessfulJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.partialSuccessfulCollectionJobs,0,Valid

numOf24HrFailedCollectionJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.failedCollectionJobs,0,Valid

numOf30MinFailedCollectionJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.failedCollectionJobs,0,Valid

numOf12HrFailedCollectionJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.failedCollectionJobs,0,Valid

numOf15MinFailedCollectionJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.failedCollectionJobs,0,Valid

numOf60MinFailedCollectionJobs,2004-12-
13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri
cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.
performance.failedCollectionJobs,0,Valid

numOf5MinFailedCollectionJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedCollectionJobs,0,Valid

numOf24HrFailedTransferJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOf30MinFailedTransferJobs,2004-12-13T13:02:05EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOf12HrFailedTransferJobs,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOf15MinFailedTransferJobs,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOf60MinFailedTransferJobs,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOf5MinFailedTransferJobs,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.performance.failedTransferJobs,0,Valid

numOfManagedObjects,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology,47,Valid

numOfDevicesInUnManagedState,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology,3,Valid

numOfAddedManagedObjects,2004-12-13T13:02:06EST,.iso.org.dod.internet.private.enterprises.nortel.nortelGeneri

cMIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology,0,Valid

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<Reliability>Valid</Reliability>

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<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

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<Reliability>Valid</Reliability>

</SingleValue>

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<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfAddedManagedObjects</MeasureId>

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<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfDevicesInUnKnownState</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

<Value>8</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfUnKnownDeviceStateTransistions</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfdeletedManagedObjects</MeasureId>

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<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfDevicesInThrottledState</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfSystemUnManagedDeviceStateTransistions</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

<SingleValue>

<CaptureTime>2004-12-13T13:05:55EST</CaptureTime>

<MeasureId>numOfDevicesInSystemUnManagedState</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.nortelGeneric MIBs.nortelNetworkManagementInterfaceMIBs.operationalMeasurements.topology</MeasureSuppId1>

<Value>0</Value>

<Reliability>Valid</Reliability>

</SingleValue>

</SingleValues>

</Entity>

</System>

</PMFile>

GUI/CLUI Documentation for IEMS

GUI Launching and User procedures

- NN10329-111: Integrated EMS Basics

Related documents

- NN10334-911: Integrated EMS Fault Management
- NN10330-511: Integrated EMS Configuration Management
- NN10327-711: Integrated EMS Performance Management
- NN10336-611: Integrated EMS Security and Administration

Media Application Server (MAS)

MAS Fault Interface

This section will provide references to customer documentation for Fault, Performance, Topology, GUI/CLUI, and Security for MAS.

Fault documentation for MAS :

- NN10303-111 - MCP 2.0 MAS Meetme Basics
- NN10297-111 - MCP 2.0 MAS Adhoc Basics

Fault Mapping for MAS

The following criteria can be used for looking up information on specific faults for MAS.

Fault Correlation for MAS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MAS	Event Id Logname and Log number	Event Id Logname and Log number	Event Id Logname and Log number	Event Id Logname and Log number	NN10303-111 MCP 2.0 MAS Meetme Basics NN10297-111 MCP 2.0 MAS Adhoc Basics

Northbound Fault Formats for MAS

SCC2

The following is an example of a MAS log in SCC2 format:

```
*C00 MAS 330 2515 FLT  Fault
        Location: 47.104.11.120
        Notification Id: 1001
        State: Raised
        Category: processingError
        Cause: applicationSubsystemFailure
        Time: Mar 23 10:46:51 2004
        Component Id: MediaServer_CStore
        Specific Problem: MAS;330
        Description: Component Shutdown
```

NTSTD

The following is an example of a MAS log in NTSTD format:

```
RTPU07CAPT ***  MAS330 MAR23 17:00:18 2310 FLT  Fault
        Location: 47.104.11.120
        Notification Id: 1001
        State: Raised
        Category: processingError
        Cause: applicationSubsystemFailure
        Time: Mar 23 10:46:51 2004
        Component Id: MediaServer_CStore
        Specific Problem: MAS;330
        Description: Component Shutdown
```

SNMP

The following is an example of a MAS log in SNMP format:

```
sysUpTime.0 => 1:52:16

snmpTrapOID.0 => nnExtAlarmCritical

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.19.50.48
.48.52.45.51.45.50.51.44.48.58.48.58.49.56.46.54.44.

2572

alarmActiveDateAndTime => 2004-3-23,0:0:18.6

alarmActiveDescription => Location: 47.104.11.120

Notification Id: 1001

State: Raised

Category: processingError

Cause: applicationSubsystemFailure

Time: Mar 23 10:46:51 2004

Component Id: MediaServer_CStore

Specific Problem: MAS;330

Description: Component Shutdown


nnExtAlarmActiveEventType => 3

nnExtAlarmActiveProbableCause => 2

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => MAS 330

nnExtAlarmActiveResourceDescription => IEMS=47.104.11.120-MAS;MediaServer_CStore

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 1
```

Syslog

The following is an example of a MAS log in Syslog format:

```
Mar 23 12:00:19 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=3629~~  MAS330 CRIT FLT
Fault^M        Location: 47.104.11.120^M        Notification Id: 1001^M        State:
Raised^M       Category: processingError^M Cause: applicationSubsystemFailure^M
Time: Mar 23 10:46:51 2004^M        Component Id: MediaServer_CStore^M        Specific
Problem: MAS;330^M        Description: Component Shutdown
```

Performance

OM and PM Documentation references for MAS

- NN10303-111 - MCP 2.0 MAS Meetme Basics
- NN10297-111 - MCP 2.0 MAS Adhoc Basics

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for MAS in XML format:

Not available at time of publication

CSV

The following is an example of Performance data for MAS in CSV format:

PMFile=Begin

MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime

PM,commonFormat.xsd,2004-07-02T05:55:54EST

System=Begin

SystemId

NortelNetworks/IEMS

Entity=Begin

EntityId,Type

47.104.11.120,MAS

SingleValues=Begin

MeasurementKind,IntervalDuration

Snapshot,5

MeasureId,CaptureTime,MeasureSuppId1,Value,Reliability

CreateConf,2004-07-02T05:13:44EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:44EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:45EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:45EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:46EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:46EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:47EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:47EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:48EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:48EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:13:51EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:13:51EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:13:58EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:00EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:01EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:01EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:02EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:02EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:03EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:04EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:06EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:09EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:10EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:18EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:19EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:21EST,ConfMP,40,Valid

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CreateConf,2004-07-02T05:14:44EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:44EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:45EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:45EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:46EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:46EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:47EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:47EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:48EST,ConfMP,40,Valid

CreateConf,2004-07-02T05:14:48EST,ConfMP,40,Valid

SingleValues=End

Entity=End

System=End

PMFile=End

GUI/CLUI Documentation for MAS

GUI Launching and User procedures

- NN10303-111 - MCP 2.0 MAS Meetme Basics

Related Documents

None

Multimedia Communication Server (MCS)

MCS Fault Interface

This section will provide references to customer documentation for Fault, Performance, Topology, GUI/CLUI, and Security for MCS.

Fault documentation for MCS :

- NN10030-111 - Multimedia Communication Server 5200 Management Module Basics
- NN10303-111 - MCP 2.0 MAS Meetme Basics
- NN10297-111 - MCP 2.0 MAS Adhoc Basics

Fault Mapping for MCS

The following criteria can be used for looking up information on specific faults for MCS.

Fault Correlation for MCS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MCS	logname and log number	logname and log number	logname and log number	logname and log number	NN10247-111 Multimedia Communication Server 5200 System Management Console User Guide

Northbound Fault Formats for MCS

SCC2

The following is an example of a MCS log in SCC2 format:

```
**55 LAM 102 0447 FLT  Fault
        Location: 47.104.23.117
        Notification Id: 1199
        State: Raised
        Category: communications
        Cause: communicationsSubsystemFailure
        Time: Mar 23 11:55:13 2004
        Component Id: Site=MgmtSite;Server=AppSvr;System.Sites.MgmtSite.Servers.
        Appsvr.Services.appsvr.BillingTransferAgent.BtaPrimaryConnectToAmLost
        Specific Problem: LAM;102
        Description: severity=MAJOR;probableCause=communications subsystem failu
        re;addedText=Communication Error : Primary stream cannot connect to CAM;
```

NTSTD

The following is an example of a MCS log in NTSTD format:

```
RTPU07CAPT  **  LAM102 MAR23 16:55:13 0242 FLT  Fault
        Location: 47.104.23.117
        Notification Id: 1199
        State: Raised
        Category: communications
        Cause: communicationsSubsystemFailure
        Time: Mar 23 11:55:13 2004
        Component Id: Site=MgmtSite;Server=AppSvr;System.Sites.MgmtSite.Servers.
        Appsvr.Services.appsvr.BillingTransferAgent.BtaPrimaryConnectToAmLost
```

```
Specific Problem: LAM;102

Description: severity=MAJOR;probableCause=communications subsystem failu

re;addedText=Communication Error : Primary stream cannot connect to CAM;
```

SNMP

The following is an example of a MCS log in SNMP format:

```
sysUpTime.0 => 2:19:58

snmpTrapOID.0 => nnExtAlarmMajor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.21.50.48
.48.52.45.51.45.50.51.44.49.49.58.53.53.58.49.51.46.

48.44.2616

alarmActiveDateAndTime => 2004-3-23,11:55:13.0

alarmActiveDescription => Location: 47.104.23.117

Notification Id: 1199

State: Raised

Category: communications

Cause: communicationsSubsystemFailure

Time: Mar 23 11:55:13 2004

Component Id:
Site=MgmtSite;Server=AppSvr;System.Sites.MgmtSite.Servers.Appsvr.Services.appsvr.Bil
lingTransferAgent.BtaPrimaryConnectToAmLost

Specific Problem: LAM;102

Description: severity=MAJOR;probableCause=communications subsystem
failure;addedText=Communication Error : Primary stream cannot connect to CAM;


nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 6

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => LAM 102

nnExtAlarmActiveResourceDescription => IEMS=47.104.23.117-
CSE;Site=MgmtSite;Server=AppSvr;System.Sites.MgmtSite.Servers.Appsvr.Services.appsvr
.BillingTransferAge

nt.BtaPrimaryConnectToAmLost

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 533
```

Syslog

The following is an example of a MCS log in Syslog format:

```
Mar 23 12:17:08 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=1558~~  LAM102 MAJOR FLT
Fault^M        Location: 47.104.23.117^M        Notification Id: 1199^M        State:
Raised^M    Category: communications^M    Cause: communicationsSubsystemFailure^M
Time: Mar 23 11:55:13 2004^M        Component Id:
```

```
Site=MgmtSite;Server=AppSvr;System.Sites.MgmtSite.Servers.^M
Appsvr.Services.appsvr.BillingTransferAgent.BtaPrimaryConnectToAmLost^M
Specific Problem: LAM;102^M        Description:
severity=MAJOR;probableCause=communications subsystem failu^M
re;addedText=Communication Error : Primary stream cannot connect to CAM;
```

Performance

OM and PM Documentation references for MCS

- NN10030-111 - Multimedia Communication Server 5200 Management Module Basics
- NN10247-111 - Multimedia Communication Server 5200 System

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for MCS in XML format:

Not available at time of publication

CSV

The following is an example of Performance data for MCS in CSV format:

Not available at time of publication

GUI/CLUI Documentation for MCS

GUI Launching and User procedures

- NN10247-111 - Multimedia Communication Server 5200 System Management Console User Guide

Related Documents

None

Media Gateway 9000 (MG9000)

This section contains IEMS Northbound log samples and device documentation references for the MG9000.

MG 9000 Fault Interface

Fault documentation for MG 9000 :

- NN10074-911 MG9000 Fault Management
- NN10325-900 ATM/IP Fault Management

Fault Mapping for MG 9000

The following criteria can be used for looking up information on specific faults for MG 9000.

Fault Correlation for MG 9000

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MG 9000	logname and number	logname and number	logname and number	logname and number	NN10325-900 ATM/IP Fault Management

Northbound Fault Formats for MG 9000

SCC2

The following is an example of a MG 9000 log in SCC2 format:

```
* 37 SWLN302 4259 TBL  MG9K NorLineFault
        Location: Port.frame0.shelf1.slot5.WL32.port21
        Notification Id: 330712652810
        State: UnAcknowledged
        Category: processingError
        Cause: Underlying Resource Unavailable
              NorLineFault - Line Protection Fault
        Component Id: Port.frame0.shelf1.slot5.WL32.port21
        specificProblem: NorLineFault - Line Protection Fault
        Description: Line Protection HighVoltageError      : 0,1,5,21 [suspect b
        ad LineCard]
```

NTSTD

The following is an example of a MG 9000 log in NTSTD format:

```
RTPU07BU   * SWLN302 Jan23 17:37:31 4259 TBL  MG9K NorLineFault
        Location: Port.frame0.shelf1.slot5.WL32.port21
        Notification Id: 330712652810
        State: UnAcknowledged
        Category: processingError
        Cause: Underlying Resource Unavailable
              NorLineFault - Line Protection Fault
        Component Id: Port.frame0.shelf1.slot5.WL32.port21
        specificProblem: NorLineFault - Line Protection Fault
        Description: Line Protection HighVoltageError      : 0,1,5,21 [suspect b
        ad LineCard]
```

SNMP

The following is an example of a MG 9000 log in SNMP format:

```
system.sysUpTime.0 => 17:59:11
snmpTrapOID.0 => nnExtAlarmClearalarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.19.50.48
.48.52.45.49.45.50.51.44.49.48.58.52.58.50.46.54.44.41817
alarmActiveDateAndTime => 2004-1-23,10:4:2.6,
alarmActiveDescription => Underlying Resource Unavailable
        NorLineFault - Line Protection Fault

nnExtAlarmActiveEventType => 3
nnExtAlarmActiveProbableCause => 56
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => SWLN302
nnExtAlarmActiveResourceDescription => IEMS=CC07;Port.frame0.shelf1.slot5.WL32.port21
nnExtAlarmActiveSequenceNumber => 7240
```

Syslog

The following is an example of a MG 9000 log in Syslog format:

```
Feb 23 12:40:26 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=4323~~ SWLN302 NONE TBL
MG9K NorLineFault^M        Location: Port.frame0.shelf1.slot5.WL32.port21^M
Notification Id: 330712652810^M        State: Cleared^M        Category:
processingError^M        Cause: Underlying Resource Unavailable^M
NorLineFault - Line Protection Fault^M        Component Id:
Port.frame0.shelf1.slot5.WL32.port21^M        specificProblem: NorLineFault - Line
Protection Fault^M      Description: Line Protection HighVoltageError     : 0,1,5,21
[suspect b^M        ad LineCard]
```

Performance

OM and PM Documentation references for MG 9000

- NN10140-711 MG9000 Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for MG 9000 in XML format:

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<MeasureSuppId1>nnBwIntervalQueueFillTable</MeasureSuppId1>
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<MeasureId>nnBwQueueFillIntervalUbrPlus</MeasureId>
<MeasureSuppId1>nnBwIntervalQueueFillTable</MeasureSuppId1>
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<MeasureSuppId1>nnBwIntervalQueueFillTable</MeasureSuppId1>
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</System>
</PMFile>
```

CSV

The following is an example of Performance data for MG 9000 in CSV format:

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PMFile=Begin
MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime
PM,commonFormat.xsd,2005-01-18T15:45:34EST

System=Begin
SystemId
NortelNetworks/IEMS

Entity=Begin
EntityId,Type
172.31.125.226,MG9K Mgr

SubEntity=Begin
```

```
SubEntityId
172.31.125.226

Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnMegacoOMECANIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label
Source,nnMegacoOMECANnumResrceReq,nnMegacoOMECANnumResrceReqFail
Value,Value,Value
Frame008.Shelf1.Slot17,0,0
Frame008.Shelf1.Slot16,0,0
Frame008.Shelf1.Slot5,0,0
Frame008.Shelf1.Slot4,0,0
Frame008.Shelf1.Slot13,0,0
Frame008.Shelf1.Slot12,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnMegacoOMDSPIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label
Source,nnMegacoOMDSPnumCMRmodemReq,nnMegacoOMDSPnumCMRmodemReqFail,nnMegacoOMDSP
numToneGenReq,nnMegacoOMDSPnumToneGenReqFail,nnMegacoOMDSPnumToneRcvrReq,nnMegac
oOMDSPnumToneRcvrReqFail
Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot17,0,0,0,0,0,0
Frame008.Shelf1.Slot16,0,0,0,0,0,0
Frame008.Shelf1.Slot5,0,0,0,0,0,0
Frame008.Shelf1.Slot4,0,0,0,0,0,0
Frame008.Shelf1.Slot13,0,0,0,0,0,0
Frame008.Shelf1.Slot12,0,0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnMegacoQoSIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label,Label
Source,nnMegacoQoSIntervalBadCalls,nnMegacoQoSIntervalCalls,nnMegacoQoSIntervalJ
itter,nnMegacoQoSIntervalLatency,nnMegacoQoSIntervalPktLossPct,nnMegacoQoSInterv
alPktsLost,nnMegacoQoSIntervalPktsRecvd
Value,Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot4.Port1,0,0,0,0,0,0,0
Frame008.Shelf1.Slot16.Port1,0,0,0,0,0,0,0
Frame008.Shelf1.Slot12.Port1,0,0,0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnIpsecOmIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label
Source,nnIpsecConfigInterfaceId,nnIpsecConfigSecLinkId,nnIpsecOmIntervalPacketsD
iscardedIn,nnIpsecOmIntervalPacketsDiscardedOut,nnIpsecOmIntervalPacketsRx,nnIps
ecOmIntervalPacketsTx
Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot17,1,1,0,0,0,0
Frame008.Shelf1.Slot16,1,1,0,0,0,0
Frame008.Shelf1.Slot5,1,1,0,0,0,0
Frame008.Shelf1.Slot4,1,1,0,0,0,0
Frame008.Shelf1.Slot13,1,1,0,0,0,0
Frame008.Shelf1.Slot12,1,1,0,0,0,0
Frame008.Shelf1.Slot11,1,1,0,0,0,0
```

```
Frame008.Shelf1.Slot10,1,1,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnPmOvldRscIntervTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label
Source,nnPmOvldRscIntervCbvMsgRAvg,nnPmOvldRscIntervCbvMsgRPeak,nnPmOvldRscInter
vConQDelAvg,nnPmOvldRscIntervConQDelPeak,nnPmOvldRscIntervCpuUtilAvg,nnPmOvldRsc
IntervCpuUtilPeak,nnPmOvldRscIntervPduRateAvg,nnPmOvldRscIntervPduRatePeak
Value,Value,Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot17,0,0,0,0,514,552,5,6
Frame008.Shelf1.Slot16,0,0,0,0,494,498,5,5
Frame008.Shelf1.Slot5,0,1,0,0,435,449,5,6
Frame008.Shelf1.Slot4,0,0,0,0,451,476,6,8
Frame008.Shelf1.Slot13,0,2,0,3,545,567,5,6
Frame008.Shelf1.Slot12,0,0,0,0,591,649,6,9
Frame008.Shelf1.Slot11,0,0,0,0,428,483,17,27
Frame008.Shelf1.Slot10,0,2,0,0,554,995,17,25
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnBwShelfIntervalSloaBandwResrvdTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label
Source,nnBwShelfIntervalSloaBandwReserved
Value,Value
Frame008.Shelf1,897
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
sonetPathIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label
Source,sonetPathIntervalCVs,sonetPathIntervalESs,sonetPathIntervalSESs,sonetPath
IntervalUASs
Value,Value,Value,Value,Value
Frame008.Shelf1.Slot11.Port1,0,0,0,0
Frame008.Shelf1.Slot10.Port1,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnBwAbiIntervalBandwResrvdEntry,Snapshot,15,2005-01-18T15:45:00EST
Label,Label
Source,nnBwAbiIntervalBandwReserved
Value,Value
Frame008.Shelf1.Slot17,6000
Frame008.Shelf1.Slot16,7000
Frame008.Shelf1.Slot5,6612
Frame008.Shelf1.Slot4,7000
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnPmUtilOmIntervTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label
```

```
Source,nnPmUtilIntervChanAvg,nnPmUtilIntervChanPeak,nnPmUtilIntervCpuAvg,nnPmUti
lIntervCpuPeak,nnPmUtilIntervFlashAvg,nnPmUtilIntervFlashPeak,nnPmUtilIntervRamA
vg,nnPmUtilIntervRamPeak
Value,Value,Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot5,0,0,4,4,17,17,32,32
Frame008.Shelf1.Slot4,0,0,5,5,17,17,32,32
Frame008.Shelf1.Slot17,0,0,5,6,17,17,32,32
Frame008.Shelf1.Slot16,0,0,5,5,17,17,32,32
Frame008.Shelf1.Slot15,0,0,2,2,19,19,36,36
Frame008.Shelf1.Slot14,0,0,2,2,18,18,36,36
Frame008.Shelf1.Slot13,0,0,5,6,24,24,32,32
Frame008.Shelf1.Slot12,0,0,6,6,24,24,32,32
Frame008.Shelf1.Slot11,0,0,4,5,47,47,37,37
Frame008.Shelf1.Slot10,0,1,6,10,23,23,38,38
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnRelMsgSctpAssocOmIntervTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Source,nnRelMsgSctpAscIntervAbort,nnRelMsgSctpAscIntervClosed,nnRelMsgSctpAscInt
ervCongCleared,nnRelMsgSctpAscIntervCongCount,nnRelMsgSctpAscIntervDiscPacks,nnR
elMsgSctpAscIntervInPacks,nnRelMsgSctpAscIntervOutPacks,nnRelMsgSctpAscIntervRet
ranPacks,nnRelMsgSctpAscIntervT1expires,nnRelMsgSctpAscIntervT2expires,nnRelMsgS
ctpAscIntervT3expires
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot17,0,0,0,0,0,467,487,0,0,0,0
Frame008.Shelf1.Slot16,0,0,0,0,0,0,465,485,0,0,0,0
Frame008.Shelf1.Slot5,0,0,0,0,0,0,761,697,0,0,0,0
Frame008.Shelf1.Slot4,0,0,0,0,0,0,792,726,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
sonetLineIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label
Source,sonetLineIntervalCVs,sonetLineIntervalESs,sonetLineIntervalSESs,sonetLine
IntervalUASs
Value,Value,Value,Value,Value
Frame008.Shelf1.Slot11.Port1,0,0,0,0
Frame008.Shelf1.Slot10.Port1,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnMegacoOMCESIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label
Source,nnMegacoOMCESnumChnlAllocInter,nnMegacoOMCESnumChnlAllocInterFail,nnMegac
oOMCESnumChnlAllocIntra,nnMegacoOMCESnumChnlAllocIntraFail
Value,Value,Value,Value,Value
Frame008.Shelf1.Slot17,0,0,0,0
Frame008.Shelf1.Slot16,0,0,0,0
Frame008.Shelf1.Slot5,0,0,0,0
Frame008.Shelf1.Slot4,0,0,0,0
Frame008.Shelf1.Slot13,0,0,0,0
Frame008.Shelf1.Slot12,0,0,0,0
Frame008.Shelf1.Slot11,3,0,0,0
Frame008.Shelf1.Slot10,3,0,0,0
Table=End
```

```
Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnBwAbiCurrentBandwResrvdTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label
Source,nnBwAbiCapacityBandwReserved
Value,Value
Frame008.Shelf1.Slot17,0
Frame008.Shelf1.Slot16,0
Frame008.Shelf1.Slot5,0
Frame008.Shelf1.Slot4,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
sonetSectionIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label
Source,sonetSectionIntervalCVs,sonetSectionIntervalESs,sonetSectionIntervalSEFSs
,sonetSectionIntervalSESs
Value,Value,Value,Value,Value
Frame008.Shelf1.Slot11.Port1,0,0,0,0
Frame008.Shelf1.Slot10.Port1,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnClkSyncRefTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label
Source,nnClkSyncRefId,nnClkSyncRefLossOfFrameCount,nnClkSyncRefLossOfSignalCount
Value,Value,Value,Value
Frame008.Shelf1.Slot13,3,0,1
Frame008.Shelf1.Slot12,3,0,3
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnBwShelfCurrentSloaBandwResrvdTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label
Source,nnBwShelfCapacitySloaBandwReserved
Value,Value
Frame008.Shelf1,48960
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
norCarrSonetMediumIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label
Source,nnorCarrSonetMedIntervalLBC,norCarrSonetMedIntervalOpt
Value,Value,Value
Frame008.Shelf1.Slot11.Port1,106,99
Frame008.Shelf1.Slot10.Port1,103,100
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnPmOvldConnDenyIntervTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label
Source,nnPmOvldConnDenyIntervCount
Value,Value
Frame008.Shelf1.Slot17,0
```

```
Frame008.Shelf1.Slot16,0
Frame008.Shelf1.Slot5,0
Frame008.Shelf1.Slot4,0
Frame008.Shelf1.Slot13,0
Frame008.Shelf1.Slot12,0
Frame008.Shelf1.Slot11,0
Frame008.Shelf1.Slot10,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
apsChanStatusTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label
Source,apsChanSignalDegrades,apsChanSignalFailures,apsChanSwitchovers
Value,Value,Value,Value
Frame008.Shelf1.Slot11.Port1,0,0,0
Frame008.Shelf1.Slot10.Port1,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
nnMegacoOMMedGwyIntervalTable,Snapshot,15,2005-01-18T15:45:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label
Source,nnMegacoOMMedGwyAvrgInMsgRate,nnMegacoOMMedGwyAvrgOutMsgRate,nnMegacoOMMe
dGwyMaxInMsgRate,nnMegacoOMMedGwyMaxOutMsgRate,nnMegacoOMMedGwyNumInMessages,nnM
egacoOMMedGwyNumInOctets,nnMegacoOMMedGwyNumOutMessages,nnMegacoOMMedGwyNumOutOc
tets
Value,Value,Value,Value,Value,Value,Value,Value,Value
Frame008.Shelf1.Slot4.Port1,29,29,0,0,438,25752,438,36018
Frame008.Shelf1.Slot16.Port1,29,29,0,0,440,25867,440,33229
Frame008.Shelf1.Slot12.Port1,53,53,0,0,805,50834,805,52001
Table=End


SingleValues=Begin
MeasurementKind,IntervalDuration
Snapshot,15
MeasureId,CaptureTime,MeasureSuppId1,Value,Reliability
snmpInvalidMsgs,2005-01-18T15:45:00EST,Miscellaneous,0,Valid
snmpInBadCommunityNames,2005-01-18T15:45:00EST,Miscellaneous,0,Valid
snmpInPkts,2005-01-18T15:45:00EST,Miscellaneous,124921,Valid
nnPmSnmpIntervReqPeak,2005-01-18T15:45:00EST,nnPmSnmpOmIntervTable,40,Valid
nnPmSnmpIntervReqAvg,2005-01-18T15:45:00EST,nnPmSnmpOmIntervTable,126,Valid
nnPmSnmpIntervNotifPeak,2005-01-18T15:45:00EST,nnPmSnmpOmIntervTable,0,Valid
nnPmSnmpIntervNotifAvg,2005-01-18T15:45:00EST,nnPmSnmpOmIntervTable,0,Valid
nnClkSyncSignalId,2005-01-18T15:45:00EST,nnClkSyncSignalTable,5,Valid
nnClkSyncSignalLossOfSignalCount,2005-01-
18T15:45:00EST,nnClkSyncSignalTable,3,Valid
nnClkSyncSignalLossOfFrameCount,2005-01-
18T15:45:00EST,nnClkSyncSignalTable,0,Valid
nnBwBandwUtilIntervalInCellRate,2005-01-
18T15:45:00EST,nnBwIntervalBandwUtilTable,878,Valid
nnBwBandwUtilIntervalOutCellRate,2005-01-
18T15:45:00EST,nnBwIntervalBandwUtilTable,936,Valid
nnBwBandwUtilIntervalInDslCellRate,2005-01-
18T15:45:00EST,nnBwIntervalBandwUtilTable,0,Valid
nnBwBandwUtilIntervalOutDslCellRate,2005-01-
18T15:45:00EST,nnBwIntervalBandwUtilTable,0,Valid
nnBwQueueFillIntervalTotal,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
nnBwQueueFillIntervalCbr,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
```

```
nnBwQueueFillIntervalRtVbr,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
nnBwQueueFillIntervalNrtVbr,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
nnBwQueueFillIntervalUbr,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
nnBwQueueFillIntervalUbrPlus,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
nnBwQueueFillIntervalControl,2005-01-
18T15:45:00EST,nnBwIntervalQueueFillTable,0,Valid
SingleValues=End

SubEntity=End

Entity=End

System=End

PMFile=End
```

GUI/CLUI Documentation for MG 9000

GUI Launching and User procedures

- NN10096-511 MG9000 Configuration Management

Related documents

- NN10276-500 ATM/IP Configuration Management

MultiService Switch 7400, 15000, 20000

This section contains IEMS Northbound log samples and device documentation references for the MSS 7400, 15000, 20000.

Information for this device is covered in MDM documentation. *Please refer to Section " Multi-Service Data Manager (MDM)" on page 559.* for more details.

MSS 7400, 15000, 20000 Fault Interface

Fault documentation for MSS 7400, 15000, 20000 :

Please refer to Section " Fault documentation for MDM:" on page 559.

Fault Mapping for MSS 7400, 15000, 20000

Please refer to Section " Fault Mapping for MDM" on page 559.

Northbound Fault Formats for MSS 7400, 15000, 20000

SCC2

The following is an example of a MSS 7400, 15000, 20000 log in SCC2 format:

```
  19 PPEM302 8013 TBL
        time: 2004 01 27 14 19 53
        event: message
        compId: EM PP04 LP 8
        severity: indeterminate
        faultcode: 70560000
        alarmType: other
        commentData: 1-7-200
        0000
        1;DBG_WARNING:R:21-L:18 stats timeout.
```

NTSTD

The following is an example of a MSS 7400, 15000, 20000 log in NTSTD format:

```
RTPU07BU     PPEM302 Jan27 19:19:53 7467 TBL
        time: 2004 01 27 14 19 53
        event: message
        compId: EM PP04 LP 8
        severity: indeterminate
        faultcode: 70560000
        alarmType: other
        commentData: 1-7-200
        0000
        1;DBG_WARNING:R:21-L:18 stats timeout.
```

SNMP

The following is an example of a MSS 7400, 15000, 20000 log in SNMP format:

```
system.sysUpTime.0 => 3 days, 1:02:10
snmpTrapOID.0 => nnExtAlarmMessage
```

```
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=47.142.116.75-MDM-Mgr_PP04;EM PP04 LP 8
nnExtAlarmMessageDateAndTime => 2004-1-21,6:41:14.0,
nnExtAlarmMessageDocumentationPointer => PPEM302
nnExtAlarmMessageInfo =>   19 PPEM302 8013 TBL                time: 2004 01 27 14 19 53
        event: message
        compId: EM PP04 LP 8
        severity: indeterminate
        faultcode: 70560000
        alarmType: other
        commentData: 1-7-200
        0000
        1;DBG_WARNING:R:21-L:18 stats timeout.
```

Syslog

The following is an example of a MSS 7400, 15000, 20000 log in Syslog format:

```
Feb 27 13:19:58 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=2202~~ PPEM302 NONE TBL ^M
time: 2004 01 27 14 19 53^M       event: message^M       compId: EM PP04 LP 8^M
severity: indeterminate^M       faultcode: 70560000^M       alarmType: other^M
commentData: 1-7-200^M       0000 ^M       1;DBG_WARNING:R:21-L:18 stats timeout.
```

Performance

OM and PM Documentation references for MSS 7400, 15000, 20000

Please refer to Section " OM and PM Documentation references for MDM" on page 562.

Northbound OM/PM Formats

Performance measurements for MSS 7400, 15000, 20000 are available only from the MDM directly. *Please refer to Section " Northbound OM/PM Formats" on page 562.*

XML

The following is an example of Performance data for MSS 7400, 15000, 20000 in XML format:

***Note:** The IEMS northbound performance interface does not support this device..*

CSV

The following is an example of Performance data for MSS 7400, 15000, 20000 in CSV format:

Note: *The IEMS northbound performance interface does not support this device..*

GUI/CLUI Documentation for MSS 7400, 15000, 20000

GUI Launching and User procedures

Please refer to *"GUI/CLUI Documentation for MDM" on page 563*.

- NN10600-030 - Nortel Networks Multiservice Switch 7400/15000/20000 Overview
- 241-5701-045 - Passport "7400," "15000," 20000 Management System User Interface Guide
- NN10600-050 - Nortel Networks Multiservice Switch 7400/15000/20000 Commands Reference
- NN10600-053 - Nortel Networks Multiservice Switch 7400/15000/20000 Commands Job Aid

Related documents

Please refer to *"Related documents" on page 564*.

- NN10600-001 - Nortel Networks Multiservice Switch 7400/15000/20000 Using the Documentation
- NN10600-002 - Nortel Networks Multiservice Switch 7400/15000/20000 Using Task-based Documentation Job Aid
- NN10600-005 - Nortel Networks Multiservice Switch 7400/15000/20000 Terminology
- NN10600-030 - Nortel Networks Multiservice Switch 7400/15000/20000 Overview
- NN10600-270 - Nortel Networks Multiservice Switch 7400/15000/20000 Software Installation
- NN10600-271 - Nortel Networks Multiservice Switch 7400/15000/20000 Network Management Connectivity
- NN10600-272 - Nortel Networks Multiservice Switch 7400/15000/20000 Upgrading Software

- NN10600-300 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: SNMP
- 241-5701-400 - Passport "7400," "15000," 20000 Networking Overview
- NN10600-405 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Call Server
- NN10600-410 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Call Redirection Server
- NN10600-415 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Hunt Group Server
- NN10600-420 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Trunking
- NN10600-425 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Dynamic Packet Routing System
- NN10600-435 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Path-Oriented Routing System
- NN10600-440 - Nortel Networks Multiservice Switch 7400 Operations: Frame Relay Managed Cut-through Switching
- NN10600-445 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Multiprotocol Label Switching
- NN10600-500 - Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference
- NN10600-510 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Trace System
- NN10600-520 - Nortel Networks Multiservice Switch 7400/15000/20000 Fault and Performance Management: Troubleshooting
- NN10600-581 - Nortel Networks Multiservice Switch 7400/15000/20000 IP VPN Technology Fundamentals
- NN10600-582 - Nortel Networks Multiservice Switch 7400/15000/20000 IP VPN Configuration Management
- NN10600-550 - Nortel Networks Multiservice Switch 7400/15000/20000 Common Configuration Procedures
- NN10600-561 - Nortel Networks Multiservice Switch 7400/15000/20000 Data Management
- NN10600-551 - Nortel Networks Multiservice Switch 7400/15000/20000 FP Configuration Reference
- NN10600-560 - Nortel Networks Multiservice Switch 7400/15000/20000 Accounting

- NN10600-700 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals
- NN10600-702 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Routing and Signaling Fundamentals
- NN10600-705 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Traffic Management Fundamentals
- NN10600-706 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Traffic Shaping and Policing Fundamentals
- NN10600-707 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Queuing and Scheduling Fundamentals
- NN10600-708 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM CAC and Bandwidth Fundamentals
- NN10600-710 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management
- NN10600-715 - Nortel Networks Multiservice Switch 7400/15000/20000 ATM Fault and Performance Management
- NN10600-720 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: AAL1 Circuit Emulation
- NN10600-730 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Inverse Multiplexing for ATMe
- NN10600-780 - Nortel Networks Media Gateway 7480/15000 Technology Fundamentals
- NN10600-781 - Nortel Networks Media Gateway 7480/15000 Non-switched Service Configuration Management
- NN10600-782 - Nortel Networks Media Gateway 7480/15000 Switched Service Configuration Management
- NN10600-800 - Nortel Networks Multiservice Switch 7400/15000/20000 IP Technology Fundamentals
- NN10600-801 - Nortel Networks Multiservice Switch 7400/15000/20000 IP Configuration Management
- NN10600-580 - Nortel Networks Multiservice Switch 7400/15000/20000 Operations: Ethernet Service
- NN10600-120 - Nortel Networks Multiservice Switch 15000/20000 Hardware Description
- NN10600-130 - Nortel Networks Multiservice Switch 15000/20000 Hardware Installation, Maintenance, and Upgrade
- NN10600-170 - Nortel Networks Multiservice Switch 7400 Hardware Description

- NN10600-130 - Nortel Networks Multiservice Switch 15000/20000 Hardware Installation, Maintenance, and Upgrade
- NN10600-172 - Nortel Networks Multiservice Switch 7400 FP Cabling Reference
- NN10600-745 - Nortel Networks Multiservice Switch 7400 Operations: MPANL
- NN10600-750 - Nortel Networks Multiservice Switch 7400 Operations: Voice Transport
- NN10600-755 - Nortel Networks Multiservice Switch 7400 Operations: Voice Networking
- NN10600-765 - Nortel Networks Multiservice Switch 7400 Operations: Remote Server Agent
- NN10600-605 - Passport MDM Network Security: Operations
- NN10600-606 - Passport MDM Network Security: User Access Configuration
- NN10600-607 - Passport MDM Network Security: Secure Communications Configuration
- 241-6001-309 - MDM Management Data Provider User Guide
- 241-6001-806 - MDM MDP Data Formats Reference Guide
- NN10600-060 - Nortel Networks Multiservice Switch 7400/15000/20000 Components Reference

MS2000 Series Node

This section contains IEMS Northbound log samples and device documentation references for the MS2000 Series Node.

MS2000 Series Node Fault Interface

Fault documentation for MS2000 Series Node :

- NN10328-911 MS2000 Fault Management

Fault Mapping for MS2000 Series Node

The following criteria can be used for looking up information on specific faults for MS2000 Series Node.

Fault Correlation for MS2000 Series Node

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MS2000 Series Node	logname and number	logname and number	logname and number	logname and number	NN10328-911 MS2000 Fault Management

Northbound Fault Formats for MS2000 Series Node

SCC2

The following is an example of a MS2000 Series Node log in SCC2 format:

34 AMS 501 0035 INFO MS2000 FAULT
Location: 47.142.134.127
State: Cleared
Time: 1086806097963

**34 AMS 501 0036 FLT MS2000 FAULT
Location: 47.142.134.127
State: Raised
Category: processingError
Cause: 71
Time: 1086806097964
Component Id: System#0
Trap Name: 6
Description: Network element admin state change alarm. Gateway is locked

NTSTD

The following is an example of a MS2000 Series Node log in NTSTD format:

```
Nortel-JH **  AMS501 JUN10 09:21:12 5707 FLT  MS2000 FAULT
        Location: 47.142.134.127
        State: Raised
        Category: processingError
        Cause: 71
        Time: 1086873672171
```

```
        Component Id: System#0
        Trap Name: 6
        Description: Network element admin state change alarm. Gateway is shutti
        ngDown


Nortel-JH AMS501 JUN10 09:21:12 5708 INFO MS2000 FAULT
        Location: 47.142.134.127
        State: Cleared
        Time: 1086873672172


Nortel-JH **  AMS501 JUN10 09:21:12 5709 FLT  MS2000 FAULT
        Location: 47.142.134.127
        State: Raised
        Category: processingError
        Cause: 71
        Time: 1086873672174
        Component Id: System#0
        Trap Name: 6
        Description: Network element admin state change alarm. Gateway is locked


Nortel-JH AMS501 JUN10 09:21:25 5710 INFO MS2000 FAULT
        Location: 47.142.134.127
        State: Cleared
        Time: 1086873685240
```

SNMP

The following is an example of a MS2000 Series Node log in SNMP format:

```
sysUpTime. => 1 day, 19:19:22
snmpTrapOID. => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=Unknown Device;
nnExtAlarmMessageDateAndTime => 2004-6-9,3:4:5.0
nnExtAlarmMessageDocumentationPointer => IEMS601
nnExtAlarmMessageInfo =>   04 IEMS601 3350 INFO
```

```
        Location: 10.5.0.17

        Event: .1.3.6.1.6.3.1.1.5.3

        Varbind0: .1.3.6.1.2.1.2.2.1.1.0: 132

        Varbind1: .1.3.6.1.2.1.2.2.1.7.0: 1

        Varbind2: .1.3.6.1.2.1.2.2.1.8.0: 2



sysUpTime. => 1 day, 19:19:25
snmpTrapOID. => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=Unknown Device;
nnExtAlarmMessageDateAndTime => 2004-6-9,3:4:7.9
nnExtAlarmMessageDocumentationPointer => IEMS601
nnExtAlarmMessageInfo =>   04 IEMS601 3351 INFO

        Location: 10.5.0.17

        Event: .1.3.6.1.6.3.1.1.5.4

        Varbind0: .1.3.6.1.2.1.2.2.1.1.0: 132

        Varbind1: .1.3.6.1.2.1.2.2.1.7.0: 1

        Varbind2: .1.3.6.1.2.1.2.2.1.8.0: 1
```

Syslog

The following is an example of a MS2000 Series Node log in Syslog format:

```
Jun  9 14:31:41 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=9643~~  AMS501 MAJOR FLT
MS2000 FAULT        Location: 47.142.134.127        State: Raised        Category:
processingError     Cause: 71     Time: 1086805901311     Component Id: System#0
Trap Name: 6       Description: Network element admin state change alarm. Gateway is
shuttingDown
```

```
Jun  9 14:31:41 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=9644~~  AMS501 NONE INFO
MS2000 FAULT        Location: 47.142.134.127        State: Cleared        Time:
1086805901313


Jun  9 14:31:41 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=9645~~  AMS501 MAJOR FLT
MS2000 FAULT        Location: 47.142.134.127        State: Raised        Category:
processingError     Cause: 71     Time: 1086805901314     Component Id: System#0
Trap Name: 6       Description: Network element admin state change alarm. Gateway is
locked

Jun  9 14:31:41 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=9646~~ IEMS601 NONE


Resetting board
```

Performance

OM and PM Documentation references for MS2000 Series Node

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided.

XML

The following is an example of Performance data for MS2000 Series Node in XML format:

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>

- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance" xsi:noNamespaceSchemaLocation="**commonFormat.xsd**" MeasurementCategory="**PM**">

<FileCreationTime>2004-06-23T17:40:01EST</FileCreationTime>

- <System>

<SystemId>NortelNetworks/IEMS</SystemId>

- <Entity Type="**MS2000**">

<EntityId>47.142.92.107</EntityId>

- <SingleValues MeasurementKind="**Snapshot**" IntervalDuration="**5**">

- <SingleValue>

<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>

<MeasureId>sysDescr</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.system</MeasureSuppId1>

<Value>Product: IPMedia 3000;SW Version: 4.30.380.12</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpOutPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>4858</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpInBadVersions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpInBadCommunityNames</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInTotalReqVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>9089</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpOutTraps</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>15</Value>

<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInBadCommunityUses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>4844</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInTotalSetVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>4</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>snmpInASNParseErrs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>tcpOutSegs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.tcp</MeasureSuppId1>
<Value>3531</Value>
<Reliability>Valid</Reliability>

```
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>tcpInSegs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.tcp</MeasureSuppId1>
<Value>4359</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>udpOutDatagrams</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.udp</MeasureSuppId1>
<Value>438175</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>udpInDatagrams</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.udp</MeasureSuppId1>
<Value>107768</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>
```


CSV

The following is an example of Performance data for MS2000 Series Node in CSV format:


```
PMFile=Begin

PM,commonFormat.xsd,2004-06-23T17:25:50EST

System=Begin

NortelNetworks/IEMS
```

Entity=Begin

47.142.92.104,MS2000

SingleValues=Begin

Snapshot,5

snmpOutPkts,2004-06-23T17:24:09EST,.iso.org.dod.internet.mgmt.mib-2.snmp,368,Valid

snmpInBadVersions,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInBadCommunityNames,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInTotalReqVars,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,959,Valid

snmpOutTraps,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,13,Valid

snmpInBadCommunityUses,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInPkts,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,356,Valid

snmpInTotalSetVars,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,12,Valid

snmpInASNParseErrs,2004-06-23T17:24:10EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

tcpOutSegs,2004-06-23T17:24:11EST,.iso.org.dod.internet.mgmt.mib-2.tcp,195,Valid

tcpInSegs,2004-06-23T17:24:11EST,.iso.org.dod.internet.mgmt.mib-2.tcp,13675,Valid

udpOutDatagrams,2004-06-23T17:24:11EST,.iso.org.dod.internet.mgmt.mib-2.udp,27702,Valid

udpInDatagrams,2004-06-23T17:24:11EST,.iso.org.dod.internet.mgmt.mib-2.udp,14797,Valid

snmpSilentDrops,2004-06-23T17:24:11EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

acPerfCpMessageSendErrors,2004-06-23T17:24:11EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpNumDupsForCompletedTransactions,2004-06-23T17:24:11EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpMessageMaxRetransmissionsExceeded,2004-06-23T17:24:11EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpMessageReceiveErrors,2004-06-23T17:24:12EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpMessageRetransmissions,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,18,Valid

acPerfCpNumDupsForOutstandingTransactions,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpMessagesFromUntrustedSources,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfCpProtocolSyntaxErrors,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfCp,0,Valid

acPerfRtpRcvrLostPackets,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfRtp,0,Valid

acPerfRtpFailedDueToLackOfResources,2004-06-23T17:24:13EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfRtp,0,Valid

acPerfIvrPlayCollectRequests,2004-06-23T17:24:14EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfIvrPlayRequests,2004-06-23T17:24:15EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,88,Valid

acPerfBctRequests,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfBct,0,Valid

acPerfIvrPlayCollectFailedDueToLackOfResources,2004-06-23T17:24:15EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfIvrPlaySegmentFailedDueToProvMismatch,2004-06-23T17:24:15EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,9,Valid

acPerfIvrContDigitCollectRequests,2004-06-23T17:24:15EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfIvrPlayFailedDueToLackOfResources,2004-06-23T17:24:15EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfIvrPlayCollectFailedDueToProvMismatch,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfIvrContDigitCollectFailedDueToLackOfResources,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfIvr,0,Valid

acPerfBctFailedDueToLackOfResources,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfBct,0,Valid

acPerfConfRequests,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfConf,11,Valid

acPerfConfPlays,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfConf,36,Valid

acPerfConfAddFailedDueToLackOfResources,2004-06-23T17:24:16EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfConf,0,Valid

acPerfConfFailedDueToLackOfResources,2004-06-23T17:24:17EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfConf,0,Valid

acPerfTtFailedDueToLackOfResources,2004-06-23T17:24:17EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfTt,0,Valid

acPerfTtRequests,2004-06-23T17:24:17EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaServices.acPerfTt,0,Valid

acPerfSystemPacketEndpointsInUse,2004-06-23T17:24:17EST,.iso.org.dod.internet.private.enterprises.audioCodes.acPerformances.acPerfMediaGateway.acPerfSystem,0,Valid

SingleValues=End

Entity=End

System=End

PMFile=End

GUI/CLUI Documentation for MS2000 Series Node

GUI Launching and User procedures

- NN10323-111 MS2000 Basics

Related documents

- NN10340-511 MS2000 Configuration
- NN10337-611 MS2000 Security

Session Server Manager

This section contains IEMS Northbound log samples and device documentation references for the Session Server Manager.

Session Server Manager Fault Interface

This section will provide references to customer documentation for Fault, Performance, Topology, GUI/CLUI, and Security for Session Server Manager.

Fault documentation for Session Server Manager:

- NN10322-911 - Session Server Manager Fault Management

Fault Mapping for Session Server Manager

The following criteria can be used for looking up information on specific faults for Session Server Manager.

Fault Correlation for Session Server Manager

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Session Server Manager	logname and number	logname and number	logname and number	logname and number	NN10322-911 Session Server Manager Fault Management

Northbound Fault Formats for Session Server Manager

SCC2

The following is an example of a Session Server Manager log in SCC2 format:

```
**57 SIPM302 2080 FLT  SIPM Fault
      Location: 47.142.123.43
      Notification Id: 111
      State: Raised
      Category: communications
      Cause: applicationSubsystemFailure
      Time: Apr 12 21:57:55 2004
      Component Id: NCGL=RTPF-SIP0;Unit=0;
      Specific Problem: SIP Gateway Application State Not Synced With Mate
      Description: SIP Gateway Application Mtc Out Of Sync
```

NTSTD

The following is an example of a Session Server Manager log in NTSTD format:

```
znc0s0jh  ** SIPM302 APR12 21:57:55 2080 FLT  SIPM Fault
        Location: 47.142.123.43
        Notification Id: 111
        State: Raised
        Category: communications
        Cause: applicationSubsystemFailure
        Time: Apr 12 21:57:55 2004
        Component Id: NCGL=RTPF-SIP0;Unit=0;
        Specific Problem: SIP Gateway Application State Not Synced With Mate
        Description: SIP Gateway Application Mtc Out Of Sync
```

SNMP

The following is an example of a Session Server Manager log in SNMP format:

```
sysUpTime.0 => 2:34:22

snmpTrapOID.0 => nnExtAlarmMajor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.

20.50.48.48.52.45.52.45.49.50.44.57.58.53.55.58.53.53.46.48.44.3070

alarmActiveDateAndTime => 2004-4-12,9:57:55.0

alarmActiveDescription => Location: 47.142.123.43

Notification Id: 111

State: Raised

Category: communications

Cause: applicationSubsystemFailure

Time: Apr 12 21:57:55 2004

Component Id: NCGL=RTPF-SIP0;Unit=0;

Specific Problem: SIP Gateway Application State Not Synced With Mate

Description: SIP Gateway Application Mtc Out Of Sync


nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 2

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => SIPM302

nnExtAlarmActiveResourceDescription => IEMS=47.142.123.48-SP2000-Unit-0;NCGL=RTPF-
SIP0;Unit=0;

nnExtAlarmActiveManualClear => 2

nnExtAlarmActiveSequenceNumber => 35
```

Syslog

The following is an example of a Session Server Manager log in Syslog format:

```
Apr 12 22:13:03 znc0s0jh IEMS: V2_~I=~H=znc0s0jh~A=IEMS~S=6213~~ SIPM302 MAJOR FLT
SIPM Fault^M      Locationon:47.142.123.43^M      Notification Id: 111^M      State:
Raised^M     Category: communications^M     Cause: applicationSubsystemFailure^M
Time: Apr 12 21:57:55 2004^M        Component Id: NCGL=RTPF-SIP0;Unit=0;^M  Specific
Problem: SIP Gateway Application State Not Synced With Mate^M       Description: SIP
Gateway Application Mtc Out Of Sync
```

Performance

OM and PM Documentation references for Session Server Manager

- NN10342-711 Session Server Manager Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance for Session Server Manager in XML format:

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>

- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance" xsi:noNamespaceSchemaLocation="**commonFormat.xsd**" MeasurementCategory="**PM**">

<FileCreationTime>2004-06-23T17:40:13EST</FileCreationTime>

- <System>

<SystemId>NortelNetworks/IEMS</SystemId>

- <Entity Type="**Session Server**">

<EntityId>47.174.74.179</EntityId>

- <SingleValues MeasurementKind="**Snapshot**" IntervalDuration="**5**">

- <SingleValue>

<CaptureTime>2004-06-23T17:35:00EST</CaptureTime>

<MeasureId>sysDescr</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.system</MeasureSuppId1>

<Value>Linux sp2k-1 2.4.22-samxts #1 Thu May 13 01:48:09 EDT 2004 i686</Value>

<Reliability>Valid</Reliability>

</SingleValue>

- <SingleValue>

<CaptureTime>2004-06-23T17:35:00EST</CaptureTime>

<MeasureId>snmpOutPkts</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>

<Value>8679</Value>

<Reliability>Valid</Reliability>

</SingleValue>

- <SingleValue>

<CaptureTime>2004-06-23T17:35:00EST</CaptureTime>

<MeasureId>snmpInBadVersions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpInBadCommunityNames</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>1</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpInTotalReqVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>9899</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpOutTraps</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:01EST</CaptureTime>
<MeasureId>snmpInBadCommunityUses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInPkts</MeasureId>

<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>8692</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInTotalSetVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>snmpInASNParseErrs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:02EST</CaptureTime>
<MeasureId>hrSystemDate</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>hrSystemUptime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>
<Value>1316119</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>hrSystemProcesses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>

<Value>170</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T17:35:03EST</CaptureTime>
<MeasureId>snmpSilentDrops</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>

CSV

The following is an example of Performance for Session Server Manager in CSV format:

PMFile=Begin

PM,commonFormat.xsd,2004-06-23T20:35:30EST

System=Begin

NortelNetworks/IEMS

Entity=Begin

47.174.74.179,Session Server

SingleValues=Begin

Snapshot,5

sysDescr,2004-06-23T20:30:01EST,.iso.org.dod.internet.mgmt.mib-2.system,Linux sp2k-1 2.4.22-samxts #1 Thu May 13 01:48:09 EDT 2004 i686,Valid

snmpOutPkts,2004-06-23T20:30:01EST,.iso.org.dod.internet.mgmt.mib-2.snmp,9342,Valid

snmpInBadVersions,2004-06-23T20:30:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInBadCommunityNames,2004-06-23T20:30:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,1,Valid

snmpInTotalReqVars,2004-06-23T20:30:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,13190,Valid

snmpOutTraps,2004-06-23T20:30:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInBadCommunityUses,2004-06-23T20:30:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInPkts,2004-06-23T20:30:03EST,.iso.org.dod.internet.mgmt.mib-2.snmp,9355,Valid

snmpInTotalSetVars,2004-06-23T20:30:03EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

snmpInASNParseErrs,2004-06-23T20:30:03EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

hrSystemDate,2004-06-23T20:30:04EST,.iso.org.dod.internet.mgmt.mib-2.host.hrSystem,0,Valid

hrSystemUptime,2004-06-23T20:30:04EST,.iso.org.dod.internet.mgmt.mib-2.host.hrSystem,1326620,Valid

hrSystemProcesses,2004-06-23T20:30:04EST,.iso.org.dod.internet.mgmt.mib-2.host.hrSystem,170,Valid

SingleValues=End

Entity=End

System=End

PMFile=End

GUI/CLUI Documentation for Session Server Manager

GUI Launching and User procedures

- NN10333-111 Session Server Manager Basics

Related documents

- NN10338-511 - Session Server Manager configuration
- NN10346-611 - Session Server Manager Security and Administration

SAM21 Shelf Controller

This section contains IEMS Northbound log samples and device documentation references for the SAM21 Shelf Controller.

SAM21 Shelf Controller Fault Interface

Fault documentation for SAM21 Shelf Controller :

- NN10089-911 - SAM21 Shelf Controller Fault Management

Fault Mapping for SAM21 Shelf Controller

The following criteria can be used for looking up information on specific faults for SAM21 Shelf Controller.

Fault Correlation for SAM21 Shelf Controller

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
SAM21 Shelf Controller	logname and number	logname and number	logname and number	logname and number	NN10089-911 SAM21 Shelf Controller Fault Management

Northbound Fault Formats for SAM21 Shelf Controller

SCC2

The following is an example of a SAM21 Shelf Controller log in SCC2 format:

```
**37 SCU 350 0009 FLT  Alarm Raised
        Location: SAM21 1:CSAM01-01:sled 3
        Time:     Wed Jan 14 13:55:52 EST 2004
        Reason:   Temperature in Sled 3 is high
```

NTSTD

The following is an example of a SAM21 Shelf Controller log in NTSTD format:

```
COMPACT06BT  **  SCU350 Jan15 00:37:17 0009 FLT  Alarm Raised
        Location: SAM21 1:CSAM01-01:sled 3
        Time:     Wed Jan 14 13:55:52 EST 2004
        Reason:   Temperature in Sled 3 is high
```

SNMP

The following is an example of a SAM21 Shelf Controller log in SNMP format:

```
sysUpTime.0 => 9:14:20
snmpTrapOID.0 => nnExtAlarmMajor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.49.44.54.58.52.49.58.49.52.46.48.44.8995
alarmActiveDateAndTime => 2004-1-21,6:41:14.0,
alarmActiveDescription => DeviceSpecificInfo=;Location: SAM21 1:CSAM01-01:sled 3
Time:     Wed Jan 14 13:57:48 EST 2004
Reason:   Temperature in Sled 3 is high
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => SCU 350
nnExtAlarmActiveResourceDescription => IEMS=wnc0y0kz.us.nortel.com-SAM21-Mgr;
nnExtAlarmActiveManualClear => 2
nnExtAlarmActiveSequenceNumber => 1
```

Syslog

The following is an example of a SAM21 Shelf Controller log in Syslog format:

```
Feb 12 18:30:19 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=7929~~  SCU350 MAJOR FLT
Alarm Raised^M       Location: SAM21 1:CSAM01-01:sled 3^M       Time:     Mon Jan 12
12:49:06 EST 2004^M        Reason:   Temperature in Sled 3 is high
```

Performance

OM and PM Documentation references for SAM21 Shelf Controller

- There are no OMs or PMs associated with this device.

Northbound OM/PM Formats

Not applicable.

CSV

Not applicable.

Note: *The IEMS northbound performance interface does not support this device.*

GUI/CLUI Documentation for SAM21 Shelf Controller

GUI Launching and User procedures

- NN10025-111 - SAM21 Shelf Controller Basics
- NN10089-911 - SAM21 Shelf Controller Fault Management
- NN10111-511 - SAM21 Shelf Controller Configuration Management
- NN10177-611 - SAM21 Shelf Controller Administration and Security
- NN10155-711 - SAM21 Shelf Controller Performance Management

Related documents

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Storage Manager (STORM)

This section contains IEMS Northbound log samples and device documentation references for the STORM.

STORM Fault Interface

Fault documentation for STORM :

- NN10024-111 - STORM Basics
- NN10088-911 - STORM Fault Management

Fault Mapping for STORM

The following criteria can be used for looking up information on specific faults for STORM.

Fault Correlation for STORM

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
STORM	logname and number eg: STM 800	logname and number	logname and number	logname and number	NN10088-911 STORM Fault Management

Northbound Fault Formats for STORM

SCC2

The following is an example of a STORM log in SCC2 format:

Sample Clear:

```
  19 STM 801 0595 INFO
        Location: 47.166.56.10
        Notification Id: 13
        State: Cleared
        Time: Jan 24 19:19:49 2004
```

Sample Raise:

```
**19 STM 801 0596 FLT  STM Fault
        Location: 47.166.56.10
        Notification Id: 14
        State: Raised
        Category: qualityOfService
        Cause: thresholdCrossed
        Time: Jan 24 19:19:49 2004
        Component Id: STORMIA=langley1
        Specific Problem:
        Description: Status: Alarm raised. Used memory percentage is 18.24. Majo
        r alarm threshold value is 6.00.
```

NTSTD

The following is an example of a STORM log in NTSTD format:

Sample Clear:

```
RTPU07BR      STM801 Jan25 00:19:49 0041 INFO
        Location: 47.166.56.10
        Notification Id: 13
        State: Cleared
        Time: Jan 24 19:19:49 2004
```

Sample Raise:

```
RTPU07BR  **  STM801 Jan25 00:19:49 0042 FLT  STM Fault
        Location: 47.166.56.10
        Notification Id: 14
        State: Raised
        Category: qualityOfService
        Cause: thresholdCrossed
        Time: Jan 24 19:19:49 2004
        Component Id: STORMIA=langley1
        Specific Problem:
        Description: Status: Alarm raised. Used memory percentage is 18.24. Majo
        r alarm threshold value is 6.00.
```

SNMP

The following is an example of a STORM log in SNMP format:

Sample Clear:

system.sysUpTime.0 => 8:01:55

snmpTrapOID.0 => nnExtAlarmClear

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.52.44.55.58.49.57.58.52.57.46.48.44.312

alarmActiveDateAndTime => 2004-1-21,6:41:14.0,

alarmActiveDescription => DeviceSpecificInfo=;Status: Alarm cleared. A new alarm with higher severity will be raised.

nnExtAlarmActiveEventType => 2

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => STM 801

nnExtAlarmActiveResourceDescription => IEMS=zmdhh0jk.europe.nortel.com-STORM;STORMIA=langley1

nnExtAlarmActiveSequenceNumber => 24

Sample Raise:

system.sysUpTime.0 => 7:01:55

snmpTrapOID.0 => nnExtAlarmMajor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.52.44.55.58.49.57.58.52.57.46.48.44.329

alarmActiveDateAndTime => 2004-1-21,6:41:14.0,

alarmActiveDescription => Status: Alarm raised. Used memory percentage is 18.24. Major alarm threshold value is 6.00.

nnExtAlarmActiveEventType => 2

nnExtAlarmActiveProbableCause => 51

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => STM 801

nnExtAlarmActiveResourceDescription => IEMS=zmdhh0jk.europe.nortel.com-STORM;STORMIA=langley1

nnExtAlarmActiveManualClear => 2

nnExtAlarmActiveSequenceNumber => 25

Syslog

The following is an example of a STORM log in Syslog format:

Sample Clear:

```
Feb 24 19:19:43 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0618~~  STM801 NONE INFO
^M      Location: 47.166.56.10^M      Notification Id: 13^M      State: Cleared^M
Time: Jan 24 19:19:49 2004
```

Sample Raise:

```
Feb 24 19:19:43 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0619~~  STM801 MAJOR FLT
STM Fault^M       Location: 47.166.56.10^M       Notification Id: 14^M       State:
Raised^M      Category: qualityOfService^M      Cause: thresholdCrossed^M      Time:
Jan 24 19:19:49 2004^M       Component Id: STORMIA=langley1^M       Specific Problem:
^M      Description: Status: Alarm raised. Used memory percentage is 18.24. Majo^M
r alarm threshold value is 6.00.
```

Performance

OM and PM Documentation references for STORM

The SNMP based attributes that can be collected from the STORM device are documented in:

- NN10054-711 - STORM Performance Management Customer Document

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided.

XML

The following is an example of Performance data for STORM in XML format:

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance" xsi:noNamespaceSchemaLocation="**commonFormat.xsd**" MeasurementCategory="**PM**">
<FileCreationTime>2004-06-23T21:30:00EST</FileCreationTime>
- <System>
<SystemId>NortelNetworks/IEMS</SystemId>
- <Entity Type="**STORM**">
<EntityId>47.166.56.10</EntityId>
- <SingleValues MeasurementKind="**Snapshot**" IntervalDuration="**5**">
- <SingleValue>
<CaptureTime>2004-06-23T21:25:01EST</CaptureTime>
<MeasureId>sysDescr</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.system</MeasureSuppId1>
<Value>Linux langley40 2.4.19-xfs #1 SMP Fri Nov 7 11:18:05 EST 2003 i686</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:02EST</CaptureTime>
<MeasureId>snmpOutPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>2790</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:03EST</CaptureTime>
<MeasureId>snmpInBadVersions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>

- <SingleValue>
<CaptureTime>2004-06-23T21:25:03EST</CaptureTime>
<MeasureId>snmpInBadCommunityNames</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>1</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:04EST</CaptureTime>
<MeasureId>snmpInTotalReqVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>8880</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:04EST</CaptureTime>
<MeasureId>snmpOutTraps</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>69</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:04EST</CaptureTime>
<MeasureId>snmpInBadCommunityUses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:05EST</CaptureTime>
<MeasureId>snmpInPkts</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>2739</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>

<CaptureTime>2004-06-23T21:25:05EST</CaptureTime>
<MeasureId>snmpInTotalSetVars</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:06EST</CaptureTime>
<MeasureId>snmpInASNParseErrs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:07EST</CaptureTime>
<MeasureId>snmpSilentDrops</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.snmp</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:08EST</CaptureTime>
<MeasureId>hrSystemDate</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:09EST</CaptureTime>
<MeasureId>hrSystemUptime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>
<Value>6603666</Value>
<Reliability>Valid</Reliability>
</SingleValue>
- <SingleValue>
<CaptureTime>2004-06-23T21:25:09EST</CaptureTime>

<MeasureId>hrSystemProcesses</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.host.hrSystem</MeasureSuppId1>
<Value>73</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>

CSV

The following is an example of Performance data for STORM in CSV format:

```
PMFile=Begin
PM,commonFormat.xsd,2004-06-23T21:30:00EST

System=Begin
NortelNetworks/IEMS

Entity=Begin
47.166.56.10,STORM

SingleValues=Begin
Snapshot,5
sysDescr,2004-06-23T21:25:01EST,.iso.org.dod.internet.mgmt.mib-2.system,Linux
langley40 2.4.19-xfs #1 SMP Fri Nov 7 11:18:05 EST 2003 i686,Valid
snmpOutPkts,2004-06-23T21:25:02EST,.iso.org.dod.internet.mgmt.mib-2.snmp,2790,Valid
snmpInBadVersions,2004-06-23T21:25:03EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid
snmpInBadCommunityNames,2004-06-23T21:25:03EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,1,Valid
snmpInTotalReqVars,2004-06-23T21:25:04EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,8880,Valid
snmpOutTraps,2004-06-23T21:25:04EST,.iso.org.dod.internet.mgmt.mib-2.snmp,69,Valid
snmpInBadCommunityUses,2004-06-23T21:25:04EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid
snmpInPkts,2004-06-23T21:25:05EST,.iso.org.dod.internet.mgmt.mib-2.snmp,2739,Valid
```

```
snmpInTotalSetVars,2004-06-23T21:25:05EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid

snmpInASNParseErrs,2004-06-23T21:25:06EST,.iso.org.dod.internet.mgmt.mib-
2.snmp,0,Valid

snmpSilentDrops,2004-06-23T21:25:07EST,.iso.org.dod.internet.mgmt.mib-2.snmp,0,Valid

hrSystemDate,2004-06-23T21:25:08EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,0,Valid

hrSystemUptime,2004-06-23T21:25:09EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,6603666,Valid

hrSystemProcesses,2004-06-23T21:25:09EST,.iso.org.dod.internet.mgmt.mib-
2.host.hrSystem,73,Valid

SingleValues=End

Entity=End

System=End

PMFile=End
```

GUI/CLUI Documentation for STORM

GUI Launching and User procedures

- NN10024-111 (STORM Basics)

Related documents

- NN10066-461 (Understanding STORM)
- NN10110-511 (STORM Configuration)
- NN10054-711 (STORM Performance)
- NN10176-611 (STORM Administration and Security)

Universal Audio Server (UAS)

This section contains IEMS Northbound log samples and device documentation references for the UAS.

UAS Fault Interface

Fault documentation for UAS :

- NN10073-911 UAS Fault Management

Fault Mapping for UAS

The following criteria can be used for looking up information on specific faults for UAS.

Fault Correlation for UAS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
UAS	logname and number	logname and number	logname and number	logname and number	NN10073-911 UAS Fault Management

Northbound Fault Formats for UAS

SCC2

The following is an example of a UAS log in SCC2 format:

```
*C59 UAS 301 0723 TBL  UAS Fault
        Location: UAS12_Test
        NotificationID: 2109441
        State: Raise
        Category: Processing Error
        Cause: Software error
        Time: Jan 22 15:41:28 2004
        Component Id: UAS;UASUnit=MATTA-2;Software=Call_Engine_1
        Specific Problem: 12289
        Description: CallEngine test alarm critical number 1
```

NTSTD

The following is an example of a UAS log in NTSTD format:

```
COMPACT506BT ***  UAS301 Jan22 20:59:00 1149 TBL  UAS Fault
        Location: UAS12_Test
        NotificationID: 2109441
        State: Raise
        Category: Processing Error
        Cause: Software error
```

```
Time: Jan 22 15:41:28 2004
Component Id: UAS;UASUnit=MATTA-2;Software=Call_Engine_1
Specific Problem: 12289
Description: CallEngine test alarm critical number 1
```

SNMP

The following is an example of a UAS log in SNMP format:

```
sysUpTime.0 => 3:21:08
snmpTrapOID.0 => nnExtAlarmCritical
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.11
6.19.50.48.48.52.45.49.45.50.50.44.51.58.53.57.58.48.46.52.44.28556
alarmActiveDateAndTime => 2004-1-22,3:59:0.4,
alarmActiveDescription => DeviceSpecificInfo=Unavailable;Location: UAS12_Test
NotificationID: 2109441
State: Raise
Category: Processing Error
Cause: Software error
Time: Jan 22 15:41:28 2004
Component Id: UAS;UASUnit=MATTA-2;Software=Call_Engine_1
Specific Problem: 12289
Description: CallEngine test alarm critical number 1
```

Syslog

The following is an example of a UAS log in Syslog format:

```
Jan 22 15:59:00 znc0s0jh IEMS: _V2_~I=~H=znc0s0jh~A=IEMS~S=3086~~ UAS301 CRIT TBL UAS
Fault^M Location: UAS12_Test^M NotificationID: 2109441^M State:
Raise^M Category: Processing Error^M Cause: Software error^M Time:
Jan 22 15:41:28 2004^M Component Id: UAS;UASUnit=MATTA-
2;Software=Call_Engine_1^M Specific Problem: 12289^M Description:
CallEngine test alarm critical number 1
```

Performance

OM and PM Documentation references for UAS

- NTP NN10139-001 UAS Performance

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided
each of the Northbound formats provided

XML

The following is an example of performance data for UAS in XML format:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="commonFormat.xsd" MeasurementCategory="PM">
<FileCreationTime>2005-01-13T14:15:01EST</FileCreationTime>
<System>
<SystemId>NortelNetworks/IEMS</SystemId>
<Entity Type="UAS">
<EntityId>47.142.89.82</EntityId>
<Table MeasurementKind="Snapshot" IntervalDuration="5">
<TableId>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasResourc
eManagerObjects.norUasRequestStatsTable.norUasRequestStatsEntry</TableId>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<Labels>
<Label>norUasResourceName</Label>
<Label>norUasRequestCount</Label>
<Label>norUasRequestsFailed</Label>
</Labels>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool5</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool4</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool3</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool2</Value>
</RowValue>
```

```
<RowValue>
<Value>0</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool1</Value>
</RowValue>
<RowValue>
<Value>4</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>EndpointIdPool0</Value>
</RowValue>
<RowValue>
<Value>103</Value>
</RowValue>
<RowValue>
<Value>0</Value>
</RowValue>
</RowOfValues>
</Table>
<SingleValues MeasurementKind="Snapshot" IntervalDuration="5">
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasMgcpMessageRetransmissionFailures</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>3771</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasAckfail</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasProterror</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasAudioSegmentFailed</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
```

```
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasComperror</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasProtocolSyntaxErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:01EST</CaptureTime>
<MeasureId>norUasNumberOfPlayRecordErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
IVRServiceObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasConfLackOfResourceRejections</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
ConfServiceObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasConfTotal</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
ConfServiceObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasConfPlays</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
ConfServiceObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:01EST</CaptureTime>
<MeasureId>norUasNumberOfPlayRecords</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
IVRServiceObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasRestart</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
```

```
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasConndeleted</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasProtocolMessageValidationErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasUdpReceiveErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>10</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasNumDupsForOutstandingTransactions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasEndpointsInUse</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasTimeout</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>1256</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasNumDupsForCompletedTransactions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>3</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasUdpSendErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
```

```
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasCallControlMessageSendFailures</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>1257</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasMgcpMessageRetransmissions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>3771</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2005-01-13T14:15:00EST</CaptureTime>
<MeasureId>norUasAudioSegmentPlayed</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUas
CallEngineObjects</MeasureSuppId1>
<Value>134</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>
```

CSV

The following is an example of performance data for UAS in CSV format:

```
PMFile=Begin
MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime
PM,commonFormat.xsd,2005-01-13T14:15:02EST

System=Begin
SystemId
NortelNetworks/IEMS

Entity=Begin
EntityId,Type
47.142.89.82,UAS

Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasResourceManagerO
bjects.norUasRequestStatsTable.norUasRequestStatsEntry,Snapshot,5,2005-01-
13T14:15:00EST
Label,Label,Label
norUasResourceName,norUasRequestCount,norUasRequestsFailed
Value,Value,Value
EndpointIdPool5,0,0
EndpointIdPool4,0,0
EndpointIdPool3,0,0
EndpointIdPool2,0,0
EndpointIdPool1,4,0
EndpointIdPool0,103,0
Table=End


SingleValues=Begin
MeasurementKind,IntervalDuration
Snapshot,5
MeasureId,CaptureTime,MeasureSuppId1,Value,Reliability
```

```
norUasMgcpMessageRetransmissionFailures,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,3771,Valid
norUasAckfail,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasProterror,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasAudioSegmentFailed,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasComperror,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasProtocolSyntaxErrors,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasNumberOfPlayRecordErrors,2005-01-
13T14:15:01EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasI
VRServiceObjects,0,Valid
norUasConfLackOfResourceRejections,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
onfServiceObjects,0,Valid
norUasConfTotal,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
onfServiceObjects,0,Valid
norUasConfPlays,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
onfServiceObjects,0,Valid
norUasNumberOfPlayRecords,2005-01-
13T14:15:01EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasI
VRServiceObjects,0,Valid
norUasRestart,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasConndeleted,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasProtocolMessageValidationErrors,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasUdpReceiveErrors,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,10,Valid
norUasNumDupsForOutstandingTransactions,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasEndpointsInUse,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasTimeout,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,1256,Valid
norUasNumDupsForCompletedTransactions,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,3,Valid
norUasUdpSendErrors,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,0,Valid
norUasCallControlMessageSendFailures,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,1257,Valid
```

```
norUasMgcpMessageRetransmissions,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,3771,Valid
norUasAudioSegmentPlayed,2005-01-
13T14:15:00EST,.iso.org.dod.internet.private.enterprises.nortel.voip.uas.norUasC
allEngineObjects,134,Valid
SingleValues=End

Entity=End

System=End

PMFile=End
```

GUI/CLUI Documentation for UAS

GUI Launching and User procedures

- NTP NN10047-461 UAS Basics

Related documents

- NTP NN10095-511 UAS Configuration
- NTP NN10161-611 UAS Security
- NTP NN10047-461 UAS Upgrades

Universal Signaling Point (USP)

This section contains IEMS Northbound log samples and device documentation references for the USP.

USP Fault Interface

Fault documentation for USP :

- NN10071911 - USP Fault Management
- NN10072911 - USP-Compact Fault Management

Fault Mapping for USP

The following criteria can be used for looking up information on specific faults for USP.

Fault Correlation for USP

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
USP	Specific Problem: Log Group=<text> & Log Number=<number> Note: Log GroupID is not used	Specific Problem: Log Group=<text> & Log Number=<number> Note: Log GroupID is not used	Specific Problem: Log Group=<text> & Log Number=<number> Note: Log GroupID is not used	Specific Problem: Log Group=<text> & Log Number=<number> Note: Log GroupID is not used	NN10071911 USP Fault Management

Northbound Fault Formats for USP

SCC2

The following is an example of a USP log in SCC2 format:

```
**10 USP 398 0022 FLT  USP Fault
        Location: 47.135.60.201
        Notification Id: 526
        State: Raised
        Category: processingError
        Cause: applicationSubsystemFailure(2)
        Time: Jan 20 07:10:29 2004
        Component Id: USP=autoimage;Shelf=0;Slot=15;ContextID=0x0
        Specific Problem: Log GroupID=13;Log Group=System Node Maintenance;Log N
        umber=3
        Description: Transition to DISABLED Operational State.
```

NTSTD

The following is an example of a USP log in NTSTD format:

```
COMPACT06BT  ** USP398 Jan20 12:10:29 0022 FLT  USP Fault
        Location: 47.135.60.201
        Notification Id: 526
        State: Raised
        Category: processingError
        Cause: applicationSubsystemFailure(2)
```

```
Time: Jan 20 07:10:29 2004
Component Id: USP=autoimage;Shelf=0;Slot=15;ContextID=0x0
Specific Problem: Log GroupID=13;Log Group=System Node Maintenance;Log N
umber=3
Description: Transition to DISABLED Operational State.
```

SNMP

The following is an example of a USP log in SNMP format:

sysUpTime.0 => 2:58:15

snmpTrapOID.0 => nnExtAlarmMajor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.48.44.55.58.49.48.58.50.57.46.48.44.36582

alarmActiveDateAndTime => 2004-1-20,7:10:29.0,

alarmActiveDescription =>
DeviceSpecificInfo=applicationSubsystemFailure(2);Transition to DISABLED Operational
State.

nnExtAlarmActiveEventType => 3

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => USP 398

nnExtAlarmActiveResourceDescription => IEMS=usp_germany-1321-Unit-
0;USP=autoimage;Shelf=0;Slot=15;ContextID=0x0

nnExtAlarmActiveManualClear => 0

nnExtAlarmActiveSequenceNumber => 21

Syslog

The following is an example of a USP log in Syslog format:

```
Feb 22 01:50:39 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0088~~  USP398 MAJOR FLT
USP Fault^M       Location: 47.135.60.201^M       Notification Id: 526^M       State:
Raised^M        Category: processingError^M        Cause:
applicationSubsystemFailure(2)^M       Time: Jan 20 07:10:29 2004^M       Component
Id: USP=autoimage;Shelf=0;Slot=15;ContextID=0x0^M        Specific Problem: Log
GroupID=13;Log Group=System Node Maintenance;Log N^M      umber=3^M      Description:
Transition to DISABLED Operational State.
```

Performance

OM and PM Documentation references for USP

- NN10137711 - USP Performance Management
- NN10138711 - USP-Compact Performance Management
- USP Logs & OMs - USP Logs and OMs

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided.
Note that for SN08, the OMs/PMs are provided in raw CSV format.

XML

The following is an example of performance data for USP in XML format:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="commonFormat.xsd" MeasurementCategory="PM">
<FileCreationTime>2004-12-09T16:30:20EST</FileCreationTime>
<System>
<SystemId>NortelNetworks/IEMS</SystemId>
<Entity Type="USP">
<EntityId>47.135.60.71</EntityId>
<Table MeasurementKind="Snapshot" IntervalDuration="5">
<TableId>Linkset Utilization</TableId>
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<Label>RST Transmitted Count</Label>
<Label>TFA and TCA Received Count</Label>
<Label>TFA and TCA Transmitted Count</Label>
<Label>TFC Received Count</Label>
<Label>TFC Transmitted Count</Label>
<Label>TFP and TCP Received Count</Label>
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<Label>TFR and TCR Received Count</Label>
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CSV

The following is an example of performance data for USP in CSV format:

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MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime
PM,commonFormat.xsd,2004-12-09T16:35:32EST

System=Begin
SystemId
NortelNetworks/IEMS

Entity=Begin
EntityId,Type
47.135.60.71,USP

Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Linkset Utilization,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Linkset Inactivity Duration,RST Received Count,RST Transmitted Count,TFA and TCA
Received Count,TFA and TCA Transmitted Count,TFC Received Count,TFC Transmitted
Count,TFP and TCP Received Count,TFP and TCP Transmitted Count,TFR and TCR
Received Count,TFR and TCR Transmitted Count,UPU Received Count
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value
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TableId,MeasurementKind,IntervalDuration,CaptureTime
ASP Path Traffic,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label
Discarded MSUs Count,Discarded MTP3b MSUs Count,Originated MSUs Count,Received
MSUs Count,Sent MSUs Count,Terminated MSUs Count
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SCCP System Totals,Snapshot,5,2004-12-09T09:15:00EST
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bel,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
l,Label,Label,Label,Label
Conn-Orient IP Dist Viol Count,Conn-Orient Msg Handled Count,Conn-Orient Msg Rtg
Fail Count,LUDT Msg Rcvd Count,LUDT Msg Sent Count,LUDTS Msg Sent Count,MSUs Disc-
Unrec SCCP Msg Count,Msg Incompatibility,Msg too large for segmentation,Out of
sequence SCCP msg count,Reassembly Timer Expired,Reassembly buffer
unavailable,Reassembly failed,Routing Failure - Unequip.User,SCCP Routing Failure
Count,SSA Received Count,SSA Transmitted Count,SSP Received Count,SSP Transmitted
Count,SST Received Count,SST Transmitted Count,Segmentation failed,Total messages
handled,UDT Msg Rcvd Count,UDT Msg Sent Count,UDTS Msg Rcvd Count,UDTS Msg Sent
Count,XUDT Msg Rcvd Count,XUDT Msg Sent Count,XUDTS Msg Rcvd Count,XUDTS Msg Sent
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Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
TUP Received Message Counts,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label
B/TUP Error No AS for OPC/CIC,B/TUP Error No OPC/CIC Data,B/TUP Error No Path,B/TUP
Error No Route,BTUP Call P Received Count,BTUP Maint Received Count,TUP Call P
Received Count,TUP Maint Received Count,Wrong NE Received Count
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Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Link Faults and Performance,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Number of SUs received in error,Number of negative ack.received,Octets
Retransmitted,SL alignment or proving failure,SL failure-Abnormal FIBR/BSNR,SL
failure-All reasons,SL failure-Exc. delay of ack,SL failure-Exc. duration of
con,SL failure-Excessive error rate,SL failure-Other reasons
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value
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Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
System Node State,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label
Disabled, Locked Duration,Disabled, Unlocked Duration,Enabled, Locked
Duration,Enabled, Unlocked Duration,Locked, Off-line Duration,Percentage Enabled
Value,Value,Value,Value,Value,Value
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Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
SCTP Management/Traffic Counts,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label
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```
Association Aborted Count,Association Establish Attempts,Association Terminated
Count,Chunk Retransmitted Count,Chunks Received Count,Chunks Transmitted
Count,Established Association Count,Out of Blue SCTP Packet
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Log Server,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label
Critical Alarms Ack Count,Critical Alarms Cleared Count,Critical Alarms Received
Count,Major Alarms Ack Count,Major Alarms Cleared Count,Major Alarms Received
Count,Minor Alarms Ack Count,Minor Alarms Cleared Count,Minor Alarms Received
Count
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TableId,MeasurementKind,IntervalDuration,CaptureTime
UDP,Snapshot,5,2004-12-09T09:15:00EST
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TableId,MeasurementKind,IntervalDuration,CaptureTime
Gateway Screening Results,Snapshot,5,2004-12-09T09:15:00EST
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Disallowed Cld Party Addr Count,Disallowed ISUP Count,Disallowed Trans Type
Count,Invalid Affct Destination Count,Invalid Affct PC-SSN Count,Invalid Cng Party
Addr Count,Invalid DPC Count,Invalid OPC Count,Invalid SIO Count
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0,0,0,0,0,0,0,0,0
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0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Task Management,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Collection Period Duration,Idle Task Duration,Level 0 Priority Task Duration,Level
1 Priority Task Duration,Level 2 Priority Task Duration,Level 3 Priority Task
Duration,Level 4 Priority Task Duration,Level 5 Priority Task Duration,Level 6
Priority Task Duration,Level 7 Priority Task Duration,Level 8 Priority Task
Duration,Level 9 Priority Task Duration,OS System Tasks Duration
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value
300030,299590,2,18,32,12,44,87,4,0,93,0,142
300030,299655,2,19,30,11,42,81,3,0,39,0,142
300020,298201,23,140,257,95,381,318,28,3,46,0,522
300020,212600,29,200,936,134,421,84783,35,3,54,0,821
300000,293905,8,142,173,44,272,212,4401,0,247,0,591
300010,268964,10,69,332,45,162,30092,14,1,28,0,289
300000,211605,0,3405,18943,791,12853,1461,211,38494,70,0,12163
300000,211708,0,3382,18769,789,13039,1461,214,38358,68,0,12207
300000,299318,7,48,88,34,137,128,11,1,26,0,196
300020,299818,2,18,30,9,5,46,4,0,40,0,42
300030,299828,2,18,29,9,5,46,4,0,40,0,42
300020,299592,2,18,31,11,43,79,4,0,93,0,142
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Link Traffic,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,La
bel,Label,Label,Label,Label,Label,Label,Label,Label
Link utilization,MSUs Received Count,MSUs Requiring GTT Count,MSUs Transmitted
Count,MTP3b Discard Count,Network Indicator Discard Count,OPC Screening Discard
Count,Octets Received Count,Octets Requiring GTT Count,Octets Transmitted
Count,Originated MSU Octets Count,Pri 0 MSU Inbd Discard Count,Pri 0 MSU Outbd
Discard Count,Pri 1 MSU Inbd Discard Count,Pri 1 MSU Outbd Discard Count,Pri 2 MSU
Inbd Discard Count,Pri 2 MSU Outbd Discard Count,Pri 3 MSU Inbd Discard Count,Pri
3 MSU Outbd Discard Count,Terminated MSU Octets Count,Through-Switched MSUs
Count,Thru-Switched MSU Octets Count
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Va
lue,Value,Value,Value,Value,Value,Value,Value,Value
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
70,67021,,8376,0,0,0,1474462,,134016,134016,67021,0,0,0,0,0,0,0,0,0,0
70,67022,,8377,0,0,0,1474484,,134032,134032,67022,0,0,0,0,0,0,0,0,0,0
70,67022,,8378,0,0,0,1474484,,134048,134048,67022,0,0,0,0,0,0,0,0,0,0
70,67022,0,8378,0,0,0,1474484,0,134048,134048,67022,0,0,0,0,0,0,0,0,0,0,0
70,67021,,8378,0,0,0,1474462,,134048,134048,67021,0,0,0,0,0,0,0,0,0,0
70,67022,,8378,0,0,0,1474484,,134048,134048,67022,0,0,0,0,0,0,0,0,0,0
70,67022,,8378,0,0,0,1474484,,134048,134048,67022,0,0,0,0,0,0,0,0,0,0
0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
70,67021,0,8378,0,0,0,1474462,0,134048,134048,67021,0,0,0,0,0,0,0,0,0,0
0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
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0,0,,0,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,0,0,0,0,0,,,,,,,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
ISUP Received Message Counts,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,La
bel,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Labe
l,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,La
bel,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Labe
l
ACM Received Count,ALT Received Count,ANM Received Count,BLA Received Count,BLO
Received Count,CCR Received Count,CFN Received Count,CGB Received Count,CGBA
Received Count,CGU Received Count,CGUA Received Count,CMC Received Count,CMR
Received Count,CMRJ Received Count,CON Received Count,COT Received Count,CPG
Received Count,CQM Received Count,CQR Received Count,CRA Received Count,CRG
Received Count,CRM Received Count,CSVR Received Count,CSVS Received Count,CVR
Received Count,CVT Received Count,DRS Received Count,EXM Received Count,FAA
Received Count,FAC Received Count,FAD Received Count,FAI Received Count,FAR
Received Count,FOT Received Count,FRJ Received Count,GRA Received Count,GRS
Received Count,IAM Received Count,IAMN1 Received Count,IDR Received Count,INF
Received Count,INR Received Count,IRS Received Count,ISUP Error No AS for
OPC/CIC,ISUP Error No OPC/CIC Data,ISUP Error No Path,ISUP Error No Route,ISUP
Error Unknown Message,LOP Received Count,LPA Received Count,NRM Received Count,PAM
Received Count,PRG Received Count,REL Received Count,RES Received Count,RLC
Received Count,RPM Received Count,RSC Received Count,SAM Received Count,SGM
Received Count,SUS Received Count,UBA Received Count,UBL Received Count,UCIC
Received Count,UPA Received Count,UPT Received Count,USR Received Count
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Va
lue,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Valu
e,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Va
lue,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Valu
e
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
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0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
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0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
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0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
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0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Route Set Management,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label
RouteSet Congested Count,Routeset Man-busied Count,Routeset Unavailability
Count,Routeset Unavailability Dur.
Value,Value,Value,Value
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
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0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Link Management,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,La
bel,Label,Label
Changeover Procedure Count,Far End Mgmt Inhibit Count,Level 1 Congestion
Count,Level 1 Congestion Duration,Level 2 Congestion Count,Level 2 Congestion
Duration,Level 3 Congestion Count,Level 3 Congestion Duration,Link Available
Duration,Link Deactivated Duration,Link Local Inhibit Duration,Link Remote
Inhibit Duration,Near End Forced Unavailable Cou,RPO Count,RPO Cumulative
Duration,Unavailable Duration
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Va
lue,Value,Value
0,0,,0,,0,,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,300
```

```
0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
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0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,300,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,0,0,0,0,0,0,0,300,0,0,0,0,0,300
0,0,,0,,0,,0,300,0,0,0,0,0,0,300
0,0,0,0,,,,,0,300,0,0,0,0,0,300
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
BICC Received Message Counts,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label
BICC Call P Received Count,BICC Error No OPC Route,BICC Error No Path,BICC Error
No Route,BICC Maint Received Count
Value,Value,Value,Value,Value
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
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0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
ASP Path Management,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label
Path Down Time,Path Restore Time,Path Up Time,Path entered Down state,Path entered
Restoring state,Path entered Up state
Value,Value,Value,Value,Value,Value
300,0,0,0,0,0
300,0,0,0,0,0
300,0,0,0,0,0
300,0,0,0,0,0
300,0,0,0,0,0
300,0,0,0,0,0
Table=End
```

```
Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
Carrier,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label,La
bel,Label,Label,Label,Label,Label
Far End Line - Errored Seconds,Far End P - Sev Err Frm/AIS Sec,Far End P - Severely
Err Secs,Far End P - Unavailable Seconds,Far End Path - Code Violations,Far End
Path - Controlled Slips,Far End Path - Errored Seconds,Far End Path - Failure
Count,Line - Code Violations,Line - Errored Seconds,Line - Loss of Signal
Seconds,Line - Severely Errored Seconds,P - Severely Err Frame/AIS Secs,Path - AIS
Seconds,Path - Code Violations,Path - Errored Seconds,Path - Failure Count,Path -
Severely Errored Seconds,Path - Unavailable Seconds
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Value,Va
lue,Value,Value,Value,Value,Value
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
ATM Driver Messaging,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Duplicate Messages Count,IP Message Count,Plane 1 CRC Error Count,Plane 1 Messages
Count,Plane 2 CRC Error Count,Plane 2 Messages Count,Raw Cell Count,Raw Message
Count,SSCOP Message Count,Sequence Number Reset Count
Value,Value,Value,Value,Value,Value,Value,Value,Value,Value
1725,636,0,1725,0,1725,0,0,1089,0
1730,636,0,1730,0,1730,0,0,1094,0
1723,636,0,1723,0,1723,0,0,1087,0
24364,636,0,24364,0,24364,0,0,23728,0
1995,871,0,1995,0,1995,0,0,1124,0
24364,636,0,24364,0,24364,0,0,23728,0
3066,3066,0,3066,0,3066,0,0,0,0
3066,3066,0,3066,0,3066,0,0,0,0
1723,636,0,1723,0,1723,0,0,1087,0
1124,36,0,1124,0,1124,0,0,1088,0
1123,36,0,1123,0,1123,0,0,1087,0
1731,636,0,1731,0,1731,0,0,1095,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
ASP Path Utilization,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label
DAUD Received Count,DAVA Transmitted Count,DUNA Transmitted Count,DUPU
Transmitted Count,SCON Transmitted Count
Value,Value,Value,Value,Value
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
0,0,0,0,0
Table=End


Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
SCCP GTT,Snapshot,5,2004-12-09T09:15:00EST
Label,Label,Label,Label,Label
```

```
Alt Routing on Cong Count,GTT Performed Count,Hop Counter Violation Count,No
Translation for Addr Count,Trans Type Not Found Count
Value,Value,Value,Value,Value
0,0,0,0,0
Table=End

Entity=End

System=End

PMFile=End
```

GUI/CLUI Documentation for USP

GUI Launching and User procedures

- NN10093511 - USP Configuration Management
- NN10094511 - USP-Compact Operation Configuration
- NN10159611 - USP Administration and Security
- NN10160611 - USP-Compact Administration and Security

Related documents

- NN10008111 - USP Basics
- NN10045461 - Upgrading the USP
- NN10009111 - USP-Compact Product and Technology Fundamentals

XACore

This section contains IEMS Northbound log samples and device documentation references for the XACore.

XACore Fault Interface

Fault documentation for XACore :

- 297-8991-510 - XA-Core Maintenance Manual
- 297-8991-511 - XA-Core Maintenance Guide
- NN10275-909 - Succession fault Management logs Reference
- NN10083-911 - Communication Server 2000 Fault Management

DMS Standard (North America)

- 297-8021-840P1 - North American DMS100 Log Report Reference Manual Volume 1 of 8
- 297-8021-840P2 - North American DMS100 Log Report Reference Manual Volume 2 of 8
- 297-8021-840P3 - North American DMS100 Log Report Reference Manual Volume 3 of 8
- 297-8021-840P4 - North American DMS100 Log Report Reference Manual Volume 4 of 8
- 297-8021-840P5 - North American DMS100 Log Report Reference Manual Volume 5 of 8
- 297-8021-840P6 - North American DMS100 Log Report Reference Manual Volume 6 of 8
- 297-8021-840P7 - North American DMS100 Log Report Reference Manual Volume 7 of 8
- 297-8021-840P8 - North American DMS100 Log Report Reference Manual Volume 8 of 8

International Succession

- 297-9051-8401 - DMS100 Log Report Reference Manual Volume 1 of 7
- 297-9051-8402 - DMS100 Log Report Reference Manual Volume 2 of 7
- 297-9051-8403 - DMS100 Log Report Reference Manual Volume 3 of 7
- 297-9051-8404 - DMS100 Log Report Reference Manual Volume 4 of 7
- 297-9051-8405 - DMS100 Log Report Reference Manual Volume 5 of 7
- 297-9051-8406 - DMS100 Log Report Reference Manual Volume 6 of 7
- 297-9051-8407 - DMS100 Log Report Reference Manual Volume 7 of 7

Fault Mapping for XACore

The following criteria can be used for looking up information on specific faults for XACore.

Fault Correlation for XACore

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
XACore	log name and log number	log name and log number	log name and log number	log name and log number	297-8991-510 - XA-Core Maintenance Manual

Northbound Fault Formats for XACore

SCC2

The following is an example of a XACore log in SCC2 format:

```
* 47 XAC 305 0114 FLT  RTIF (Reset Terminal Interface)
        DESCRIPTION: State has changed from INSV to SYSB by FAULT action
        PORT: Type State Site FL Row Bay    Shf/Slt/Pk/Pt   EqPEC/Serial
              RTIF SYSB  HOST 01 A00 DPCC:00 00 15R U  1 NTLX08AA/  NNTM17205KR8
        REASON:  Device Fault: RTIF IPC Protocol Error.
        FAULT RECORD ID: 880166C7
```

NTSTD

The following is an example of a XACore log in NTSTD format:

```
COMPACT06BT   *  XAC305 Feb15 00:47:43 0114 FLT  RTIF (Reset Terminal Interface)
        DESCRIPTION: State has changed from INSV to SYSB by FAULT action
        PORT: Type State Site FL Row Bay    Shf/Slt/Pk/Pt   EqPEC/Serial
              RTIF SYSB  HOST 01 A00 DPCC:00 00 15R U  1 NTLX08AA/  NNTM17205KR8
        REASON:  Device Fault: RTIF IPC Protocol Error.
        FAULT RECORD ID: 880166C7
```

SNMP

The following is an example of a XACore log in SNMP format:

```
sysUpTime. => 0:28:39

snmpTrapOID. => nnExtAlarmMinor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.50.52.44.51.58.53.51.58.52.49.46.48.44.5248

alarmActiveDateAndTime => 2004-6-24,3:53:41.0

alarmActiveDescription => DeviceSpecificInfo=localTransmissionError;time: 2004 06 24
15 53 41

event: set

compId: EM MANTEO LP 3 SONET 2

severity: minor

faultcode: 70115203

alarmType: communications

commentData: Far end has raised a Line Remote Failure Indication alarm (rxRfiAlarm).
```

```
Check the operational attributes of the far-end.


nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => PPEM300

nnExtAlarmActiveResourceDescription => IEMS=wnc0y0m3.us.nortel.com-MDM-Mgr;EM MANTEO
LP 3 SONET 2

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 1375


sysUpTime. => 0:28:47

snmpTrapOID. => nnExtAlarmMinor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.50.52.44.51.58.53.51.58.52.56.46.48.44.5249

alarmActiveDateAndTime => 2004-6-24,3:53:48.0

alarmActiveDescription => time: 2004 06 24 15 53 48

event: set

compId: EM MANTEO LP 3 SONET 2

severity: minor

faultcode: 70115210

alarmType: communications

commentData: Far end line: Entering unavailable state (10 consecutive SESs).

Check the provisioning or the hardware on the local and far end.


nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 12

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => PPEM300

nnExtAlarmActiveResourceDescription => IEMS=wnc0y0m3.us.nortel.com-MDM-Mgr;EM MANTEO
LP 3 SONET 2

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 1376
```

Syslog

The following is an example of a XACore log in Syslog format:

```
Feb 14 19:47:43 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=9773~~  XAC305 MINOR FLT
RTIF (Reset Terminal Interface)^M         node CM      ^M        DESCRIPTION: State
```

```
has changed from INSV to SYSB by FAULT action^M        PORT: Type State Site FL Row
Bay    Shf/Slt/Pk/Pt   EqPEC/Serial^M              RTIF SYSB  HOST 01 A00 DPCC:00 00
15R U  1 NTLX08AA/  NNTM17205KR8^M        REASON:  Device Fault: RTIF IPC Protocol
Error.  ^M        FAULT RECORD ID: 880166C7
```

Performance

OM and PM Documentation references for XACore

- 297-8991-810 - XA-Core Reference Manual
- NN10149-711 - Communications Server 2000 Performance Management

DMS Standard (North America)

- 297-8021-814P1 - North American DMS-100 Operational Measurements Reference Manual Volume 1of 6
- 297-8021-814P2 - North American DMS-100 Operational Measurements Reference Manual Volume 2 of 6
- 297-8021-814P3 - North American DMS-100 Operational Measurements Reference Manual Volume 3 of 6
- 297-8021-814P4 - North American DMS-100 Operational Measurements Reference Manual Volume 4 of 6
- 297-8021-814P5 - North American DMS-100 Operational Measurements Reference Manual Volume 5 of 6
- 297-8021-814P6 - North American DMS-100 Operational Measurements Reference Manual Volume 6 of 6

International Succession

- 297-9051-8141 - DMS-100 Family Operational Measurements Reference Manual Volume 1 of 6
- 297-9051-8142 - DMS-100 Family Operational Measurements Reference Manual Volume 2 of 6
- 297-9051-8143 - DMS-100 Family Operational Measurements Reference Manual Volume 3 of 6
- 297-9051-8144 - DMS-100 Family Operational Measurements Reference Manual Volume 4 of 6
- 297-9051-8145 - DMS-100 Family Operational Measurements Reference Manual Volume 5 of 6
- 297-9051-8146 - DMS-100 Family Operational Measurements Reference Manual Volume 6 of 6

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

Performance measurements for XACore are available from the CS2K Core Manager. See NN10149-711 - Communications Server 2000 Performance Management for more information.

XML

The following is an example of Performance data for XACore in XML format:

Note: *The IEMS northbound performance interface does not support this device.*

CSV

The following is an example of Performance data for XACore in CSV format:

Note: *The IEMS northbound performance interface does not support this device.*

GUI/CLUI Documentation for XACore

The XACore provides both command-line and MAP-based interfaces accessed through the CS2000 Core Manager.

GUI/CLUI Launching and User procedures

- NN10018-111 - CS2000 Core Manager Basics

  see section “Accessing the Core”

Related documents

- NN10197-111 - Communication Server 2000 Basics
- NN10193-511 - Communication Server 2000 Configuration Management
- NN10127-811 - Communication Server 2000 Accounting Management
- NN10171-611 - Communication Server 2000 Security and Administration
- 297-5051-921 - SuperNode Data Manager DDMS ASCII CI Gateway User Guide
- 297-5161-022P1 - Advanced Intelligent Network Service Enablers SIG Volume 1 of 3
- 297-5161-022P2 - Advanced Intelligent Network Service Enablers SIG Volume 2 of 3
- 297-5161-022P3 - Advanced Intelligent Network Service Enablers SIG Volume 3 of 3

- 297-8021-350P1 - North American DMS-100 Translations Guide Volume 1 of 25
- 297-8021-350P2 - North American DMS-100 Translations Guide Volume 2 of 25
- 297-8021-350P3 - North American DMS-100 Translations Guide Volume 3 of 25
- 297-8021-350P4 - North American DMS-100 Translations Guide Volume 4 of 25
- 297-8021-350P5 - North American DMS-100 Translations Guide Volume 5 of 25
- 297-8021-350P6 - North American DMS-100 Translations Guide Volume 6 of 25
- 297-8021-350P7 - North American DMS-100 Translations Guide Volume 7 of 25
- 297-8021-350P8 - North American DMS-100 Translations Guide Volume 8 of 25
- 297-8021-350P9 - North American DMS-100 Translations Guide Volume 9 of 25
- 297-8021-350P10 - North American DMS-100 Translations Guide Volume 10 of 25
- 297-8021-350P11 - North American DMS-100 Translations Guide Volume 11 of 25
- 297-8021-350P12 - North American DMS-100 Translations Guide Volume 12 of 25
- 297-8021-350P13 - North American DMS-100 Translations Guide Volume 13 of 25
- 297-8021-350P14 - North American DMS-100 Translations Guide Volume 14 of 25
- 297-8021-350P15 - North American DMS-100 Translations Guide Volume 15 of 25
- 297-8021-350P16 - North American DMS-100 Translations Guide Volume 16 of 25
- 297-8021-350P17 - North American DMS-100 Translations Guide Volume 17 of 25
- 297-8021-350P18 - North American DMS-100 Translations Guide Volume 18 of 25
- 297-8021-350P19 - North American DMS-100 Translations Guide Volume 19 of 25

- 297-8021-350P20 - North American DMS-100 Translations Guide Volume 20 of 25
- 297-8021-350P21 - North American DMS-100 Translations Guide Volume 21 of 25
- 297-8021-350P22 - North American DMS-100 Translations Guide Volume 22 of 25
- 297-8021-350P23 - North American DMS-100 Translations Guide Volume 23 of 25
- 297-8021-350P24 - North American DMS-100 Translations Guide Volume 24 of 25
- 297-8021-350P25 - North American DMS-100 Translations Guide Volume 25 of 25
- 297-8021-351P1 - DMS-100 Data Schema Reference Manual
- 297-8021-351P2 - DMS-100 Data Schema Reference Manual
- 297-8021-351P3 - DMS-100 Data Schema Reference Manual
- 297-8021-351P4 - DMS-100 Data Schema Reference Manual
- 297-8021-351P5 - DMS-100 Data Schema Reference Manual
- 297-8021-351P6 - DMS-100 Data Schema Reference Manual
- 297-8021-351P7 - DMS-100 Data Schema Reference Manual
- 297-8021-351P8 - DMS-100 Data Schema Reference Manual
- 297-8021-351P9 - DMS-100 Data Schema Reference Manual
- 297-8021-351P10 - DMS-100 Data Schema Reference Manual
- 297-8021-351P11 - DMS-100 Data Schema Reference Manual
- 297-8021-351P12 - DMS-100 Data Schema Reference Manual
- 297-8021-801 - DMS-100 Feature Guide
- 297-8021-808P1 - DMS-100 SERVORD Reference Manual
- 297-8021-808P2 - DMS-100 SERVORD Reference Manual
- 297-8021-814P1 - DMS-100 Operational Measurements Reference Manual
- 297-8021-814P2 - DMS-100 Operational Measurements Reference Manual
- 297-8021-814P3 - DMS-100 Operational Measurements Reference Manual
- 297-8021-814P4 - DMS-100 Operational Measurements Reference Manual

- 297-8021-814P5 - DMS-100 Operational Measurements Reference Manual
- 297-8021-814P6 - DMS-100 Operational Measurements Reference Manual
- 297-8021-840P1 - DMS-100 Logs Reference Manual
- 297-8021-840P2 - DMS-100 Logs Reference Manual
- 297-8021-840P3 - DMS-100 Logs Reference Manual
- 297-8021-840P4 - DMS-100 Logs Reference Manual
- 297-8021-840P5 - DMS-100 Logs Reference Manual
- 297-8021-840P6 - DMS-100 Logs Reference Manual
- 297-8021-840P7 - DMS-100 Logs Reference Manual
- 297-8021-840P8 - DMS-100 Logs Reference Manual
- 297-8021-855P1 - DMS-100 Office Parameters Reference Manual
- 297-8021-855P2 - DMS-100 Office Parameters Reference Manual
- 297-8021-855P3 - DMS-100 Office Parameters Reference Manual
- 297-8991-810 - XA-Core Reference Manual

Platforms

SDM Platform

This section contains IEMS Northbound log samples and device documentation references for the SDM Platform.

SDM Platform Fault Interface

Fault documentation for SDM Platform :

- NN10081-911 SDM Fault Management

Fault Mapping for SDM Platform

The following criteria can be used for looking up information on specific faults for SDM Platform.

Fault Correlation for SDM Platform

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
SDM (Platform) - AIX	logname and number	logname and number	logname and number	logname and number	NN10081-911 SDM Fault Management

Northbound Fault Formats for SDM Platform

SCC2

The following is an example of a SDM Platform log in SCC2 format:

```
* 52 SDM 317 0162 TBL
         node SDM      SDM Base Maintenance
        DCE problem detected
        Reason: SEC Master Server 47.142.94.49 is down.
```

NTSTD

The following is an example of a SDM Platform log in NTSTD format:

```
COMPACT06BT   *  SDM 317 Feb15 00:52:49 0162 TBL
         node SDM      SDM Base Maintenance
        DCE problem detected
        Reason: SEC Master Server 47.142.94.49 is down.
```

SNMP

The following is an example of a SDM Platform log in SNMP format:

```
sysUpTime.0 => 9:27:56
snmpTrapOID.0 => nnExtAlarmMinor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.49.44.54.58.52.49.58.49.52.46.48.44.8995
alarmActiveDateAndTime => 2004-1-14,7:52:49.1
```

```
alarmActiveDescription => DeviceSpecificInfo=Unavailable; node SDM      SDM Base
Maintenance

DCE problem detected

Reason: SEC Master Server 47.142.94.49 is down.


nnExtAlarmActiveEventType => 5

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => SDM 317

nnExtAlarmActiveResourceDescription => IEMS=wnc0y0m0.us.nortel.com-SDM;

nnExtAlarmActiveManualClear => 2

nnExtAlarmActiveSequenceNumber => 35
```

Syslog

The following is an example of a SDM Platform log in Syslog format:

```
Feb 14 19:52:49 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=9821~~  SDM317 MINOR TBL
^M       node SDM     SDM Base Maintenance^M      DCE problem detected^M      Reason:
SEC Master Server 47.142.94.49 is down.
```

Performance

OM and PM Documentation references for SDM Platform

- NN10147-711 SDM Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for SDM Platform in XML format:

***Note:** The IEMS northbound performance interface does not support this device.*

CSV

The following is an example of performance data for SDM Platform in CSV format:

***Note:** The IEMS northbound performance interface does not support this device.*

GUI/CLUI Documentation for SDM Platform

SDM Platform has a command line user interface that can be accessed via a secure shell.

GUI/CLUI Launching and User procedures

- NN10017-111 SDM Basics (see User Interfaces Overview)

Related documents

- NN10059-461 Upgrading the SDM
- NN10103-511 SDM Configuration Management
- NN10125-811 SDM Accounting
- NN10169-611 SDM Security and Administration

Succession Server Platform Foundation Software (SSPFS)

This section contains IEMS Northbound log samples and device documentation references for the SSPFS platform.

SSPFS Fault Interface

Fault documentation for SSPFS

- NN10440-450 - Upgrading a Carrier VoIP Network

Fault Mapping for SSPFS

The following criteria can be used for looking up information on specific faults for SSPFS.

Fault Correlation for SSPFS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
SSPFS	logname and number	logname and number	logname and number	logname and number	NN10440-450 Upgrading a Carrier VoIP Network

Northbound Fault Formats for SSPFS

The SSPFS SNMP interface is not implemented yet.

SCC2

The following is an example of a SSPFS log in SCC2 format:

Not available at time of publication

NTSTD

The following is an example of a SSPFS log in NTSTD format:

Not available at time of publication

SNMP

The following is an example of a SSPFS log in SNMP format:

Not available at time of publication

Syslog

The following is an example of a SSPFS log in Syslog format:

Not available at time of publication

Performance

OM and PM Documentation references for SSPFS

The SSPFS platform does not generate and OMs or PMs, but it does collect such information from other network elements. For more information see:

- NN10276-500 - ATM/IP Configuration Management (Configuration of SNMP Poller)
- Upgrading a Carrier VoIP Network, NN10440-450.

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for SSPFS platform in XML format:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="commonFormat.xsd" MeasurementCategory="PM">
<FileCreationTime>2004-12-14T13:20:20EST</FileCreationTime>
<System>
<SystemId>NortelNetworks/IEMS</SystemId>
<Entity Type="SSPFS">
<EntityId>47.142.106.220</EntityId>
<Table MeasurementKind="Snapshot" IntervalDuration="5">
<TableId>.iso.org.dod.internet.mgmt.mib-2.ip.ipAddrTable.ipAddrEntry</TableId>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<Labels>
```

```
<Label>ipAdEntAddr</Label>
<Label>ipAdEntIfIndex</Label>
<Label>ipAdEntNetMask</Label>
<Label>ipAdEntBcastAddr</Label>
<Label>ipAdEntReasmMaxSize</Label>
</Labels>
<RowOfValues>
<RowValue>
<Value>47.142.106.222</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>255.255.255.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>47.142.106.220</Value>
</RowValue>
<RowValue>
<Value>2</Value>
</RowValue>
<RowValue>
<Value>255.255.255.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>192.168.47.1</Value>
</RowValue>
<RowValue>
<Value>5</Value>
</RowValue>
<RowValue>
<Value>255.255.255.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>127.0.0.1</Value>
</RowValue>
<RowValue>
<Value>6</Value>
</RowValue>
```

```
<RowValue>
<Value>255.0.0.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>47.142.106.224</Value>
</RowValue>
<RowValue>
<Value>4</Value>
</RowValue>
<RowValue>
<Value>255.255.255.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
<RowOfValues>
<RowValue>
<Value>47.142.106.223</Value>
</RowValue>
<RowValue>
<Value>3</Value>
</RowValue>
<RowValue>
<Value>255.255.255.0</Value>
</RowValue>
<RowValue>
<Value>1</Value>
</RowValue>
<RowValue>
<Value>65535</Value>
</RowValue>
</RowOfValues>
</Table>
<SingleValues MeasurementKind="Snapshot" IntervalDuration="5">
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInUnknownProtos</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipFragCreates</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>418461</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipOutRequests</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
```

```
<Value>19623971</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInDelivers</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>21482658</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipOutNoRoutes</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipDefaultTTL</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>255</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipReasmReqds</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>137693</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInHdrErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipReasmFails</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipForwDatagrams</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipFragFails</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInDiscards</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
```

```
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipOutDiscards</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>4</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipForwarding</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>2</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipReasmTimeout</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>60</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInReceives</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>17207338</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipReasmOKs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>137693</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipRoutingDiscards</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipInAddrErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:00EST</CaptureTime>
<MeasureId>ipFragOKs</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.mgmt.mib-2.ip</MeasureSuppId1>
<Value>138590</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIfInErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
```

```
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsSystemProcessTime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIfCollisions</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsDiskXfer1</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsVSwapIn</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsDiskXfer3</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsVIntr</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsVPagesIn</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIfOutPackets</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
```

```
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsNiceModeTime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIfOutErrors</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIdleModeTime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsVPagesOut</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsDiskXfer2</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsVSwapOut</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsDiskXfer4</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsIfInPackets</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
```

```
<Reliability>Valid</Reliability>
</SingleValue>
<SingleValue>
<CaptureTime>2004-12-14T13:20:01EST</CaptureTime>
<MeasureId>rsUserProcessTime</MeasureId>
<MeasureSuppId1>.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf
</MeasureSuppId1>
<Value>0</Value>
<Reliability>Valid</Reliability>
</SingleValue>
</SingleValues>
</Entity>
</System>
</PMFile>
</PMFile>
```

CSV

The following is an example of performance data for SSPFS platform in CSV format:

```
PMFile=Begin
MeasurementCategory,noNamespaceSchemaLocation,FileCreationTime
PM,commonFormat.xsd,2004-12-14T13:20:20EST

System=Begin
SystemId
NortelNetworks/IEMS

Entity=Begin
EntityId,Type
47.142.106.220,SSPFS

Table=Begin
TableId,MeasurementKind,IntervalDuration,CaptureTime
.iso.org.dod.internet.mgmt.mib-2.ip.ipAddrTable.ipAddrEntry,Snapshot,5,2004-12-
14T13:20:01EST
Label,Label,Label,Label,Label
ipAdEntAddr,ipAdEntIfIndex,ipAdEntNetMask,ipAdEntBcastAddr,ipAdEntReasmMaxSize
Value,Value,Value,Value,Value
47.142.106.222,1,255.255.255.0,1,65535
47.142.106.220,2,255.255.255.0,1,65535
192.168.47.1,5,255.255.255.0,1,65535
127.0.0.1,6,255.0.0.0,1,65535
47.142.106.224,4,255.255.255.0,1,65535
47.142.106.223,3,255.255.255.0,1,65535
Table=End


SingleValues=Begin
MeasurementKind,IntervalDuration
Snapshot,5
MeasureId,CaptureTime,MeasureSuppId1,Value,Reliability
ipInUnknownProtos,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,0,Valid
ipFragCreates,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,418461,Valid
ipOutRequests,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,19623971,Valid
ipInDelivers,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,21482658,Valid
ipOutNoRoutes,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,0,Valid
```

```
ipDefaultTTL,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,255,Valid
ipReasmReqds,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,137693,Valid
ipInHdrErrors,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,0,Valid
ipReasmFails,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,0,Valid
ipForwDatagrams,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,0,Valid
ipFragFails,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,0,Valid
ipInDiscards,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,0,Valid
ipOutDiscards,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,4,Valid
ipForwarding,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-2.ip,2,Valid
ipReasmTimeout,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,60,Valid
ipInReceives,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,17207338,Valid
ipReasmOKs,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,137693,Valid
ipRoutingDiscards,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,0,Valid
ipInAddrErrors,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,0,Valid
ipFragOKs,2004-12-14T13:20:00EST,.iso.org.dod.internet.mgmt.mib-
2.ip,138590,Valid
rsIfInErrors,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsSystemProcessTime,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsIfCollisions,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsDiskXfer1,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsVSwapIn,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsDiskXfer3,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsVIntr,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsVPagesIn,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsIfOutPackets,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsNiceModeTime,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsIfOutErrors,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsIdleModeTime,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsVPagesOut,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
```

```
rsDiskXfer2,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsVSwapOut,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsDiskXfer4,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsIfInPackets,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
rsUserProcessTime,2004-12-
14T13:20:01EST,.iso.org.dod.internet.private.enterprises.sun.sunMib.sunHostPerf,
0,Valid
SingleValues=End

Entity=End

System=End

PMFile=End
```

GUI/CLUI Documentation for SSPFS

GUI Launching and User procedures

- NN10276-500 - ATM/IP Configuration Management

  Note: Contains information on the SSPFS CLI interface

Related documents

- NN10281-600 - ATM/IP Administration and Security

Element Managers

CS2000 Core Manager

This section contains IEMS Northbound log samples and device documentation references for the CS2K Core Manager.

CS2K Core Manager Fault Interface

Fault documentation for CS2000 Core Manager :

- NN10275-909 - Succession fault Management logs Reference
- NN10082-911 - CS 2000 Core Manager Fault Management

Fault Mapping for CS2000 Core Manager

The following criteria can be used for looking up information on specific faults for CS2000 Core Manager.

Fault Correlation for CS2000 Core Manager

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
CS2000 Core Manager	log name and number	log name and number	log name and number	log name and number	NN10275-909 Succession fault Management logs Reference NN10082-911 CS 2000 Core Manager Fault Management

Northbound Fault Formats for CS2000 Core Manager

SCC2

The following is an example of a CS2000 Core Manager log in SCC2 format:

```
* 06 SDM 550 1506 INFO Node Status Change
        Node:   SDM 0
        Status:  ** ISTb      from  ** ISTb
        Reason: Application alarm set. SDM_ETA.eta
```

NTSTD

The following is an example of a CS2000 Core Manager log in NTSTD format:

```
COMPACT506BT   * SDM550 Feb15 03:07:00 1520 INFO Node Status Change
        Node:   SDM 0
       Status:     InSv      from   * ISTb
       Reason: Application alarm cleared. SDM_ETA.eta
```

SNMP

The following is an example of a CS2000 Core Manager log in SNMP format:

```
sysUpTime. => 1 day, 19:19:26
snmpTrapOID. => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr;
nnExtAlarmMessageDateAndTime => 2004-6-9,3:4:9.1
nnExtAlarmMessageDocumentationPointer => PM  610
nnExtAlarmMessageInfo =>  04 PM  610 3352 INFO ABI XPM C-side Link State Change

        Node: SMA2 0     Link: 0   Plane: 0   Port: 0

        From: SYSB   To: INSV

        Reason: Link opened by MG9K/ABI

sysUpTime.0 => 1 day, 19:19:27
snmpTrapOID.0 =>
alarmActiveResourceId => .0.0
alarmActiveDateAndTime => 2004-6-9,3:4:9.3
alarmActiveDescription => DeviceSpecificInfo=Unavailable;
Node:   SDM 0
Status:  ** ISTb      from  ** ISTb
Reason: Application alarm set. SDM_ETA.eta
```

Syslog

The following is an example of a CS2000 Core Manager log in Syslog format:

```
Feb 14 22:06:01 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=1165~~  SDM550 MINOR INFO
Node Status Change^M        node CM      ^M        Node:   SDM 0^M        Status:  **
ISTb      from  ** ISTb     ^M        Reason: Application alarm set. SDM_ETA.eta
```

Performance

OM and PM Documentation references for CS2000 Core Manager

- NN10148-711 - CS 2000 Core Manager Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for CS2000 Core Manager in XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of performance data for CS2000 Core Manager in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for CS2000 Core Manager

The CS2000 Core Manager provides both command-line and MAP-based interfaces.

GUI/CLUI Launching and User procedures

- NN10018-111 - CS2000 Core Manager Basics

Related documents

- NN10060-461 - Upgrading the CS 2000 Core Manager
- NN10082-911 - CS 2000 Core Manager Fault Management
- NN10104-511 - CS 2000 Core Manager Configuration Management
- NN10126-811 - CS 2000 Core Manager Accounting
- NN10170-611 - CS 2000 Core Manager Administration and Security

Centrex IP Call Manager (CICM Manager)

This section contains IEMS Northbound log samples and device documentation references for the CICM Manager.

CICM Fault Interface

Fault documentation for CICM Manager:

- NN10334-911 - - IEMS Fault Management

Fault Mapping for CICM Manager

The following criteria can be used for looking up information on specific faults for CICM Manager.

Fault Correlation for CICM Manager

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
CICM Mgr	logname and number	logname and number	logname and number	logname and number	NN10334-911 - IEMS Fault Management

Northbound Fault Formats for CICM Manager

SCC2

The following is an example of a CICM Manager log in SCC2 format:

```
?
  44 IEMS399 0011 FLT  Communication Regained
        Location: 47.142.106.223
        NotificationID: 0
        State: Cleared
        Category: Communications
        Time: Jun 30 15:44:06 2004
        ComponentId: 47.165.168.74-CICM-Mgr_Card_B
        Description: IEMS regained communication with the managed device



?
*C44 IEMS398 0012 FLT  Communication Lost
```

```
        Location: 47.142.106.223
        NotificationID: 0
        State: Raised
        Category: Communications
        Cause: Communications subsystem failure
        Time: Jun 30 15:44:15 2004
        ComponentId: 47.165.168.74-CICM-Mgr_Card_B
        Specific Problem: Connection Lost
        Description: IEMS Unable to communicate with managed device
```

NTSTD

The following is an example of a CICM Manager log in NTSTD format:

```
test     IEMS399 JUN30 15:44:06 0011 FLT  Communication Regained
        Location: 47.142.106.223
        NotificationID: 0
        State: Cleared
        Category: Communications
        Time: Jun 30 15:44:06 2004
        ComponentId: 47.165.168.74-CICM-Mgr_Card_B
        Description: IEMS regained communication with the managed device


test *** IEMS398 JUN30 15:44:15 0012 FLT  Communication Lost
        Location: 47.142.106.223
        NotificationID: 0
        State: Raised
        Category: Communications
        Cause: Communications subsystem failure
        Time: Jun 30 15:44:15 2004
        ComponentId: 47.165.168.74-CICM-Mgr_Card_B
        Specific Problem: Connection Lost
        Description: IEMS Unable to communicate with managed device
```

SNMP

The following is an example of a CICM Manager log in SNMP format:

```
sysUpTime. => 1 day, 18:18:50
snmpTrapOID. => nnExtAlarmClear
```

```
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.51.48.44.51.58.51.53.58.49.50.46.51.44.2

alarmActiveDateAndTime => 2004-6-30,3:35:12.3

alarmActiveDescription => DeviceSpecificInfo=transmitFailure(54);Location:
47.165.168.252

Notification Id: 13

State: Raised

Category: communications

Cause: transmitFailure(54)

Time: Jun 29 08:30:47 2004

Component Id: CICM=CICMEM-070-B;NodeType=Platform

Specific Problem:  Syslog failure for securitylog stream.

Description: Syslog Failure.

nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => CICM301

nnExtAlarmActiveResourceDescription => IEMS=47.165.168.252-CICM-
Mgr_Card_A;CICM=CICMEM-070-B;NodeType=Platform

nnExtAlarmActiveSequenceNumber => 7


sysUpTime. => 1 day, 18:19:00

snmpTrapOID. => nnExtAlarmMinor

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.54.45.50.57.44.56.58.51.48.58.52.55.46.48.44.2965

alarmActiveDateAndTime => 2004-6-29,8:30:47.0

alarmActiveDescription => DeviceSpecificInfo=transmitFailure(54);Location:
47.165.168.252

Notification Id: 13

State: Raised

Category: communications

Cause: transmitFailure(54)

Time: Jun 29 08:30:47 2004

Component Id: CICM=CICMEM-070-B;NodeType=Platform

Specific Problem:  Syslog failure for securitylog stream.

Description: Syslog Failure.

nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>
```

```
nnExtAlarmActiveDocumentationPointer => CICM301

nnExtAlarmActiveResourceDescription => IEMS=47.165.168.252-CICM-
Mgr_Card_A;CICM=CICMEM-070-B;NodeType=Platform

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 8
```

Syslog

The following is an example of a CICM Manager log in Syslog format:

```
Jun 30 15:44:06 2004     ComponentId: 47.165.168.74-CICM-Mgr_Card_B      Description:
IEMS regained communication with the managed device

Jun 30 15:44:15 znc0s0tm IEMS: _V2_~I=~H=znc0s0tm~A=IEMS~S=6162~~ IEMS398 CRIT FLT
Communication Lost      Location: 47.142.106.223      NotificationID: 0      State:
Raised     Category: Communications     Cause: Communications subsystem failure
Time:

Jun 30 15:44:15 2004       ComponentId: 47.165.168.74-CICM-Mgr_Card_B       Specific
Problem: Connection Lost        Description: IEMS Unable to communicate with managed
device
```

Performance

OM and PM Documentation references for CICM Manager

- NN10327-711 - IEMS Performance Management

Northbound OM/PM Formats

Performance measurements for CICM Manager are available only from the CICM Manager interface. See NN10327-711 - IEMS Performance Management for more information.

XML

The following is an example of Performance data for CICM Manager in XML format:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <PMFile xmlns:xsi="http://www.w3.org/2000/10/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="commonFormat.xsd" MeasurementCategory="PM">
<FileCreationTime>2004-06-23T13:36:04EST</FileCreationTime>
- <System>
<SystemId>NortelNetworks/IEMS</SystemId>
- <Entity Type="CICM Mgr">
<EntityId>47.165.168.120</EntityId>
- <Table MeasurementKind="Snapshot" IntervalDuration="5">
<TableId>.iso.org.dod.internet.mgmt.mib-
```

2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry</TableId>
<CaptureTime>2004-06-23T13:35:01EST</CaptureTime>
- <Labels>
<Label>usrHistoryControlInterval</Label>
<Label>usrHistoryControlIndex</Label>
<Label>usrHistoryControlStatus</Label>
<Label>usrHistoryControlOwner</Label>
</Labels>
- <RowOfValues>
- <RowValue>
<Value>900</Value>
</RowValue>
- <RowValue>
<Value>5</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM-120A</Value>
</RowValue>
</RowOfValues>
</Table>
- <Table MeasurementKind="**Snapshot**" IntervalDuration="**5**">
<TableId>.iso.org.dod.internet.mgmt.mib-
2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry</TableId>
<CaptureTime>2004-06-23T13:35:58EST</CaptureTime>
- <Labels>
<Label>usrHistoryControlInterval</Label>
<Label>usrHistoryControlIndex</Label>
<Label>usrHistoryControlStatus</Label>
<Label>usrHistoryControlOwner</Label>
</Labels>
- <RowOfValues>
- <RowValue>
<Value>900</Value>

</RowValue>
- <RowValue>
<Value>5</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM-120A</Value>
</RowValue>
</RowOfValues>
</Table>
- <Table MeasurementKind="**Snapshot**" IntervalDuration="**5**">
<TableId>.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPerfRefMIB
.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry</TableId>
<CaptureTime>2004-06-23T13:35:02EST</CaptureTime>
- <Labels>
<Label>nnPerfMetricValue</Label>
<Label>nnPerfMetricSources</Label>
<Label>nnPerfMetricDataType</Label>
<Label>nnPerfMetricGroup</Label>
<Label>nnPerfMetricName</Label>
<Label>nnPerfMetricRefIndex</Label>
</Labels>
- <RowOfValues>
- <RowValue>
<Value>0</Value>
</RowValue>
- <RowValue>
<Value>2</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM</Value>

</RowValue>
- <RowValue>
<Value>ActiveConnections</Value>
</RowValue>
- <RowValue>
<Value>5</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>0</Value>
</RowValue>
- <RowValue>
<Value>2</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM</Value>
</RowValue>
- <RowValue>
<Value>PercentageCpuUsed</Value>
</RowValue>
- <RowValue>
<Value>4</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>0</Value>
</RowValue>
- <RowValue>
<Value>2</Value>
</RowValue>
- <RowValue>

<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM</Value>
</RowValue>
- <RowValue>
<Value>PercentageMemoryUsed</Value>
</RowValue>
- <RowValue>
<Value>3</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>0</Value>
</RowValue>
- <RowValue>
<Value>2</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM</Value>
</RowValue>
- <RowValue>
<Value>NumberOfLogs</Value>
</RowValue>
- <RowValue>
<Value>2</Value>
</RowValue>
</RowOfValues>
- <RowOfValues>
- <RowValue>
<Value>0</Value>
</RowValue>

- <RowValue>
<Value>2</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
- <RowValue>
<Value>CICM</Value>
</RowValue>
- <RowValue>
<Value>ActiveSessions</Value>
</RowValue>
- <RowValue>
<Value>1</Value>
</RowValue>
</RowOfValues>
</Table>
</Entity>
</System>
</PMFile>

CSV

The following is an example of Performance data for CICM Manager in CSV format:

PMFile=Begin

PM,commonFormat.xsd,2004-06-23T13:45:00EST

System=Begin

NortelNetworks/IEMS

Entity=Begin

47.165.168.120,CICM Mgr

Table=Begin

.iso.org.dod.internet.mgmt.mib-2.rmon.usrHistory.usrHistoryControlTable.usrHistoryControlEntry,Snapshot,5,2004-06-23T13:40:01EST

usrHistoryControlInterval,usrHistoryControlIndex,usrHistoryControlStatus,usrHistoryControlOwner

900,5,1,CICM-120A

Table=End

Table=Begin

.iso.org.dod.internet.private.enterprises.nortel.nortelGenericMIBs.nortelPerfRefMIB.nnPerfMetricReferenceTable.nnPerfMetricReferenceEntry,Snapshot,5,2004-06-23T13:40:02EST

nnPerfMetricValue,nnPerfMetricSources,nnPerfMetricDataType,nnPerfMetricGroup,nnPerfMetricName,nnPerfMetricRefIndex

0,2,1,CICM,ActiveConnections,5

0,2,1,CICM,PercentageCpuUsed,4

0,2,1,CICM,PercentageMemoryUsed,3

0,2,1,CICM,NumberOfLogs,2

0,2,1,CICM,ActiveSessions,1

Table=End

Entity=End

System=End

PMFile=End

GUI/CLUI Documentation for CICM Manager

GUI Launching and User procedures

Related documents

GWC Manager

This section contains IEMS Northbound log samples and device documentation references for the GWC Manager.

GWC Manager Fault Interface

Fault documentation for GWC Mgr :

- NN10325-900 - ATM/IP Fault Management

Fault Mapping for GWC Mgr

The following criteria can be used for looking up information on specific faults for GWC Mgr.

Fault Correlation for GWC Mgr

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
GWC Mgr	logname and number	logname and number	logname and number	logname and number	PLN-08AT OSS SN08 OSS Guide (ATM) PLN-08IP OSS SN08 OSS Guide (IP)

Northbound Fault Formats for GWC Mgr

SCC2

The following is an example of a GWC Mgr log in SCC2 format:

```
*C14 CMT 301 7248 TBL  CMT Fault
        Location: gwcem
        NotificationID: 700
        State: Raise
        Category: Processing Error
        Cause: Corrupt data
        Time: Jan 23 15:14:38 2004
```

```
        Component Id: SESM=GWCEMalarm;GWCEM=Recovery;GWC=GWC-2-UNIT-0
        Specific Problem: FTP Problem
        Description: Problem detected in GWC Recovery Subsystem
```

NTSTD

The following is an example of a GWC Mgr log in NTSTD format:

```
COMPACT06BT ***  CMT301 Jan23 20:14:38 7248 TBL  CMT Fault
        Location: gwcem
        NotificationID: 700
        State: Raise
        Category: Processing Error
        Cause: Corrupt data
        Time: Jan 23 15:14:38 2004
        Component Id: SESM=GWCEMalarm;GWCEM=Recovery;GWC=GWC-2-UNIT-0
        Specific Problem: FTP Problem
        Description: Problem detected in GWC Recovery Subsystem
```

SNMP

The following is an example of a GWC Mgr log in SNMP format:

```
system.sysUpTime.0 => 23:10:15
snmpTrapOID.0 => nnExtAlarmCritical
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.51.44.51.58.49.52.58.51.56.46.48.44.42847
alarmActiveDateAndTime => 2004-1-23,3:14:38.0,
alarmActiveDescription => DeviceSpecificInfo=;Location: gwcem
NotificationID: 700
State: Raise
Category: Processing Error
Cause: Corrupt data
Time: Jan 23 15:14:38 2004
Component Id: SESM=GWCEMalarm;GWCEM=Recovery;GWC=GWC-2-UNIT-0
Specific Problem: FTP Problem
Description: Problem detected in GWC Recovery Subsystem
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
```

```
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => CMT 301
nnExtAlarmActiveResourceDescription =>
IEMS=znc0s0j6;SESM=GWCEMalarm;GWCEM=Recovery;GWC=GWC-2-UNIT-0
nnExtAlarmActiveManualClear => 0
nnExtAlarmActiveSequenceNumber => 9027
```

Syslog

The following is an example of a GWC Mgr log in Syslog format:

```
Feb 23 15:15:56 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=7305~~  CMT301 CRIT TBL  CMT
Fault^M       Location: gwcem^M       NotificationID: 700^M       State: Raise^M
Category: Processing Error^M       Cause: Corrupt data^M       Time: Jan 23 15:14:38
2004^M        Component Id: SESM=GWCEMalarm;GWCEM=Recovery;GWC=GWC-2-UNIT-0^M
Specific Problem: FTP Problem^M        Description: Problem detected in GWC Recovery
Subsystem^M
```

Performance

OM and PM Documentation references for GWC Mgr

GWC Mgr has no operational or performance measurements.

- See NN10156-711 - GWC Performance Management for PM information.

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for GWC Mgr in XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of performance data for GWC Mgr in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for GWC Mgr

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics
- NN10276-500 - ATM/IP Configuration Management
- NN10281-600 - ATM/IP Administration and Security
- NN10325-900 - ATM/IP Fault Management

Related documents

Integrated Element Management System (IEMS)

This section contains IEMS Northbound log samples and device documentation references for the IEMS.

IEMS Fault Interface

Fault documentation for IEMS :

- NN10334-911 - IEMS Fault Management

Fault Mapping for IEMS

The following criteria can be used for looking up information on specific faults for IEMS.

Fault Correlation for IEMS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
IEMS	logname and logNumber	logname and logNumber	logname and logNumber	logname and logNumber	NN10334-911 IEMS Fault Management Guide

Northbound Fault Formats for IEMS

SCC2

The following is an example of a IEMS log in SCC2 format:

```
36 IEMS603 0001 INFO Missed Notifications
        Location: 47.142.122.202
        Component Id: IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr
        Time: Feb 14 19:36:32 2004
        Description: Notification(s) missed in ML 5050 - 5149
```

NTSTD

The following is an example of a IEMS log in NTSTD format:

```
RTPU07BU     IEMS603 Feb15 00:36:32 0001 INFO Missed Notifications
        Location: 47.142.122.202
        Component Id: IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr
        Time: Feb 14 19:36:32 2004
        Description: Notification(s) missed in ML 5050 - 5149
```

SNMP

The following is an example of a IEMS log in SNMP format:

```
sysUpTime.0 => 9:34:06
snmpTrapOID.0 => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr;
nnExtAlarmMessageDateAndTime => 2004-1-14,7:58:59.2
nnExtAlarmMessageDocumentationPointer => IEMS603
nnExtAlarmMessageInfo =>   58 IEMS603 0234 INFO Missed Notifications
        Location: 47.142.122.202
        Component Id: IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr
        Time: Feb 14 19:58:59 2004
        Description: Notification(s) missed in ML 5050 - 5149
```

Syslog

The following is an example of a IEMS log in Syslog format:

```
Feb 14 18:42:42 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=9198~~ IEMS603 NONE INFO
Missed Notifications^M        Location: 47.142.122.202^M        Component Id:
IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr^M        Time: Feb 14 18:42:41 2004^M
Description: Notification(s) missed in ML 5050 - 5149
```

Performance

OM and PM Documentation references for IEMS

- NN10327-711 IEMS Performance Monitoring

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for IEMS in XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of performance data for IEMS in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for IEMS

GUI Launching and User procedures

- NN10329-111 - IEMS Basics

Related documents

- NN10336-611 - IEMS Administration and Security
- NN10330-511 - IEMS Operational Configuration
- NN10326-461 - IEMS Upgrades

MG9000 Manager

This section contains IEMS Northbound log samples and device documentation references for the MG9000 Mgr.

MG9000 Mgr Fault Interface

Fault documentation for MG9000 Mgr :

- NN10074-911 MG9000 Fault Management

- NN10325-900 ATM/IP Fault Management
- NN10275-909 Succession Fault Management Logs Reference

Fault Mapping for MG9000 Mgr

The following criteria can be used for looking up information on specific faults for MG9000 Mgr.

Fault Correlation for MG9000 Mgr

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MG9000 Mgr	logname and number	logname and number	logname and number	logname and number	NN10074-911 MG9000 Fault Management

Northbound Fault Formats for MG9000 Mgr

SCC2

The following is an example of a MG9000 Mgr log in SCC2 format:

```
 49 MGEM302 4260 TBL  MG9K InvalidEMIPAddress
       Location: MG9k EM Comm Network
       Notification Id: 17180020453
       State: Cleared
       Category: communications
       Cause: Communications Subsystem Failure
             Invalid EM IP Address - An invalid EM IP address has been set on the GW
       Component Id: MG9k EM Comm Network
       specificProblem: Invalid EM IP Address - An invalid EM IP address has be
       en set on the GW
       Description: An invalid EM IP address has been set on the GW
```

NTSTD

The following is an example of a MG9000 Mgr log in NTSTD format:

```
RTPU07BR     MGEM302 Jan20 06:49:09 4260 TBL  MG9K InvalidEMIPAddress
       Location: MG9k EM Comm Network
       Notification Id: 17180020453
```

State: Cleared

Category: communications

Cause: Communications Subsystem Failure

Invalid EM IP Address - An invalid EM IP address has been set on the GW

Component Id: MG9k EM Comm Network

specificProblem: Invalid EM IP Address - An invalid EM IP address has be

en set on the GW

Description: An invalid EM IP address has been set on the GW

SNMP

The following is an example of a MG9000 Mgr log in SNMP format:

system.sysUpTime.0 => 20:33:14

iso.org.dod.internet.snmpV2.snmpModules.snmpMIB.snmpMIBObjects.snmpTrap.**snmpTrapOID.0 =>** nnExtAlarmClear

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.19.50.48.48.52.45.49.45.50.48.44.49.58.52.57.58.57.46.51.44.37279

alarmActiveDateAndTime => 2004-1-20,1:49:9.3,

alarmActiveDescription => Communications Subsystem Failure

Invalid EM IP Address - An invalid EM IP address has been set on the GW

nnExtAlarmActiveEventType => 1

nnExtAlarmActiveProbableCause => 6

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => MGEM302

nnExtAlarmActiveResourceDescription => IEMS=cco4;MG9k EM Comm Network

nnExtAlarmActiveSequenceNumber => 7768

Syslog

The following is an example of a MG9000 Mgr log in Syslog format:

Feb 23 12:38:54 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=4317~~ MGEM302 NONE TBL MG9K InvalidEMIPAddress^M Location: MG9k EM Comm Network^M Notification Id: 17180020453^M State: Cleared^M Category: communications^M Cause: Communications Subsystem Failure^M Invalid EM IP Address - An invalid EM IP address has been set on the GW^M Component Id: MG9k EM Comm Network^M specificProblem: Invalid EM IP Address - An invalid EM IP address has be^M en set on the GW^M Description: An invalid EM IP address has been set on the GW

Performance

XML

The following is an example of performance data for IEMS in XML format:

```
System=Begin
SystemId
NortelNetworks/IEMS

Entity=Begin
EntityId Type
47.142.' MG9K Mgr

SubEntity=Begin
SubEntityId
CC04
SubEntity=End

SubEntity=Begin
SubEntityId
CC03
SubEntity=End

SubEntity=Begin
SubEntityId
CC02
SubEntity=End

SubEntity=Begin
SubEntityId
Sefik_CCO1
SubEntity=End

SubEntity=Begin
SubEntityId
cco6

Table=Begin
TableId Measur( IntervalI CaptureTime
nnPmUt Snapsh( 5 2004-11-18T15:45:00EST
Label Label Label Label Label Label Label Label Label
Source nnPmUt nnPmUt nnPmUt nnPmUt nnPmUt nnPmUt nnPmUt nnPmUtilIntervRamPeak
Value Value Value Value Value Value Value Value Value
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Frame0 0 0 0 0 0 0 0 0
Table=End
```

OM and PM Documentation references for MG9000 Mgr

There are no OMs or PMs associated with this component.

GUI/CLUI Documentation for MG9000 Mgr

GUI Launching and User procedures

- NN10096-511 MG9000 Configuration Management

Related documents

- NN10221105 VoA OSS Guide
- NN10162-611 MG9000 Administration and Security
- NN10048-461 Upgrading the MG9000
- NN10276-500 ATM/IP Configuration Management
- NN10325-900 ATM/IP Fault Management

Multi-Service Data Manager (MDM)

This section contains IEMS Northbound log samples and device documentation references for the MDM.

Information in this section also applies to the following Media Gateways : MSS 7400, 15000, 20000. All these devices are closely related and are covered by the same set of customer documentation.

MDM Fault Interface

Fault documentation for MDM:

- 241-6001-011 - MDM Fault Management User Guide
- NN10092-911 - Passport 15000 and MDM in Succession Networks Fault Management
- NN10600-500 - Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference
- 241-6001-501 - MDM Proxy Alarms Reference Guide

Fault Mapping for MDM

The following criteria can be used for looking up information on specific faults for MDM.

MDM and Media Gateway devices (6400, 7480, 15000, 20000) use fault code to identify different alarms. Fault codes are eight digits or letters and are grouped by type (first four digits of fault code). Documentation for each fault code group is provided in the following table.

Fault Documentation for MDM

Fault Code Group	Document Reference
0000	NN10600-500 - Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference
1100	NN10600-500 - Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference
70xx	NN10600-500 - Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference
0999	241-6001-501 - MDM Proxy Alarms Reference Guide
301x	241-6001-501 - MDM Proxy Alarms Reference Guide
50xx	241-6001-501 - MDM Proxy Alarms Reference Guide
600x	241-6001-501 - MDM Proxy Alarms Reference Guide
A0xx	241-6001-501 - MDM Proxy Alarms Reference Guide
B000	241-6001-501 - MDM Proxy Alarms Reference Guide
CDxx	241-6001-501 - MDM Proxy Alarms Reference Guide

The faults that are fed northbound from the IEMS use log name and number for distinction. The mapping between log name/number and fault code can be found in the Succession Solution document.

- NN10092-911 - Passport 15000 and MDM in Succession Networks Fault Management (PT-AAL1/UA-AAL1).

Fault Correlation for MDM

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Multi-Service Data manager (MDM)	log name and number	log name and number	log name and number	log name and number	NN10092-911 Passport 15000 and MDM in Succession Networks Fault Management (PT-AAL1/UA-AAL1)

Northbound Fault Formats for MDM

SCC2

The following is an example of a MDM log in SCC2 format:

```
*C22 MDM 303 7891 TBL
        time: 2004 01 25 09 22 32
        event: set
        compId: EM PP14
        severity: critical
        faultcode: 09990001
        alarmType: equipment
        commentData: FMDR_SURV@rtpimdm has lost connection to EM PP14. Please in
        vestigate.
```

NTSTD

The following is an example of a MDM log in NTSTD format:

```
RTPU07BU ***  MDM303 Jan25 14:22:32 7345 TBL
        time: 2004 01 25 09 22 32
        event: set
        compId: EM PP14
        severity: critical
        faultcode: 09990001
        alarmType: equipment
        commentData: FMDR_SURV@rtpimdm has lost connection to EM PP14. Please in
        vestigate.
```

SNMP

The following is an example of a MDM log in SNMP format:

```
system.sysUpTime.0 => 3 days, 0:41:03

snmpTrapOID.0 => nnExtAlarmCritical

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.53.44.57.58.50.50.58.51.50.46.48.44.13270

alarmActiveDateAndTime => 2004-1-21,6:41:14.0,

alarmActiveDescription => DeviceSpecificInfo=equipmentFailure;FMDR_SURV@rtpimdm has
lost connection to EM PP14. Please investigate.


nnExtAlarmActiveEventType => 4

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => MDM 303

nnExtAlarmActiveResourceDescription => IEMS=47.142.116.75-MDM-Mgr_PP14;EM PP14

nnExtAlarmActiveManualClear => 1

nnExtAlarmActiveSequenceNumber => 17433
```

Syslog

The following is an example of a MDM log in Syslog format:

```
Feb 27 11:16:54 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0402~~ MDM303 CRIT TBL ^M
time: 2004 01 27 11 15 32^M       event: set^M       compId: EM PP14^M       severity:
critical^M       faultcode: 09990001^M       alarmType: equipment^M       commentData:
FMDR_SURV@rtpimdm has lost connection to EM PP14. Please in^M        vestigate.
```

Performance

OM and PM Documentation references for MDM

- 241-6001-806 - MDM MDP Data Formats Reference Guide

Northbound OM/PM Formats

Performance measurements for MDM are available only from the MDM directly. For more information on MDM, MSS 7000, and MSS 15000 OMs, see 241-6001-806 - MDM MDP Data Formats Reference Guide

XML

The following is an example of Performance data for MDM in XML format:

Note: *The IEMS northbound performance interface does not support this device.*

CSV

The following is an example of Performance data for MDM in CSV format:

```
DATE,TIME,SHELFID,OFFICEID,SYSUTIL,LINKID,LINKCAP,SIGNALLINGCHANNELSTATUS,INCLP0+1,O
UTCLP0+1,OUTCLP0+1DIS,INCLP0+1DIS,OUTCBRCLP0+1DIS,OUTRTVBRCLP0+1DIS,OUTNRTVBRCLP0+1D
IS,OUTUBRCLP0+1DIS,REMOTEATMIFLABEL,INSETUP,INFAIL3,INFAIL17,INFAIL18,INFAIL21,INFAI
L27,INFAIL28,INFAIL35,INFAIL36,INFAIL37,INFAIL41,INFAIL45,INFAIL47,INFAIL49,INFAIL57
,INFAIL58,INFAIL63,INFAIL65,INFAIL73,INFAIL78,INFAIL88,INFAIL96,INFAIL99,INFAIL100,I
NFAIL104,INFAIL111,OUTSETUP,OUTFAIL3,OUTFAIL17,OUTFAIL18,OUTFAIL21,OUTFAIL27,OUTFAIL
28,OUTFAIL35,OUTFAIL36,OUTFAIL37,OUTFAIL41,OUTFAIL45,OUTFAIL47,OUTFAIL49,OUTFAIL57,O
UTFAIL58,OUTFAIL63,OUTFAIL65,OUTFAIL73,OUTFAIL78,OUTFAIL88,OUTFAIL96,OUTFAIL99,OUTFA
IL100,OUTFAIL104,OUTFAIL111

10-22-2003,11:05:00,EM/SUCCESSION_8,,5,EM/SUCCESSION_8
ATMIF/910,353207,0,5772,5772,0,,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
```

BDF

The MDM provides a Bulk Data Format option for PM data as well as the CSV file format. The BDF format and reference information can be found in the Preside MDM MDP Data Formats Reference Guide.

GUI/CLUI Documentation for MDM

GUI Launching and User procedures

The following documents provide specific details about the various user interfaces provided by the MDM.

- 241-6001-801 - MDM Overview
- 241-6001-011 - MDM Fault Management User Guide
- 241-6001-013 - MDM Remote Network Communication System User Guide
- 241-6001-015 - MDM Network Model Administrator Guide
- 241-6001-022 - MDM Network Reporting System User Guide
- 241-6001-023 - MDM Configuration Management for Passport User Guide
- 241-6001-030 - MDMWeb User Guide
- 241-6001-031 - MDM Performance Management User Guide
- 241-6001-040 - MDM Security User Guide

Related documents

Numerous documents are available on MDM installation, configuration, and planning. All the documents in the **241-6001-xxx** series are related to the MDM and its operations.

- NN10028-111 - Passport 15000 and MDM in Succession Networks Product and Technology Fundamentals (PT-AAL1/U
- NN10070-461 - Passport 15000 and MDM in Succession Networks Upgrade Guide (PT-AAL1/UA-AAL1)
- NN10092-911 - Passport 15000 and MDM in Succession Networks Fault Management Overview (PT-AAL1/UA-AAL1)
- NN10114-511 - Passport 15000 and MDM in Succession Networks Configuration Overview (PT-AAL1/UA-AAL1)
- NN10158-711 - Passport 15000 and MDM in Succession Networks Performance (PT-AAL1/UA-AAL1)
- NN10180-611 - Passport 15000 and MDM in Succession Networks Security and Administration (PT-AAL1/UA-AAL1)
- NN10185-461 - MDM in Succession Networks Upgrade Guide (PT-AAL1/UA-AAL1)
- NN10198-912 - Passport 15000 and MDM in Succession Networks Fault Management Troubleshooting (PT-AAL1/UA-A
- NN10225-512 - Passport 15000 and MDM in Succession Networks Configuration Attribute Summary (PT-AAL1/UA-AA

SAM21 Element Manager

This section contains IEMS Northbound log samples and device documentation references for the SAM21 EM.

SAM21 EM Fault Interface

Fault documentation for SAM21 EM :

The SAM 21 Manager reports faults for the SAM 21 Shelf Controller. Please refer to the SAM 21 SC documents below for details about SAM 21 faults.

- NN10089-911 - SAM21 Shelf Controller Fault Management

Fault Mapping for SAM21 EM

The following criteria can be used for looking up information on specific faults for SAM21 EM.

Fault Correlation for SAM21 EM

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
SAM21 Mgr	logname and number	logname and number	logname and number	logname and number	NN10089-911 SAM21 Shelf Controller Fault Management

Northbound Fault Formats for SAM21 EM

SCC2

The following is an example of a SAM21 EM log in SCC2 format:

```
**37 SCU 350 0009 FLT  Alarm Raised
        Location: SAM21 1:CSAM01-01:sled 3
        Time:     Wed Jan 14 13:55:52 EST 2004
        Reason:   Temperature in Sled 3 is high
```

NTSTD

The following is an example of a SAM21 EM log in NTSTD format:

```
COMPACT06BT  **  SCU350 Jan15 00:37:17 0009 FLT  Alarm Raised
        Location: SAM21 1:CSAM01-01:sled 3
        Time:     Wed Jan 14 13:55:52 EST 2004
        Reason:   Temperature in Sled 3 is high
```

SNMP

The following is an example of a SAM21 EM log in SNMP format:

```
sysUpTime.0 => 9:14:20
snmpTrapOID.0 => nnExtAlarmMajor
```

```
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.51.44.51.58.49.52.58.51.56.46.48.44.42847

alarmActiveDateAndTime => 2004-1-23,3:14:38.0,

alarmActiveDescription => DeviceSpecificInfo=;Location: SAM21 1:CSAM01-01:sled 3

Time:     Wed Jan 14 13:57:48 EST 2004

Reason:   Temperature in Sled 3 is high


nnExtAlarmActiveEventType => 5

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => SCU 350

nnExtAlarmActiveResourceDescription => IEMS=wnc0y0kz.us.nortel.com-SAM21-Mgr;

nnExtAlarmActiveManualClear => 2

nnExtAlarmActiveSequenceNumber => 1
```

Syslog

The following is an example of a SAM21 EM log in Syslog format:

```
Feb 12 18:30:19 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=7929~~  SCU350 MAJOR FLT
Alarm Raised^M       Location: SAM21 1:CSAM01-01:sled 3^M       Time:     Mon Jan 12
12:49:06 EST 2004^M        Reason:   Temperature in Sled 3 is high
```

Performance

OM and PM Documentation references for SAM21 EM

SAM21 EM has no operational or performance measurements.

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of performance data for SAM21 EM in XML format:

> ***Note:*** *Northbound performance interface not supported for this component.*

CSV

The following is an example of performance data for SAM21 EM in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for SAM21 EM

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics
- NN10281-600 - ATM/IP Administration and Security

Related documents

- NN10089-911 - SAM21 Shelf Controller Fault Management
- NN10325-900 - ATM/IP Fault Management
- NN10276-500 - ATM/IP Configuration Management

Applications

Audio Provisioning Server (APS)

This section contains IEMS Northbound log samples and device documentation references for the APS.

APS Fault Interface

Fault documentation for APS :

- NN10328-911 - MS 2000 Series Fault Management

Fault Mapping for APS

The following criteria can be used for looking up information on specific faults for APS.

Fault Correlation for APS

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
APS	SpecificProblem	SpecificProblem	SpecificProblem	SpecificProblem	NN10328-911 MS 2000 Series Fault Management

Northbound Fault Formats for APS

SCC2

The following is an example of a APS log in SCC2 format:

```
*C02 APS 398 2759 TBL  APS Fault
        Location: rtp2aps
        Notification Id: 28673
        State: Raise
        Category: communications
        Cause: softwareError
        Time: Jan 27 07:02:30 2004
        Component Id: APS;APSUnit=nc0rtp170;Software=Audio_Management_0
        Specific Problem: 28673
        Description: DB is not available, or the user cannot get a connection to
        the DB
```

NTSTD

The following is an example of a APS log in NTSTD format:

```
RTPU07BR ***  APS398 Jan27 12:02:30 2207 TBL  APS Fault
        Location: rtp2aps
        Notification Id: 28673
        State: Raise
        Category: communications
        Cause: softwareError
        Time: Jan 27 07:02:30 2004
        Component Id: APS;APSUnit=nc0rtp170;Software=Audio_Management_0
        Specific Problem: 28673
        Description: DB is not available, or the user cannot get a connection to
```

```
the DB
```

SNMP

The following is an example of a APS log in SNMP format:

```
sysUpTime.0 => 2 days, 18:44:37

snmpTrapOID.0 => nnExtAlarmCritical

alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.18.50.48
.48.52.45.49.45.50.55.44.5

5.58.49.58.54.46.48.44.11202

alarmActiveDateAndTime => 2004-1-27,7:1:6.0

alarmActiveDescription => DeviceSpecificInfo=;DB is not available, or the user cannot
get a connection to

nnExtAlarmActiveEventType => 5

nnExtAlarmActiveProbableCause => 118

nnExtAlarmActiveAdditionalText =>

nnExtAlarmActiveDocumentationPointer => APS 398

nnExtAlarmActiveResourceDescription => IEMS=znc0s0j6-SSPFS-Unit-
0;APS;APSUnit=nc0rtp170;Software=Audio_Management_0

nnExtAlarmActiveManualClear => 4

nnExtAlarmActiveSequenceNumber => 13458
```

Syslog

The following is an example of a APS log in Syslog format:

```
Feb 27 07:02:24 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=6645~~  APS398 CRIT TBL  APS
Fault^M      Location: rtp2aps^M      NotificationID: 28673^M      State: Raise^M
Category: Communications^M       Cause: Software error^M       Time: Jan 27 07:02:30
2004^M       Component Id: APS;APSUnit=nc0rtp170;Software=Audio_Management_0^M
Specific Problem: 28673^M       Description: DB is not available, or the user cannot
get a connection to^M         the DB^M
```

Performance

OM and PM Documentation references for APS

- NN10331-711 - MS 2000 Series Performance Monitoring

Northbound OM/PM Formats

XML

The following is an example of performance data for APS in XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of performance data for APS in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for APS

GUI Launching and User procedures

- NN10340-511 - MS 2000 Series Configuration Management

Related documents

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Line Maintenance Manager (LMM)

This section contains IEMS Northbound log samples and device documentation references for LMM.

LMM Fault Interface

Fault documentation for LMM :

There are no faults or logs associated with this application.

Fault Mapping for LMM

There are no faults or logs associated with this application.

Performance

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for LMM

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Related documents

Network Patch Manager (NPM)

This section contains IEMS Northbound log samples and device documentation references for the Network Patch Manager (NPM).

NPM Fault Interface

Fault documentation for NPM :

- NN10325-900 - ATM/IP Fault Management

Fault Mapping for NPM

The following criteria can be used for looking up information on specific faults for NPM.

Fault Correlation for NPM

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
NPM	logname and number	logname and number	logname and number	logname and number	NN10325-900 ATM/IP Fault Management

Northbound Fault Formats for NPM

SCC2

The following is an example of an NPM log in SCC2 format:

```
38 NPM 360 6012 INFO Alarm Raised
      Alarm ACT_NOT_APP has been raised.
      Alarm Description: Activatable patches not applied.
```

NTSTD

The following is an example of an NPM log in NTSTD format:

```
RTPU07BU      NPM360 Jan27 15:38:44 5466 INFO Alarm Raised
        Alarm ACT_NOT_APP has been raised.
        Alarm Description: Activatable patches not applied.
```

SNMP

The following is an example of an NPM log in SNMP format:

```
system.sysUpTime.0 => 2 days, 22:22:15
snmpTrapOID.0 => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=znc0s0j6-SSPFS-Unit-0;
nnExtAlarmMessageDateAndTime => 2004-1-27,10:38:44.0
nnExtAlarmMessageDocumentationPointer => NPM 360
nnExtAlarmMessageInfo =>   38 NPM 360 6012 INFO Alarm Raised                  Alarm
ACT_NOT_APP has been raised.


        Alarm Description: Activatable patches not applied.
```

Syslog

The following is an example of an NPM log in Syslog format:

```
Feb 27 10:40:03 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0201~~  NPM360 NONE INFO
Alarm Raised^M        Alarm ACT_NOT_APP has been raised.^M        Alarm Description:
Activatable patches not applied.
```

Performance

OM and PM Documentation references for NPM

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for NPM

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

- NN10276-500 - ATM/IP Configuration Management

Related documents

- NN10281-600 - ATM/IP Administration and Security
- NN10440-450 - Upgrading a Carrier VoIP Network

OSSGate

This section contains IEMS Northbound log samples and device documentation references for the OSSGate.

OSSGate Fault Interface

Fault documentation for OSSGate :

There are no faults or logs associated with this application.

Fault Mapping for OSSGate

There are no faults or logs associated with this application.

Performance

OM and PM Documentation references for OSSGate

There are no OMs or PMs associated with this application.

Northbound OM/PM Formats

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for OSSGate

GUI Launching and User procedures

- NE10004-512 OSSGate User's Guide

Related documents

- 297-9051-8081 SERVORD Reference Manual Vol 1 of 2
- 297-9051-8082 SERVORD Reference Manual Vol 2 of 2

QoS Collector Application (QCA)

This section contains IEMS Northbound log samples and device documentation references for the QCA.

QCA Fault Interface

Fault documentation for QCA :

The QoS Collector reports faults as part of the CS2K Management Tools suite. The documents below contain information about QoS Collector faults.

- NN10083-911 - Communication Server 2000 Fault Management

Fault Mapping for QCA

The following criteria can be used for looking up information on specific faults for QCA.

Fault Correlation for QCA

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
QCA	logname and number	logname and number	logname and number	logname and number	NN10083-911 Communication Server 2000 Fault Management

Northbound Fault Formats for QCA

SCC2

The following is an example of a QCA log in SCC2 format:

```
*C34 QCA 310 0052 TBL  wnc0y0kz
        Location: wnc0y0kz
        NotificationID : 49
        State : Raise
        Category : Processing Error
        Cause : storageCapacityProblem
        Time : Jan 22 16:34:19 2004
        Component Id: /data/qca
        Specific Problem: checkDiskSpace() has shown that there is less than
        104857600 bytes available on the local disk.
        Description : More Disk space is required  immediately.
```

NTSTD

The following is an example of a QCA log in NTSTD format:

```
COMPACT06BT ***  QCA 310 Jan22 21:34:19 0052 TBL  wnc0y0kz
        Location: wnc0y0kz
        NotificationID : 49
        State : Raise
        Category : Processing Error
        Cause : storageCapacityProblem
        Time : Jan 22 16:34:19 2004
        Component Id: /data/qca
        Specific Problem: checkDiskSpace() has shown that there is less than
        104857600 bytes available on the local disk.
        Description : More Disk space is required  immediately.
```

SNMP

The following is an example of a QCA log in SNMP format:

```
system.sysUpTime.0 => 0:28:36
snmpTrapOID.0 => nnExtAlarmCritical
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.50.44.52.58.51.52.58.50.48.46.48.44.37495
alarmActiveDateAndTime => 2004-1-22,4:34:20.0,
alarmActiveDescription => DeviceSpecificInfo=;Location: wnc0y0kz
NotificationID : 49
State : Raise
Category : Processing Error
Cause : storageCapacityProblem
Time : Jan 22 16:34:19 2004
Component Id: /data/qca
Specific Problem: checkDiskSpace() has shown that there is less than
104857600 bytes available on the local disk.
Description : More Disk space is required  immediately.

nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
```

```
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => QCA 310
nnExtAlarmActiveResourceDescription => IEMS=wnc0y0kz-QOS;/data/qca
nnExtAlarmActiveManualClear => 4
nnExtAlarmActiveSequenceNumber => 3
```

Syslog

The following is an example of a QCA log in Syslog format:

```
Feb 22 16:34:19 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0062~~  QCA310 CRIT TBL
wnc0y0kz^M        Location: wnc0y0kz^M        NotificationID : 49^M        State :
Raise^M      Category : Processing Error^M      Cause : storageCapacityProblem^M
Time : Jan 22 16:26:49 2004^M       Component Id: /data/qca^M       Specific Problem:
checkDiskSpace() has shown that there is less than^M       104857600 bytes available
on the local disk.^M        Description : More Disk space is required  immediately.^M
```

Performance

OM and PM Documentation references for QCA

- There are no OMs or PMs associated with QCA.

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for QCAin XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of Performance data for QCA in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for QCA

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

- NN10281-600 - ATM/IP Administration and Security
- NN10325-900 - ATM/IP Fault Management
- NN10276-500 - ATM/IP Configuration Management

Related documents

Trunk Maintenance Manager (TMM)

This section contains IEMS Northbound log samples and device documentation references for TMM.

TMM Fault Interface

Fault documentation for TMM :

There are no faults or logs associated with this application.

Fault Mapping for TMM

There are no faults or logs associated with this application.

Performance

OM and PM Documentation references for TMM

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for TMM

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Related documents

Non-Topology Elements

This section contains references to applications that do not appear in the IEMS topology, but still report faults to the Northbound log streams.

Data Audit System

This section contains IEMS Northbound log samples and device documentation references for the Data Audit System.

Data Audit System Fault Interface

Fault documentation for Data Audit System :

- NN10325-900 - ATM/IP Fault Management

Fault Mapping for Data Audit System

The following criteria can be used for looking up information on specific faults for Data Audit System.

Fault Correlation for Data Audit System

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
Data Audit System	logname and number	logname and number	logname and number	logname and number	NN10325-900 ATM/IP Fault Management

Northbound Fault Formats for Data Audit System

SCC2

The following is an example of a Data Audit System log in SCC2 format:

```
*C43 CMT 300 5341 TBL CMT Fault
        Location: Audit
        NotificationID: 1001
        State: Raise
        Category: Processing Error
        Cause: Corrupt data
        Time: Jan 23 13:43:37 2004
        Component Id: SESM=AuditSystem;Audit=CS2K Data Integrity Audit
        Specific Problem: Data mismatches detected
        Description: The SESM audit: CS2K Data Integrity Audit, has 59 unresolve
        d problems. To view and correct the problems, open the audit problem rep
        ort from the Audit System found under the SESM Maintenance menu item.
```

NTSTD

The following is an example of a Data Audit System log in NTSTD format:

```
COMPACT06BT ***  CMT300 Jan23 18:43:37 5341 TBL CMT Fault
        Location: Audit
        NotificationID: 1001
        State: Raise
        Category: Processing Error
        Cause: Corrupt data
        Time: Jan 23 13:43:37 2004
        Component Id: SESM=AuditSystem;Audit=CS2K Data Integrity Audit
        Specific Problem: Data mismatches detected
        Description: The SESM audit: CS2K Data Integrity Audit, has 59 unresolve
        d problems. To view and correct the problems, open the audit problem rep
        ort from the Audit System found under the SESM Maintenance menu item.
```

SNMP

The following is an example of a Data Audit System log in SNMP format:

```
system.sysUpTime.0 => 21:39:13
snmpTrapOID.0 => nnExtAlarmCritical
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.51.44.49.58.52.51.58.51.55.46.48.44.42485
alarmActiveDateAndTime => 2004-1-23,1:43:37.0,
alarmActiveDescription => DeviceSpecificInfo=;Event from Unknown Syslog Device
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => CMT 300
nnExtAlarmActiveResourceDescription => IEMS=znc0s0j6;SESM=AuditSystem;Audit=CS2K Data
Integrity Audit
nnExtAlarmActiveManualClear => 0
nnExtAlarmActiveSequenceNumber => 8390
```

Syslog

The following is an example of a Data Audit System log in Syslog format:

```
Feb 23 13:44:54 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=5398~~ CMT300 CRIT TBL CMT
Fault^M Location: Audit^M NotificationID: 1001^M State: Raise^M Category: Processing
Error^M Cause: Corrupt data^M Time: Jan 23 13:43:37 2004^M Component Id:
SESM=AuditSystem;Audit=CS2K Data Integrity Audit^M Specific Problem: Data mismatches
detected^M Description: The SESM audit: CS2K Data Integrity Audit, has 59 unresolve^M
d problems. To view and correct the problems, open the audit problem rep^M ort from
the Audit System found under the SESM Maintenance menu item.^M
```

Performance

OM and PM Documentation references for Data Audit System

There are no OMs or PMs associated with this application.

Northbound OM/PM Formats

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for Data Audit System

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics
- NN10276-500 - ATM/IP Configuration Management
- NN10325-900 - ATM/IP Fault Management

Related documents

IW-SPM IP

This section contains IEMS Northbound log samples and device documentation references for the IW-SPM IP.

IW-SPM IP Fault Interface

Fault documentation for IW-SPM IP :

- NN10078-911 - IW SPM IP Fault Management
- NN10275-909 - Succession Fault Management Logs Reference

Fault Mapping for IW-SPM IP

The following criteria can be used for looking up information on specific faults for IW-SPM IP.

Fault Correlation for IW-SPM IP

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
IW-SPM IP	Logname and number	Logname and number	Logname and number	Logname and number	NN10078-911 IW SPM IP Fault Management

Northbound Fault Formats for IW-SPM IP

SCC2

The following is an example of a IW-SPM IP log in SCC2 format:

```
**17 SPM 313 4488 TBL  Fault
        SPM   0 CEM   0 : A                      Time: 12:16:13.890
        Source: None           State: Insv       Type: None
        Reason:     Loadname mismatch.
        Diagnostic: Autonomous fault detection
        Comp:MCM         RegAddr:0           Exp:0           Act:0
```

NTSTD

The following is an example of a IW-SPM IP log in NTSTD format:

```
RTPU07BU  **  SPM313 Feb28 00:06:14 9091 TBL  Fault
        SPM   0 CEM   1 : A                      Time: 19:05:14.820
        Source: None           State: Insv       Type: None
        Reason:     SYNC OOSpec: prim. ref. NA.
        Diagnostic: Autonomous fault detection
        Comp:TIC         RegAddr:0           Exp:0           Act:0
```

SNMP

The following is an example of a IW-SPM IP log in SNMP format:

```
system.sysUpTime.0 => 3 days, 6:54:40
snmpTrapOID.0 => nnExtAlarmMajor
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.50.45.50.55.44.55.58.49.50.58.50.55.46.54.44.14023
alarmActiveDateAndTime => 2004-2-27,7:12:27.6
alarmActiveDescription => DeviceSpecificInfo=Unavailable;SPM  0 CEM  0 : A
Time: 19:11:31.010
Source: None           State: Insv       Type: None
Reason:     SYNC OOSpec: prim. ref. NA.
Diagnostic: Autonomous fault detection
Comp:TIC         RegAddr:0           Exp:0           Act:0
```

```
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => SPM 313
nnExtAlarmActiveResourceDescription => IEMS=wnc0y0m0.us.nortel.com-CS2K-Mgr;
nnExtAlarmActiveManualClear => 3
nnExtAlarmActiveSequenceNumber => 18489
```

Syslog

The following is an example of a IW-SPM IP log in Syslog format:

```
Feb 28 12:11:09 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=7983~~  SPM313 MAJOR TBL
Fault^M       SPM   0 CEM   1 : I                    Time: 12:10:11.080^M       Source:
None           State: Insv       Type: None  ^M        Reason:     No frame pulse from
DS-512 #0    ^M      Diagnostic: Autonomous fault detection      ^M      Comp:TIC
RegAddr:0            Exp:0           Act:0
```

Performance

OM and PM Documentation references for IW-SPM IP

- NN10144-711 - IW SPM IP Performance Management

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for IW-SPM IP in XML format:

Note: *The IEMS northbound performance interface does not support this device.*

CSV

The following is an example of Performance data for IW-SPM IP in CSV format:

Note: *The IEMS northbound performance interface does not support this device.*

GUI/CLUI Documentation for IW-SPM IP

GUI Launching and User procedures

- NN10015-111 - IW SPM IP Basics

Related documents

- NN10056-461 - Upgrading the IW SPM IP
- NN10100-511 - IW SPM IP Configuration Management
- NN10166-611 - IW SPM IP Administration and Security

MG9000 Manager Mid-Tier

This section contains IEMS Northbound log samples and device documentation references for the MG9000 Mgr Mid-Tier.

MG9000 Mgr Mid-Tier Fault Interface

Fault documentation for MG9000 Mgr Mid-Tier :

All MG9000 Mgr Mid-Tier faults are delivered via MG9000 Mgr. See document(s)

- NN10074-911 MG9000 Fault Management
- NN10325-900 ATM/IP Fault Management
- NN10275-909 Succession Fault Management Logs Reference

Fault Mapping for MG9000 Mgr Mid-Tier

The following criteria can be used for looking up information on specific faults for MG9000 Mgr Mid-Tier.

Fault Correlation for MG9000 Mgr Mid-Tier

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
MG9K Mid-Tier	log name and number	log name and number	log name and number	log name and number	NN10074-911 MG9000 Fault Management

Northbound Fault Formats for MG9000 Mgr Mid-Tier

SCC2

The following is an example of a MG9000 Mgr Mid-Tier log in SCC2 format:

```
  52 MGEM703 0193 INFO Shutdown_Event
        Status: Shutting MG 9K Midtier Server down ...
```

NTSTD

The following is an example of a MG9000 Mgr Mid-Tier log in NTSTD format:

```
RTPU07BT     MGEM703 Feb02 20:52:08 0197 INFO Shutdown_Event
        Status: Shutting MG 9K Midtier Server down ...
```

SNMP

The following is an example of a MG9000 Mgr Mid-Tier log in SNMP format:

sysUpTime.0 => 1:30:14

snmpTrapOID.0 => nnExtAlarmMessage

nnExtAlarmMessageResource => .0.0

nnExtAlarmMessageResourceDescription => IEMS=wnc0y0nr.us.nortel.com-SSPFS-Unit-0;

nnExtAlarmMessageDateAndTime => 2004-2-2,3:52:8.0

nnExtAlarmMessageDocumentationPointer => MGEM703

nnExtAlarmMessageInfo => 52 MGEM703 0193 INFO Shutdown_Event Status: Shutting MG 9K Midtier Server down ...

Syslog

The following is an example of a MG9000 Mgr Mid-Tier log in Syslog format:

```
Mar  4 15:27:47 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=0682~~ MGEM703 NONE INFO
Shutdown_Event
Status: Shutting MG 9K Midtier Server down ...
```

Performance

OM and PM Documentation references for MG9000 Mgr Mid-Tier

There are no OMs or PMs associated with this component.

GUI/CLUI Documentation for MG9000 Mgr Mid-Tier

GUI Launching and User procedures

The MG9000 Mgr Mid-Tier is an application that runs on an SSPFS machine. See SSPFS platform for client launch details.

- NN10096-511 MG9000 Configuration Management

Related documents

- NN10221105 VoA OSS Guide
- NN10048-461 Upgrading the MG9000
- NN10276-500 ATM/IP Configuration Management
- NN10325-900 ATM/IP Fault Management
- NN10162-611 MG9000 Administration and Security

OM Collector

OM Collector Fault Interface

This section contains IEMS Northbound log samples and device documentation references for the OM Collector.

Fault documentation for OM Collector :

- NN10074-911 MG9000 Fault Management

Fault Mapping for OM Collector

- NN10074-911 MG9000 Fault Management

The following criteria can be used for looking up information on specific faults for OM Collector.

Fault Correlation for OM Collector

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
OM Collector	logname and number	logname and number	logname and number	logname and number	NN10074-911 MG9000 Fault Management

Northbound Fault Formats for OM Collector

SCC2

The following is an example of a OM Collector log in SCC2 format:

```
  27 OMC 700 0470 INFO Startup_Event
        Status: OMCLTR_Process: OMCollector Process was started with PSID 17585
```

NTSTD

The following is an example of a OM Collector log in NTSTD format:

```
RTPU07BR      OMC700 Jan28 21:27:53 9923 INFO Startup_Event
         Status: OMCLTR_Process: OMCollector Process was started with PSID 17585
```

SNMP

The following is an example of a OM Collector log in SNMP format:

```
system.sysUpTime.0 => 4 days, 4:10:00
snmpTrapOID.0 => nnExtAlarmMessage
nnExtAlarmMessageResource => .0.0
nnExtAlarmMessageResourceDescription => IEMS=wnc0s0kq.us.nortel.com-SSPFS-Unit-0;
nnExtAlarmMessageDateAndTime => 2004-1-28,4:27:53.0
nnExtAlarmMessageDocumentationPointer => OMC 700
nnExtAlarmMessageInfo =>   27 OMC 700 0470 INFO Startup_Event
        Status: OMCLTR_Process: OMCollector Process was started with PSID 17585
```

Syslog

The following is an example of a OM Collector log in Syslog format:

```
Feb 28 16:27:48 wnc0s0pf IEMS: _V2_~I=~H=wnc0s0pf~A=IEMS~S=4656~~  OMC700 NONE INFO
Startup_Event^M        Status: OMCLTR_Process: OMCollector Process was started with
PSID 17585
```

Performance

OM and PM Documentation references for OM Collector

There are no OMs or PMs associated with this application. For MG9000 performance information see:

- NN10140-711 MG9000 Performance Management

Northbound OM/PM Formats

There are no OMs or PMs associated with this application.

GUI/CLUI Documentation for OM Collector

GUI Launching and User procedures

- NN10140-711 MG9000 Performance Management
- NN10096-511 MG9000 Configuration Management

Related documents

- NN10276-500 ATM/IP Configuration Management

V5.2 Data Audit

This section contains IEMS Northbound log samples and device documentation references for the V5.2 Data Audit.

V5.2 Data Audit Fault Interface

Fault documentation for V5.2 Data Audit :

The V5.2 Data Integrity Audit Module of V5.2 Data Audit will raise CMT300 faults, and it will be covered in **DataAudit**'s Fault Management.

The Data Audit system will generate CMT300 logs when problems are found during any of its audits. The component ID of the log can be used to identify the specific audit that encountered a problem.

- NN10275-909 - Succession Fault Management Logs Reference
- NN10325-900 - ATM/IP Fault Management

Fault Mapping for V5.2 Data Audit

The following criteria can be used for looking up information on specific faults for V5.2 Data Audit.

Fault Correlation for V5.2 Data Audit

NB format -> Device/EM	SCC2	NTSTD	SNMP	Syslog	Document Reference
V5.2 Data Audit	log name and log number. Seen as component ID in generic CMT300 Audit log. example: componentid = SESM=AuditSystem;Audit=V5.2 Data Integrity Audit	log name and log number. Seen as component ID in generic CMT300 Audit log. example: componentid = SESM=AuditSystem;Audit=V5.2 Data Integrity Audit	log name and log number. Seen as component ID in generic CMT300 Audit log. example: componentid = SESM=AuditSystem;Audit=V5.2 Data Integrity Audit	log name and log number. Seen as component ID in generic CMT300 Audit log. example: componentid = SESM=AuditSystem;Audit=V5.2 Data Integrity Audit	NN10275-909 Succession Fault Management Logs Reference

Northbound Fault Formats for V5.2 Data Audit

SCC2

The following is an example of a V5.2 Data Audit log in SCC2 format:

```
*C12 CMT 300 0002 TBL  CMT Fault
        Location: Audit
        NotificationID: 1002
        State: Raise
        Category: Processing Error
        Cause: Corrupt data
        Time: Feb 14 23:12:48 2004
        Component Id: SESM=AuditSystem;Audit=V5.2 Data Integrity Audit
        Specific Problem: Data mismatches detected
        Description: The SESM audit: V5.2 Data Integrity Audit, has 5 unresolved
        problems. To view and correct the problems, open the audit problem repo
        rt from the Audit System found under the SESM Maintenance menu item.
```

NTSTD

The following is an example of a V5.2 Data Audit log in NTSTD format:

```
COMPACT06BT ***  CMT300 Feb15 07:12:48 0002 TBL  CMT Fault
```

```
Location: Audit
NotificationID: 1002
State: Raise
Category: Processing Error
Cause: Corrupt data
Time: Feb 14 23:12:48 2004
Component Id: SESM=AuditSystem;Audit=V5.2 Data Integrity Audit
Specific Problem: Data mismatches detected
Description: The SESM audit: V5.2 Data Integrity Audit, has 5 unresolved
problems. To view and correct the problems, open the audit problem repo
rt from the Audit System found under the SESM Maintenance menu item.
```

SNMP

The following is an example of a V5.2 Data Audit log in SNMP format:

```
system.sysUpTime.0 => 3:05:01
snmpTrapOID.0 => nnExtAlarmCritical
alarmActiveResourceId =>
.1.3.6.1.2.1.111.1.2.2.1.10.12.78.111.114.116.101.108.95.102.97.117.108.116.20.50.48
.48.52.45.49.45.50.49.44.54.58.52.49.58.49.52.46.48.44.8995
alarmActiveDateAndTime => 2004-1-21,6:41:14.0,
alarmActiveDescription => DeviceSpecificInfo=;Event from Unknown Syslog Device
nnExtAlarmActiveEventType => 5
nnExtAlarmActiveProbableCause => 118
nnExtAlarmActiveAdditionalText =>
nnExtAlarmActiveDocumentationPointer => CMT 300
nnExtAlarmActiveResourceDescription => IEMS=zsups228;SESM=AuditSystem;Audit=V5.2 Data
Integrity Audit
nnExtAlarmActiveManualClear => 2
nnExtAlarmActiveSequenceNumber => 1
```

Syslog

The following is an example of a V5.2 Data Audit log in Syslog format:

```
Feb 14 23:12:50 zsups228 IEMS: _V2_~I=~H=zsups228~A=IEMS~S=0008~~ CMT300 CRIT TBL CMT
Fault^M Location: Audit^M NotificationID: 1002^M State: Raise^M
Category: Processing Error^M Cause: Corrupt data^M Time: Feb 14 23:12:48
2004^M Component Id: SESM=AuditSystem;Audit=V5.2 Data Integrity Audit^M
Specific Problem: Data mismatches detected^M Description: The SESM audit: V5.2
Data Integrity Audit, has 5 unresolved^M problems. To view and correct the
```

```
problems, open the audit problem repo^M        rt from the Audit System found under
the SESM Maintenance menu item.^M
```

Performance

OM and PM Documentation references for V5.2 Data Audit

- There are no performance measurements for V5.2 Data Audit V5.2 Data Audit

Northbound OM/PM Formats

This section provides example output of Performance Measurement data in each of the Northbound formats provided

XML

The following is an example of Performance data for V5.2 Data Audit in XML format:

Note: *Northbound performance interface not supported for this component.*

CSV

The following is an example of Performance data for V5.2 Data Audit in CSV format:

Note: *Northbound performance interface not supported for this component.*

GUI/CLUI Documentation for V5.2 Data Audit

GUI Launching and User procedures

- NN10320-100 - ATM Solutions Basics
- NN10300-100 - IP Solutions Basics

Related documents

- NN10083-911 - CS2000 Fault Management
- NN10281-600 - ATM/IP Administration and Security
- NN10276-500 - ATM/IP Configuration Management
- NIS V208-1 - DMS-100 International Switching V5: CS2K Interface Specification to Support V5.2 Protocol

References

Fault Specifications

[1] Syslog Protocol (RFC 3164): http://www.ietf.org/rfc/rfc3164.txt

[2] Alarm MIB (draft): http://www.ietf.org/html.charters/disman-charter.html

[3] Notification Log MIB (RFC 3014): http://www.ietf.org/rfc/rfc3014.txt?number=3014

OAM&P Security

[4] NN10281-600 - ATM/IP Administration and Security

Network Engineering

[5] <SN08 SEB number> - IAC Engineering Guidelines

[6] <SN08 SEB number> - IAW Engineering Guidelines

[7] <SN08 SEB number> - UAIP Engineering Guidelines

[8] <SN08 SEB number> - PT-IP Engineering Guidelines

[9] <SN08 SEB number> - VoATM Engineering Guidelines

[10] <SN08 SEB number> - TRIMODAL Engineering Guidelines

Industry Standards

PAM

[11] Introduction to PAM: http://docs.sun.com/db/doc/805-7229/6j6q8svdi?q=pam.conf&a=view

[12] PAM RFC from OpenGroup: http://www.opengroup.org/tech/rfc/mirror-rfc/rfc86.0.txt

[13] pam.conf (Solaris 8): http://docs.sun.com/db/doc/806-0633/6j9vn6q5t?q=pam.conf&a=view

NSSwitch

[14] Solaris Name Services: http://docs.sun.com/db/doc/806-1387/6jam6926b?q=nsswitch&a=view

[15] nsswitch.conf (Solaris 8): http://docs.sun.com/db/doc/806-0633/6j9vn6q5m?q=nsswitch&a=view

Secure Shell (SSH)

[16] Secure Shell (secsh) Internet Drafts: http://www.ietf.org/html.charters/secsh-charter.html

[17] OpenSSH: http://www.openssh.org

SNMP V3/USM

[18] An Architecture for Describing SNMP Management Frameworks (RFC3411): http://www.ietf.org/rfc/rfc3411.txt?number=3411

[19] User-based Security Model (RFC3414): http://www.ietf.org/rfc/rfc3414.txt?number=3414

[20] View-based Access Control Model (RFC3415): http://www.ietf.org/rfc/rfc3415.txt?number=3415

HTTPS

[21] The SSL Protocol V3.0: http://wp.netscape.com/eng/ssl3/ssl-toc.html

[22] Transport Layer Security (TLS) Extensions (RFC2246): http://www.ietf.org/rfc/rfc3546.txt

[23] HTTP over TLS (RFC 2818): http://www.ietf.org/rfc/rfc2818.txt

[24] OpenSSL: http://www.openssl.org

IEMS Appendix 1: Northbound OSS Configurations

Depending on customer requirements, a single-source OSS interface can be provided from either the IEMS server or the SDM platform. In either scenario, one system is configured as the primary and the other a subordinate log source .

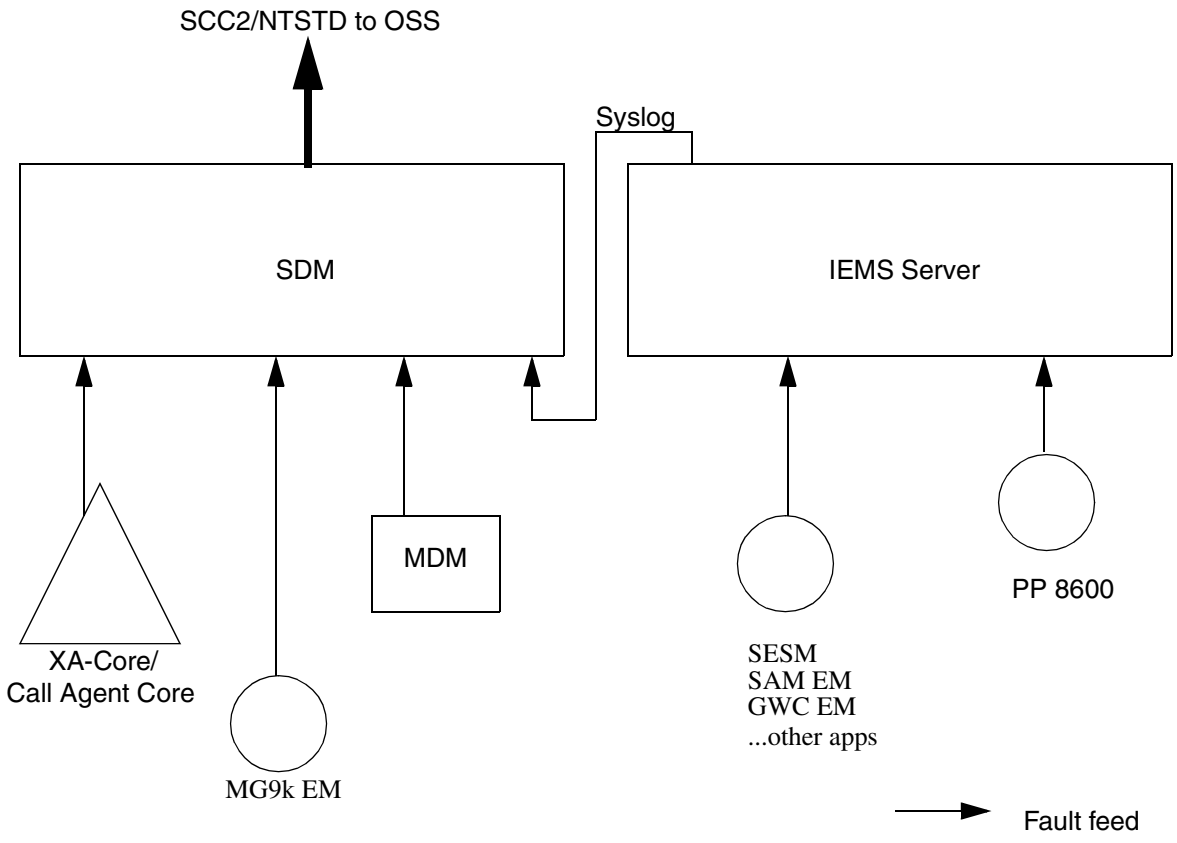
For existing Nortel Networks ATM customers, the SDM provides the external interface to third party OSSs. The IEMS is configured to forward all of its collected faults to the SDM through its Syslog interface. The SDM then aggregates all incoming faults and forwards them to the standard SCC2 and NTSTD interfaces used by customers. See figure .

Conversely, for Nortel Networks Carrier VoIP customers, IEMS provides the single Northbound interface using the SDM as a one of several subordinate fault collectors/forwarders in the network. See figure .

Using the SDM as a Northbound Fault Feed

As an OAM&P requirement, fault information must be available from the existing SDM northbound interfaces. In order to support that, the IEMS can be configured to send its northbound information to the SDM.

Fault flow with SDM as Northbound interface (ATM Market only)



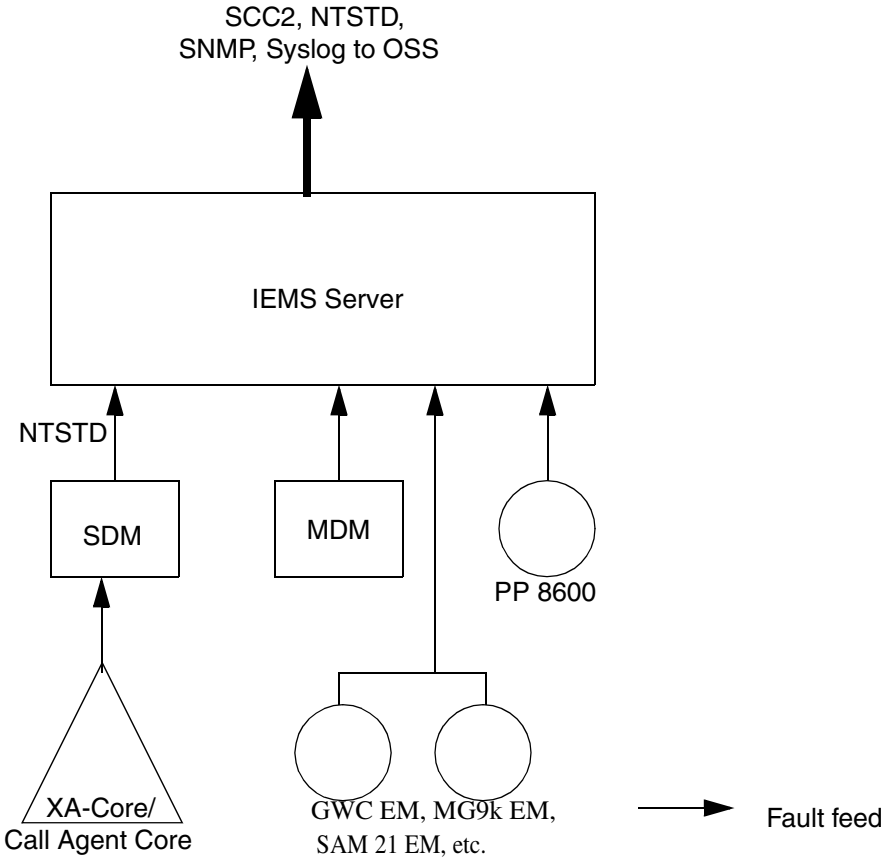
Note: The IEMS northbound Syslog stream is sent on local7.notice. The SDM syslog.conf file will need to be configured to accept this stream.

The following figure shows the fault feeds that are used in the ATM market to provide a single source feed for all devices. In this case, the SDM serves as the Northbound fault interface.

The MDM and MG9000 Manager send their information to the SDM. This information is sent by the SDM northbound along with the CS2k core information (XA-Core as illustrated or Call Agent Core).

Additional data comes to the IEMS server from the CS2000 Manager applications and element managers (GWC-EM, NPM, SAM 21 EM, etc.). The IEMS then sends this data to the SDM via its Syslog facility. In this way, the IEMS acts as a mediator for devices that cannot directly send events to the SDM.

Fault flow with IEMS as Northbound interface (typical)



Note: The SDM SCC2 and NTSTD logroute streams must be configured for SCC2_old or NTstd_old. This is a change from SN06.2

This figure shows the fault flows in an office where the IEMS will be the northbound interface. In this configuration, all the devices that have been implemented in IEMS forward their fault information to IEMS. The SDM will only be responsible for forwarding core faults to the IEMS.

Note: The SDM logroute stream must be configured from tcpin.

IEMS Appendix 2: Nortel Alarm Extension MIB

```
-- Draft Version

NORTEL-ALARM-EXT-MIB

DEFINITIONS ::= BEGIN

   IMPORTS
       nortelGenericMIBs FROM NORTEL-GENERIC-MIB
       alarmActiveEntry, alarmActiveResourceId, alarmActiveDescription,
       ResourceId, alarmActiveDateAndTime
                                    FROM ALARM-MIB
       IANAItuEventType, IANAItuProbableCause
                                    FROM IANA-ITU-ALARM-TC
       AdminState, OperState, UsageState,
       AlarmStatus, StandbyStatus    FROM ENTITY-STATE-MIB
      nlmLogName, nlmLogIndex      FROM NOTIFICATION-LOG-MIB
       NOTIFICATION-GROUP            FROM SNMPv2-CONF
       DateAndTime, DisplayString    FROM SNMPv2-TC
       SnmpAdminString               FROM SNMP-FRAMEWORK-MIB
       MODULE-IDENTITY, OBJECT-IDENTITY,
       OBJECT-TYPE, NOTIFICATION-TYPE,
       Unsigned32
                                    FROM SNMPv2-SMI;


   nnExtAlarmMIB  MODULE-IDENTITY
       LAST-UPDATED "200401270000Z"
       ORGANIZATION "Nortel Networks"
       CONTACT-INFO
              "     Nortel Networks
                    8200 Dixie Road
                    Brampton, Ontario L6T 5P6
                    Canada

                    1-800-4Nortel
```

```
                    www.nortelnetworks.com "
       DESCRIPTION
              "This module contains objects that extend the IETF Alarm MIB, including
notifications."

       -- Revision history

       REVISION "200401270000Z"
       DESCRIPTION
                " Initial version"

       ::= { nortelGenericMIBs 6 }

  nnExtAlarmObjects  OBJECT IDENTIFIER ::= { nnExtAlarmMIB 1 }
  nnExtAlarmConformance  OBJECT IDENTIFIER ::= { nnExtAlarmMIB 2 }
  nnExtAlarmCompliances  OBJECT IDENTIFIER ::= { nnExtAlarmConformance 1 }
  nnExtAlarmGroups  OBJECT IDENTIFIER ::= { nnExtAlarmConformance 2 }


  -- Textual Convetions

  NnAvailabilityStatus  ::=  TEXTUAL-CONVENTION
       STATUS         current
       DESCRIPTION
            "Represents the availability status"
       SYNTAX INTEGER {
        notSupported (1),
      inTest (2),
      failed (3),
      powerOff (4),
      offLine (5),
      offDuty (6),
      dependency (7),
      degraded (8),
      notInstalled (9),
      logFull (10)
   }

  NnControlStatus  ::=  TEXTUAL-CONVENTION
```

```
      STATUS         current
      DESCRIPTION
           "Represents the control status"
      SYNTAX INTEGER {
       notSupported (1),
    subjectToTest (2),
    partOfServiceLocked (3),
    reservedForTest (4),
    suspended (5)
 }

NnProceduralStatus  ::=  TEXTUAL-CONVENTION
     STATUS         current
     DESCRIPTION
          "Represents the procedural status"
     SYNTAX INTEGER {
      notSupported (1),
     initializationRequired (2),
    notInitialized (3),
    initializing (4),
    reporting (5),
    terminating (6)
 }

NnUnknownStatus  ::=  TEXTUAL-CONVENTION
     STATUS         current
     DESCRIPTION
          "The unknown status attribute is used to indicate that
          the state of the resource represented by the managed object
          is unknown. When the unknown status attribute value is
          true, the value of the state attributes may not reflect
          the actual state of the resource."
 SYNTAX     INTEGER {
      false(1),
      true(2)
   }
```

```
-- Nortel Extended Active Alarm Table

 nnExtAlarmActiveTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF NnExtAlarmActiveEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains additional information about active alarms than
        what is found in the IETF Alarm MIB."
    ::= { nnExtAlarmObjects 1 }

nnExtAlarmActiveEntry OBJECT-TYPE
    SYNTAX      NnExtAlarmActiveEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An active alarm entry"
    AUGMENTS { alarmActiveEntry }
    ::= { nnExtAlarmActiveTable 1 }

 NnExtAlarmActiveEntry ::= SEQUENCE {
    nnExtAlarmActiveEventType                    IANAItuEventType,
    nnExtAlarmActiveProbableCause                IANAItuProbableCause,
    nnExtAlarmActiveAdditionalText               SnmpAdminString,
    nnExtAlarmActiveDocumentationPointer         SnmpAdminString,
    nnExtAlarmActiveResourceDescription          SnmpAdminString,
    nnExtAlarmActiveManualClear                  INTEGER,
    nnExtAlarmActiveSequenceNumber               Integer32
          }

   nnExtAlarmActiveEventType OBJECT-TYPE
    SYNTAX       IANAItuEventType
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
             "Represents the per active alarm instance event type values."
     REFERENCE
         "ITU Recommendation M.3100, 'Generic Network Information
```

```
                Model', 1995
             ITU Recommendation X.733, 'Information Technology - Open
                Systems Interconnection - System Management: Alarm
                Reporting Function', 1992
             ITU Recommendation X.736, 'Information Technology - Open
                Systems Interconnection - System Management: Security
                Alarm Reporting Function', 1992"
      ::= { nnExtAlarmActiveEntry 1 }

   nnExtAlarmActiveProbableCause OBJECT-TYPE
      SYNTAX      IANAItuProbableCause
      MAX-ACCESS  read-write
      STATUS       current

       DESCRIPTION
               "Per active alarm instance ITU probable cause values."
       REFERENCE
           "ITU Recommendation M.3100, 'Generic Network Information
                Model', 1995
             ITU Recommendation X.733, 'Information Technology - Open
                Systems Interconnection - System Management: Alarm
                Reporting Function', 1992
             ITU Recommendation X.736, 'Information Technology - Open
                Systems Interconnection - System Management: Security
                Alarm Reporting Function', 1992"
      ::= { nnExtAlarmActiveEntry 2 }


   nnExtAlarmActiveAdditionalText OBJECT-TYPE
      SYNTAX  SnmpAdminString
      MAX-ACCESS read-write
      STATUS     current
      DESCRIPTION
               "Represents the per active alarm instanace additional text
               field."
       REFERENCE
           "ITU Recommendation M.3100, 'Generic Network Information
                Model', 1995
```

```
            ITU Recommendation X.733, 'Information Technology - Open
               Systems Interconnection - System Management: Alarm
               Reporting Function', 1992"
      ::= { nnExtAlarmActiveEntry 3}

  nnExtAlarmActiveDocumentationPointer OBJECT-TYPE
      SYNTAX      SnmpAdminString
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               "This object servces as a pointer to documentation related to this
               problem.

               If there is no specific document pointer for this alarm, this object
               is a null length string."
      ::= { nnExtAlarmActiveEntry 4 }

  nnExtAlarmActiveResourceDescription OBJECT-TYPE
      SYNTAX      SnmpAdminString
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
           "This is a textual description of the resource under
            under alarm.

            The format of the string is as follows:

NEtype=NEname;componentType=componentInstanceId;subcompType=subcompInstanceId;....

          With NE as the root, the entire containment with the list of Relative
          Distinguished Names (RDNs) is presented upto the
           point where the alarming component is clearly identified.
           Semicolon is the delimiter between a 'category=value' pair.
           The string can only contain alphanumeric characters and
           underscores. No commas, spaces, slashes, hyphens, or
           dollar signs are allowed
               "
      ::= { nnExtAlarmActiveEntry 5 }
```

```
nnExtAlarmActiveManualClear OBJECT-TYPE
    SYNTAX      INTEGER {
         other (1),
         forbidden (2),
         required (3),
         optional (4)
         }
    MAX-ACCESS  read-only
    STATUS       current
    DESCRIPTION
              "This object provides guidance to a mid-level manager
              on the handling of this alarm. A value of forbidden
              indicates that a mid-level manager MUST NOT allow
              this alarm to be manually cleared. A value of
              required indicates that this alarm has no corresponding
              clear so MUST always be manually cleared. A value of
              optional indicates that this alarm does have a corresponding
              clear, but that is MAY also be cleared manually. A value of
              other indicates that the manual clear status is either
              unknown or not one of the specified values."
     ::= { nnExtAlarmActiveEntry 6 }

nnExtAlarmActiveSequenceNumber OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS       current
    DESCRIPTION
              "The sequence number of this notification. This object
              MUST have a value of 0 for notifications without
              sequence numbers or solutions that don't support
              sequence numbers."
    DEFVAL { 0 }
     ::= { nnExtAlarmActiveEntry 7 }

-- Nortel Extended Alarm State Information

   nnExtAlarmStateTable OBJECT-TYPE
```

```
    SYNTAX      SEQUENCE OF NnExtAlarmStateEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains state information about active alarms than
        what is found in the IETF Alarm MIB."
    ::= { nnExtAlarmObjects 2 }

nnExtAlarmStateEntry OBJECT-TYPE
    SYNTAX      NnExtAlarmStateEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An active alarm state entry"
    AUGMENTS { alarmActiveEntry }
    ::= { nnExtAlarmStateTable 1 }

NnExtAlarmStateEntry ::= SEQUENCE {
 nnExtAlarmStateAdministrative   AdminState,
 nnExtAlarmStateOperational      OperState,
 nnExtAlarmStateUsage            UsageState,
 nnExtAlarmStateAlarm            AlarmStatus,
 nnExtAlarmStateAvailability     NnAvailabilityStatus,
 nnExtAlarmStateControl          NnControlStatus,
 nnExtAlarmStateProcedural       NnProceduralStatus,
 nnExtAlarmStateStandby          StandbyStatus,
 nnExtAlarmStateUnknown          NnUnknownStatus
}

 nnExtAlarmStateAdministrative OBJECT-TYPE
    SYNTAX      AdminState
    MAX-ACCESS  read-only
    STATUS       current
    DESCRIPTION
             ""
     ::= { nnExtAlarmStateEntry 1 }

  nnExtAlarmStateOperational OBJECT-TYPE
```

```
      SYNTAX      OperState
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               ""
       ::= { nnExtAlarmStateEntry 2 }

   nnExtAlarmStateUsage OBJECT-TYPE
      SYNTAX      UsageState
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               ""
       ::= { nnExtAlarmStateEntry 3 }

    nnExtAlarmStateAlarm OBJECT-TYPE
      SYNTAX      AlarmStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               ""
       ::= { nnExtAlarmStateEntry 4 }

   nnExtAlarmStateAvailability OBJECT-TYPE
      SYNTAX      NnAvailabilityStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               ""
       ::= { nnExtAlarmStateEntry 5 }

    nnExtAlarmStateControl OBJECT-TYPE
      SYNTAX      NnControlStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               ""
       ::= { nnExtAlarmStateEntry 6 }
```

```
   nnExtAlarmStateProcedural OBJECT-TYPE
      SYNTAX      NnProceduralStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
                ""
       ::= { nnExtAlarmStateEntry 7 }

    nnExtAlarmStateStandby OBJECT-TYPE
      SYNTAX      StandbyStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
                ""
       ::= { nnExtAlarmStateEntry 8 }

    nnExtAlarmStateUnknown OBJECT-TYPE
      SYNTAX      NnUnknownStatus
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
                ""
       ::= { nnExtAlarmStateEntry 9 }

  -- Table of Information related to Messages

     nnExtAlarmMessageTable OBJECT-TYPE
      SYNTAX      SEQUENCE OF NnExtAlarmMessageEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
          "A table of information on messages. Entries are
          added to this table when their corresponding
          notifications have been sent. Entires will be
          removed from this table as outlined in the
          Notification Log MIB [RFC3014]. Implementations
          that do not support the Notification Log MIB should
```

```
          provide behaviour for nlmLogName, nlmLogIndex and
          this table as if they did."
      ::= { nnExtAlarmObjects 3 }

  nnExtAlarmMessageEntry OBJECT-TYPE
      SYNTAX      NnExtAlarmMessageEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
          "An alarm message entry."
      INDEX       { nlmLogName, nlmLogIndex }
      ::= { nnExtAlarmMessageTable 1 }

   NnExtAlarmMessageEntry ::= SEQUENCE {
       nnExtAlarmMessageResource             ResourceId,
       nnExtAlarmMessageResourceDescription  SnmpAdminString,
       nnExtAlarmMessageDateAndTime          DateAndTime,
       nnExtAlarmMessageDocumentationPointer SnmpAdminString,
       nnExtAlarmMessageInfo                 SnmpAdminString
    }

    nnExtAlarmMessageResource    OBJECT-TYPE
      SYNTAX      ResourceId
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object identifies the resource that this message pertains to

         If there is no corresponding resource, then
         the value of this object MUST be 0.0."
      ::= { nnExtAlarmMessageEntry 1 }

     nnExtAlarmMessageResourceDescription OBJECT-TYPE
      SYNTAX      SnmpAdminString
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
           "This is a textual description of the resource this message
```

```
           pertains to.

            The format of the string is as follows:

NEtype=NEname;componentType=componentInstanceId;subcompType=subcompInstanceId;....

           With NE as the root, the entire containment with the list of Relative
           Distinguished Names (RDNs) is presented upto the
            point where the messaging component is clearly identified.
            Semicolon is the delimiter between a 'category=value' pair.
            The string can only contain alphanumeric characters and
            underscores. No commas, spaces, slashes, hyphens, or
            dollar signs are allowed
               "
       ::= { nnExtAlarmMessageEntry 2 }



   nnExtAlarmMessageDateAndTime OBJECT-TYPE
      SYNTAX      DateAndTime
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
          "The local date and time when the message originated.

          Implementations MUST include the offset from UTC,
          if available.  Implementation in environments in which
          the UTC offset is not available is NOT RECOMMENDED."
      ::= { nnExtAlarmMessageEntry 3 }

    nnExtAlarmMessageDocumentationPointer OBJECT-TYPE
      SYNTAX      SnmpAdminString
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
               "This object servces as a pointer to documentation related to this
               problem.

               If there is no specific document pointer for this alarm, this object
```

```
                is a null length string."
        ::= { nnExtAlarmMessageEntry 4 }

    nnExtAlarmMessageInfo OBJECT-TYPE
     SYNTAX      SnmpAdminString
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "A textual discription of the event that has occurred,
             suitable to display to an operator. "
     ::= { nnExtAlarmMessageEntry 5 }


  -- all notification OIDs would be prefixed with a zero OID to
  -- facilitate  snmp v1<->v2 conversion

  nnExtNotificationPrefix  OBJECT-IDENTITY
           STATUS         current
           DESCRIPTION
                  "This OID represents the prefix branch for all Nortel ITU
                   Alarm  Notifications.
                   The last but one sub identifier in the OID of
                   any Notification must have the value zero to facilitate
                   v2<-->v1 conversion."
           ::=  {nnExtAlarmObjects  0 }

 -- Alarm  Notifications

          nnExtAlarmClear NOTIFICATION-TYPE
                          OBJECTS { alarmActiveResourceId,
                                    alarmActiveDateAndTime,
                                    alarmActiveDescription,
                                    nnExtAlarmActiveEventType,
                                    nnExtAlarmActiveProbableCause,
                 nnExtAlarmActiveAdditionalText,
                                    nnExtAlarmActiveDocumentationPointer,
                                    nnExtAlarmActiveResourceDescription,
                                    nnExtAlarmActiveSequenceNumber
```

```
                        }
  STATUS  current
  DESCRIPTION
    "This notification indicates that one or more previously
     reported alarms have been cleared and the previously reported
     alarms are identified via the correlation id list field.
     The varbinds include alarm context via the ComponentId field
     and other additional useful information."


::= { nnExtNotificationPrefix 301 }


nnExtAlarmWarning NOTIFICATION-TYPE
                OBJECTS { alarmActiveResourceId,
                          alarmActiveDateAndTime,
                          alarmActiveDescription,
                          nnExtAlarmActiveEventType,
                          nnExtAlarmActiveProbableCause,
        nnExtAlarmActiveAdditionalText,
                          nnExtAlarmActiveDocumentationPointer,
                          nnExtAlarmActiveResourceDescription,
                          nnExtAlarmActiveManualClear,
                          nnExtAlarmActiveSequenceNumber
                        }
  STATUS  current
  DESCRIPTION
    "This notification indicates that an alarm of 'Warning' severity
     has been raised on a NE.
     The varbinds include alarm context via the ComponentId field
     and other additional useful information on the alarm condition."


::= { nnExtNotificationPrefix 302 }


nnExtAlarmMinor NOTIFICATION-TYPE
                OBJECTS { alarmActiveResourceId,
```

```
                            alarmActiveDateAndTime,
                            alarmActiveDescription,
                            nnExtAlarmActiveEventType,
                            nnExtAlarmActiveProbableCause,
          nnExtAlarmActiveAdditionalText,
                            nnExtAlarmActiveDocumentationPointer,
                            nnExtAlarmActiveResourceDescription,
                            nnExtAlarmActiveManualClear,
                            nnExtAlarmActiveSequenceNumber
                          }
    STATUS  current
    DESCRIPTION
      "This notification indicates that an alarm of 'Minor' severity
       has been raised on a NE.
       The varbinds include alarm context via the ComponentId field
       and other additional useful information on the alarm condition."


::= { nnExtNotificationPrefix 303 }



nnExtAlarmMajor NOTIFICATION-TYPE
                  OBJECTS { alarmActiveResourceId,
                            alarmActiveDateAndTime,
                            alarmActiveDescription,
                            nnExtAlarmActiveEventType,
                            nnExtAlarmActiveProbableCause,
          nnExtAlarmActiveAdditionalText,
                            nnExtAlarmActiveDocumentationPointer,
                            nnExtAlarmActiveResourceDescription,
                            nnExtAlarmActiveManualClear,
              nnExtAlarmActiveSequenceNumber
                          }
    STATUS  current
    DESCRIPTION
      "This notification indicates that an alarm of 'Major' severity
       has been raised on a NE.
```

```
      The varbinds include alarm context via the ComponentId field
      and other additional useful information on the alarm condition."


::= { nnExtNotificationPrefix 304 }


nnExtAlarmCritical NOTIFICATION-TYPE
                OBJECTS { alarmActiveResourceId,
                          alarmActiveDateAndTime,
                          alarmActiveDescription,
                          nnExtAlarmActiveEventType,
                          nnExtAlarmActiveProbableCause,
        nnExtAlarmActiveAdditionalText,
                          nnExtAlarmActiveDocumentationPointer,
                          nnExtAlarmActiveResourceDescription,
                          nnExtAlarmActiveManualClear,
            nnExtAlarmActiveSequenceNumber
                        }
  STATUS  current
  DESCRIPTION
    "This notification indicates that an alarm of 'Critical' severity
     has been raised on a NE.
     The varbinds include alarm context via the ComponentId field
     and other additional useful information on the alarm condition."


::= { nnExtNotificationPrefix 305 }

nnExtAlarmMessage NOTIFICATION-TYPE
                OBJECTS {
                        nnExtAlarmMessageResource,
                        nnExtAlarmMessageResourceDescription,
                        nnExtAlarmMessageDateAndTime,
                        nnExtAlarmMessageDocumentationPointer,
                        nnExtAlarmMessageInfo
                        }
  STATUS  current
```

```
            DESCRIPTION
              "An informational message. This notification does not
              correspond to an alarm so would not be stored in the
              active alarm table and it does not have a corresponing
              clear."
           ::= { nnExtNotificationPrefix 306 }

-- Notification group definitions


    nnExtAlarmNotificationsGroup NOTIFICATION-GROUP
           NOTIFICATIONS  {
                          nnExtAlarmClear,
                          nnExtAlarmWarning,
                          nnExtAlarmMinor,
                          nnExtAlarmMajor,
                          nnExtAlarmCritical
                          }
           STATUS   current
           DESCRIPTION
                " Nortel alarm notification group."
           ::= { nnExtAlarmGroups 1}

    nnExtAlarmGroup OBJECT-GROUP
           OBJECTS  {
                          nnExtAlarmActiveEventType,
                          nnExtAlarmActiveProbableCause,
                          nnExtAlarmActiveAdditionalText,
                          nnExtAlarmActiveDocumentationPointer,
                          nnExtAlarmActiveResourceDescription,
                          nnExtAlarmActiveManualClear,
                          nnExtAlarmActiveSequenceNumber
                          }
           STATUS   current
           DESCRIPTION
                " Nortel alarm  group."
           ::= { nnExtAlarmGroups 2}
```

```
     nnExtAlarmStateGroup OBJECT-GROUP
           OBJECTS {
           nnExtAlarmStateAdministrative,
          nnExtAlarmStateOperational,
          nnExtAlarmStateUsage,
          nnExtAlarmStateAlarm,
          nnExtAlarmStateAvailability,
          nnExtAlarmStateControl,
          nnExtAlarmStateProcedural,
          nnExtAlarmStateStandby,
           nnExtAlarmStateUnknown
       }
      STATUS   current
           DESCRIPTION
                " Nortel  alarm state group."
           ::= { nnExtAlarmGroups 3}

     nnExtAlarmMessageGroup OBJECT-GROUP
         OBJECTS {
         nnExtAlarmMessageResource,
         nnExtAlarmMessageInfo,
         nnExtAlarmMessageDocumentationPointer,
         nnExtAlarmMessageDateAndTime,
         nnExtAlarmMessage
         }
     STATUS   current
           DESCRIPTION
                " Nortel  alarm message group."
           ::= { nnExtAlarmGroups 4}

-- Compliance
 nnExtAlarmCompliance MODULE-COMPLIANCE
     STATUS current
     DESCRIPTION
          "The compliance statement for entities which implement
          the Nortel Alarm MIB."
     MODULE    -- this module
          MANDATORY-GROUPS {
```

```
                nnExtAlarmGroup
            }
    ::= { nnExtAlarmCompliances 1}
END
```

iSN08 Feature Deltas

Product = CS 2000

A59039138 -- (Visual) Message Waiting Indicator (V)MWI/CFX (DMS)

Note: This feature was developed in SN05 and SN06 but was not activated for those releases in the North American market. It is now active and available in the North American market for SN07.

1.1 Description

1.1.1 Overview

This activity provides the following functionality in for the Integrated Access Cable IP Solution:

- CMWI (Class Message Waiting Indicator) for CEPT and Bellcore lines on Succession.
- Announcement as an optional replacement for the MWT stuttered dial tone indications for MWT suboptions CMWI and STD.

1.1.2 Background Information

Message Waiting allows a user to have a list of messages stored against their station. When a message is queued for a station, the MWI (Message Waiting Indicator) associated with the line is activated. When the last message is retrieved, the MWI is deactivated.

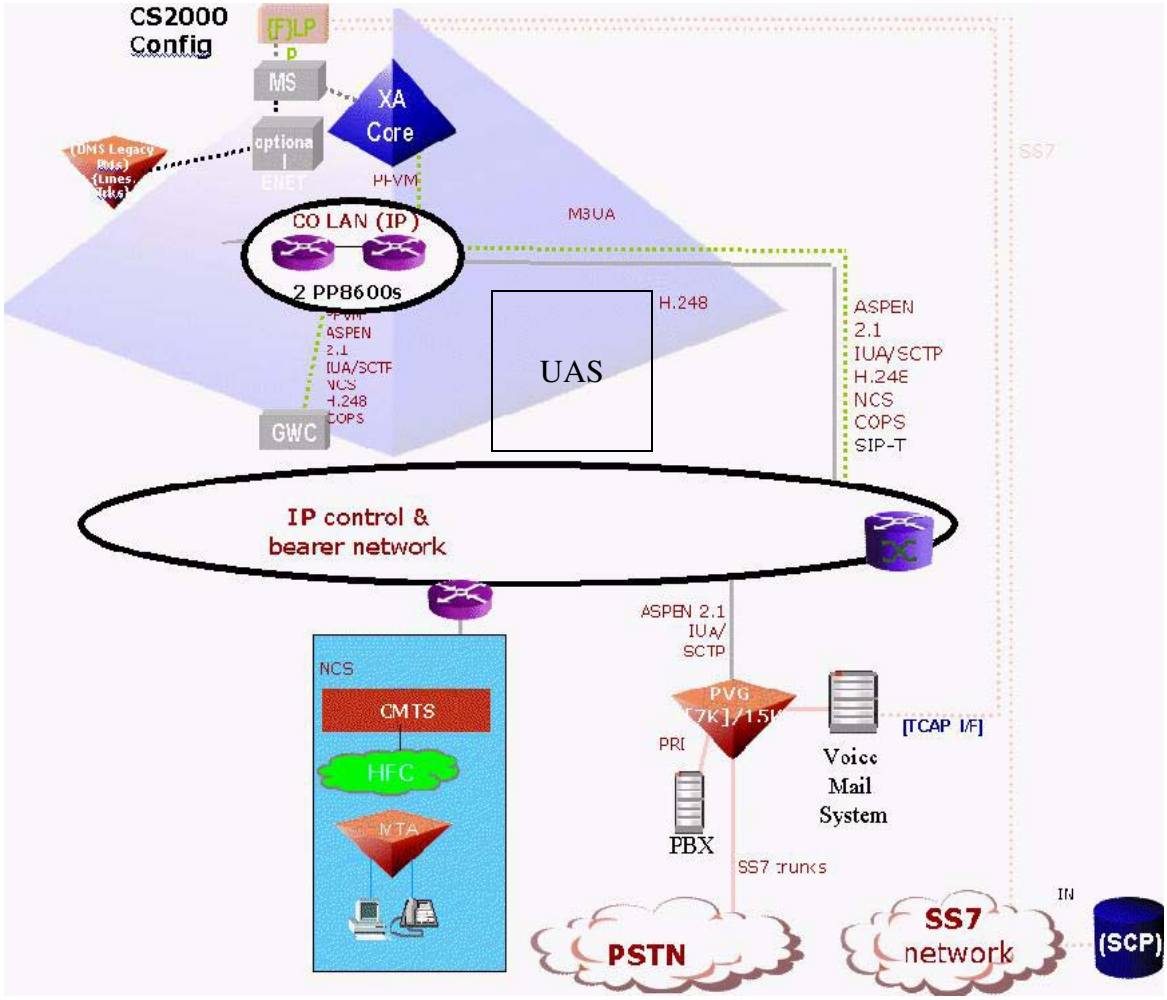
The MWT option has several sub options (STD, MWL, CMWI, PRN, MWL_STD). This activity focuses on STD and CMWI suboptions.

- CMWI (Class Message Waiting)[1] is used for sets which are capable of displaying a MWI request in a display or as a flashing lamp. In addition it provides audible (stuttered dial tone) or ring splash notification. The last can be activated and deactivated by dialing an activation code.

1. AG1954 'CLASS: VISUAL MESSAGE WAITING INDICATOR'

- STD (Stuttered Dial Tone) This is only used for applying a stuttered dial tone if a message is waiting.

Configuration VMWI

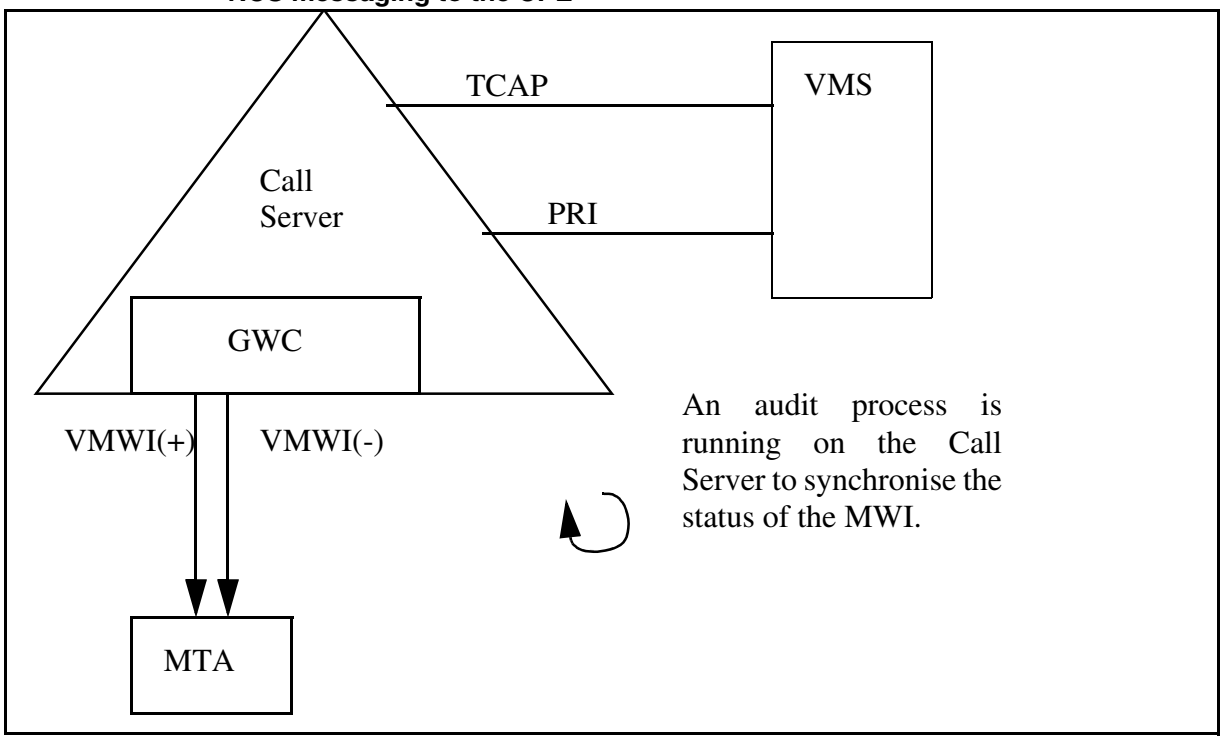


On MMP the Visual Message Waiting was signalled to the user by a special Line Class Tone. For Integrated Access Cable Media an NCS[2] message is used. For activating the MWI a VMWI(+) message is sent. For deactivation a VMWI(-).

In addition to this the Call Server should periodically refresh the CPE's (Customer Premise Equipment) visual indicator (Audit).

2. PKT-SP-EC-MGCP-I02-991201

NCS messaging to the CPE



1.1.3 Agent Interworking

The Controlling user is a VMS (Voice Mail System) connected over

- PRI (PVG, PDTC)
- TCAP (LPP, USP)

to the Call Server.

The receiving user can be an IBN line connected via

- GWC - hosted on Motorola CG4500E MTA
- PLGC

1.1.4 Provisioning of the MWT service

The message waiting service can be provisioned with the following options: {**STD**,MWL,**CMWI**,PRN,MWL_STD}.

When the MWTANN announcement option is selected for MWT, datafill is required for the announcement. The CLLI for this announcement must be MWT. The CLLI can not be changed by the telco.

Below is sample datafill from a lab switch for the MWTANN feature:

```
> table clli
TABLE: CLLI
>pos mwt
MWT 433 5 TEST
>quit
CI:                 HEADER
>table anns
TABLE: ANNS
>pos mwt
MWT ALL 1 1 1 STND N 59 60
>quit
CI:
>table annmems
TABLE: ANNMEMS
>pos mwt 1
MWT 1
DRAM DRA
( 0 DTM 7 3)$
>quit
CI:
>table annphlst
TABLE: ANNPHLST
>pos mwt 0
MWT 0
( HAVE_MSG)$
>quit
***Create the announcement using DRAMREC***
> DRAMREC
> connect the HSET to a DRAM with available space.............
>Record have_msg 3 nopad 8 3 12
> QUIT
```

****This in turn creates a tuple in table dramphrs in a SN06 and beyond load. ***

>table dramphrs
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: DRAMPHRS
>pos 8 have_msg
8 HAVE_MSG 12 4 3 Y N 4

Table IBNFEAT

This feature adds the new announcement field MWT_ANNOUNCEMENT to the MWT feature in table IBNFEAT. A datafill example follows.

```
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
LEN:
```

```
>HOST  01 0 07 00
DNNO:
>0
DF:
>mwt
FEATURE:
>mwt
NOTICE:
>std
MWT_ANNOUNCEMENT: N
>y
CAR:
>n
CRX: N
>n
TUPLE TO BE ADDED:
HOST  01 0 07 00
          0     MWT         MWT     STD      Y         N      N
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
>
```

Overview of the CMWI Service

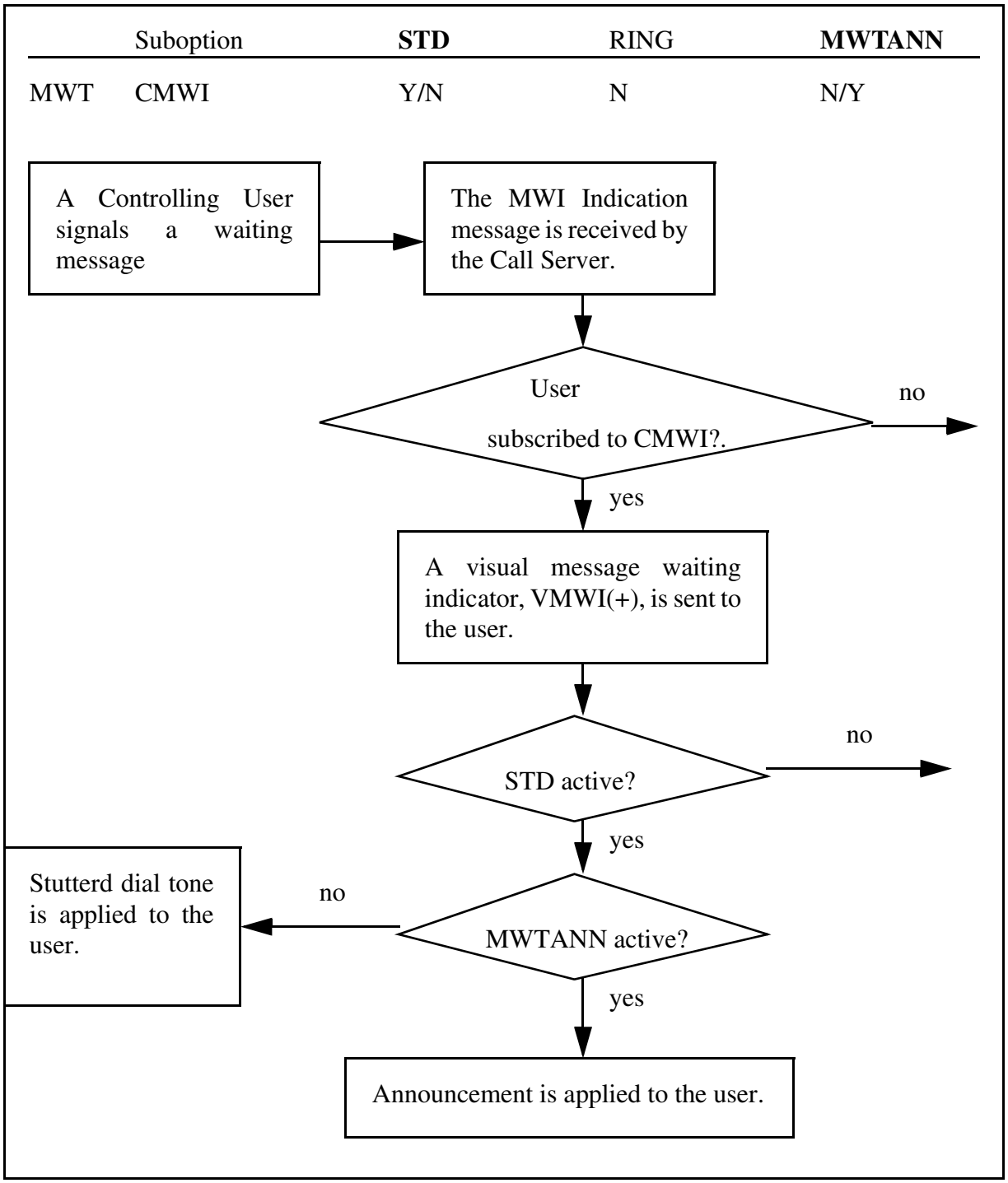
CLASS Message Waiting Indicator (CMWI) was developed under feature AG1954. The CMWI allows a subscriber to combine the visual message waiting indicator with audible indication types.

- STD - Stuttered Dial Tone
  On active message waiting a stuttered dial tone is applied when the user goes off-hook
- Ring Splash
  On active message waiting a ring burst is applied to the users' phone
- MWTANN - Announcement
  On active message waiting an announcement is applied to the user.

For the Integrated Access Cable IP solution the signaling to the end user was shown in "NCS messaging to the CPE" on page 555.

Figure "CMWI Overview" on page 558 shows a functional overview on how the different indication components work together.

CMWI Overview



This feature adds a new SERVORD prompt called MWT_ANNOUNCEMENT. The provisioning for the CMWI service looks as follows:

SERVORD example for CMWI

```
>DN_OR_LEN:
>8838441020

OPTION:
>mwt

NOTICE:
>cmwi

CMWISTD:
>y

MWT_ANNOUNCEMENT:

>y

CMWIRING:
>y

STATUS:
>act

CAR:
>y

CRRCFW:
>all

CRX:
>n

OPTION:
>$

COMMAND AS ENTERED:

ADO NOW 1 12 4 AM 8838441020 ( MWT CMWI Y Y Y ACT Y ALL N ) $

ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

The CMWI option must be activated in table RESOFC.

Table RESOFC

KEY	ENABLED	ACCESS	FEATDATA
CMWI	Y	SUBSCR CMWI	SINGLE 5

The datafill above shows an example of the CMWI entry where the feature is enabled, using the Single Data Message format and allows 5 retransmissions per activation/deactivation request.

STD suboption

The STD option enables a subscriber to hear a stuttered dial tone if a message is waiting for them. This example shows the new SERVORD prompt called MWT_ANNOUNCEMENT.

SERVORD example for STD suboption

```
>DN_OR_LEN:
>8838441020

OPTION:
>mwt

NOTICE:
>STD

MWT_ANNOUCEMENT:

>Y

OPTION:
>$

COMMAND AS ENTERED:

ADO NOW 1 12 4 AM 8838441020 ( MWT STD Y Y ALL N ) $

ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

Datafilling the Audit for CMWI

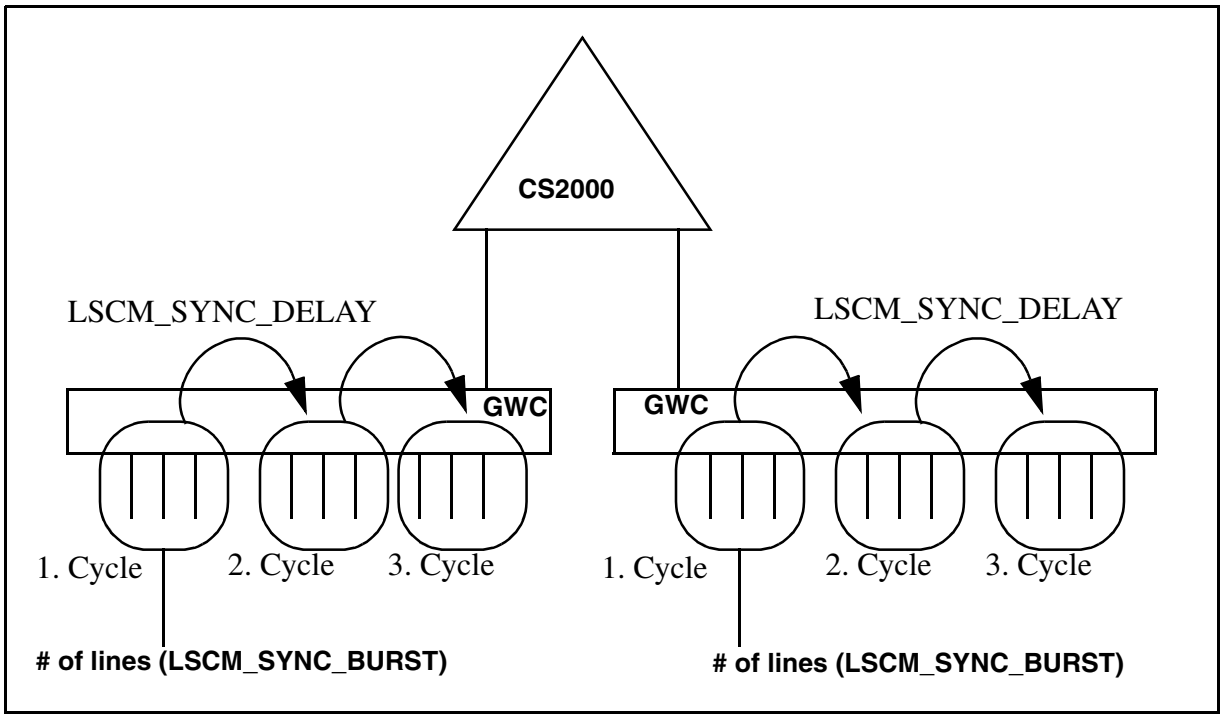
In table OFCENG two tuples have to be datafilled in order to start the audit.

OFCENG - Audit

Tuple	Value
LSCM_SYNC_BURST	# of lines audited per peripheral in one cycle (0..10)
LSCM_SYNC_DELAY	delay between audit cylces (5 to 6000 s)

The next figure shows the how the audit based on the two datafillable parameters works. LSCM_SYNC_BURST gives the number of lines on an each peripheral which is audited by one cycle. The LSCM_SYNC_DELAY defines the time between the cycles.

Audit Process



Engineering information is provided below.

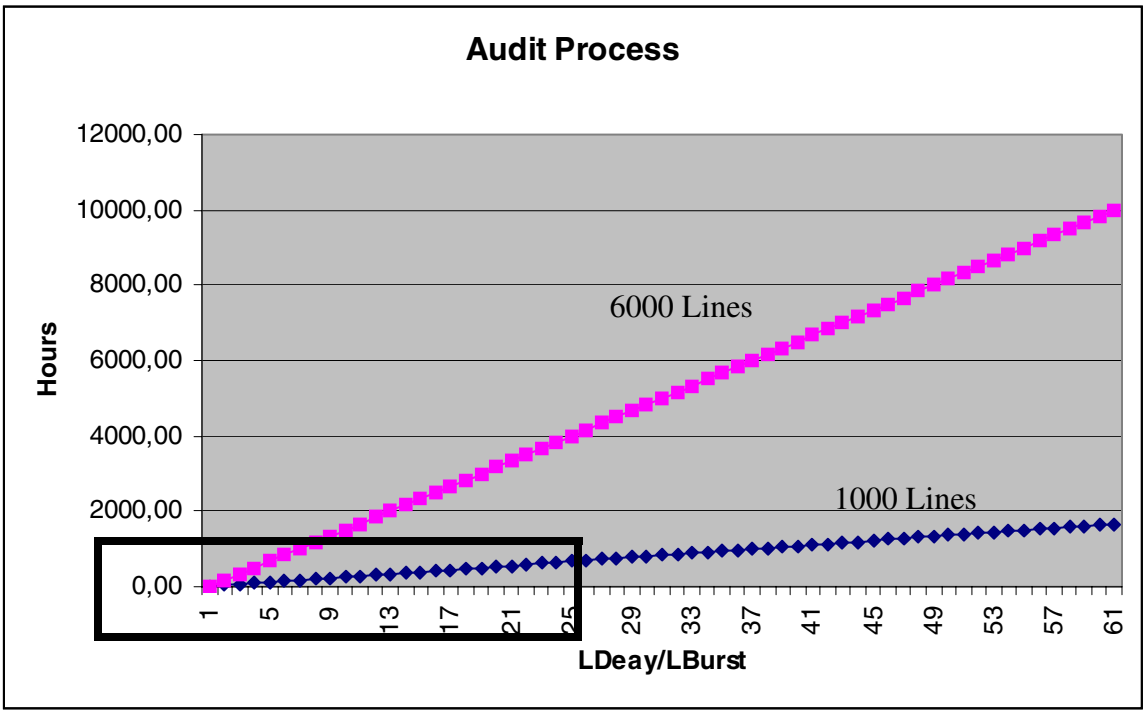
The following variables are defined:

- L_{Burst} (as datafilled)
- $L_{SyncDelay}$ (as datafilled)
- N_{all} (Number of all Lines connected to Peripherals)
- t_{circle}(Time for one complete Circle for all Lines)
- t_{c1} (Time for one circle)

For the first calculation t_{c1} << 1s and is not be considered.

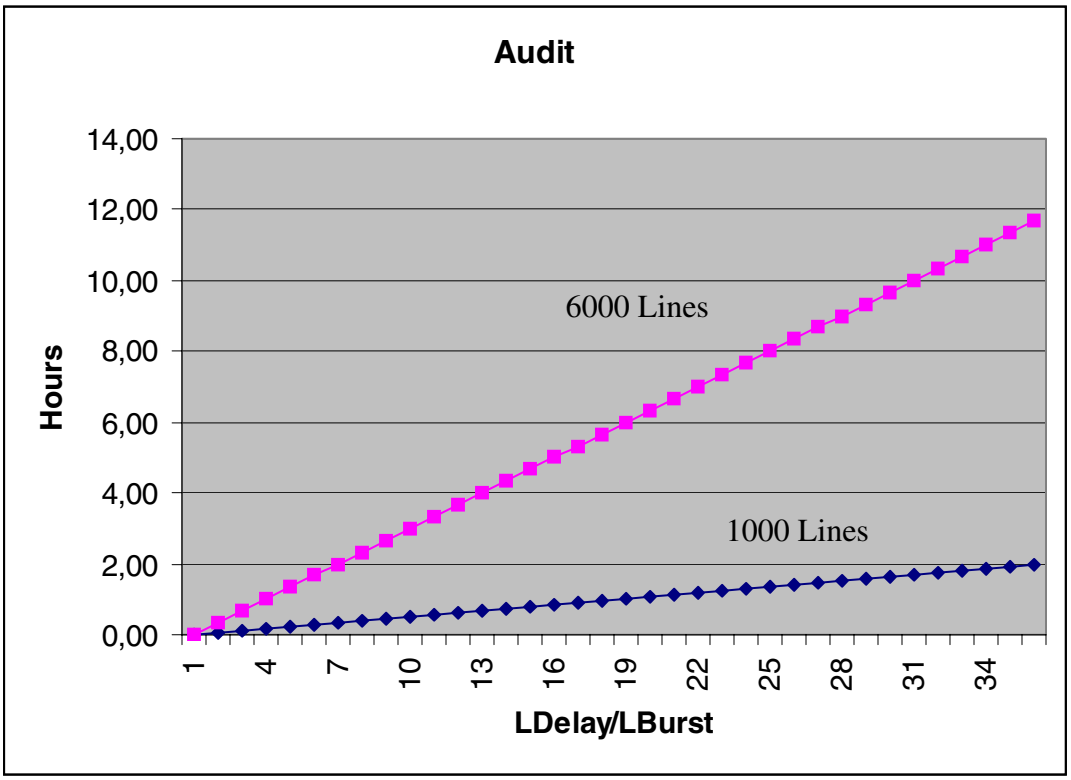
$$\left(\frac{L_{Burst}}{L_{SyncDelay} \cdot N_{all}}\right)^{-1} = t_{circle}$$

Diagram for Audit Process



A detailed view of the marked area is shown in the next figure.

Diagram for Audit Process--detail



If t_{c1} is not considered to be small in comparison with the complete cycle time the equation will change into:

$$\left(\frac{L_{Burst}}{\left(L_{SyncDelay} + t_{c1} \right) \cdot N_{all}} \right)^{-1} = t_{circle}$$

t_{c1} is not only dependent on the time of the audit itself. Traffic and System Usage need to be considered.

0.0.1 Hardware Requirements or Dependencies

n/a

0.0.2 Software Requirements or Dependencies

n/a

0.1 Limitations and restrictions

- SMDI as a Controlling User is not included in this activity.
- No CEPT style user activation/deactivation for CMWI Ring Splash supported
- V5.2 Receiving Users are not covered by this activity.
- MWT_ANNOUNCEMENT will not be visible in KSETFEAT table for ISDN lines,
- Since MWT_ANNOUNCMENT is not supported for ISDN lines, this field automatically set to FALSE, during addition of MWT option to ISDN lines.

1.2 Interactions

- CFIND: CFIND has precedence over MWI when Call Forwarding is active
- WML: The warm line timer is started after the announcement for MWT has finished playing.
- CEPT CFU (Call Forwarding Universal): CFU always gives a special dial tone to the user if CFU is active. If CFU and MWI are active and the user has the MWI announcement option, and first the announcement is played and then the user will hear the CEPT CFU tone.
- CEPT CFB/CFD: No interaction

1.3 Applicable customer facing sections

Fault Management

Logs _____

Alarms _____

Configuration

Data Schema _____

User Interface _____

Element Management _____

Security _____

Service Order __X___

Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

Glossary

Term	Description
VMS	Voice Mail System
CMWI	Class Message Waiting Indicator
MWI	Message Waiting Indicator
PRI	Primary Rate Interface
CEPT	European Conference of Post and Telecommunications Administrations
CFx	Call Forwarding
CLASS	Custom Local Area Signalling Service

1.4 References

- PKT-SP-EC-MGCP-I02-991201 PacketCable Network-Based Call Signalling Protocol Specification

Product = CS 2000

A00005822--AOC Support over H.323

Functional Description

1.1 Applicable Solution(s)

Int'l PT-IP

1.2 Description

1.2.1 Summary

Advice of Charge (AOC) gives the CS2000 Call Server the ability to send network incurred charges to the ISDN subscriber within call control or facility messages.

The AOC service is delivered in three flavors:

AOC-S	Advice Of Charge at call Setup
AOC-D	Advice Of Charge During the call
AOC-E	Advice Of Charge at the End of the call

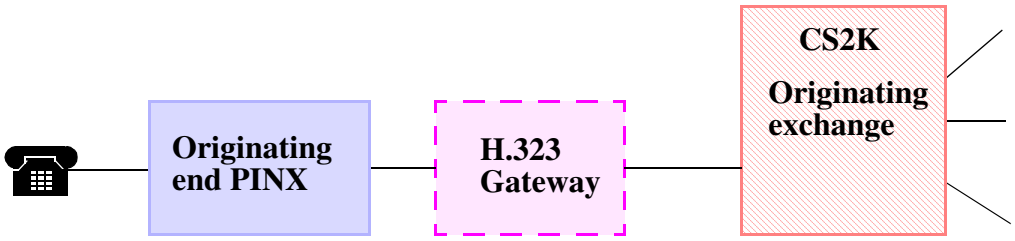
This activiy, A00005822, adresses two AOC services: ***AOC-D*** and ***AOC-E***. These services are deployed for originating agents connected to the CS2000 over H.323. For the AOC calculation, the CS2K node has to be configured to determine and apply the tariffs (nodal configuration or combined CGP/CDP, see also Figure 1, on page 566 and Figure 3, on page 570)

The actual activity reuses the AOC on QSIG solution implemented by Nortel with the activities AF7344 [35], A59024423 [36], A590038835 [37] and provides the support for QSIG originating agents.

The overall solution will include a 3rd party H.323 gateway capable of delivering AOC information to BRI subscribers in different national variants, for example in France

- EURO-NUMERIS (VN4, VN6)
- EURO-NUMERIS+ .

Figure 1 AOC over H.323 (functional overview)



1.3 Background information

1.3.1 Charging Information at Call Set-up time (AOC-S)

When the ***AOC-S*** supplementary service is activated, the network shall provide the user with call charging information at call establishment. In addition, the network shall inform the served user if a change in charging rates takes place during the call.

The network shall provide the charging information during call establishment or at the latest at call connection. When there is a change in charging rate during the call, the network shall send information about the new charging rate to the served user.

1.3.2 Charging Information During the Call (AOC-D)

When the ***AOC-D*** supplementary service is activated, the network shall provide the user with call charging information during the active phase of a call. The network shall provide the charging information and transfer it to the

user in an appropriate message. The supplied charging information shall be provided as a cumulative charge incurred so far for the call.

When the call is released, the network shall send the user the recorded charges for the call in one of the call control messages clearing the call.

If the network has determined that the call is free of charge, the network shall send the user a free-of-charge indication. The network shall not send any further charging information during the call. When the call is released, the network shall send the free-of-charge indication in a call control message clearing the call.

1.3.3 Charging Information at the End of the Call (AOC-E)

When the ***AOC-E*** supplementary service is activated, the network shall provide the user with call charging information indicating the recorded charges when the call is released. The network shall send the user the charging information in one of the call control messages clearing the call.

1.3.4 Indication of Charge [télétaxe]

This term is used in France in order to describe the supplementary service which informs the user of the charges which have been attributed during the active phase of a call. With other words, it is another term for ***AOC-D***. Please refer to chapter "1.3.2 Charging Information During the Call (AOC-D)" on page 566.

1.3.5 Total Cost

This term is used in France in order to describe the supplementary service which informs the user of the call charges when the call is released. It is another term for ***AOC-E***. Please refer to chapter "1.3.3 Charging Information at the End of the Call (AOC-E)" on page 567.

1.3.6 Charging Units

In this variant of AOC, the AOC charging information is presented to the terminal in form of a pulse count. The subscriber or terminal has to know the amount and currency equivalent to one pulse in order to calculate the cost of a call.

1.3.7 Currency Units

In this variant of AOC, the AOC charging information is presented to the terminal in form of amount and currency.

1.3.8 Functional Protocol

The functional protocol is based on the use of the Facility information element and the FACILITY message, as well as of other specific functional messages specified in clause 7 of Recommendation Q.932.

This protocol is functional in the sense that it requires the knowledge of the related supplementary service by the user equipment supporting it. This facilitates user equipment operation without human intervention by defining semantics for the protocol elements which user equipment can process on its own.

The protocol is symmetrical and is applicable to both basic and primary rate interfaces.

The key characteristic of the functional protocol is that it may operate end-to-end as contrasted with the Keypad Protocol that is local in nature.

1.3.9 Keypad Stimulus Protocol

The Keypad protocol is a stimulus protocol providing a means of transferring a sequence of IA5-characters from the user to the network to control supplementary services and indicating network responses to the user. The Keypad protocol is based on the use of the Keypad facility and Display information elements. The Keypad facility information element may be included in the SETUP and INFORMATION messages. The Display information element may be included in any message sent by the network to the user according to Recommendation Q.931.

The Keypad protocol is a stimulus protocol in the sense that it does not require any knowledge about the invoked supplementary service by the user equipment. It may be used in any state of a call and in association with a call for supplementary service invocation. Whatever digits dialled by the user are sent, as such, in a Keypad IE to the network. The keypad facility codes used for the invocation of individual supplementary services are network dependent.

The protocol is applicable to both basic and primary rate interfaces.

In general, the keypad protocol has only a local significance.

1.3.10 AOC on request

In this variant of AOC, charging information is not sent for every call that the user originates but only for calls where the subscriber explicitly requests AOC information by adding a respective Facility Information Element (FAC IE) into the Q.931 SETUP message.

1.3.11 NAOC

Network **A**dvice **O**f **C**harge (NAOC) implements the tariffing of calls in a deregulated telecom marked. It can operate

- in a **single carrier environment**, where tariffs are sent between different nodes within the same carrier's network.
- in a **multiple carrier environment**,

— where tariffs have to be exchanged between different network operators.

— where all the tariffs are available on the originating local exchange and there is no need to receive and process tariffs between different operators.

If the originating exchange does not know the tariff to be applied, it has to receive the tariff information over the network from an other exchange.

From the point of view of the **NAOC** service there are two different types of nodes involved in the tariffing of a call in a multiple carrier environment:

1. **CDP** - The main function of the **Charge Determination Point** is to determine which tariff should be applied. The CDP is located in the network of the carrier chosen by carrier selection.

   The tariff information is either sent in an charge message over the network (**CDP** and **CGP** on different exchanges[3]) or passed internally to the CGP interface (**CGP** and **CDP** on the same exchange[4]).

2. **CGP** - The **Charge Generation Point** is an exchange where the received charging information is converted into a format that is delivered to the subscriber.

   The CGP is located in the Originating Local Exchange (OLE) that receives the charging information from the **CDP** and routes this information to an originator who has subscribed the **AOC** service.

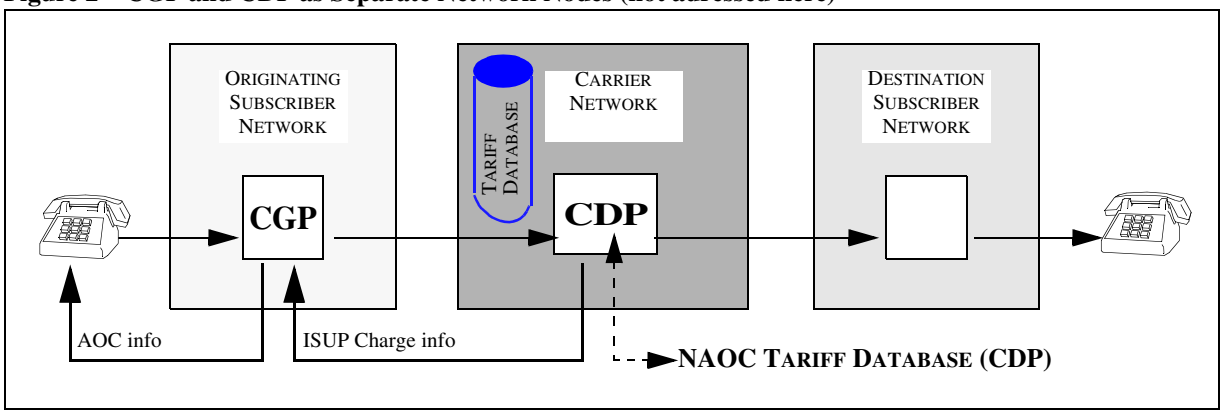
Based on these types of network nodes, there are two scenarios which have been considered for **NAOC**:

- **CDP** and **CGP** are located in different networks, so that the **CDP** has to send the tariff information over the network boundaries to the **CGP**. Please refer to Figure 2. This scenario will not be adressed by the current activity

3. This is the case where the originating network does not keep any tariff information for the selected carrier

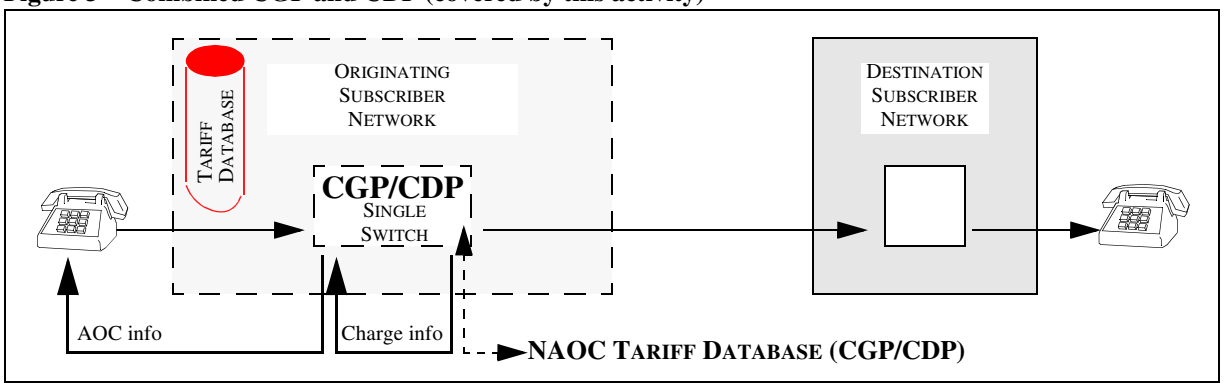
4. This is the case where the originating network has included the tariff information for the selected carrier in its local database

Figure 2 CGP and CDP as Separate Network Nodes (not adressed here)



- **CDP** and **CGP** are located on the same exchange (**combined CGP/CDP scenario**). Tariff information is retrieved internally from the local tariff database and can be pulsed out to the subscriber. Please refer to Figure 3. This is the valid scenario which will be adressed by the current activity.

Figure 3 Combined CGP and CDP (covered by this activity)



The decision whether a call has to be tariffed by the originating exchange (combined CGP/CDP functionality) or by an another exchange located in an intermediate network (CDP tariffing) is made on a **per call basis,** based on the translations information datafilled at the originating exchange. This ensures that the network structure is dynamic.

1.3.12 NAOC Interworking

A brief overview of the supported agent interworkings is given below. The combinations of supported interworkings are listed in “Figure 4 Agent interworking for the current feature” on page 571. Only the agents marked green and with “X” are being supported. Other agents supported by AOC on QSIG which are not being covered by this activity are marked yellow and “N/A”

Figure 4 Agent interworking for the current feature

Platform	Originator	Terminating agents										
		H323 agents	IBN lines	ETSI PRI	QSIG (95)	ETSI ISUP V1	ETSI ISUP V2/V2+	SIP-T	SSURN2 (FTUP)	SPIROU	UK ISUP	ANSI ISUP
CS2K	H323	X							N/A			

1.3.12.1 NAOC functionality

The NAOC framework provides support for the following functionality:

- **Support for multiple carriers/resellers**.

  Up to 16 carriers and 204 resellers can be handled by one CS2000 node;

- Enhanced Call Translations

  The NAOC tariff determination process is initiated through new translation options cont/rte.

- Tariffing based on zoning information

  Zoning is supported for

  — local calls,

  — national calls,

  — international calls, and

  — service (special destination) calls i.e. calls to premium rate services, non-geographical numbers, mobile subscribers etc.

- **Tariffing based on Type of Day / Time of Day System**.

  Up to 30 tariff changeovers (TCOs) and several datafillable day types are supported per CS2000 node. The CS2000 provides the ability to specify the zones that are applicable to each individual changeover time.

- **Tariffing support for Discounts**.

  The Discount System is supported independently for each Carrier Identification Code (CIC) based carrier and simple reseller. Up to 511 discount levels can be assigned. Partial discounts can be given for service numbers

- **Enhanced Tariff tables**.

Supported independently for each CIC based carrier and simple reseller. Supported tariff definitions include:

— Block tariffing. This is simply a call setup charge, or a fixed amount to be applied at the beginning of a call.

— Combination tariffing. This is a call setup charge along with a time dependent charge. A time dependant charge is an amount (in the Euro currency) to be applied on a per second basis.

— Minimum communication charge. This is a call setup charge along with a “zero” first sub-tariff charge. In other words, the first sub-tariff is set to zero and there is a call setup charge. In this manner, regardless if the first tariff expires or not, the call will be charged at the minimum amount.

1.4 Feature description

1.4.1 Introduction

AOC is provided for ISDN agents connected via H.323 interface. From a CS2000 point of view, this interface is seen as a QSIG trunk. All related AOC messages are sent as Q.931 Facility Information Elements, generated at the QSIG/H.323 interface and tunneled in H.225[Q.931] messages to the H.323 gateway. At the gateway, the information is unpacked and applied to the originating ISDN agents. Figure 5, on page 573 provides a high level view on the CS2000 architecture with regards to QSIG/H.323.

Figure 5 AOC over H.323 & QSIG

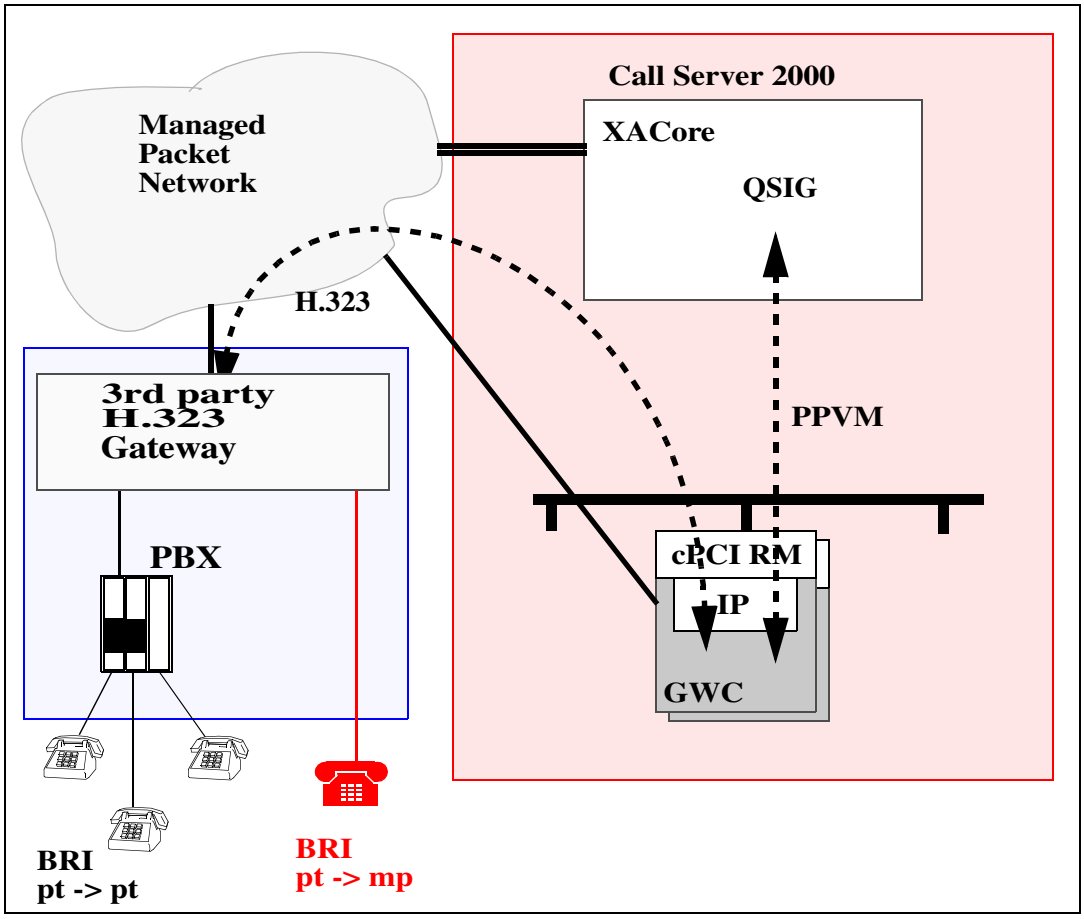
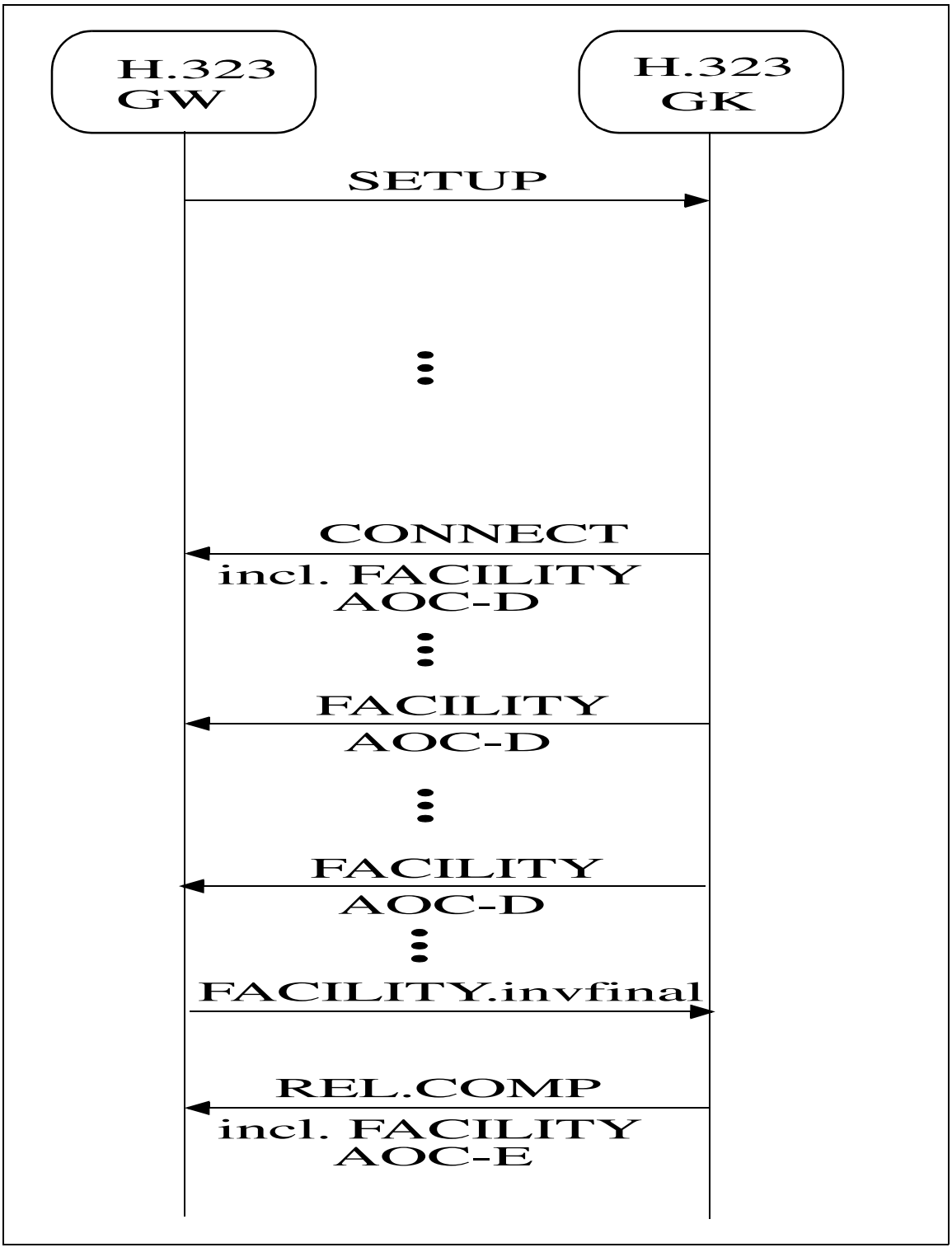


Figure 6 on page 574 depicts a sample AOC message flow on a combined CGP/CDP node, which is tthe configuration currently supported by the actual activity

Figure 6 High Level AOC message flow on a combined CGP/CDP



1.4.2 AOC Control

The AOC functionality can be controlled/provisioned via 3 components:

- Trunk group (customer) basis, through table ***TRKOPTS***,
- GWC basis, through table ***SERVRINV***.
- Call Server basis, via ***SOC*** (Software Optionality Control) by using the codes ***NETK0024, NSUP0020, NSUP0023, PBXT0011, PBXT0018***

H323QSIG trunks datafilled in table ***TRKOPTS*** can have a option called ***AOC***. This option has several fields:

1. ***AOCD***, to enable/disable the "AOC During call (AOC-D)" functionality. If set to Y, Facility messages are sent to provide the PBX subscriber with the charge unit count on a regular basis during a call.
2. ***AOCE***, to enable/disable the "AOC End of call (AOC-E)" functionality. If set to Y, the final charge unit count is sent at the end of the call in a standard call control message during the disconnect phase.
3. ***DSCNT***, to specify the discount class number to which the customer belongs
4. ***AOCREL*** to enable/disable releasing a call if AOC is not available, i.e.the datafill on both CS2K and GW is not complete. Emergency calls and Priority calls are not released although this flag is set.

   Note: For H.323QSIG, AOCREL has to be set to **N**, otherwise a GW misconfiguration might cause calls to be released.
5. ***AOCCHGOV*** to enable/disable tariff and discount changeover during time of day changeover. This flag also controls if changes in the tariff tables apply directly to active calls.
6. ***PROTOCOL*** to choose the AOC protocol. If set to KEYPAD, the AOC information will be sent in the national defined KEYPAD protocol to the user, if set to FUNCTIONAL the Functional protocol will be used instead.

   Note: For H.323QSIG, PROTOCOL has to be set to ***FUNCTIONAL***.
7. ***UNITS*** to choose which units shall be used to send the charging information. If set to CURRENCY, the charging information will be given in currency units of the specific market, if set to CHARGING charging units will be used.

   Note: For H323QSIG, UNITS have to be set to ***CHARGING***.
8. ***REQUEST*** to choose if AOC is only invoked if it is explicitly requested by the user in the SETUP message (REQUEST = 'Y') or if it is invoked for every call (REQUEST = 'N').

   Note: For H.323QSIG, REQUEST has to be set to 'Y'.

1.4.3 Message Protocols

The AOC is specified by ETSI standards. Three type of AOC is defined :

- ***AOC-S*** : Advice of Charge at the beginning of the call. The main goal is to advise the user about how the communication will be charged. Specified in ETS 300 178 [1].
- ***AOC-D*** : Advice of Charge during a call. Information about the cost (units or currency) is delivered continuously during the call. Specified in ETS 300 179 [2].
- ***AOC-E*** : Advice of Charge at the end of the call. Information about the total cost of the communication is delivered during the disconnection. Specified in ETS 300 180 [3].

The signalling protocol used for the AOC is defined in ETS 300 182 [4].

For the purpose of this activity, the AOC information is mapped to H.323 / H.225 call signalling messages [5], using the Q.931 Facility Information Element [6] to carry charging requests and charging information.

The AOC Q.931 Facility Information Element is supported in the messages shown in the table below. The codeset change is done using a Q.931 Locking Shift information element.

Table 1 Messages which can contain a Q.931 Advice Of Charge IE

MESSAGE TYPE	DIRECTION	COMMENTS
SETUP	user -> network	may be used to carry AOC-D and / or AOC-E invoke APDUs
FACILITY	user -> network	may be used to carry AOC-D and / or AOC-E invoke APDUs
FACILITY	network -> user	used to carry AOC-D (aocInterim) information
FACILITY	network -> user	also used to carry returnError and returnResult APDUs
CONNECT	network -> user	used to carry AOC-D returnError APDUs, reporting 'Service not Available' or 'supplementary Service Interaction Not Allowed'
RELEASE COMPLETE	network -> user	may be used for AOC-E (aocFinal) information

If no charge is available for a call (datafill error or CS2000 resource problem) no indication is sent to the user. The call is released depending on the

AOCREL parameter (if AOCREL is TRUE), the Q.931 RELEASE COMPLETE message contains no AOC information.

1.4.4 AOC Requests

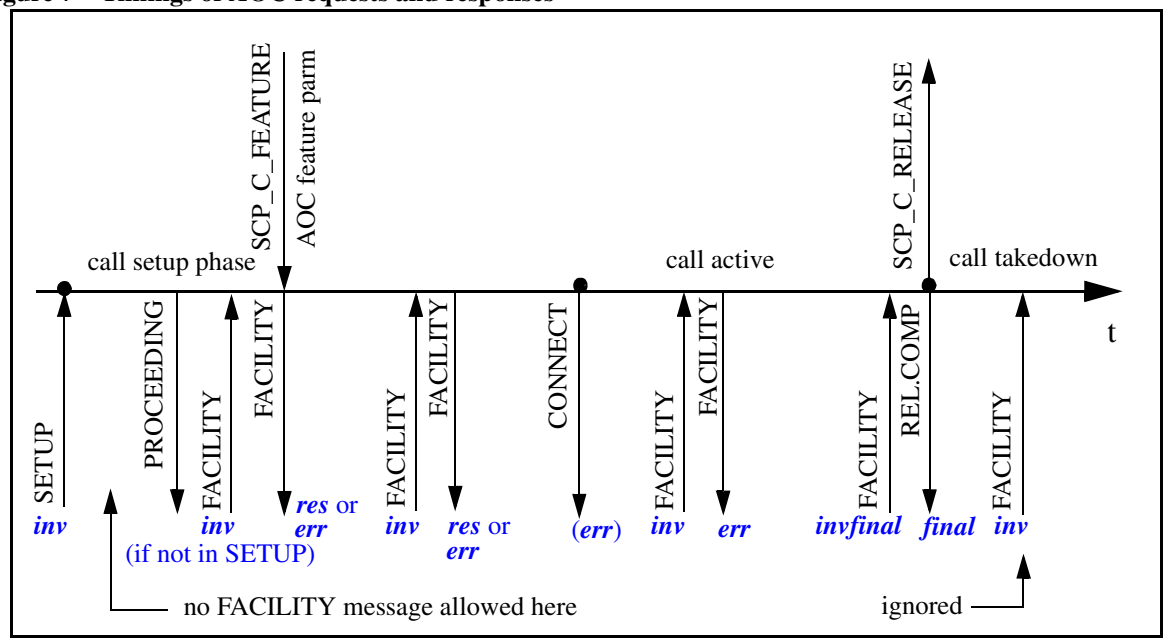
AOC requests from the originating H.323 gateway can be received in Facility IEs included in either SETUP or FACILITY messages. An AOC request in turn is a ROSE Invoke APDU with one of the operations defined for AOC in ISO 15049/ECMA-211 [10] and ISO 15050/ECMA-212 [11].

Figure 7 on page 578 shows the per-call sequence of AOC requests and responses on a relative time scale, as supported by this activity. The H.323 Gatekeeper should be imagined as being on the time axis. Messages above the time axis are from/to the CS2000 Core, and messages below the time axis are from/to the originating H.323 gateway.

Table 2 AOC APDU types

Request	Definition
inv	invoke APDU requesting AOC-D
res	returnResult APDU reporting positive acknowledgement for an AOC-D request
err	returnError APDU reporting negative acknowledgement for an AOC-D request (with error values ‘notAvailable’ or ‘supplementaryServiceInteraction NotAllowed’)
invfinal	invoke APDU requesting AOC-E
final	invoke APDU reporting AOC-E final charge
	Bullets on the time axis delineate call phases. Only messages relevant for AOC request handling are shown.

Figure 7 Timings of AOC requests and responses



- An ***inv*** APDU may be sent in either SETUP or FACILITY message, but not in both.
- An ***inv*** APDU in a FACILITY message may be sent after PROCEEDING and before CONNECT. Instead of PROCEEDING there may be a SETUP ACK message right before the (internal) SCP_C_FEATURE message.
- An ***err*** APDU in the CONNECT message will only be sent if an ***inv*** APDU was previously received, but AOC service is not provisioned in table TRKOPTS.
- An ***inv*** APDU received after CONNECT and before RELEASE will be replied with an ***err*** APDU in FACILITY (***supplementary Service Interaction Not Allowed***).
- An ***inv*** APDU received after RELEASE COMPLETE will be discarded by the CS2000 without reply.
- An ***invfinal*** APDU MAY be sent in a FACILITY message up to the beginning of the call takedown phase. Please note that H323 QSIG does support a special forward clearing procedure for AOC calls: the originating gateway may send getFinalCharge.inv in a FACILITY message which triggers a call release initiated by the CS2000.

1.4.5 Charge Information Messages

The AOC charging information will be transported in a Facility Information Element as part of the FACILITY and RELEASE COMPLETE messages as defined in ISO 15049/ECMA-211 [10] and ISO 15050/ECMA-212 [11].

The format of the AOC currency units messages for both AOC-D and AOC-E will be as defined in ISO 15049/ECMA-211 [10] and ISO 15050/ECMA-212 [11]. If the originating GW offers AOC information in the ETSI format (ETS 300 179 [2] and ETS 300 180 [3]) it would have to translate the ECMA encoded messages into ETSI format.

The following figures show the H.225[Q.931] (H.225 with embedded Q.931) message sequence charts relevant for the AOC functional protocol implementation of this activity.

Figure 8 depicts a message sequence typical for AOC-D where the originator takes down the call (Clear Forward).

Figure 8 AOC-D message sequence (Clear Forward)

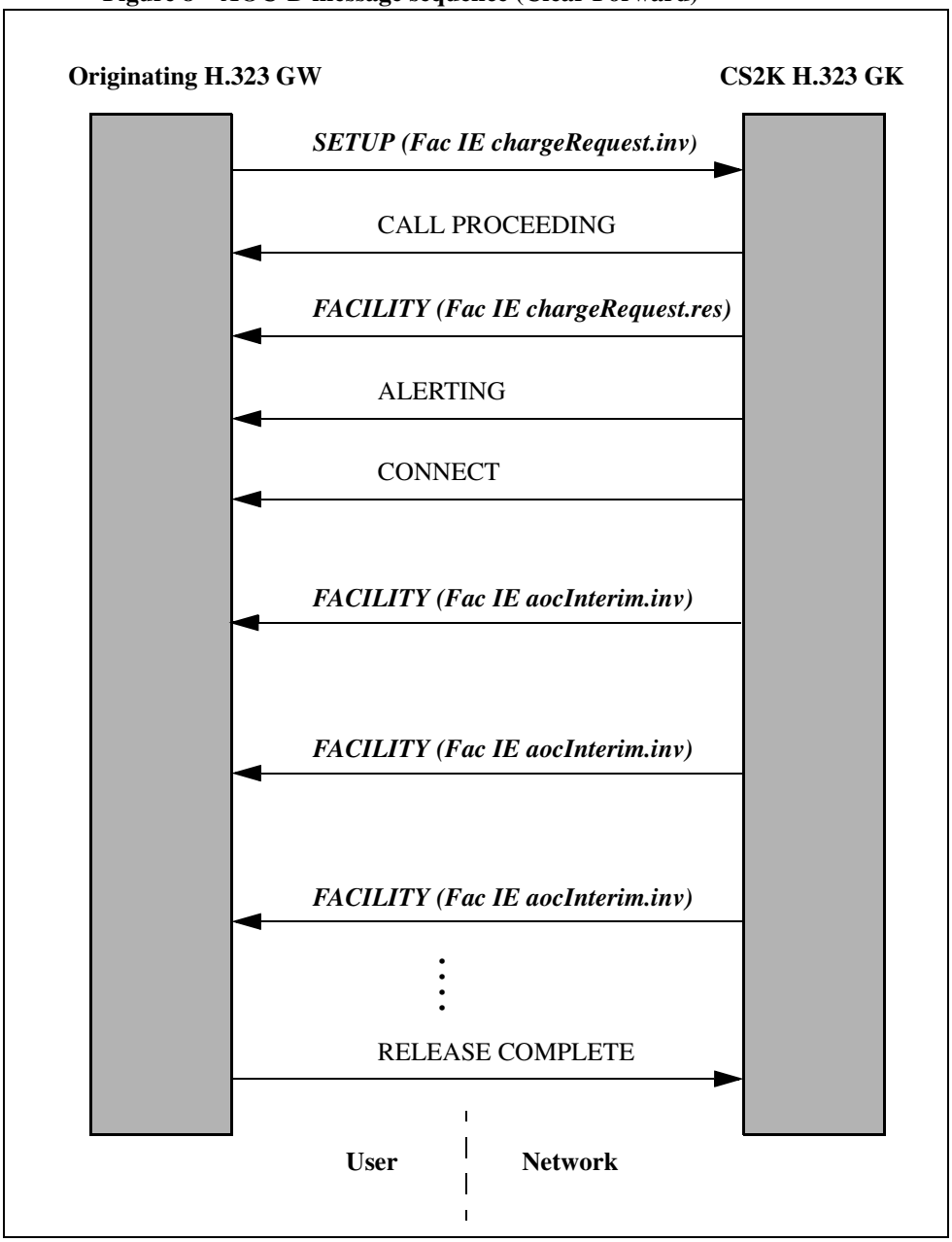
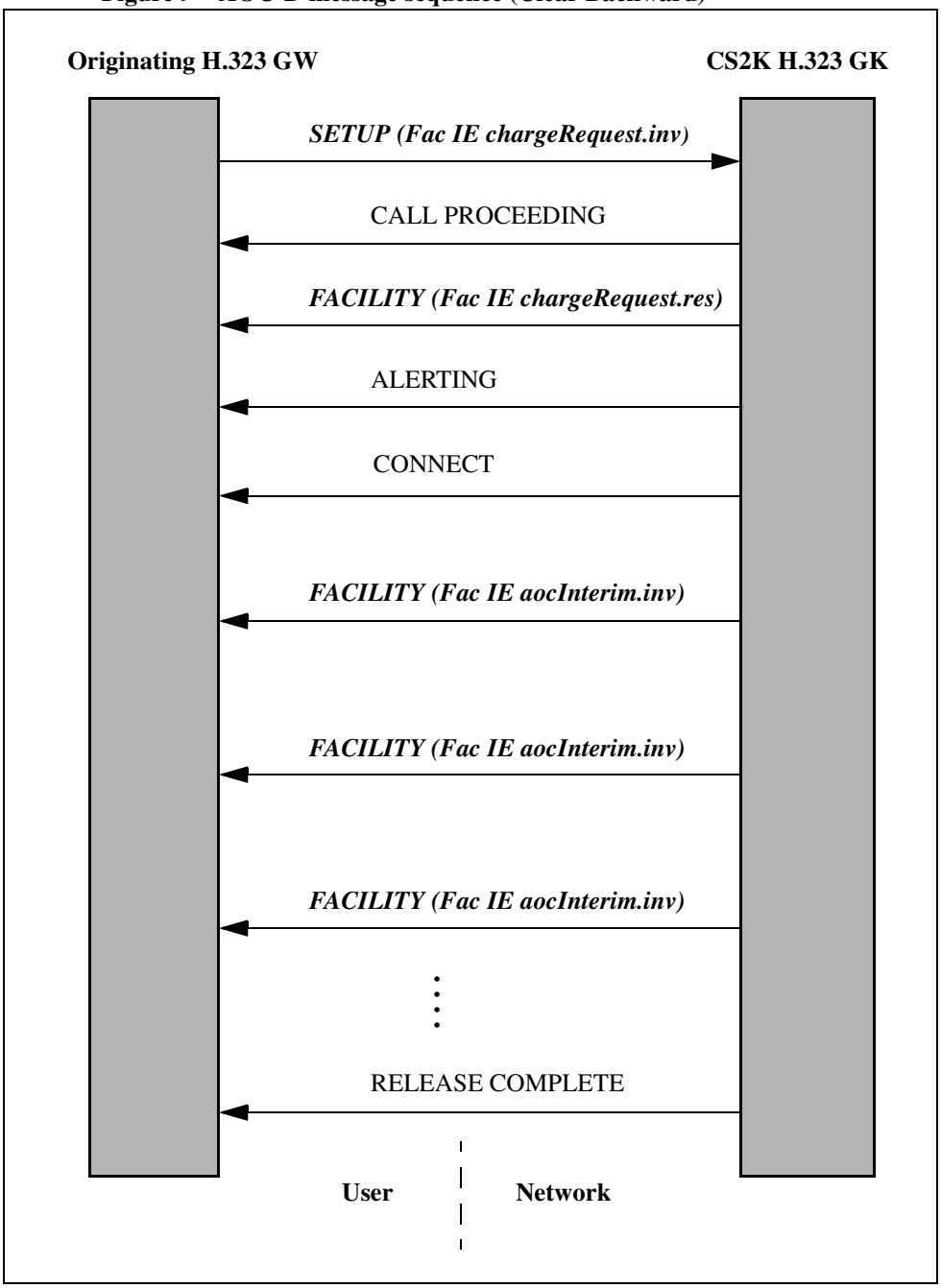


Figure 9 depicts a message sequence typical for AOC-D where the terminator takes down the call (Clear Backward).

Figure 9 AOC-D message sequence (Clear Backward)



The following figures show the H.225[Q.931] message sequence charts for delivering ***both*** AOC-D ***and*** AOC-E information, considering two call takedown scenarios.

Figure 10 depicts a typical AOC message sequence where both AOC-D and AOC-E are activated at call setup time.

Figure 10 AOC-D/E message sequence (Clear Backward)

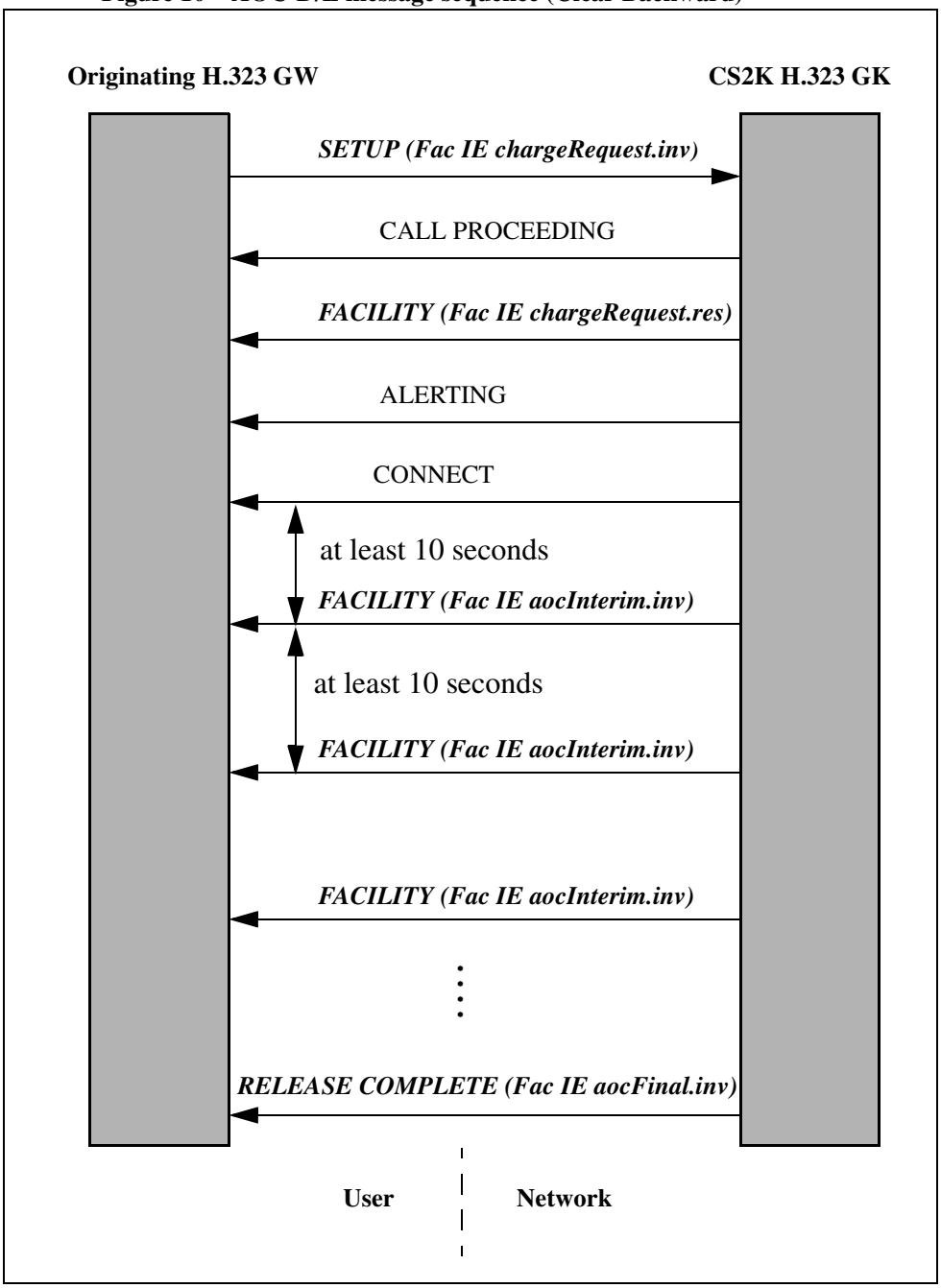
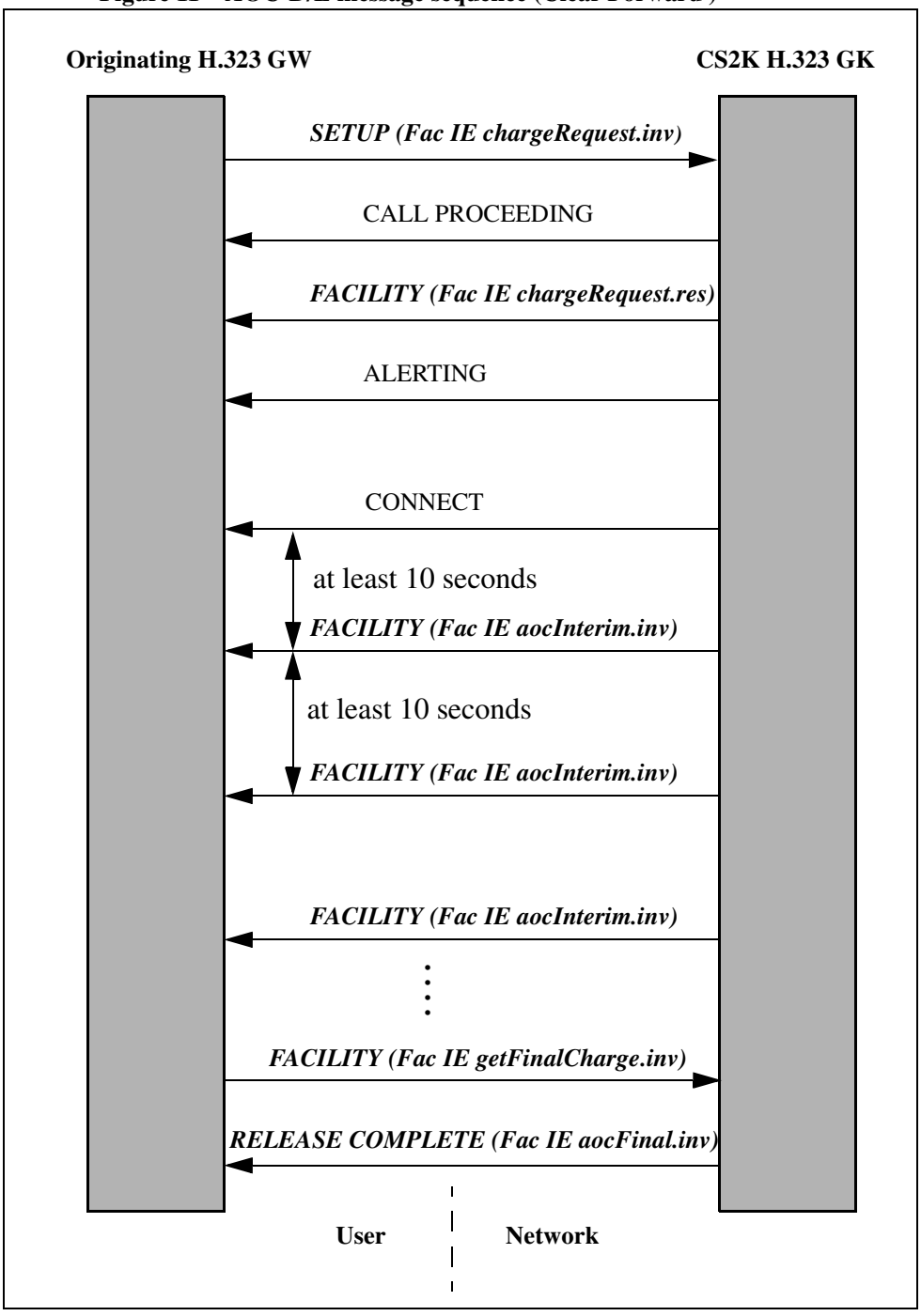


Figure 11 depicts a typical AOC message sequence where initially only AOC-D is active. AOC-E is requested at call takedown. In this case call takedown from the originator (Clear Forward) is special in the way that it is not initiated by a RELEASE COMPLETE sent by the originating H.323 gateway, but by a FACILITY message with a getFinalCharge operation embedded.

Figure 11 AOC-D/E message sequence (Clear Forward)



For the format of the FACILITY message please refer to H.225 [5] and Q.931 [6].

For the format of the AOC Facility IE, please refer to ISO 15049/ECMA-211 [10] and ISO 15050/ECMA-212 [11].

The encoding used for sending the charge units in the AOC Facility IE is ASN.1 and is done according to ITU-T Recommendations [12] - [19].

If a call is free of charge, this is indicated by sending an indication "***free of charge***".

In case of AOC-D the "***free of charge***" indication is sent twice, after CONNECT and at the end of the call.

In case of AOC-E the "***free of charge***" indication is sent once at the end of the call. Sending of "***free of charge***" as a response to an AOC request is not supported. Note that this does not lead to a non-compliance to ETS 300 179 [2] and ETS 300 180 [3].

1.5 Hardware Requirements or Dependencies

An appropriate H.323 GW from a 3rd party vendor being able to convert Facility messages from ECMA format ISO 15049/ECMA-211 [10] and ISO 15050/ECMA-212 [11] into ETSI format ETS 300 179 [2] and ETS 300 180 [3] is needed.

1.6 Software Requirements or Dependencies

This feature requires the following features to be activated by SOC:

- ***NETK0024*** Network AOC Tariff
- NSUP0020 NAOC/PCA Supp Svcs
- NSUP0023 PCA SW Metering Support for Billing
- PBXT0011 ETSI PRI Info
- PBXT0018 QSIG AOC

NAOC tariff information is required, since this feature reuses the *NAOC* framework. If no *NAOC* information is provided, the payment ceiling counter cannot be updated for that call. NAOC datafill including the NAOC tables and translation options have to be set up in a appropriate way. Please refer to [1] - [7] for additional information.

1.7 Restrictions/Limitations

1.7.1 Interactions

Interactions with terminators other than the following are ***not*** supported:

— ETSI ISUP V1

— ETSI ISUP V2

— ETSI PRI

— QSIG

— IBN

— BRI

— V5.2 IBN

1.7.2 Restrictions/Limitations

Only some few new limitations or restrictions are introduced by the current activity:

1. Sending of AOC charge information as **currency** units is not supported for H.323 QSIG trunks yet.
2. AOC calculation based on the **charging interval** introduced with A00002625 [39] is not supported
3. A delta may exist between the number of charge units saved in the AMA record by the CM feature A00002638 [38] controlled by SOC NSUP0023 and the number of charge units provided by the AOC metering counter in the GWC. This is due to charge interval based calculation done in the CM.
4. The GWC calculation of the AOC does not influence or change AMA records extension introduced with A00002638 [38]. There are no direct interactions between the AMA billing system and the AOC functionality in the GWC.
5. AOC on H.323 QSIG is only supported for **bearer calls**. AOC on H.323 QSIG for non-bearer calls is not supported. Facility IEs with AOC operations for these calls are transparently passed through the CS2000.

The enumeration below lists all known restrictions, which have been introduced by the previous activities AF7344 [35], A59024423 [36], A590038835 [37], A59020791 [33]

6. ***AOC-S*** (AOC at call setup) is not supported.
7. Provisioning of AOC can only be per trunk group and per GWC. AOC request is always on a per call basis.
8. Out of the supported AOC modes, only those will be delivered which are requested and provisioned at the same time.
9. Only connection-oriented charging information is transmitted to the user (charges for supplementary services are not included).
10. In case no system resources are available in the GWC, a FACILITY message with a Facility IE coded "***chargeNotAvailable***" is sent towards the originating H.323 gateway. If the AOCREL boolean is set in table ***TRKOPTS***, the call is released, otherwise it is not released.

11. Race condition: If a call has ***AOC-D*** activated, the originating H.323 gateway might receive a FACILITY message after it sent out a '***getFinalCharge***' request. This message should not cause an erroneous charge display because it will be received before the RELEASE COMPLETE message with the final charge.

12. The feature is supported over GWC Warm Swacts. No errors are expected for Swacts with both units InSv. If the inactive unit is RTS'ed and then a Swact happens, there can be errors for the calls that were in talking state at RTS.

13. The calculation of the charging rate time interval can produce a result which is not an exact multiple of 100 ms. The result is therefore rounded up to the next 0.1 sec multiple.

14. Basic Service discounts are not supported on H.323 QSIG because there is no formal definition of Basic Service for H.323 QSIG, even though Bearer Capability and High Layer Compatibility are both defined. This means that table ***AOCBSDSC*** will not be used by AOC on H.323 QSIG.

15. When changes are done in the table ***SERVRINV***, these are not dynamically reported the GWC. After adding the AOC option, the GWC has to be double swacted in order for the changes to take effect

16. The SESM interface for table ***SERVRINV*** does not support the AOC option. This option has to be manually added to the table SERVRINV.

17. For calls routed to tones or announcements the charge provided is either '***freeOfCharge***' or totally missing (which should cause the originating H.323 gateway to report '***notAvailable***' to the end user).

18. Interactions with supplementary services other than those specified in the QSIG AOC standards will not be handled.

a. any '***aocComplete***' request at Call Transfer will be rejected with a ReturnError APDU with error code '***supplementaryServiceInteractionNotAllowed***';

b. any '***aocDivChargeReq***' will be ignored but not passed along towards the terminator.

19. The currency name can only consist of up to 10 capital letters (no lower case and blanks supported).

20. Currency name changes affect calls in progress as well as new calls.

21. It is possible to define only 16 currency names and 16 currency units conversion factor per Call Server.

22. A conversion factor change does not affect calls in progress; it only affects calls established after the change.

23. A dummy sourceEntityAddress = 0 will be coded in the NFE of outpulsed Facility IEs, because PINX are not supported by QSIG GF.

24. The design is based on the assumption that AOC will never be delivered by another Call Server located from the Call Server towards the terminating party. Therefore, AOC charge requests can not be passed through the Call Server. Incoming Facility Information Elements (from the terminating side) with operations '***aocInterim***', '***aocFinal***' or '***aocRate***' will be discarded by the GWC and therefore not pass through the CS2000.

25. AOC charge requests arriving at the CS2000 after CONNECT are always rejected by the CS2000. This means: no AOC service will be provided for any charge requests received after CONNECT.

26. According to the AOC specification it does not make sense to send more than one AOC APDU per message. If an incoming message or Facility IE contains more AOC InvokePDUs, only the first APDU per message is considered. The remaining APDUs are passed through towards the terminating party.

27. If an AOC charge request is received in a FACILITY message during the overlap sending phase and before enough digits were received to route, the following situation may lead to failure to provide the service: the reception of the remaining digits necessary to find a route takes longer than 15 seconds. The reason is timer T1 >= 15 seconds running in the originating PINX, waiting for a reply to the request. This timer may time out, because CS2000 can send the reply only when it found the route. As a result, the PINX will report '***notAvailable***' to the user and ignore the AOC information received from CS2000.

28. Table ***TRKOPTS***, AOC option, AOCREL = Yes datafill does not have an effect in the following situations (calls are not released):

a. no AOC service is provisioned, but a request is received. The request is replied with '***notAvailable***' and the call continues. No CS2000 log is generated.

b. QSIG AOC is provisioned with protocol type KEYPAD or with charging type CHARGING (units). These situations will not even lead to '***notAvailable***' replies, they will lead to GWC Swerrs and CS2000 PM189 logs, and no AOC information being sent out.

29. The content of the Interpretation APDU in the AOC requests is not checked by CS2000. But the actions taken (which would depend on it) are always according to the AOC standard.

30. AOC tariff determination is supported only for the combined CGP/CDP scenario. Support for the French NAOC trunk metering functionality (ITX/TAX messages) is not part of this activity. The translations table ***xxHEAD / xxCODE*** will therefor have to use the keyword (***NAOC*** xxxx)

31. The following restrictions already exist for the NAOC tariff database

— only 220 operators (16 carrier and 204 reseller) are available per CS2000 node

— a pool of up to 64K tariffs is available for all operators (carriers and resellers) on a single CS2000 node

— every carrier can adress up to 1022 zones and up to 1022 tariffs. Zones cannot be shared between incompatible zone clases

— a pool of up to 30 TCOs is available for all operators (carrier and reseller) on a single CS2000 node. TCOs can be shared between operators

— zoning for international calls is not available on a reseller basis

— only 10,000 ONDCs can be used for zoning national calls

— only 511 discounts are available per single CS2000 node

— all exceptions have to be zoned as SERVice calls

— oup to 4 million SERVice DNs can be datafilled in table SERVZONE

1.8 Glossary

Term	Description
AOC	Advice of Charge
BRI	Basic Rate interface
CDN	Called Party Directory Number
CDP	Charge Determination Point
CGN	Calling Party Directory Number
CGP	Charge Generation Point
CS	Carrier Selection
CS2000	Communication Server 2000
CS2K	Communication Server 2000
ELN	Essential Line
ETSI	European Telecommunication Standard Institute
IAM	Initial Address Message
IBN	Integrated Business Network
IP	Internet Protocol
ISUP	Integrated Services Digital Network User Part
LNP	Local Number Portability
MMP	Multi Market Platform

NAOC	Network Advice of Charge
PINX	Private Integrated Services Network Exchange
PCA	Payment Ceiling Advice
PVG	Passport Voice Gateway
PRI	Primary Rate Interface
SIP	Session Initiation Protocol
SIP-T	Session Initiation Protocol - Telephony
SNP	Service Number Portability
UXLA	Universal Translations
XLA	Translations

1.9 References

REF #	Description of Reference
[1]	*ETS 300 178 - ISDN; Advice of Charge: charging information at call set-up time supplementary service, Service description, October1992*
[2]	*ETS 300 179 - ISDN; Advice of Charge: charging information during the call supplementary service, Service description, October1992*
[3]	*ETS 300 180 - ISDN; Advice of Charge: charging information at the end of the call supplementary service, Service description, October 1992*
[4]	*ETS 300 182 - ISDN; Advice of Charge supplementary service, DSS-1 protocol, April 1993*
[5]	*ITU-T H.225.0 - Call signalling protocols and media stream packetization for packet-based multimedia communication systems (2000)*
[6]	*ITU-T Q.931 - ISDN user-network interface layer 3 specification for basic call control*
[7]	*ITU-T Q.932 - Generic procedures for the control of ISDN supplementary services*
[8]	*ISO/IEC 11572 / ECMA-142 and ISO/IEC 11574 / ECMA-143 - QSIG Basic Call*
[9]	*ISO/IEC 11582 / ECMA-165 - QSIG Generic functional protocol*
[10]	*ISO/IEC 15049 / ECMA-211 - QSIG Advice of Charge - Specification, Functional Model and Information Flows*
[11]	*ISO/IEC 15050 / ECMA-212 - QSIG Advice of Charge - Interexchange Signalling*

[12] *ITU-T X.680 Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation (1997)*

[13] *ITU-T X.681 Information technology - Abstract Syntax Notation One (ASN.1): Information object specification (1997)*

[14] *ITU-T X.682 Information technology - Abstract Syntax Notation One (ASN.1): Constraint specification (1997)*

[15] *ITU-T X.683 Information technology - Abstract Syntax Notation One (ASN.1): Parameterization of ASN.1 specifications (1997)*

[16] *ITU-T X.690 Information technology - ASN.1 encoding rules - Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER) (1997)*

[17] *ITU-T X.880 Information technology - Remote Operations: Concepts, model and notation (1994)*

[18] *ITU-T X.881 Information technology - Remote Operations: OSI realizations - Remote Operations Service Element (ROSE) service definition (1994)*

[19] *ITU-T X.882 Information technology - Remote Operations: OSI realizations - Remote Operations Service Element (ROSE) protocol specification (1994)*

[20] *NDAOCHLD - German ETSI AOC HLD; PLS FMDOC*

[21] *AN1950 - ETSI PRI ADVICE OF CHARGE (WT part); PLS DOC*

[22] *AN1946 - ETSI PRI ADVICE OF CHARGE (XPM part); PLS DOC*

[23] *AE1089 - GLOBAL PRI - PROTOCOL VARIANT CONTROL; PLS DOC*

[24] *AU2537 - PRI REARCH PHASE 1B; PLS DOC*

[25] *PRIARHLD - Legacy PRI Rearchitecture - Phase 1A; PLS FMDOC*

[26] *ELO001 - Euro ISDN Advice of Charge SIM; PLS FMDOC*

[27] *ND0035 - AOC for NLOs SIM; PLS FMDOC*

[28] *CSE P22-30A; Call Control for ISDN Interfacing Protocol D, Layer 3 (for interfaces S and T)*

[29] *AJ4901 - ETSI AOC PRI Variants XPM Detailed Design document; PLS DOC*

[30] *AJ4903 - ETSI AOC PRI Variants SHR Detailed Design document; PLS DOC*

[31] *AJ4904 - ETSI AOC PRI Variants CCM Detailed Design document; PLS DOC*

[32] *AJ4905 - ETSI AOC PRI Variants WT Detailed Design document; PLS DOC*

[33] *A59020791 - Support of AOC for ETSI PRI on CS2000; PLS FMDOC*

[34] *A59031474 - NAOC XPM cleanup; PLS FMDOC*

[35] *AF7344 - QSIG Advice Of Charge; PLS DOC*

[36] *A59024423 - QSIG on CS2000; PLS FMDOC*

[37] *A59038835 - QSIG on CS2000 Completion; PLS FMDOC*

[38] *A00002638 - Software Metering Support for Billing; PLS FMDOC*

[39] *A00002625 - Full Line HW Metering / Billing Compliace; PLS FMDOC*

1.10 Applicable customer facing sections

Fault Management

Logs _____

Alarms _____

Configuration

Data Schema _____

User Interface _____

Element Management _____

Security _____

Service Order _____

Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

Figure 12 Overview of the NAOC and PCA development

Type	Stream	ACTID	Description of Reference

N A O C	MMP12	59007987	*ETSI ISUP - Network AOC (CDP+CGP)*, Issue AA25, PLS FMDOC module: *network_aoc_etsi_isup.*
		59008229	*ETSI ISUP - Network AOC Tariff And Time Of Day Switchover (CDP)*, Issue AA67, PLS FMDOC module: *naoc_etsi_isup_tariff_db_tco.*
		59007780	*Network AOC CGP Function*, Issue AA18, PLS FMDOC module: *A59007780.*
	MMP13	59012308	*ETSI ISUP Network AOC - analog enhancement,* Issue AA15, PLS FMDOC module *A59012308 (TDM onlly)*
		59012315	*ETSI ISUP Network AOC - V5.2 enhancement,* Issue AA02, PLS FMDOC module *A59012315*
		59013775	*Network AOC: Integrated CGP and CDP,* Issue AA27, PLS FMDOC module: *A59013775.*
	ISNH03	59032878	*NAOC on PRI,* Issue AA05, PLS FMDOC module: *A59032878.*
P C A	SN04	59034497	*Payment ceiling for Succession Intl. Cable IP,* Issue AA32, PLS FMDOC module: *A59034497.*
	SN05	59039121	*NAOC and PCA Feature Interworkings with 3WC, CFx, CXR and HOLD,* Issue AA30, PLS FMDOC module: *A59039121.*
NAOC	SN06	89007454	*NAOC German Regulatory Enhancements,* Issue AA17, PLS FMDOC module: *A89007454.*
PCA		89007461	*Payment Ceiling Regulatory Enhancements,* Issue AA40, PLS FMDOC module: *A89007461.*
NAOC	SN06.2	A00001927	*Line Hardware Metering,* Issue AA03, PLS FMDOC module: *A00001927.*
		A00002938	*Full Line HW Metering / Billing Compliance*, Issue AA12, PLS FMDOC, module: *A00002625.*
	SN07	A00002625	*Full Line HW Metering / Billing Compliance*, Issue AA12, PLS FMDOC, module: *A00002625.*
		A00002637	*NAOC Trunk Metering Enhancements,* Issue AA02, PLS FMDOC module: *A00002637.*
		A00002909	Telekom ISUP (T-ISUP), *Issue AA24, PLS FMDOC module A00002909*
		A00004933	Indian ISUP Charging, Issue AA02, PLS FMDOC module A00004933
PCA		A00002638	PCA SW Metering Billing Compliance, Issue AA14, PLS FMDOC module A00002638
NAOC& PCA		S00002638	Software Metering support for Billing, *Issue AA02, PLS FMDOC module S00002638*

1.11 Annex A: Facility Information Elements

This annex provides typical, albeit not normative, examples of Facility Information Elements the CS2000 H.323 Gatekeeper is able to genrate and. The structure of AOC information carried in H.225[Q.931] Facility Information Elements (FIEs) is as follows.

I. Examples of upstream AOC FIEs (taken from automated STEP test cases)

```
#define AOC_D_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 03"
#define AOC_E_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 04"
#define AOC_DE_CHR_REQ "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 05"
#define GET_FINAL_CHR  "9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00"

#                       |       NFE                |Interpr | chgreq
#define AOC_D_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 03"
#define AOC_E_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 04"
#define AOC_DE_CHR_REQ "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 05"
#define GET_FINAL_CHR  "9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00"

#define AOC_D_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 03"
#define AOC_E_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 04"
#define AOC_DE_CHR_REQ "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 05"
#define GET_FINAL_CHR  "9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00"
#                       |       NFE                |Interpr | getFinalChg

#define AOC_D_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 03"
#define AOC_E_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 04"
#define AOC_DE_CHR_REQ "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 05"
#define GET_FINAL_CHR  "9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00"


#define AOC_D_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 03"
#define AOC_E_CHR_REQ  "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 04"
#define AOC_DE_CHR_REQ "9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30
05 30 03 0A 01 05"
#define GET_FINAL_CHR  "9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00"
```

II. Examples of upstream and downstream AOC FIEs (taken from STEP traces)

```
up      SETUP     1c 1b 9f aa 06 80 01 00 82 01 00 8b 01 02 a1 0d 02 01 05 02 01 3b 30
05 30 03 0a 01 05

down    FACILITY  1c 1d 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 a2 0d 02 01 05 30 08
02 01 3b 30 03 0a 01 05
```

```
up      FACILITY   1c 1b 9f aa 06 80 01 00 82 01 00 8b 01 02 a1 0d 02 01 05 02 01 3b
30 05 30 03 0a 01 03

down    FACILITY   1c 1d 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 a2 0d 02 01 05 30
08 02 01 3b 30 03 0a 01 03

down    FACILITY   1c 31 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1e 02
01 01 02 01 3e 30 16 30 14 a1 12 81 08 43 48 41 52 47 49 4e 47 a2 06 81 01 4b 82 01 03

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 02 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 81 82 01 03

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 03 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 8b 82 01 03

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 04 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 8e 82 01 03

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 05 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 91 82 01 03

down    FACILITY   1c 31 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1e 02
01 06 02 01 3e 30 16 30 14 a1 12 81 08 43 48 41 52 47 49 4e 47 a2 06 81 01 0f 82 01 04

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 07 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 9b 82 01 03

down    FACILITY   1c 31 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1e 02
01 08 02 01 3e 30 16 30 14 a1 12 81 08 43 48 41 52 47 49 4e 47 a2 06 81 01 10 82 01 04

down    FACILITY   1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 09 02 01 3e 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 a5 82 01 03

down    DISCONNECT 1c 32 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 8b 01 00 a1 1f 02
01 0a 02 01 3d 30 17 30 15 a1 13 81 08 43 48 41 52 47 49 4e 47 a2 07 81 02 00 a8 82 01 03

up      SETUP     1c 1b 9f aa 06 80 01 00 82 01 00 8b 01 02 a1 0d 02 01 05 02 01 3b 30
05 30 03 0a 01 05

down    FACILITY  1c 16 9f aa 0b 80 01 01 a1 03 80 01 30 82 01 00 a3 06 02 01 05 02 01 03
```

III. AOC FIEs, decomposed

1) Upstream AOC_D_CHR_REQ - Advice Of Charge During Call Charge Request

```
  1C 1B 9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30 05 30 03 0A 01 03
  1C 1B
     9F                 # Protocol Profile = Networking Extensions
     AA 06              # Network Facility Extensions
        80 01 00        # Source Entity = endPINX(0)
        82 01 00        # Destination Entity = endPINX(0)
     8B 01 02           # Interpretation APDU = rejectAnyUnrecognisedInvokePdu(2)
     A1 0D              # Rose Invoke APDU
        02 01 05        # Invoke Id = 5
        02 01 3B        # Invoke Opcode = ChargeRequest
        30 05           # ChargeRequestArg = Sequence of
           30 03        # AdviceModeCombinations = Sequence of
              0A 01 03  # 03 = Interim = Advice Of Charge During Call
```

2) Upstream AOC_E_CHR_REQ - Advice Of Charge At End of Call Charge Request

```
  1C 1B 9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30 05 30 03 0A 01 04
```

```
  1C 1B
     9F                 # Protocol Profile = Networking Extensions
     AA 06              # Network Facility Extensions
        80 01 00        # Source Entity = endPINX(0)
        82 01 00        # Destination Entity = endPINX(0)
     8B 01 02           # Interpretation APDU = rejectAnyUnrecognisedInvokePdu(2)
     A1 0D              # Rose Invoke APDU
        02 01 05        # Invoke Id = 5
        02 01 3B        # Invoke Opcode = ChargeRequest
        30 05           # ChargeRequestArg = Sequence of
           30 03        # AdviceModeCombinations = Sequence of
              0A 01 04  # 04 = Final = Advice Of Charge At End of Call


3) Upstream AOC_DE_CHR_REQ - Advice Of Charge During and End Of Call Charge Request

  1C 1B 9F AA 06 80 01 00 82 01 00 8B 01 02 A1 0D 02 01 05 02 01 3B 30 05 30 03 0A 01 05
  1C 1B
     9F                 # Protocol Profile = Networking Extensions
     AA 06              # Network Facility Extensions
        80 01 00        # Source Entity = endPINX(0)
        82 01 00        # Destination Entity = endPINX(0)
     8B 01 02           # Interpretation APDU = rejectAnyUnrecognisedInvokePdu(2)
     A1 0D              # Rose Invoke APDU
        02 01 05        # Invoke Id = 5
        02 01 3B        # Invoke Opcode = ChargeRequest
        30 05           # ChargeRequestArg = Sequence of
           30 03        # AdviceModeCombinations = Sequence of
              0A 01 05  # 05 = interimFinal = Advice Of Charge During and End Of Call


4) Upstream GET_FINAL_CHR - Advice of Charge Get Final Charge Request

  1C 16 9F AA 06 80 01 00 82 01 00 8B 01 01 A1 08 02 01 06 02 01 3C 05 00
  1C 16
     9F                 # Protocol Profile = Networking Extensions
     AA 06              # Network Facility Extensions
        80 01 00        # Source Entity = endPINX(0)
        82 01 00        # Destination Entity = endPINX(0)
    8B 01 01          # Interpretation APDU = clearCallIfAnyInvokePduNotRecognised(1)
     A1 08              # Rose Invoke APDU
        02 01 06        # Invoke Id = 6
        02 01 3C        # Invoke Opcode = getFinalCharge
        05 00           # DummyArg = none


5) Downstream FACILITY (Charge Request ReturnResult APDU)

  1C 1D 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A2 0D 02 01 07 30 08 02 01 3B 30
  03 0A 01 03
  1C 1D
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A2 0D              # Rose ReturnResultPDU
  02 01 07              # Invoke Id = 7
  30 08                 # Sequence of
     02 01 3B           # Invoke Opcode = ChargeRequest
     30 03              # Sequence of
        0A 01 03        # Advice Of Charge During Call

  1C 1D 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A2 0D 02 01 08 30 08 02 01 3B 30
  03 0A 01 05
  1C 1D
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
```

```
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A2 0D              # Rose ReturnResultPDU
  02 01 08              # Invoke Id = 8
  30 08                 # Sequnce of
     02 01 3B           # Invoke Opcode = ChargeRequest
     30 03              # Sequence of
        0A 01 05        # Advice Of Charge During and at End Of Call


6) Downstream FACILITY (Charge Request ReturnError APDU)

  1C 16 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A3 06 02 01 09 02 01 03
  1C 16
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A3 06              # Rose ReturnErrorPDU
  02 01 09              # Invoke Id = 9
  02 01 03              # error code = 03 = notAvailable


7) Downstream FACILITY (Charge Request ReturnError APDU)

  1C 16 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A3 06 02 01 09 02 01 0a
  1C 16
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A3 06              # Rose ReturnErrorPDU
  02 01 09              # Invoke Id = 9
  02 01 0a              # error code = 0a = supplServiceInteractionNotAllowed


8) Downstream FACILITY (Charge Request Reject APDU)

  1C 16 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A3 06 02 01 0a 80 01 02
  1C 16
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A4 06              # Rose ReturnErrorPDU
  02 01 0a              # Invoke Id = 10
  80 01 02              # general problem, badly structured APDU


9) Downstream FACILITY (Charge Request Reject APDU)

  1C 16 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 A3 06 02 01 0b 80 01 02
  1C 16
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01              # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30        # sourceEntityAddress = dummy source entity address of '0'
  82 01 00              # Destination Entity = endPINX(0)
     A4 06              # Rose ReturnErrorPDU
  02 01 0b              # Invoke Id = 11
  81 01 02              # invoke problem, mistyped argument
```

```
10) Downstream FACILITY (Intermediate Charge Amount)

  1C 31 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1E 02 01 01 02 01 3E
  30 16 30 14 A1 12 81 08 43 48 41 52 47 49 4E 47 A2 06 81 01 4B 82 01 03
  1C 31
     9F                  # Protocol Profile = Networking Extensions
     AA 0B               # Network Facility Extensions
  80 01 01               # Source Entity = anyTypeOfPINX(1)
  A1 03 80 01 30         # sourceEntityAddress = dummy source entity address of '0'
  82 01 00               # Destination Entity = endPINX(0)
     8B 01 00            # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
     A1 1E               # Rose Invoke APDU
  02 01 01               # Invoke Id = 1
  02 01 3E               # Invoke Opcode = AocInterim
  30 16                  # AocInterimArg = Sequence of
     30 14               # interimCharge = specificCurrency = Sequence of
        A1 12            # recordedCurrency =
     81 08               # rCurrency = Currency = IA4string
        43 48 41 52
        47 49 4E 47      # CHARGING
     A2 06               # rAmount =
        81 01 4B         # currencyAmount = INTEGER = 75
        82 01 03         # multiplier = enum = 03 = one


11) Downstream FACILITY (Intermediate Charge Amount)

  1C 32 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1F 02 01 02 02 01 3E
  30 17 30 15 A1 13 81 08 43 48 41 52 47 49 4E 47 A2 07 81 02 00 81 82 01 03
  1C 32
     9F                  # Protocol Profile = Networking Extensions
     AA 0B
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00
     A1 1F               # Rose Invoke APDU
  02 01 02               # Invoke Id = 2
  02 01 3E               # Invoke Opcode = AocInterim
  30 17                  # AocInterimArg = Sequence of
     30 15               # interimCharge = specificCurrency = Sequence of
        A1 13            # recordedCurrency =
     81 08               # rCurrency = Currency = IA4string
        43 48 41 52
        47 49 4E 47      # CHARGING
     A2 07               # rAmount =
        81 02 00 81      # currencyAmount = INTEGER = 127
        82 01 03         # multiplier = enum = 03 = one


12) Downstream FACILITY (Intermediate Charge Amount)

  1C 31 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1E 02 01 06 02 01 3E
  30 16 30 14 A1 12 81 08 43 48 41 52 47 49 4E 47 A2 06 81 01 0F 82 01 04
  1C 31
     9F                  # Protocol Profile = Networking Extensions
     AA 0B               # Network Facility Extensions
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00            # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
     A1 1E               # Rose Invoke APDU
  02 01 06               # Invoke Id = 6
  02 01 3E               # Invoke Opcode = AocInterim
  30 16                  # AocInterimArg = Sequence of
     30 14               # interimCharge = specificCurrency = Sequence of
        A1 12            # recordedCurrency =
     81 08               # rCurrency = Currency = IA4string
```

```
        43 48 41 52
        47 49 4E 47     # CHARGING
     A2 06              # rAmount =
        81 01 0F        # currencyAmount = INTEGER = 15
        82 01 04        # multiplier = enum = 04 = ten
```

13) Downstream FACILITY (Intermediate Charge Amount)

```
  1C 31 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1E 02 01 08 02 01 3E
  30 16 30 14 A1 12 81 08 43 48 41 52 47 49 4E 47 A2 06 81 01 10 82 01 04
  1C 31
     9F                 # Protocol Profile = Networking Extensions
     AA 0B              # Network Facility Extensions
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00           # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
     A1 1E              # Rose Invoke APDU
  02 01 08              # Invoke Id = 8
  02 01 3E              # Invoke Opcode = AocInterim
  30 16                 # AocInterimArg = Sequence of
     30 14              # interimCharge = specificCurrency = Sequence of
        A1 12           # recordedCurrency =
     81 08              # rCurrency = Currency = IA4string
        43 48 41 52
        47 49 4E 47     # CHARGING
     A2 06              # rAmount =
        81 01 10        # currencyAmount = INTEGER = 16
        82 01 04        # multiplier = enum = 04 = ten
```

14) Downstream RELEASE COMPLETE (Final Charge Amount)

```
  1C 32 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1F 02 01 0A 02 01 3D
  30 17 30 15 A1 13 81 08 43 48 41 52 47 49 4E 47 A2 07 81 02 00 A8 82 01 03
  1C 32
     9F                 # Protocol Profile = Networking Extensions
     AA 0BA             # Network Facility Extensions
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00           # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
     A1 1F              # Rose Invoke APDU
  02 01 0A              # Invoke Id = 10
  02 01 3D              # Invoke Opcode = AocFinal
  30 17                 # AocFinalArg = Sequence of
     30 15              # finalCharge = specificCurrency = Sequence of
        A1 13           # recordedCurrency =
     81 08              # rCurrency = Currency = IA4string
        43 48 41 52
        47 49 4E 47     # CHARGING
     A2 07              # rAmount =
        81 02 00 A8     # currencyAmount = INTEGER = 168
        82 01 03        # multiplier = enum = 03 = one
```

15) Downstream RELEASE COMPLETE (Final Charge Amount - chargeNotAvailable)

```
  1C 1D 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1F 02 01 0A 02 01 3D
  30 02 80 00
  1C 1D
     9F                 # Protocol Profile = Networking Extensions
     AA 0BA             # Network Facility Extensions
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00           # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
```

```
     A1 1F              # Rose Invoke APDU
  02 01 0A              # Invoke Id = 10
  02 01 3D              # Invoke Opcode = AocFinal
  30 02                 # AocFinalArg = Sequence of
     80 00              # finalCharge = chargeNotAvailable = NULL


16) Downstream RELEASE COMPLETE (Final Charge Amount - freeOfCharge)

  1C 1D 9F AA 0B 80 01 01 A1 03 80 01 30 82 01 00 8B 01 00 A1 1F 02 01 0A 02 01 3D
  30 02 80 00
  1C 1D
     9F                 # Protocol Profile = Networking Extensions
     AA 0BA             # Network Facility Extensions
  80 01 01
  A1 03 80 01 30
  82 01 00
     8B 01 00           # Interpretation APDU = discardAnyUnrecognisedInvokePdu(0)
     A1 1F              # Rose Invoke APDU
  02 01 0A              # Invoke Id = 10
  02 01 3D              # Invoke Opcode = AocFinal
  30 02                 # AocFinalArg = Sequence of
     81 00              # finalCharge = freeOfCharge = NULL
```

Product = CS 2000

A00006731--Handle Flash on Exit

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

On TMX100 switches, hook flash is only enabled on those RES lines that have flash features assigned. Most customers do not use flash features. RES customers without hook flash features who flash are treated as exiting the current call and receive standard dial tone allowing them to initiate a new call.

When TMX100 sites migrate to ISN04 or later, customers are converted from RES to IBN line functionality and by default have hook flash enabled and will get second dial tone if they Flash (go on/off hook) instead of Exit. This difference in behavior is causing confusion and customer complaints at the Coteor site in Bolivia, the first local exchange migrating from TMX100 to ISN04. Similar complaints are expected when other sites convert (100-150 sites).

The purpose of the Exit on Flash (EOF) option is to resolve these customer complaints and to provide for a more seamless migration from TMX100 to ISN04.

Customer requirement of this activity is to develop a new line option that treats Flash as EXIT for IBN lines.

Without EOF:

A Calls B

B Answers

A Flashes

A gets Special Dial Tone

A Calls C

A Receives Feature Not Allowed (FNAL) treatment

With EOF:

A has EOF option

A Calls B

B Answers

A Flashes

A and B Disconnect

A gets Dial Tone

A calls C

A to C call is established

This feature uses line option datafill. The advantages of offering this as a line option are:

- consistency with the current FIG (Flash IGnore) option
- ability to define option compatibilities using the OPTOPT table

1.3 Hardware Requirements or Dependencies

There is no hardware dependency. The option can be added to any line with an LCC of IBN.

1.4 Software Requirements or Dependencies

None.

1.5 Limitations and restrictions

EOF feature is only applicable to IBN lines in NA and WT.

EOF feature is not compatible with the following options:

CHD, CNF, CWI, CWX, CWT, CXR, FXR, DCBX, HLD, LDSA, LDSO, LDSR, LDST, LNPTST, MPB, PCWT, PRK, 3WC, 3WCPUB, VOWDN.

1.6 Interactions

Call Waiting Originate (CWO) and Dial Call Waiting (CWD) are both features compatible with the EOF feature. If another agent imposes CWT on an agent with EOF, this agent still has the ability to flash to the waiting call and maintain the original call instead of exiting.

A has EOF option

A Calls B

B Answers

C with CWO/CWD calls A and imposes CWT on A

A Flashes

A to C call established while B is on hold

A flashes again and A to B call established while C is on hold

Timed-release disconnect (TRD) timing is supported by EOF. If a call is setup for TRD timing with EOF and the terminating agent flashes, the terminating agent is reconnected to the originating agent instead of exiting.

A has EOF option

B calls A over IT trunk (see NTP 297-1001-190 for other TRD call scenarios)

A flashes

A to B call maintains connection

1.7 Applicable customer facing sections

Fault Management

Logs	_____
Alarms	_____

Configuration

Data Schema	___X__
User Interface	_____
Element Management	_____
Security	_____
Service Order	___X__

Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

Configuration for A00006731

2.1 Hardware and Software Requirements

No hardware or software dependencies.

2.2 Upgrade Impact

No impact on upgrades.

2.3 Data schema (DS) (CM, MIBS, RDB)

2.3.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
IBNLINES	changed	unchanged

2.3.2 Table/MIB/Remote Database Schema information

2.3.2.1 Name: IBNLINES

IBN Line Assignment Table

2.3.2.1.1 Functional description

Table IBNLINES contains the line assignments for each 500/2500 set assigned to an Integrated Business Network (IBN), Residential Enhanced Services (RES), and Multiple Appearance Directory Number (MADN) station number. This table also contains the line assignments for the IBN attendant consoles (AC).

2.3.2.1.2 Usage sequence and implications (CM Only)

Current datafill order unchanged.

2.3.2.1.3 Size

Unchanged.

2.3.2.1.4 Fields/OIDs

The following table lists fields/OIDs for IBNLINES.

Table 2 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
RESULT	Changed	OPTLIST	EOF	Option List. Added EOF to OPTLIST as another line option. Enter EOF for Exit On Flash option.

2.3.2.1.5 Datafill example

The following example shows sample datafill for table IBNLINES.

```
>table ibnlines
>list
LEN DNNO RESULT
---------------
HOST 00 0 00 01 0 DT STN IBN 6210201 350 819_P621_2 L819_NILLA_2 819 (EOF) $
```

2.3.2.1.6 Table release history update

ISN08 - Feature (A00006731) Handle Flash on Exit adds new OPTLIST option EOF.

2.4 Service Orders (SO) (CM & SESM)

2.4.1 Service order change details

2.4.1.1 LCC and options

New line option, EOF, can only be assigned to LCC of IBN.

Option EOF is not compatible with the following options and features:

CHD, CNF, CWI, CWX, CWT, CXR, FXR, DCBX, HLD, LDSA, LDSO, LDSR, LDST, LNPTST, MPB, PCWT, PRK, 3WC, 3WCPUB, VOWDN.

2.4.2 New commands

2.4.2.1 How service order options are presented

2.4.2.1.1 Description

The EOF option enables the subscriber on the assigned line to exit on flash.

2.4.2.1.2 Example

Figure 13 Example of the EOF option in prompt mode

```
SERVORD
SO:
>ado
SONUMBER:      NOW    4   1 14 PM
>
DN_OR_LEN:
>6137220110
OPTION:
>eof
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 4 1 14 PM 6137220110 ( EOF ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>y
```

Figure 14 Example of the EOF option in no-prompt mode

```
SERVORD
SO:
>ado $ 6137220110 eof $ y y
```

2.4.2.1.3 Option prompts

Table 3 System prompts for EOF option

Prompt	Valid input	Description	Areas affected by prompt
OPTION	EOF	Assigns Exit On Flash feature to line	None

2.4.2.1.4 Line class code compatibility

Table 4 EOF compatibility to LCC

Line class code	Compatible?
IBN	Yes

2.4.2.1.5 Option prerequisites

EOF has no prerequisites

2.4.2.1.6 Notes

None

Product = CS 2000

A00007040--Int'l R2 CAS Framework - Error handling support

Functional Description

1.1 Applicable Solution(s)

Int'l PT-IP

1.2 Description

This SN08 activity provides error handling support for FDCP CAS in CS2K. This feature handles errors encountered and reported by the Media Gateway (MG) to the Media Gateway Controller (MGC) during CAS call processing.

The various error scenarios generated by the CAS components in the MG has been classified into the following three categories.

1. **NACK** : NACK errors occur when the H.248 message fails a parsing or validation check.When MG is the receiver of the H.248 message and while processing the message it realizes that

   — the request is syntactically invalid or

   — the signals or events cannot be supported or

   — the signals cannot be applied,

   the H.248 message is rejected and the MG reports the error to the MGC.It does so by sending a reply to the MGC including an ErrorDescriptor in the reply message.These reply messages with the error descriptor in them are referred to as NACK.

   In the present implementation, for FDCP CAS, any NACK reported causes the call to be released irrespective of the state of the trunk.

   This feature provides handling of NACKs for FDCP CAS based on the state of the trunk and the exception reason received. The action can be either to re-attempt or take down the call and generate logs.The following tables show the action taken for the various MGC exceptions in different states.

2. **CAS failure event in the observed events descriptor** : A CAS failure event is defined in every CAS package to enable the MG to report failures to the MGC, encountered while performing actions requested by MGC.This feature provides the functionality for the MGC to request a casf event of the package being used while sending the H.248 message.

   If an error is detected by the MG a casf observed event will be built in the Observed Event Descriptor and sent to the MGC via a Notify message.These casf observed events contain an error code parameter based on which the respective error handling is done.

3. **NotifyCompletion parameter in Signal Complete event(g/sc) with an indication of signal not completed** : Since CAS Register Signalling duration is not instantaneous, the MGC can request the MG to be informed when a signal has successfully completed or has not completed due to a failure.

   The optional parameter NotifyCompletion allows the MGC to indicate that it wishes to be informed of normal completion, being interrupted by an event, being interrupted by a new signals descriptor and not completed for other reasons.

   If an error is detected during outpulsing and the g/sc had been previously requested for the Register signal, the MG will send a Notify message to the MGC to inform that signal playout has not finished (or was never started) due to a failure.

   In the current implementation this event g/sc has been used only for bcasaddr package.

   This feature will implement g/sc for the icasc.There are only two events implemented here.TO is timeout implying that the signal was completed successfully and nothing further is done on receiving this parameter in the notify message .NC implies that the signal could not be completed whereby it is sent for further treatment and the call is released by sending an SMP release message to the core.

1.3 Logs generated

The logs generated on encountering these errors are basically trunk logs. The log generated for bcas/SME is as follows :

CKT CAS3 1,

REASON: PTS ERROR CODE

DATA = 3902 0004 2C00 0006 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000

The above log indicates an FDCP protocol error for line signalling for the event bcas/SME in SZA_SENT state.

1.4 Hardware Requirements or Dependencies

N/A

1.5 Software Requirements or Dependencies

N/A

1.6 Glossary

Term	Description
CAS	Channel Associated Signalling.
CS2K	Call Server 2000
FDCP	Flexible Digital CAS Platform
MG	Media gateway
MGC	Media Gateway Controller
NACK	Negative Acknowledgement
NAPTS	North American Per Trunk Signalling
PVG	Passport Voice Gateway
LSF	Line Signalling Function

1.7 References

1. World CAS homepage

   http://pndinfo.europe.nortel.com/worldcas/

   Courses ->
   1. CallMach Interface (GLUE)
   2. CAS Domain Course
   3. FDCP Architecture Course

2. CAS Livelink

   http://eur-livelink.europe.nortel.com/livelink/

3. NAPTS error handling feature A00003506

Product = CS 2000

A00007146--CM Audits and Carrier grade for Intl. FDCP CAS on CS2K

Functional Description

1.1 Applicable Solution(s)

Int'l PT-IP

1.2 Description

This activity provides Core audits and Carrier Grade functionality for FDCP CAS on CS2K. The following items are covered in this activity.

- Core Audits
- CM maintenance actions
- GWC maintenance actions
- PVG maintenance actions

This activity applies generically to H.248 trunk Gateways although it is validated with only the PVG.

1.2.1 Core Audits

1.2.1.1 Background

The activity '**59015654** -Disabling trunk audit functionalities for Call Server trunk maintenance' disabled audits for all the trunks that reside on the gateway. Currently, the trunk audit functionality is not enabled for FDCP CAS trunks on the GWC.
This activity enables core trunk member audit for FDCP CAS trunks on the GWC.

This causes the audit system to recover trunk members that have state mismatches. As a result, the following audit logs are generated for FDCP CAS trunks.

- AUDT108 - this is generated when a trunk audit discovers that a trunk without data is other than TK_UNEQUIPPED or when the trunk state does not match the condition bits.
- AUDT109 - this is generated when the trunk audit corrects trouble conditions.
- AUDT110 - this is generated when a trunk audit detects a terminal trunk state that is invalid.

These are the same set of logs that are generated for legacy FDCP CAS trunks.

1.2.2 CM Warm restart and GWC Warm Swact

Currently, FDCP trunks on the GWC involved in unstable calls are in CPB (Call Processing Busy) state after a core Warm restart and also on GWC warm swact.

During CM warm restart or GWC warm swact, the CM stops call processing, informs the GWC that a maintenance event has occurred and clears unstable calls and retains stable calls.

This activity recovers the FDCP CAS trunks that are involved in unstable calls after CM Warm restart or GWC swact. In the current implementation, the audit that runs to clear unstable calls recovers ISUP, PRI and PTS trunks only.This implementation is extended to include FDCP CAS trunks.

1.2.3 Other Maintenance activities

The following table gives the maintenance activities that are tested and verified.

Table 5 Expected behaviour of the maintenance activities

Type of Maintenance	Activity	Expected behaviour
CM Maintenance	Cold Restart	Stable and unstable calls are brought down. Trunks become IDL.
	Reload restart	Stable and unstable calls are brought down. GWC restarts and Trunks become IDL.
	Norestartswact and mtcswact	Similar to Warm restart. Unstable calls are brought down. Trunks become IDL.
	BuSY	Trunk goes to BSY state.
	Return To Service	Trunk becomes IDL and available for Service.
	Force ReLeaSe	Trunk goes to BSY state and is NOT available to make calls.
	Installation BSY	Trunk goes to INB state and is NOT available to make calls.
GWC Maintenance	Warm Swact	Unstable calls are brought down. Trunks involved in unstable calls become IDL. Stable calls stay up. Active unit of GWC becomes Inactive and Inactive unit becomes active.
	Cold Swact	Both Stable and unstable calls are brought down. Trunks become IDL. GWC restarts. Active unit of GWC becomes Inactive and Inactive unit becomes active.
	Restart	Similar to Cold Swact
	Node bsy/rts	Similar to Cold Swact

Type of Maintenance	Activity	Expected behaviour
	Loss of Communication between GWC and CM	Stable calls stay up and Unstable calls are brought down.
PVG Maintenance	Loss of Communication between PVG and GWC	All calls are brought down. GWC recovers using SSC Hearbeat recovery.
	Carrier Reset	All calls are taken down. All trunks go to Carrier FailLure (CFL) state.

1.2.3.1 PVG testing

- Simultaneous swacts - Core + GWC
- PVG Swact
- PVG - Robustness, Congestion/Overload, VSP reset,TDM and IP reset.
- Support of a maximum of 1024 endpoints by the GWC & PVG.

1.3 Hardware Requirements or Dependencies

PVG 15K with VSP3o Card

1.4 Software Requirements or Dependencies

None.

1.5 Limitations and restrictions

- As PVG load was not available, PVG testcases are moved to ICAF. No PVG testcases are executed in IT.

1.6 Interactions

Not Applicable

1.7 Glossary

Table 6 Glossary

Term	Description
CAS	Channel Associated Signaling
CS2K	Call Server 2000
FDCP	Flexible Digital CAS Platform
GWC	GateWay Controller
ISUP	ISDN User Part

Table 6 Glossary

Term	Description
PRI	Primary Rate Interface
PTS	Per-Trunk Signaling
PVG	Passport Voice Gateway
SSC	Service State Controller
TDM	Time Division Multiplexing
VSP	Voice Signaling Processor

1.8 Reference

1. DMS-100 MMP Log Report Reference Manual Volume 2 of 7

Product = CS 2000

A00007749--MG9000 ABI Support for LGCO, LGCOi

Functional Description

1.1 Applicable Solution(s)

Int'l UA-IP

1.2 Description

This feature provides the customer with the ability to host LGCO and LGCOi peripherals (datafilled as PLGCs in table LTCINV) off the ABI DS-512 interface on the MG9000 Gateway. Hosting this type of peripheral is required in the International market for Telstra to allow them to deploy Call Servers within their network.

> ***Note:*** Only MX77 processor versions of the PLGC are supported in the patched back version of this activity into ISN07. This corresponds to the OGI and OLG PLGC loads which run on the MX77 processor based PLGCs. SX05 based PLGCs (QGI load) are only supported in ISN08 and beyond.

In ISN08 the customer will be able to datafill the EXTDS512 option on in a PLGC tuple in table LTCINV, which is required to support PLGCs on the ABI interface of the MG9000. In this release we will support only a limited set of interworkings in the international market for ABI lines. For example,

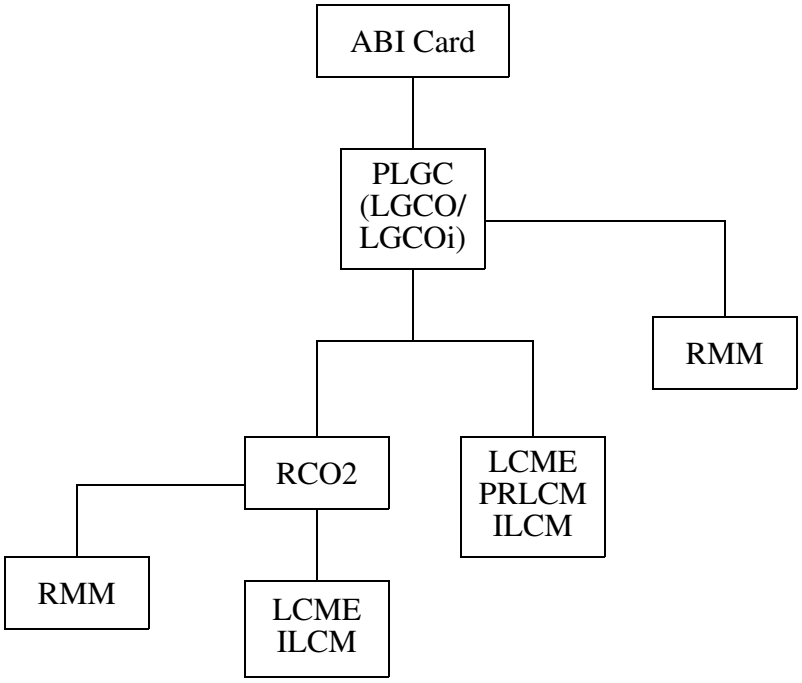
interworking with native MG9000 lines will not be supported from ABI lines, nor will interworking to GWC hosted CICM lines (although interworking to XPM hosted CICM lines will be allowed as these lines appear as P-phone lines). ISDN BRI is also supported on the LGCOi (and RCO2), but only the TS13 version of BRI, and only a limited service set is allowed (specifically only BRI Data Services are supported for Telstra).

The feature also adds support for hosting of an Remote Maintenance Module (RMM) directly on a PLGC host peripheral. In the past RMMs were only supported on remote type peripherals (ie: RCO2s in the international market), but with this feature support has been added to allow a PLGC (LGCO/LGCOi) to have an RMM directly connected to it via a DS30A interface. This is needed, again for Telstra, to allow for Metallic Line Test access at collapsed office sites where previously there was a DMS-100 and an ENET with an MTM available. With the DMS and ENET/MTM no longer available at the site where the PLGC exists the RMM serves as the interface for line test functions. Without the RMM it would not be possible to access line test functionality at the, now remote, site.

An issue with the RMM involves the hardware configuration. Specifically, the RMM has in the past always been sold by Nortel as a component of the RSC/RSCS, not as a stand-alone piece of hardware. For connection to a HOST type peripheral the RMM needs to be supported in a separate frame, and new cabling needs to be installed to allow it to be connected to the new host peripheral. This new hardware setup was implemented and documented as part of activity A00001898 - ABI RMM Support in SN07 for the North American market. The same hardware will be used for the international market as well for RMM support on PLGCs.

The followig diagram (figure 1) shows the ISN08 configurations supported for Telstra. Note that this is a logical not physical diagram as a PLGC may support more than one of each type of subtending device.

Figure 1 Supported ISN08 ABI Configurations for the International Market



Note: Only single RCO2 configurations are supported in ISN08, not dual RCO2 setups.

1.2.1 Supported Line Class Codes and Features

The following tables lay out the Line Class Codes (LCCs) and features that are supported on the ABI PLGC.

Note: Although the subtending devices are not shown in the following list, they will support all the LCCs applicable for their host peripheral. For example, an RCO2 subtending an ABI based PLGC will be able to support all the LCCs listed for the PLGC in the table below, assuming that the RCO2 supports that LCC in a legacy environment.

Table 1: ISN08 Supported LCCs for the PLGC

LCC	PLGC Support
1FR	-
1MR	-
2WW	-
CDF	-

LCC	PLGC Support
CFD	-
EOW	-
ETW	-
IBN	ISN08
ISDNKSET	ISN08
INW	-
M5008	-
M5009	-
M5112	-
M5208	-
M5209	-
M5212	ISN08
M5216	ISN08
M5312	ISN08
M5316	ISN08
OWT	-
PBM	-
PBX	-
PSET	-
RES	-
TWX	-
ZMD	-
ZMZPA	-

Note: A "-" in any cell of the above table means that the LCC is not supported for that XPM type. For example, RES is not supported on PLGC.

The following services are supported for the PLGC in SN08:

Table 2: ISN08 Supported Line Services

Service	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Account Codes	Yes	Yes
Authentication Codes	Yes	Yes
Call Waiting	Yes	Yes
Directory Number	Yes	Yes
Call Barring (Network Class of Service)	Yes	Yes
Automatic Call Back (RAG)	Yes	Yes
Call Forward All Calls (CFI)	Yes	Yes
Call Forward Busy (CFB)	Yes	Yes
Call Forward Busy - Block Internal (CBI)	Yes	Yes
Call Forward No Answer (CFD)	Yes	Yes
Permanent Hold (HLD) including Music on Hold	Yes	N/A
Call Park (PRK)	Yes	Yes
Call Pickup Group (CPU)	Yes	Yes
Directed Call Pickup (DCPU)	Yes	Yes
Malicious Call Hold	Yes	Yes
Last Number Redial	Yes	N/A
Speed Call Short (SCS)	Yes	Yes
Tone Dialing (DGT)	Yes	N/A
Executive Busy Override	Yes	Yes
Executive Busy Override Exempt	Yes	Yes
Transfer, Hold & 3 Way Conference (CXR)	Yes	Yes
Terminating Line Select	Yes	Yes

Table 2: ISN08 Supported Line Services

Service	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Originating Line Select	Yes	Yes
Calling Number Delivery	Yes	Yes
Calling Name Delivery	Yes	Yes
Message Waiting	Yes	Yes
Music On Hold (fixed recording in UAS)	Yes	N/A
Last Number Redial from Set (LNRA)	N/A	Yes
Music on Hold (KSMOH)	N/A	Yes
Automatic Dial	N/A	Yes
Additional Directory Number	N/A	Yes
Multiple Appearance Directory Number (MDN)	N/A	Yes
Intercom Group (GIC)	N/A	Yes
Direct Intercom (ICM)	N/A	Yes
Speed Call Long (SCL)	Yes	Yes
Conference 6 (CNF CO6)	Yes	Yes
Conference - Executive	Yes	Yes
Conference - Preset	Yes	Yes
Key Short Hunt (KSH)	N/A	Yes
Call Forward Universal per Key	N/A	Yes
Camp-On (MBSCAMP)	Yes	Yes
Directed Call Park (DCPK)	Yes	Yes
Direct Station Select/Busy Lamp Field (BLF)	N/A	Yes
No Double Connect (NDC)	Yes	N/A
Line Hunt (DLH or MLH) (Circular or Sequential)	Yes	Yes

Table 2: ISN08 Supported Line Services

Service	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Privacy Release	Yes	Yes
Suppress	Yes	Yes
Line Overflow to DN (LOD & LOR)	Yes	Yes
Call Forward No Answer from Hunt Group	Yes	Yes
Directory Number Hunt (DNH)	Yes	Yes

Table 3: ISN08 Supported ACD Services

Service	System	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Abandoned Call Clearing	Yes	N/A	N/A
Additional/Second Directory Numbers	N/A	Yes	Yes
Agent Queue	N/A	Yes	Yes
Automatic ACD Not Ready	Yes	N/A	N/A
Automatic Overflow	Yes	N/A	N/A
Call Delay Announcements	Yes	N/A	N/A
Call Queue Slots	Yes	N/A	N/A
Call Processing Control	Yes	N/A	N/A
Called Name/Number Display (for ACD Directory Numbers)	N/A	Yes	Yes
Distinctive RInging	N/A	Yes	Yes
Overflow of Enqueued Calls to a DN	Yes	N/A	N/A
Priority Promotion	Yes	N/A	N/A

Table 3: ISN08 Supported ACD Services

Service	System	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Ring Threshold	Yes	N/A	N/A
Second and Third Delay Announcements	Yes	N/A	N/A
Time Delay Overflow	Yes	N/A	N/A
Night Treatment	Yes	N/A	N/A
Night Recorded Announcement and Forward	Yes	N/A	N/A
Forced Announcement for New and Over-flowed Calls	Yes	N/A	N/A
Music on Delay	Yes	N/A	N/A
Emergency Key Backup	N/A	N/A	Yes
Multi-Stage Queue Status	N/A	N/A	Yes
Optional Not Ready Key	N/A	N/A	Yes
Queue to Make Set Busy	Yes	N/A	N/A
Variable Wrap-up	Yes	N/A	N/A
ACD In Calls Key (DN on Key 1)	N/A	N/A	Yes
Make Set Busy/Login (MSB)	N/A	Yes	Yes
ACD Not Ready (ACDNR)	N/A	Yes	Yes
Call/Answer Supervisor (CLSUP)	N/A	N/A	Yes
Call Forcing	Yes	N/A	Yes
Secondary Directory Number	N/A	Yes	Yes
Answer Agent Key (AAK)	N/A	N/A	Yes
Call Agent Key (CAG)	N/A	N/A	Yes
Control of Night Service Key (NGTSRVCE)	N/A	N/A	Yes
Controlled Interflow Key (CIF)	N/A	N/A	Yes

Table 3: ISN08 Supported ACD Services

Service	System	Analog LCCs (IBN)	P-Phone LCCs (M5212/M5216/M5312/M5316)
Forced Agent Availability Key (FAA)	N/A	N/A	Yes
Observe Agent Key (OBS)	N/A	Yes	Yes
Display Queue Status (DQS)	N/A	N/A	Yes
Display Agent Summary (DASK)	N/A	N/A	Yes
Agent Status Lamp (ASL)	N/A	N/A	Yes
Line of Business (LOB)	N/A	N/A	Yes
Display Queue Threshold (DQT)	N/A	N/A	Yes
Uniform Call Distribution	Yes	N/A	N/A
UCD Login Keys	N/A	N/A	Yes

Table 4: ISDN BRI Services Supported in ISN08

Service
3KHz Audio Call
64 Kb/s Unrestricted Data Call
CLI Presentation and Restriction

1.3 Hardware Requirements or Dependencies

1.3.1 RMM Hardware Frame

The RMM will be housed in a MIS frame. This is an existing frametype, but prior to the SN07 activity A00001898 (mentioned above), was not used to house RMM shelves.

1.3.2 RMM Circuit Packs

The following circuits packs will be supported in an RMM in the ABI configuration. The packs are:

- 0X10: Scan Detector

- 2X11: MTU (Mult-Line Test Unit)
- 2X57: Signal Distribution Card
- 2X90: Datafilled as a Montalk or NTT (No Test Trunk)
- 3Z09: MTA (Metallic Test Access)

1.3.3 DS30A Cards and Cables

See the Engineering Information section of this feature for more details than the summary below.

An RMM requires a DS30A interface to its host XPM. If a HOST PLGC does not already contain a DS30A card (6X48 card) it will need to be added before an RMM can be hosted off the PLGC.

1.4 Software Requirements or Dependencies

This activity will be implemented in the ISN08 release, but due to customer requirements will be patched back into the ISN07 release via a feature patch for Telstra.

1.5 Limitations and restrictions

The following restrictions exist on the PLGC External XPM added by this activity:

- PLGC ABI XPMs are only supported for IP Network configurations. Use of PLGCs in ATM AAL1 network configurations are not supported. ATM AAL5 (IP over ATM) networks are supported.
- Special Connections are not supported on any External XPM.
- External XPMs do not support broadcast loading or patching, although they do support parallel loading. Broadcast loading and patching are not supported due to the lack of support for IPMLs between the External XPMs.
- Only the circuits listed in “1.3 Hardware Requirements or Dependencies” on page 619 are supported on an ABI RMM. No effort has been made to prevent the datafill of other circuits packs, but they will not be supported.
- The RMM Selector field in table RMMINV will be set to RMMLTC for PLGCs. This is done because a PLGC is treated exactly the same as LTCs (and are essentially alike from a hardware perspective) in their handling.
- The severing of a connection between the MG9000 and the Call Server, between the ABI XPM (PLGC) and the MG9000, or between the RCO2 and the PLGC will cause the RCO2 to enter into ESA mode. When the connection is restored and the C-side links come back into service, the RCO2 will exit ESA. The RCO2 will perform a warm exit from ESA. ESA is not supported on the ABI PLGCs. Any lines directly on the HOST PLGC will lose service for the duration of the cut, no ESA will be available

to those lines. If an RLCM is hosted on the PLGC then the RLCM will drop into ESA (if it is configured to support ESA).

- In ISN08, only offices with office parameter "TYPE_OF_NETWORK" (in table OFCENG) set to "INTERNATNL" are supported for ABI PLGCs. Offices with this office parameter set to "ALAW" are not supported as the version of A-Law speech encoding set by this parameter (All Bit Inversion in the case of ALAW) is not supported on the MG9000 in ISN08.

1.6 Interactions

- The severing of a connection between the MG9000 and the Call Server, between the ABI XPM and the MG9000, or between the RCO2 and the PLGC will cause the RCO2 to enter into ESA mode. When the connection is restored and the C-side links come back into service, the RCO2 will exit ESA. The RCO2 will perform a warm exit from ESA.

1.7 Glossary

Term	Description
New term	Definition

Configuration for A00007749

2.1 Hardware and Software Requirements

- The RMM has been installed in a MIS frame within 50 feet of the host peripheral
- A DS30A card has been installed in the host peripheral in the appropriate slot
- The host XPM and the RMM are connected via a DS30A cable
- The software for this activity is installed in the XACore
- The required PLGC load has been installed in the XPM

2.2 Initial Configuration

Not Applicable.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

Not Applicable

2.4 Upgrade Considerations

The RMM load is unchanged by this activity and therefore is not required to be upgraded from the currently available load. All other loads are upgraded in the standard fashion and the upgrade procedure is not impacted by this activity.

The standard DMS processes for upgrade order applies to ABI XPMs. With regard to GWCs and XPMs, the XPMs are upgraded first, followed by the GWCs.

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 7 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
Table LTCINV	Changed	Unchanged
Table RMMINV	Changed	Unchanged

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: TABLE RMMINV

Long Table Name: Remote Maintenance Module Inventory

2.5.2.1.1 Functional description

Table RMMINV contains the inventory list for all the RMMs provisioned in the office. Each tuple contains the RMM's site, the PEC code for the hardware, information about the RMM load, the EXEC lineup for the RMM, and finally, a pointer to the C-side peripheral upon which the RMM is hosted.

This activity has altered this table to allow the C-side PM to include a new allowable XPM type, PLGC.

2.5.2.1.2 Usage sequence and implications (CM Only)

Current datafill order is unchanged.

2.5.2.1.3 Size

Table 8 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
RMMINV	unchanged by this activity	unchanged by this activity	unchanged by this activity

2.5.2.1.4 Fields/OIDs

The following table lists fields/OIDs for RMMINV.

CSPMINFO = "<RMMLTC> <XPM Key from LTCINV> <Port Number of DS30A Link from LTCPSINV>"

For Example:

CSPMINFO = "RMMLTC PLGC 0 18"

where "PLGC 0" is the XPM key from LTCINV and "18" is the port number in LTCPSINV of a DS30A link on PLGC 0.

> ***Note:*** It should be noted that the RMM Selector for the North American LTC and LGC peripherals is the same (RMMLTC). This is due to the fact that these peripherals are simply variations of the same hardware, and are also treated identically in the software.

Table 9 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
CSPMINFO	Changed	The handling of the CSIDEPM has been modified such that when an RMM Selector of RMMLTC is entered the allowed C-side PM types now includes PLGC.	CSIDEPM	When RMMLTC is entered as the RMM Selector for the CSPMINFO field the user is then prompted for the name/number of the PLGC/LTC/LGC and the DS30A port to use (fields CSIDEPM and CSIDPORT). The DS30A port number must match that provisioned in table LTCPSINV for the XPM.

2.5.2.1.5 Datafill example

The following 3 examples show sample datafill for table RMMINV. The first example shows the provisioning of an RMM hosted on an SMA2, the second shows the provisioning of an RMM on an LTC, and the third shows the provisioning of an RMM on an LGC. The changes from the prior allowed datafill is highlighted with **bold** characters.

Example - RMM hosted on PLGC:

```
CI:
>table rmminv
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: RMMINV
>add
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
RMMNAME:
>rmms rmm 5
FRTYPE:
>mis
FRNO:
>4
SHPOS:
>20
FLOOR:
>2
ROW:
>m
FRPOS:
>1
EQPEC:
>6x13aa
LOAD:
>rmm10a
EXECS:
>rsmex
RMMSELECTOR:
>rmmltc
CSIDEPM:
>plgc 0
CSIDPORT:
>18
TUPLE TO BE ADDED:
RMMS        RMM   5    MIS    4    20     2   M     1 6X13AA   RMM10A
   RSMEX  RMMLTC        PLGC      0 18
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
Static data update for PLGC  0 UNIT 0 submitted.
Static data update for PLGC  0 UNIT 1 submitted.
Static data updates completed.
TUPLE ADDED
JOURNAL FILE INACTIVE
>
```

2.5.2.1.6 Table release history update

The following changes have been made to table RMMINV in this release:

1. For RMMSELECTOR of RMMLTC the following peripheral types are now supported for the CSIDEPM field:

   — PLGC

2. The CSIDPORT for peripherals with a RMMSELECTOR of RMMLTC must be between 0 and 19. This is unchanged from previous releases and is simply shown for informational purposes.

2.5.2.1.7 Supplementary information

Limitations:

- The RMM is only supported on the PLGC ABI XPM. It should also be noted that the RMM is not supported on the legacy (ENET-based) version of this peripheral type.
- The CHANGE operation cannot alter the content of the C-side Port portion of the tuple. Any attempt to alter this value will result in an error and the tuple will be rejected by table control. If the C-side port information needs to be altered then the RMM must be deleted and re-added to the table. Note that this is not new behavior, it simply reflects the existing restriction for RMMs.

2.5.2.1.8 Translation verification and other tools

Output from the check all table control command and tabaudit will be included at a later date, but no issues are expected with these commands as the changes to RMMINV are minor.

2.5.2.2 Name: LTCINV

Full Table Name: Line/Trunk Controller Inventory Table

2.5.2.2.1 Functional description

Table LTCINV lists all the line and trunk controlling peripherals that were historically directly connected to the ENET (although this is no longer the case as of SN05 with the additional of the EXTDS512 optional field). Tuples are added to this table for PLGCs.

Prior to this activity the EXTDS512 optional attribute was only allowed to be provisioned on North American versions of host peripherals (LGC/LTC/SMA2/SMS). After this activity PLGC (the international variant of LGC) will be allowed to have the EXTDS512 optional attribute assigned to it as well.

There is no change in the format of the table or in the format of the optional field, all that has been changed is the types of peripherals that are allowed to have the field provisioned. All other types of peripherals that can be added in table LTCINV will continue to receive an error message if the EXTDS512 field is provisioned.

> ***Note:*** Please refer to the documentation for SN05 activity A59038361 for more detailed information of the initial EXTDS512 design, and activity A00001847 documentation for details about the ABI expansion to include additional peripheral types in SN06.2/SN07.

2.5.2.2.2 Usage sequence and implications (CM Only)

Current datafill order unchanged (Table GATWYINV must be datafilled prior to adding EXTDS512 ABI peripherals in LTCINV).

2.5.2.2.3 Size

Table 10 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
LTCINV	Unchanged by this activity.	Unchanged by this activity.	All existing tuples, regardless of whether the EXTDS512 attribute is provisioned or not, have the physical space allocated for the information contained in this field; therefore, there is no memory impact from this activity as the memory is already allocated for all tuples in this table.

2.5.2.2.4 Fields/OIDs

The following table lists fields for LTCINV.

CSLNKTAB = “$”

OPT_ATTR = EXTDS512

When provisioning an external (non-ENET hosted) peripheral in LTCINV the EXTDS512 OPT_ATTR must be added. This optional attribute includes the SITE of the external XPM (must align with datafill in table SITE) and the Gateway Host information (Gateway Type and Gateway Number) as provisioned in table GATWYINV. Note that for ABI XPMs the Gateway Type must be ABI.

It should be noted that the CSLNKTAB portion of the tuple is not datafilled when adding external XPMs. The content of the CSLNKTAB field is automatically generated by the LTCINV code and no longer refers to real C-side links to the ENET. A “$” should be entered when prompted for the CSLNKTAB entry (this is unchanged from SN05 behavior).

Table 11 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
CSLNKTAB	Changed	Unchanged from SN05	None	For External XPMs this field no longer contains real C-side ENET links. Instead, “$” should be entered when prompted for this field. With this activity you should now enter “$” when provisioning External PLGC tuples in LTCINV.

Table 11 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
OPT_ATTR (EXTDS512)	Changed	Unchanged from SN05	Unchanged from SN05	When datafilling external PLGC peripherals you should add this field and enter the SITE of the ABI XPM and the Gateway information for the DS512 card (from table GATWYINV) in the MG9000.

2.5.2.2.5 Datafill example

The following example shows sample datafill for table LTCINV. The changes from standard ENET-based peripheral datafill is highlighted with **bold** characters.

```
TABLE: LTCINV
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
LTCNAME:
>plgc 5
ADNUM:
>1001
FRTYPE:
>ltei
FRNO:
>0
SHPOS:
>32
FLOOR:
>1
ROW:
>d
FRPOS:
>32
EQPEC:
>6X02NA
LOAD:
>OGI20AH
EXECTAB:
>KEYSET   KSETEX
EXECTAB:
>$
CSLNKTAB:
>$
OPTCARD:
>UTR15
OPTCARD:
>MSG6X69
OPTCARD:
>CMR13
CMRLOAD:
>CMR10A
OPTCARD:
>ISP
```

```
SLOT_NUMBER:
>16
OPTCARD:
>$
TONESET:
>CHINA100
PROCPEC:
>MX77AA MX77AA
EXTLINKS:
>0
E2LOAD:
>UPFWQM01
OPT_ATTR:
>EXTDS512
SITE:
>REM1
GTWY_HOST:
>ABI 3
OPT_ATTR:
>$
PEC6X40:
>6X40FC
EXTSHELF: N
>
```

The following shows the range values for the OPTATTR field of table LTCINV. Note that this has not changed from the SN05 version.

```
TABLE: LTCINV
>ran
 1 LTCNAME           XPM_KEY
 2 ADNUM             ADMIN_NUMBER
 3 FRTYPE            FRAME_NAME
 4 FRNO              FRAME_NO
 5 SHPOS             SHELF_POS
 6 FLOOR             FLOOR_POS
 7 ROW               ROW_POS
 8 FRPOS             FRAME_POS
 9 EQPEC             PEC
10 LOAD              NPMLOAD_INFO
11 EXECTAB           TERM_EXEC_TC_TAB
12 CSLNKTAB          XPM_NET_CSLINK_TC_TAB
13 OPTCARD           EXT_OPT_CARD_TC_TAB
14 TONESET           TONE_SET_TYPE
15 PROCPEC           XPM_PEC_AREA_TAB
16 EXTLINKS          NUM_EXT_LNKS_RANGE
17 E2LOAD            NPMLOAD_INFO
18 OPTATTR           LTCINV_OPT_ATTR_VECTOR
19 PEC6X40           NT_6X40_PEC
20 EXTINFO           EXTENSION_INFO
LOGICAL TUPLE TYPE: LTC_LOGTUPLE
>ran 18
18 OPTATTR           LTCINV_OPT_ATTR_VECTOR
TYPE IS LTCINV_OPT_ATTR_VECTOR VECTOR OF UP TO 13 MULTIPLES WITH
        OPT_ATTR               LTCINV_OPT_ATTR REFINEMENTS:
        {EXTDS512}             MULTIPLE WITH
             SITE              VECTOR OF UP TO 16 CHAR'S
             GTWY_HOST         MULTIPLE WITH
                  GTWY_TYPE    {NLGW,ABI,CICM,GW,ITP,PVG,UAS}
                  GTWY_NO      {0 TO 1023}
        OTHERWISE              LTCINV_OPT_ATTR_NIL_DATA
```

2.5.2.2.6 Table release history update

The following changes were made:

1. EXTDS512 OPT_ATTR is now allowed for PLGC peripheral type.
2. "$" should be entered in the CSLNKTAB field for external XPMs (the C-side link information will be generated automatically).

2.5.2.2.7 Supplementary information

Limitations:

- The CSLNKTAB and EXTDS512 optional attribute must align in each tuple in LTCINV. This means that if EXTDS512 exists then a "$" must have been entered in the CSLNKTAB field. A tuple must be either ENET based on External but not a combination of both.
- Multiple tuples of each type (ENET and External) can exist in the table at the same time.
- The EXTDS512 optional attribute can be provisioned only against LTC, LGC, SMA2, SMS, and PLGC peripheral types. Attempting to add the optional attribute to other peripheral types will result in the tuple failing verification and an error will be displayed. Note that this list includes both North American as well as International peripheral types.
- The derived CSLNKTAB entries for External XPMs cannot be changed by the user.
- The EXTDS512 optional attribute cannot be added to an existing tuple using the change command in table control, nor can it be removed using change.

2.5.2.2.8 Translation verification other tools

Output from the check all table control command and tabaudit will be included at a later date, but no issues are expected with these commands as the changes to LTCINV are minor.

2.6 Service Orders (SO) (CM & SESM)

Not Applicable.

2.7 Software optionality control (SOC)

Not Applicable.

2.8 Element Management

Not Applicable

2.9 User interface changes

MAP screen changes will occur for the PLGC exactly in the same way as was done for activity A00001847 - ABI Expansion. Please refer to the User Interface section of the CN Chapter of the documentation for activity A00001847 for more information.

The MAP displays will also be updated for the PLGC with the hosting of the RMM in the same way as was done with activity A00001898 - ABI RMM Support. Please refer to the User Interface section of the CN Chapter of the documentation for activity A00001898 for more information.

2.10 OSSGate Interface Changes

Not Applicable.

2.11 Security

Not Applicable.

2.12 Configuration Walkthrough

Not Applicable.

Product = Global Services Platform

A00005980--GSP IN CONNECT Operation Enhancement to support RouteList Parameter

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

This feature enhances the Global Services Platform Intelligent Networks (GSP IN) service to handle the optional RouteList information received in an INAP CONNECT operation, and also implements Table RTELMAP.

1.2.1 Functional overview

This functionality covers the following developments for GSP IN:

- Enable the receiving of the RouteList parm in INAP CONNECT; with the RouteList parm containing from 1 up to 16 BusinessLineIDs

- Develop Table RTELMAP, in which the customer will be able to define, for each used BusinessLineID, the OVR Table and the Index in that OVR Table that will be used in routing.
- Validate each received BusinessLineID against Table RTELMAP datafill, and store all the valid (datafilled) BusinessLineIDs until the INAP dialogue terminates.
- Starting with the first Business Line ID, enable the routing according to the OVR Table and Index for that BusinessLineID; and then, if the routes for this BusinessLineID are exhausted without success, enabling the routing with the next BusinessLineID; until all of the BusinessLineIDs provided in the INAP CONNECT RouteList parm, and also datafilled in Table RTELMAP, are exhausted.
- If all the BusinessLineIDs in the Route List are exhausted without successful routing (Please refer to "Figure 3 RouteList parm interaction at EDP-4" on page 638. For more information see "Routing" on page 635.):
  - If an RRBCSME (EDP-4R: Route Select Failure - Interrupted) has been received before CONNECT:
    - Enable the reporting of ERBCSM (EDP4 / RSF: Route Select Failure) to the SCP.
    - Wait for a new instruction from the SCP
  - If an RRBCSME (EDP-4R) has *not* been received before CONNECT:
    - Not report ERBCSM (EDP-4) to the SCP
    - Enable normal clearing of the INAP dialogue
    - Let DMS-GSP apply GNCT treatment
- Enhance EINTRACE tool to support the new RouteList parm in INAP CONNECT. Please refer to Section "1.5.4.1 EINTRACE Enhancement" on page 640.
- Enhance GTRAVER to prompt whether a RouteList parameter is received in CONNECT, and if so to ask for a BusinessLineID, and to display the routes and outpulsed digits after CONNECT based on such a BusinessLineID. Please refer to Section "1.5.4.2 GTRAVER Enhancement" on page 641.
- Provide OVR Table Provisioning to prevent deletion of tuples that have already been datafilled in Table RTELMAP against at least one BusinessLineID, and to give a warning for a change of such tuples.
- Set Billing CDR record(s) correctly, according to current behaviour.
- Perform appropriate Error Processing, Treatment Setting, and clearing of calls, when irregular conditions arise such as, but not limited to:

No valid BusinessLineID in a RouteList parameter, incorrect Header and/or Parameter length(s) for the RouteList parm and/or the BusinessLineID sub-parameter, RouteList parameter recieved in a CONNECT for a TDP-2 received call, etc.

1.2.2 Feature description

The following sections describe in detail the concepts and provisioning for the different development components.

1.2.2.1 INAP Connect RouteList parm

INAP CONNECT operation requests the DMS-GSP switch to route a call to a specific destination.

Before this feature, the DMS-GSP switch supported and used the following parameters to be received in CONNECT and to be used to enter translations for routing:

- DestinationRoutingAddress

  Mandatory.

- CutAndPaste

  The SCP uses this parameter to instruct the DMS-GSP switch to delete (cut) a specified number of leading digits from the Called Party Number and to paste the digits that the SCP supplied in the DestinationRoutingAddress. Optional.

With this functionality, the DMS-GSP switch will also support the receiving of the following parameter in CONNECT, to be used in routing:

- RouteList

  Contains a sequence of 1 to 3 Octet Strings. The 2nd and the 3rd Octet Strings are not used; but the 1st Octet String contains 1 to 16 Business Line IDs (indices). Each Business Line ID is mapped by the DMS-GSP to an index in table RTELMAP, which will contain the associated OVR Table ID and Index to be used in routing. Optional.

  Each BusinessLineID represents an alternative International Carrier, who routes the call to the destination country. The BusinessLineIDs given in the RouteList parameter should be sent by the SCP in the order of most desirability in terms of Least Cost Routing. For each BusinessLineID, the subsequent OVR Table and Index contains a list of alternative routes, which are associated with that carrier, and should also be datafilled in the order of least cost.

1.2.2.2 RouteList parameter format

The DMS-GSP definition for the RouteList parameter in an INAP CONNECT operation is based on the Q.1218 (Ref 1 Q.1218: ITU-T Interface Recommendation for CS-1R (10/95)), as follows:

```
connect OPERATION
   ARGUMENT
      SEQUENCE {
         ...
         routeList [7] IMPLICIT SEQUENCE SIZE (1..3) OF
            OCTET STRING (SIZE (minRouteListLength..maxRouteListLength))
            OPTIONAL,
         ...
      }
```

The 1st octet string is defined as follows:

```
SEQUENCE SIZE(1..16) OF {
                  BusinessLineID OCTET STRING SIZE (2)
}
```

This means, in the recieved INAP CONNECT RouteList parm's 1st Octet String Data, we expect to find a minimum of 1 BusinessLineID, and up to 16 BusinessLineIDs, each of 2 Bytes long Data. Hence, the maximum expected octet string size for the RouteList Octet String 1 using the above 1..16 sequence is 16 * 4 Bytes (per BusinessLineID sub-parameter) = 64 bytes.

The 4 Bytes per BusinessLineID sub-parameter comes from:

- 1 Byte [for BusinessLineID Octet String Tag of #04]
- 1 Byte [for BusinessLineID Data Lenght of 2 = #02]
- 2 Bytes [for BusinessLineID Data itself]

The BusinessLineID is an index that takes a value in the range {0 TO 65535}. Each BusinessLineId is checked on receipt whether it is datafilled in Table RTELMAP; and is stored as a valid BusinessLineID only if it is datafilled in Table RTELMAP.

If the RouteList parm has some problem in Header or Data length(s) or if there are 0 BusinessLineIDs in a RouteList parm, appropriate Error Handling will be performed (Please see Section "1.5.1 Logs (LG)" on page 639).

Each octet string of the RouteList parameter is implemented as a RouteListOctetString sub-parameter, with tag number of #04 for the Octet String, of Universal tag class, and as a Constructor of BusinessLineID sub-parameters (Refer toSection "1.5.4.1 EINTRACE Enhancement" on page 640 for an example of an EINTRACE output with a HEX dump of an INAP CONNECT operation containing a RouteList parameter).

The 2nd and 3rd octet strings of the RouteList parm are not used. In case DMS-SSP receives any data in the 2nd and 3rd Octet Strings:

- if the data in the 2nd or 3rd Octet Strings is structured in the same manner as the 1st Octet String (in terms of BusinessLineIDs of 2 BYTEs data), the Octet Strings will be received successfully but their data will be ignored.
- if the data in the 2nd or 3rd Octet Strings is not structured in the same manner as the 1st Octet String (in terms of BusinessLineIDs of 2 BYTEs data), the call will go through Error Handling and will be cleared, due to problem in received parameter.

1.2.2.3 Table RTELMAP

A new Table RTELMAP is defined to be utilized for mapping from the BusinessLineIDs provided in the INAP CONNECT RouteList parm to the desired OVR Tables and Indices to be used in routing. Up to 65536 tuples can be datafilled in Table RTELMAP.

Table 1, "RTELMAP Field Descriptions," on page 634 describes the fields in table RTELMAP.

Table 1 RTELMAP Field Descriptions

FIELD NAME	DESCRIPTION	RANGE
BLINEID	This is the key field. It corresponds to the BusinessLineID received from the SCP.	{0..65535}
TABID	OVR Table Identifier.	OVR0 - OVR89
KEY	OVR Table Index in the identified OVR Table above.	{0..1023}

For more information onTable RTELMAP datafill, please refer to Section "1.5.2.1 New/modified table list" on page 639.

1.2.2.3.1 Mapping BusinessLineIDs to Physical Route Lists

BusinessLineIDs provided in the RouteList parameter are mapped to physical route lists in the new table RTELMAP.

The technician must define the required OVR route list by entering data into an OVR table at a specific OVR index (e.g. table **OVR4** position **243**). Enter

this OVR index against the associated BusinessLineID value in table RTELMAP.

1.2.2.4 Processing the Connect Operation with Route List parm

This section describes how the Connect operation, containing a RouteList parm, is processed on the DMS-GSP SSP switch. At the end of the section, several flow charts show the service logic of this operation.

Call processing with RouteList parm in Connect

If the RouteList parameter is present in the Connect operation, then call processing resumes at PIC_4 (Routing & Alerting).

If the CutAndPaste parameter is present, the number of most significant digits specified in this parameter are removed from the Called Party Number, and the digits in the DRA parameter are appended onto the beginning. If the CutAndPaste parameter is not present, the DRA is used to overwrite the Called Party Number.

When the RouteList parm is present, the IN Pretranslator Name is reset to NPRT (No Pretranslation), and this overrides the IN_PRTNM in Table OFCVAR. The translation after INAP CONNECT is started through the BusinessLineID at Table RTELMAP, and the associated OVR Table and Index, and DRA digits are only used from this point on in the translations, either to be outpulsed as Called Number digits to the found routes in the OVR Table, or to enter translations starting from the OVR Table entry.

Routing

For routing, each BusinessLineID element in the RouteList parameter is taken sequentially, mapped to an OVR Table and Index using table RTELMAP, and input to the DMS-GSP switch routing system. If the route list contained in the given OVR Table and Index is exhausted without successful seizure of an outgoing trunk, the DMS-GSP switch tries to route the call using the OVR Table and Index mapped from the next BusinessLineID element in the RouteList parameter.

If all BusinessLineIDs given in the RouteList parm are exhausted:

- if EDP-4R is not armed, the INAP dialogue is cleared normally, and the DMS-GSP switch is instructed to apply the appropriate treatment.
- if EDP-4R is armed, the DMS-GSP sends an RRBCSME (EDP4/RSF) operation to the SCP and the call suspends without any treatment.

Please refer to “Figure 3 RouteList parm interaction at EDP-4” on page 638.

Processing of the RouteList parameter is only supported by the DMS-GSP SSP switch for TDP-3 triggered INAP dialogues. If the RouteList operation

is received for TDP-2 triggered dialogues, treatment FNAL (Feature Not Allowed) is applied to the call.

The following flow charts show how the Connect operation is processed on the DMS-GSP switch for TDP-2 and TDP-3 triggered dialogues, respectively.

Figure 1 Connect Operation for TDP-2 triggered INAP dialogues

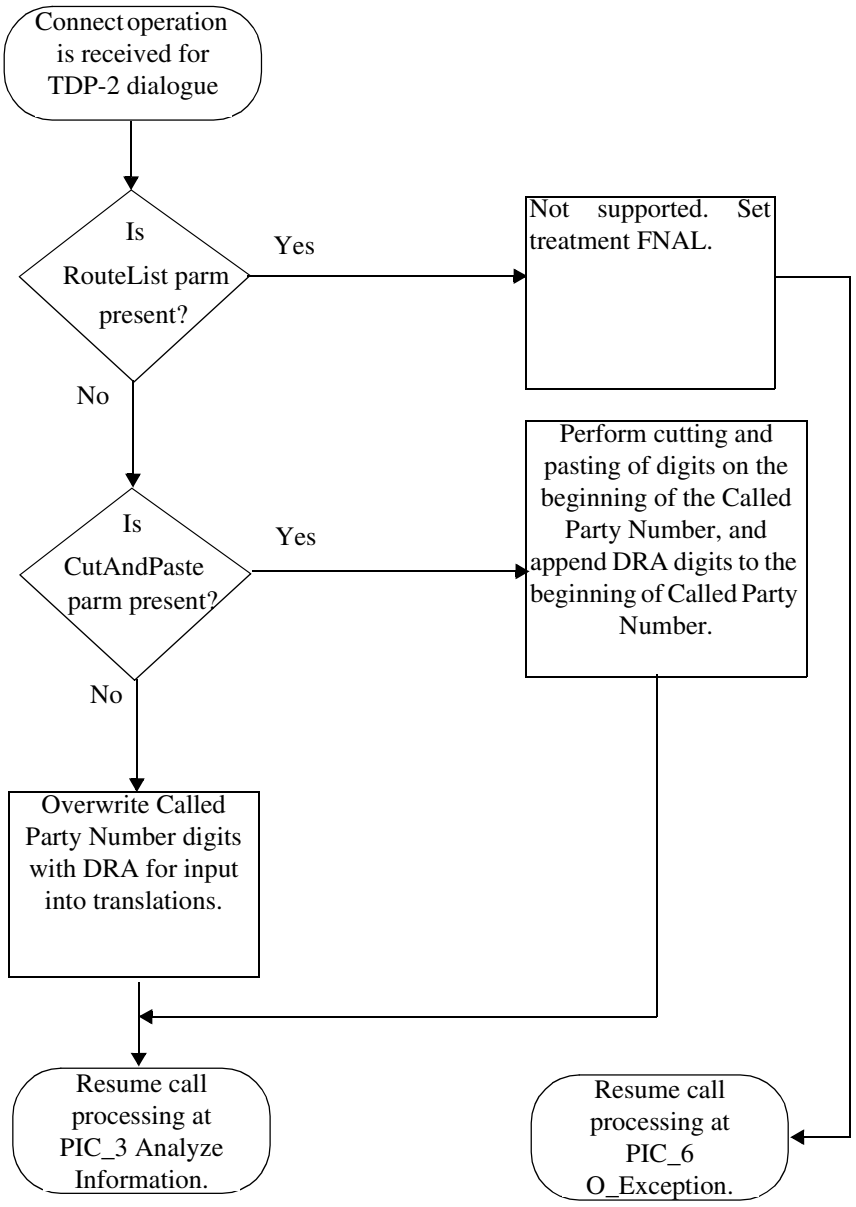
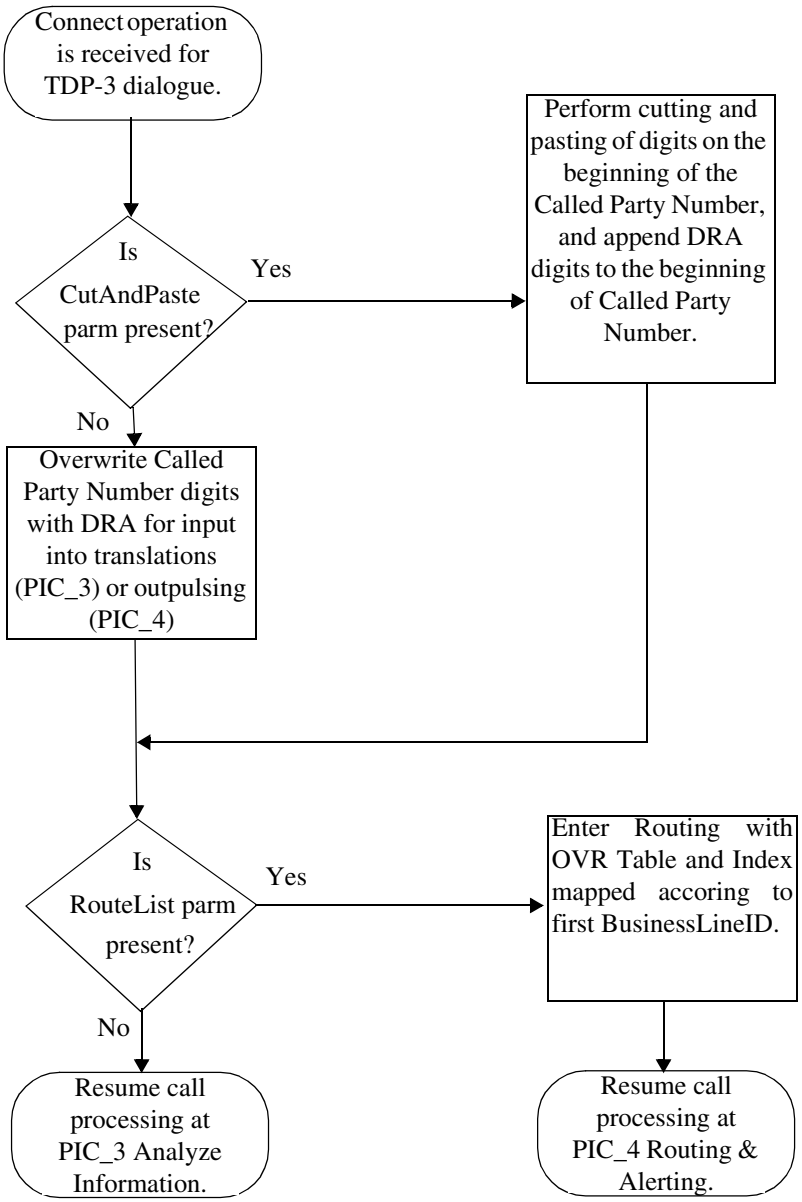
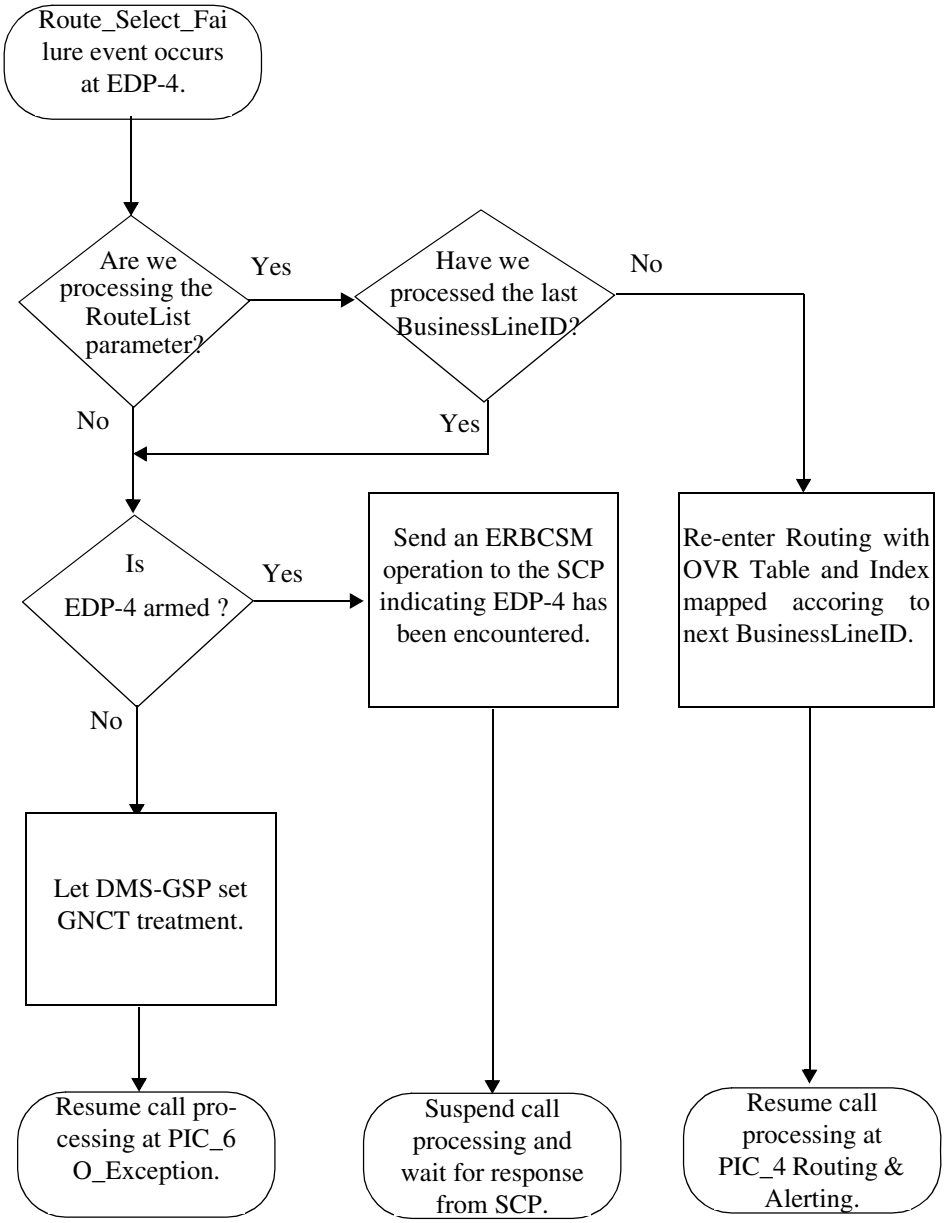


Figure 2 Connect Operation for TDP-3 triggered INAP dialogues



The following flow chart shows the affect that the RouteList parm processing has on processing the Route Select Failure (RSF) event at EDP-4.

Figure 3 RouteList parm interaction at EDP-4



Billing

The new GSP IN Routing State Machine based on RouteList parameter has been designed such that IN Billing will proceed as it used to do before. When an INAP Connect is received with a RouteList parm, Billing will be performed as usual, based on the following conditions:

- If routing according to a BusinessLineID is successful, its Billing CDR record will be processed as a successfully routed call as it is performed at present,
- If routing according to a BusinessLineID fails, its Billing CDR will be processed as a RSF (EDP4) scenario as it is performed at present,with the DEST_NUM field set according to the Destination Routing Address and Cut&Paste parameters (see “Figure 2 Connect Operation for TDP-3 triggered INAP dialogues” on page 637.), and after the probable manipulation of the OVR Route, if such a digit manipulation exists in the given OVR Route for the BusinessLineID.

1.3 Hardware Requirements or Dependencies

N/A

1.4 Software Requirements or Dependencies

N/A

1.5 Supplementary information

1.5.1 Logs (LG)

A new Trouble Decription has been defined for RouteList parameter-related troubles that may require a GIN301 Log. This new Trouble Description is:

’Error whilst processing RouteList parameter’

A new Reason Decription has been defined for the GIN301 Log to be printed in the case when none of the BusinessLineIDs provided in the RouteList parameter are datafilled in Table RTELMAP. This new Reason Description is:

’No Valid (datafilled) Business Line ID in RouteList Parm’

1.5.2 Data schema (DS)

1.5.2.1 New/modified table list

Table Name	New, Changed or deleted	Table Control
RTELMAP	New	New

Table RTELMAP maps logical BusinessLineID route IDs provided in a RouteList parameter received from the SCP in an INAP Connect operation, to DMS-GSP switch outgoing OVR indexes, for routing.

Example datafill for Table RTELMAP:

```
TABLE: RTELMAP
>
>lis all
TOP
BUSINESSLINEID
--------------
0 OVR74 44
16 OVR6 7
315 OVR4 371
4426 OVR4 6
37354 OVR74 24
65535 OVR6 373
BOTTOM
>
```

1.5.3 Service orders (SO)

N/A

1.5.4 Man machine interface (MM)

1.5.4.1 EINTRACE Enhancement

The EINTRACE tool has been enhanced to display RouteList parm and its contents if it is received in an INAP CONNECT operation. Below is an example EINTRACE output as such:

```
21:07:54 TCAP MESSAGE              Tid :   2
================================================
65 73 48 04 00 00 00 03 49 04 00 00 01 00 6C 65
A1 63 02 01 03 02 01 14 30 5B A0 06 04 04 83 13
87 03 83 01 04 A7 4E 24 40 04 02 34 75 04 02 78
90 04 02 24 53 04 02 12 34 04 02 00 00 04 02 04
44 04 02 FF FF 04 02 01 11 04 02 D6 C7 04 02 00
03 04 02 00 01 04 02 00 0D 04 02 00 16 04 02 00
1E 04 02 01 01 04 02 56 78 24 04 04 02 06 13 24
04 04 02 F4 01
================================================
```

```
Type of Package : 65 = CONTINUE
  Originating TRID : 00 00 00 03
  Destination TRID : 00 00 01 00
  Component Type : A1 = INVOKE
    Invoke ID : 03
    Operation : 14 = CONNECT
      Destination Routing Address
        Called Party Number
          Odd/Even Indicator : 1 = ODD
          Nature Of Address : 03 = NATIONAL (SIGNIFICANT) NUMBER
          INN Indicator : 0 = ROUTING TO INTERNAL NETWORK NUMBER ALLOWED
        Numbering Plan Indicator : 01 = ISDN (TELEPHONY) NUMBERING PLAN (E164)
          Digits : 87 03 = 783
      Cut And Paste : 04 = 4
      Route List
        Route List Octet String 1
          BusinessLineID 1 : 13429
          BusinessLineID 2 : 30864
          BusinessLineID 3 : 9299
          BusinessLineID 4 : 4660
          BusinessLineID 5 : 0
          BusinessLineID 6 : 1092
          BusinessLineID 7 : 65535
          BusinessLineID 8 : 273
          BusinessLineID 9 : 54983
          BusinessLineID 10 : 3
          BusinessLineID 11 : 1
          BusinessLineID 12 : 13
          BusinessLineID 13 : 22
          BusinessLineID 14 : 30
          BusinessLineID 15 : 257
          BusinessLineID 16 : 22136
        Route List Octet String 2
          *** RouteList Octet String 2 NOT DECODED ***
        Route List Octet String 3
          *** RouteList Octet String 3 NOT DECODED ***
```

1.5.4.2 GTRAVER Enhancement

The GTRAVER tool has been enhanced to prompt to enter a BusinessLineID if expected from SCP, subsequently printing the routing steps based on that BusinessLineID, if received in an INAP CONNECT RouteList parameter. The outplused digits to an outgoing trunk are also printed as usual, although they are not used to enter translations after the INAP CONNECT if there is a RouteList parameter. If no BusinessLineID is entered, GTRAVER resumes translations with the DRA digits, assuming no BusinessLineID is expected from the SCP.

The following are some examples of various scenarios:

>GTRAVER TR GM2WEISV2BA 0500 T

TABLE TRKGRP

GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5

4 ALERTING NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF
NO_OVERRIDE VOICE_DATA Y Q764 N 1 0 0 0 N N NIL NIL ISUP $ 45
STD N Y NIL 0 N
TABLE ISUPATTR
45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N
NOVERI N N NIL FILTER 0
TABLE INTRK
GM2WEISV2BA PINAR
TABLE OFCVAR
IN_OFFICE_TRIGGRP NIL
INAP TDP-2 (Info Collected): no subscribed trigger.
TABLE INTRK
GM2WEISV2BA PINAR
TABLE GTRIGGRP
PINAR **INFOANAL**
. GENTRIG (CDPN PINAR)$ NIL
Trigger INAP GENTRIG is applicable to individual trunk.
. . TABLE GTRIGDIG
. . PINAR 0500 GINDCT CALLED (SERVKEY 4) (SERVINFO_INDEX 4)
$
. . . TABLE GSERVINF
. . . 4 (INITDP_INFO Y N N N N N N) $
. . . TABLE C7GTTYPE
. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0500 0500 PCSSN (DCT2KRTESET GIN 0) $ SSN
INAP TDP-3 (Info Analyzed): trigger criteria met.
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>7835453
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:

```
>416
Translating with BusinessLineID: 416
Pretranslating with Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE RTELMAP
416 OVR4 16
TABLE OVR4
 .   16 S A GM2WEISV2BA
The Outpulsed Number is : 6067835452
 .GBL GRX PINARX N N N 416
TABLE DIGEDIT
  416 (CL BEG) (REM 3)
EXIT TABLE DIGEDIT
 .  . TABLE CALLCNTL
 .  . PINARX (PRTNM PINAR) (STS 103) (CUSTNAME NIL_CUST) $
 .CND NRR SK 0
 .S A GM2WFTUPBA
The Outpulsed Number is : 7835452
 .GBL GRX CLICNTL_NOSCRN_BL_CLI N N N 8965
TABLE DIGEDIT
 8965 (CL BEG) (INC 600)
EXIT TABLE DIGEDIT
 .  . TABLE CALLCNTL
 .  . CLICNTL_NOSCRN_BL_CLI (CLICNTL NOSCRN_BL_CLI) $
 .T OVR89 65
TABLE POECRTE
TUPLE NOT FOUND
 .  . TABLE OVR89
 .  .65 S A GM2WFTUPBA
The Outpulsed Number is : 6007835452
 .  . EXIT TABLE OVR89
TABLE STDPRTCT
PINAR ( 1) ( 0) 3
 . SUBTABLE STDPRT
 . 6 9 CT OFFNET PX 1 24 0 416 NAT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE PXTRAN
103 NIL_CUST PXOFF PXON PXOFF PXIP
```

TABLE PXHEAD

PXOFF DFLT CONT (XLT FA FAOFF)$ DFOP $ NOCON STD

THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6007835452

TABLE PXCODE

PXOFF 600 600 RTE (PF 3) (DEST 606) (CLASS NATL) (LNET NAT) (MZONE 1)$

TABLE: PXRTE

KEY:PXOFF 606

. S GM2WEISV2BA

The Outpulsed Number is : 7835452

EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV2BA 0800 T

TABLE TRKGRP

GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 45 STD N Y NIL 0 N

TABLE ISUPATTR

45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N N NIL FILTER

0

TABLE INTRK

GM2WEISV2BA PINAR

TABLE OFCVAR

IN_OFFICE_TRIGGRP NIL

INAP TDP-2 (Info Collected): no subscribed trigger.

TABLE INTRK

GM2WEISV2BA PINAR

TABLE GTRIGGRP

PINAR **INFOANAL**

. GENTRIG (CDPN PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE

. . . GINDCT CCITT7 3 NATL E164 $

. . . TABLE C7GTT

. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN

INAP TDP-3 (Info Analyzed): trigger criteria met.

The Called Party NOA sent to the SCP is: 2 (Unknown)

The Called Party Number sent to the SCP is: 0800

Select the INAP Operation expected from the SCP:

1- Connect

2- Continue

>1

Enter NOA and Destination Number expected in Connect operation:

>4

Next par is: <DEST DIGITS> STRING

Enter: <DEST DIGITS>

>6067835452

Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:

>

No RouteList-BusinessLineID expected from SCP.

Translating only with DRA.

TABLE OFCVAR

IN_PRTNM NPRT

Pretranslating with Original Pretranslator: NPRT

Translating with STS 103 and CUSTNAME NIL_CUST

TABLE PXTRAN

103 NIL_CUST PXOFF PXON PXOFF PXIP

TABLE PXHEAD

PXOFF DFLT CONT (XLT FA FAOFF)$ DFOP $ NOCON STD

THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6067835452

TABLE PXCODE

PXOFF 606 606 RTE (PF 3) (DEST 606) (CLASS NATL) (LNET NAT) (MZONE 1)$

TABLE POECRTE

TUPLE NOT FOUND

TABLE: PXRTE

KEY:PXOFF 606

. S GM2WEISV2BA

The Outpulsed Number is : 7835452

EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV2BA 0800 T

TABLE TRKGRP

GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 45 STD N Y NIL 0 N

TABLE ISUPATTR

45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N N NIL FILTER

0

TABLE INTRK

GM2WEISV2BA PINAR

TABLE OFCVAR

IN_OFFICE_TRIGGRP NIL

INAP TDP-2 (Info Collected): no subscribed trigger.

TABLE INTRK

GM2WEISV2BA PINAR

TABLE GTRIGGRP

PINAR **INFOANAL**

. GENTRIG (CDPN PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE

. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN
INAP TDP-3 (Info Analyzed): trigger criteria met.
The Called Party NOA sent to the SCP is: 2 (Unknown)
The Called Party Number sent to the SCP is: 0800
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>6067835452
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>2474
Translating with BusinessLineID: 2474
Pretranslating with Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE RTELMAP
TUPLE NOT FOUND
TABLE TMTCNTL
AXXESS (0)
. SUBTABLE TREAT
KEY NOT FOUND
DEFAULT OFFTREAT IS USED
TABLE TMTCNTL
OFFTREAT (223)
. SUBTABLE TREAT
. AINF Y S 120T0

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV1BA 0800 T

TABLE TRKGRP

GM2WEISV1BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 44 STD N Y NIL 0 N

TABLE ISUPATTR

44 EISUPV1 NATIONAL NOVERI NIL THRH 0 Y Y N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N

N NIL FILTER 0

TABLE INTRK

GM2WEISV1BA PINAR1

TABLE GTRIGGRP

PINAR1 **INFOCOL**

. GENTRIG (SPC PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE

. . . GINDCT CCITT7 3 NATL E164 $

. . . TABLE C7GTT

. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN

INAP TDP-2 (Info Collected): trigger criteria met.

The Called Party NOA sent to the SCP is: 2 (Unknown)

The Called Party Number sent to the SCP is: 0800

Select the INAP Operation expected from the SCP:

1- Connect

2- Continue

>1

Enter NOA and Destination Number expected in Connect operation:

>10

Next par is: <DEST DIGITS> STRING

Enter: <DEST DIGITS>

>6017835452

Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:

>345

Translating with BusinessLineID: 345

Pretranslating with Pretranslator: NPRT

Translating with STS 103 and CUSTNAME NIL_CUST

Routing with a BusinessLineID is not allowed for TDP-2 triggered calls.

TABLE TMTCNTL

AXXESS (0)

. SUBTABLE TREAT

KEY NOT FOUND

DEFAULT OFFTREAT IS USED

TABLE TMTCNTL

OFFTREAT (223)

. SUBTABLE TREAT

. FNAL Y S 120T0

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV1BA 0800 T

TABLE TRKGRP

GM2WEISV1BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 44 STD N Y NIL 0 N

TABLE ISUPATTR

44 EISUPV1 NATIONAL NOVERI NIL THRH 0 Y Y N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N

N NIL FILTER 0

TABLE INTRK
GM2WEISV1BA PINAR1
TABLE GTRIGGRP
PINAR1 INFOCOL
. GENTRIG (SPC PINAR)$ NIL
Trigger INAP GENTRIG is applicable to individual trunk.
. . TABLE GTRIGDIG
. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $
. . . TABLE GSERVINF
. . . 2209 (INITDP_INFO Y N N N N N N Y) $
. . . TABLE C7GTTYPE
. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN
INAP TDP-2 (Info Collected): trigger criteria met.
The Called Party NOA sent to the SCP is: 2 (Unknown)
The Called Party Number sent to the SCP is: 0800
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>6017835452
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>
No RouteList-BusinessLineID expected from SCP.
Translating only with DRA.
TABLE OFCVAR
IN_PRTNM NPRT
Pretranslating with Original Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE PXTRAN
103 NIL_CUST PXOFF PXON PXOFF PXIP

TABLE PXHEAD
PXOFF DFLT CONT (XLT FA FAOFF)$ DFOP $ NOCON STD
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6017835452
TABLE PXCODE
PXOFF 601 601 RTE (PF 3) (DEST 601) (CLASS NATL) (LNET NAT) (MZONE 1)$
TABLE POECRTE
TUPLE NOT FOUND
TABLE: PXRTE
KEY:PXOFF 601
. S GM2WEISV1BA
The Outpulsed Number is : 7835452
EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

1.5.5 Operational measurements (OM)

N/A

1.6 Limitations and restrictions

1. This feature is supported for:
   - all incoming GSP trunks for which IN triggering at TDP3 is supported,
   - and for all outgoing GSP trunks for which routing after INAP CONNECT is supported while there is still an active INAP dialogue involved in the call
2. Processing of the RouteList parameter in the Connect operation is only supported for TDP-3 triggered INAP dialogues.
3. The RouteList parameter in the received Connect operation can contain a minimum of 1 and maximum of 16 BusinessLineIDs.
4. The routing is subject to the limitation of ACM_Timeout at the originating exchange. Note that although it is possible to retry routing with up to 16 BusinessLineIDs, if the routing takes longer than the ACM_Timeout, the call will clear before finding a successful route, even if all of the routes associated with all the BusinessLineIDs have not been tried yet.
5. The supported range of BusinessLineID values is 0 to 65535.
6. Up to 65536 tuples can be datafilled in Table RTELMAP.

7. When datafilling Table RTELMAP, it is verified whether the OVR table ID and Index is datafilled. Furthermore, when removing a tuple from an OVR Table, it is also checked whether this OVR Table and the Index for the to-be- changed/deleted tuple is datafilled in Table RTELMAP. If it is datafilled in Table RTELMAP, the deletion of the given tuple from the OVR table is not allowed until all present datafills in Table RTELMAP are removed, but a change is allowed with a Warning message printed to notify the operator that this OVR tuple is datafilled in Table RTELMAP.

8. This feature has been patched back to GSPISN04 and GSPISN07; however the patched feature allows for an OVR Table ID & Key to be changed/deleted even if it is datafilled in Table RTELMAP. Care must be taken not to have any deleted OVR Table ID and Key still datafilled in Table RTELMAP before an ONP Table Transfer from GSPISN04 to GSPISN08 / higher load, or GSPISN07 to GSPISN08 / higher load. Otherwise, an error of the following nature will be observed:

   Did not add temporary ovrt tuple

   OVR Table and Index tuple must exist.

   ERROR: Failed to restore - 32300 OVR5 109

If it has been forgotten, either the missing OVR Table ID & Key must be datafilled or the associated Table RTELMAP tuple(s) must be deleted in the FROM load, and the ONP Table Transfer can be resumed.

9. Restrictions apply to DRA digit manipulation when the Connect operation RouteList parameter is in use. For more information see “Call processing with RouteList parm in Connect” on page 635.

10. GTRAVER has been enhanced to print the routing based on *only* one BusinessLineID at a time, and *not* for all the 1 to 16 BusinessLineIDs that may be received in a RouteList parameter at once.

1.7 Interactions

N/A

1.8 Glossary

- CS-1R Capability Set version 1 Revised
- DMS Digital Multiplexing Systems
- DRA Destination Routing Address
- EDP Event Detection Point
- ERBCSM Event Report BCSM
- GAME Generic AIN Messaging Environment

- GSP Global Services Platform
- IN Intelligent Network
- INAP Intelligent Network Application Part
- ITU International Telecommunication Union
- OVR Overseas Route Tables
- PIC Point In Call
- RRBCSME Request Report BCSM Event
- RSF Route Select Failure
- SCP Service Control Point
- SSP Service Switching Point
- TCAP Transaction Capabilities Application Part
- TDP Trigger Detection Point

1.9 References

1 Q.1218: ITU-T Interface Recommendation for CS-1R (10/95)

2 AX0944: “DMS-300 switch CS-1R INAP Phase 1”

2: Configuration for A00005980

2.1 Hardware and Software Requirements

None.

2.2 Upgrade Considerations

None.

2.3 Data schema (DS) (CM, MIBS, RDB)

2.3.1 New/modified tables, MIBs, or Database Schema

Table 2 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
RTELMAP	New	New

2.3.2 Table/MIB/Remote Database Schema information

2.3.2.1 Name: RTELMAP

Route List Mapping Table

2.3.2.1.1 Functional description

New Table RTELMAP has been created/developed to provide a datafillable mapping from a BusinessLineID (an index in the range {0 t0 65535}) to an OVR Table ID and Key. This mapping will be used to define the physical route(s) to associate with a BusinessLineID received in the INAP CONNECT RouteList parameter.

2.3.2.1.2 Usage sequence and implications (CM Only)

For an OVR Table ID and Key to be datafilled in Table RTELMAP, that OVR Table ID (Tables OVR0 - OVR89) must first be datafilled in that OVR Table Key position ({0 to 1023}).

When the datafill of a Key in an OVR Table is attempted to be changed or deleted, if this OVR Table ID and Key is already datafilled in Table RTELMAP, a delete will not be allowed, and a change will be allowed but a Warning message will be printed to notify the operator that this OVR tuple is datafilled in Table RTELMAP. In order to delete an OVR Key from the associated OVR Table, all datafills of this OVR Table ID & Key in Table RTELMAP must be deleted.

2.3.2.1.3 Size

Table 3 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
RTELMAP	0	65535	Memory for the whole table (potential 65536 tuples) is automatically allocated during the initialization of Table RTELMAP.

2.3.2.1.4 Fields/OIDs

The following table lists fields for Table RTELMAP.

Table 4 Table RTELMAP field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
BLINEID	New	N/A	{0..65535}	Business Line ID
OVRTABID	New	TABID KEY	OVR0 - OVR89 {0..1023}	OVR Table ID OVR Table Key

2.3.2.1.5 Datafill example

The following example shows sample datafill for Table RTELMAP.

```
TABLE: RTELMAP
>
>lis all
TOP
BUSINESSLINEID
--------------
0 OVR74 44
16 OVR6 7
315 OVR4 371
4426 OVR4 6
37354 OVR74 24
65535 OVR6 373
BOTTOM
>
```

2.3.2.1.6 Table release history update

Table is newly created.

2.3.2.1.7 Supplementary information

None.

2.3.2.1.8 Translation verification and other tools

The following examples show the output from GTRAVER when it is used to trace the outgoing route(s) for a received BusinessLineID in an INAP CONNECT RouteList parameter.

```
>GTRAVER TR GM2WEISV2BA 0500 T
TABLE TRKGRP
GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5
  4 ALERTING NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF
  NO_OVERRIDE VOICE_DATA Y Q764 N 1 0 0 0 N N NIL NIL ISUP $ 45
   STD N Y NIL 0 N
TABLE ISUPATTR
45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N
   NOVERI N N NIL FILTER 0
TABLE INTRK
```

GM2WEISV2BA PINAR
TABLE OFCVAR
IN_OFFICE_TRIGGRP NIL
INAP TDP-2 (Info Collected): no subscribed trigger.
TABLE INTRK
GM2WEISV2BA PINAR
TABLE GTRIGGRP
PINAR **INFOANAL**
. GENTRIG (CDPN PINAR)$ NIL
Trigger INAP GENTRIG is applicable to individual trunk.
. . TABLE GTRIGDIG
. . PINAR 0500 GINDCT CALLED (SERVKEY 4) (SERVINFO_INDEX 4) $
. . . TABLE GSERVINF
. . . 4 (INITDP_INFO Y N N N N N N) $
. . . TABLE C7GTTYPE
. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0500 0500 PCSSN (DCT2KRTESET GIN 0) $ SSN
INAP TDP-3 (Info Analyzed): trigger criteria met.
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>7835453
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>416
Translating with BusinessLineID: 416
Pretranslating with Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE RTELMAP
416 OVR4 16
TABLE OVR4

```
.  16 S A GM2WEISV2BA
The Outpulsed Number is : 6067835452
 .GBL GRX PINARX N N N 416
TABLE DIGEDIT
  416 (CL BEG) (REM 3)
EXIT TABLE DIGEDIT
 .  . TABLE CALLCNTL
 .  . PINARX (PRTNM PINAR) (STS 103) (CUSTNAME NIL_CUST) $
 .CND NRR SK 0
 .S A GM2WFTUPBA
The Outpulsed Number is : 7835452
 .GBL GRX CLICNTL_NOSCRN_BL_CLI N N N 8965
TABLE DIGEDIT
 8965 (CL BEG) (INC 600)
EXIT TABLE DIGEDIT
 .  . TABLE CALLCNTL
 .  . CLICNTL_NOSCRN_BL_CLI (CLICNTL NOSCRN_BL_CLI) $
 .T OVR89 65
TABLE POECRTE
TUPLE NOT FOUND
 .  . TABLE OVR89
 .  .65 S A GM2WFTUPBA
The Outpulsed Number is : 6007835452
 .  . EXIT TABLE OVR89
TABLE STDPRTCT
PINAR ( 1) ( 0) 3
 . SUBTABLE STDPRT
 . 6 9 CT OFFNET PX 1 24 0 416 NAT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE PXTRAN
103 NIL_CUST PXOFF PXON PXOFF PXIP
TABLE PXHEAD
PXOFF DFLT CONT ( XLT FA FAOFF)$ DFOP $ NOCON STD
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6007835452
TABLE PXCODE
PXOFF 600 600 RTE ( PF 3) ( DEST 606) ( CLASS NATL) ( LNET NAT)
( MZONE 1)$
TABLE: PXRTE
```

KEY:PXOFF 606

. S GM2WEISV2BA

The Outpulsed Number is : 7835452

EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV2BA 0800 T

TABLE TRKGRP

GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 45 STD N Y NIL 0 N

TABLE ISUPATTR

45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N N NIL FILTER

0

TABLE INTRK

GM2WEISV2BA PINAR

TABLE OFCVAR

IN_OFFICE_TRIGGRP NIL

INAP TDP-2 (Info Collected): no subscribed trigger.

TABLE INTRK

GM2WEISV2BA PINAR

TABLE GTRIGGRP

PINAR **INFOANAL**

. GENTRIG (CDPN PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE
. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN
INAP TDP-3 (Info Analyzed): trigger criteria met.
The Called Party NOA sent to the SCP is: 2 (Unknown)
The Called Party Number sent to the SCP is: 0800
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>4
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>6067835452
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>
No RouteList-BusinessLineID expected from SCP.
Translating only with DRA.
TABLE OFCVAR
IN_PRTNM NPRT
Pretranslating with Original Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE PXTRAN
103 NIL_CUST PXOFF PXON PXOFF PXIP
TABLE PXHEAD
PXOFF DFLT CONT (XLT FA FAOFF)$ DFOP $ NOCON STD
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6067835452
TABLE PXCODE
PXOFF 606 606 RTE (PF 3) (DEST 606) (CLASS NATL) (LNET NAT) (MZONE 1)$
TABLE POECRTE
TUPLE NOT FOUND
TABLE: PXRTE
KEY:PXOFF 606
. S GM2WEISV2BA

The Outpulsed Number is : 7835452

EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV2BA 0800 T

TABLE TRKGRP

GM2WEISV2BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 45 STD N Y NIL 0 N

TABLE ISUPATTR

45 EISUPV2 NIL THRH 0 Y NATL N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N N NIL FILTER

0

TABLE INTRK

GM2WEISV2BA PINAR

TABLE OFCVAR

IN_OFFICE_TRIGGRP NIL

INAP TDP-2 (Info Collected): no subscribed trigger.

TABLE INTRK

GM2WEISV2BA PINAR

TABLE GTRIGGRP

PINAR **INFOANAL**

. GENTRIG (CDPN PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE

. . . GINDCT CCITT7 3 NATL E164 $

. . . TABLE C7GTT
. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN
INAP TDP-3 (Info Analyzed): trigger criteria met.
The Called Party NOA sent to the SCP is: 2 (Unknown)
The Called Party Number sent to the SCP is: 0800
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>6067835452
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>2474
Translating with BusinessLineID: 2474
Pretranslating with Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE RTELMAP
TUPLE NOT FOUND
TABLE TMTCNTL
AXXESS (0)
. SUBTABLE TREAT
KEY NOT FOUND
DEFAULT OFFTREAT IS USED
TABLE TMTCNTL
OFFTREAT (223)
. SUBTABLE TREAT
. AINF Y S 120T0

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV1BA 0800 T

TABLE TRKGRP

GM2WEISV1BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 44 STD N Y NIL 0 N

TABLE ISUPATTR

44 EISUPV1 NATIONAL NOVERI NIL THRH 0 Y Y N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N

N NIL FILTER 0

TABLE INTRK

GM2WEISV1BA PINAR1

TABLE GTRIGGRP

PINAR1 **INFOCOL**

. GENTRIG (SPC PINAR)$ NIL

Trigger INAP GENTRIG is applicable to individual trunk.

. . TABLE GTRIGDIG

. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $

. . . TABLE GSERVINF

. . . 2209 (INITDP_INFO Y N N N N N N Y) $

. . . TABLE C7GTTYPE

. . . GINDCT CCITT7 3 NATL E164 $

. . . TABLE C7GTT

. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN

INAP TDP-2 (Info Collected): trigger criteria met.

The Called Party NOA sent to the SCP is: 2 (Unknown)

The Called Party Number sent to the SCP is: 0800

Select the INAP Operation expected from the SCP:

1- Connect

2- Continue

>1

Enter NOA and Destination Number expected in Connect operation:

>10

Next par is: <DEST DIGITS> STRING

Enter: <DEST DIGITS>

>6017835452

Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:

>345

Translating with BusinessLineID: 345

Pretranslating with Pretranslator: NPRT

Translating with STS 103 and CUSTNAME NIL_CUST

Routing with a BusinessLineID is not allowed for TDP-2 triggered calls.

TABLE TMTCNTL

AXXESS (0)

. SUBTABLE TREAT

KEY NOT FOUND

DEFAULT OFFTREAT IS USED

TABLE TMTCNTL

OFFTREAT (223)

. SUBTABLE TREAT

. FNAL Y S 120T0

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>GTRAVER TR GM2WEISV1BA 0800 T

TABLE TRKGRP

GM2WEISV1BA AXXESS 0 NPDGP NCIT 2W NPRT MIDL 16 7 16 16 4 5 4 ALERTING

NIL_COSGRP 0 103 NONE 0 0 NIL_CUST 1 Y Y NODEF NO_OVERRIDE VOICE_DATA Y Q764

N 1 0 0 0 N N NIL NIL ISUP $ 44 STD N Y NIL 0 N

TABLE ISUPATTR

44 EISUPV1 NATIONAL NOVERI NIL THRH 0 Y Y N 0 N N UNEQ 2WN7 NONE CIC N NOVERI N

N NIL FILTER 0

TABLE INTRK
GM2WEISV1BA PINAR1
TABLE GTRIGGRP
PINAR1 INFOCOL
. GENTRIG (SPC PINAR)$ NIL
Trigger INAP GENTRIG is applicable to individual trunk.
. . TABLE GTRIGDIG
. . PINAR 0800 GINDCT CALLED (SERVKEY 2209) (SERVINFO_INDEX 2209) $
. . . TABLE GSERVINF
. . . 2209 (INITDP_INFO Y N N N N N N Y) $
. . . TABLE C7GTTYPE
. . . GINDCT CCITT7 3 NATL E164 $
. . . TABLE C7GTT
. . . GINDCT 0800 0800 PCSSN (ISTEPRTSET2 SS108 2) $ SSN
INAP TDP-2 (Info Collected): trigger criteria met.
The Called Party NOA sent to the SCP is: 2 (Unknown)
The Called Party Number sent to the SCP is: 0800
Select the INAP Operation expected from the SCP:
1- Connect
2- Continue
>1
Enter NOA and Destination Number expected in Connect operation:
>3
Next par is: <DEST DIGITS> STRING
Enter: <DEST DIGITS>
>6017835452
Enter a BusinessLineID {0-65535} if expected from SCP in RouteList, else press Return:
>
No RouteList-BusinessLineID expected from SCP.
Translating only with DRA.
TABLE OFCVAR
IN_PRTNM NPRT
Pretranslating with Original Pretranslator: NPRT
Translating with STS 103 and CUSTNAME NIL_CUST
TABLE PXTRAN
103 NIL_CUST PXOFF PXON PXOFF PXIP

TABLE PXHEAD
PXOFF DFLT CONT (XLT FA FAOFF)$ DFOP $ NOCON STD
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 6017835452
TABLE PXCODE
PXOFF 601 601 RTE (PF 3) (DEST 601) (CLASS NATL) (LNET NAT) (MZONE 1)$
TABLE POECRTE
TUPLE NOT FOUND
TABLE: PXRTE
KEY:PXOFF 601
. S GM2WEISV1BA
The Outpulsed Number is : 7835452
EXIT TABLE PXRTE

+++ TRAVER: SUCCESSFUL CALL TRACE +++

2.4 Service Orders (SO) (CM & SESM)

N/A

2.5 User interface changes

2.5.1 Command: EINTRACE

2.5.1.1 Command description

EINTRACE is a tracing tool of the INAP dialogue between the DMS-SSP and the SCP. The OPEN;BACK ALL command prints the INAP operations in the TCAP packages for the INAP dialogue that took place between a START and a STOP command.

2.5.1.2 Responses

The EINTRACE tool has been enhanced to decode and print the contents of the RouteList parameter if received in an INAP CONNECT operation in a TCAP package.

2.5.1.3 Example

Table 5 Usage example for EINTRACE OPEN or BACK command

Description of task:	OPEN / BACK (to display a TCAP package containing an INAP CONNECT operation)

Table 5 Usage example for EINTRACE OPEN or BACK command

Command: **OPEN / BACK**

MAP response:

```
21:07:54 TCAP MESSAGE              Tid :   2
================================================
65 73 48 04 00 00 00 03 49 04 00 00 01 00 6C 65
A1 63 02 01 03 02 01 14 30 5B A0 06 04 04 83 13
87 03 83 01 04 A7 4E 24 40 04 02 34 75 04 02 78
90 04 02 24 53 04 02 12 34 04 02 00 00 04 02 04
44 04 02 FF FF 04 02 01 11 04 02 D6 C7 04 02 00
03 04 02 00 01 04 02 00 0D 04 02 00 16 04 02 00
1E 04 02 01 01 04 02 56 78 24 04 04 02 06 13 24
04 04 02 F4 01
================================================
Type of Package : 65 = CONTINUE
  Originating TRID : 00 00 00 03
  Destination TRID : 00 00 01 00
  Component Type : A1 = INVOKE
    Invoke ID : 03
    Operation : 14 = CONNECT
      Destination Routing Address
        Called Party Number
          Odd/Even Indicator : 1 = ODD
          Nature Of Address : 03 = NATIONAL
(SIGNIFICANT) NUMBER
          INN Indicator : 0 = ROUTING TO INTERNAL
NETWORK NUMBER ALLOWED
          Numbering Plan Indicator : 01 = ISDN
(TELEPHONY) NUMBERING PLAN (E164)
          Digits : 87 03 = 783
      Cut And Paste : 04 = 4
      Route List
        Route List Octet String 1
          BusinessLineID 1 : 13429
          BusinessLineID 2 : 30864
          BusinessLineID 3 : 9299
          BusinessLineID 4 : 4660
          BusinessLineID 5 : 0
          BusinessLineID 6 : 1092
          BusinessLineID 7 : 65535
          BusinessLineID 8 : 273
          BusinessLineID 9 : 54983
          BusinessLineID 10 : 3
          BusinessLineID 11 : 1
          BusinessLineID 12 : 13
          BusinessLineID 13 : 22
          BusinessLineID 14 : 30
          BusinessLineID 15 : 257
          BusinessLineID 16 : 22136
        Route List Octet String 2
         *** RouteList Octet String 2 NOT DECODED ***
        Route List Octet String 3
         *** RouteList Octet String 3 NOT DECODED ***
```

Product = Global Services Platform

A00005981--GSP IN InitDP Operation Enhancement to support POE (Path Of Entry) Parameter

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

This activity enhances GSP IN to incorporate and send Path Of Entry (POE) information to the SCP in the InitialDP Operation.

The following requirements are implemented:

- Table GSERVINF optionality is provided for Path Of Entry (POE) information to be built into the InitialDP.
- The Path of Entry information (POECGRP and POECIDX) is built as a Path Of Entry (POE) parameter and passed into the InitialDP message if:

  i. PATH_OF_ENTRY field of INITDP_INFO option in table GSERVINF is set to Y and

  ii. The POE information is datafilled in table TRKGRP or both in tables TRKGRP and CALLCNTL. (Please see References 1 and 2 in section "References" on page 670 for POE information datafill).
- EINTRACE tool is enhanced for InitDP POE parameter printing.

1.2.1 Table GSERVINF datafill for Path Of Entry Parameter

In order to provide optionality for the Path Of Entry parameter, this activity includes a new field named PATH_OF_ENTRY under INITDP_OPTION of table GSERVINF. If it is desired to send the Path Of Entry parameter in the InitDP message, this new PATH_OF_ENTRY field should be set to Y and other POE datafills (in table(s) TRKGRP/CALLCNTL) should be complete. Table 1 on page 668 shows an example GSERVINF tuple with PATH_OF_ENTRY datafill.

Table 1 Example GSERVINF tuple with Path_Of_Entry Datafill

```
 TABLE: GSERVINF
>pos 2209
2209 (INITDP_INFO N N N N N N N N) $
>cha
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
OPTION: INITDP_INFO
>
CALLING_PN: N
>
BEARER_CAPABILITY: N
>
FORWARD_CALL_INDICATOR: N
>
ORIG_CALLED_NUMBER: N
>
REDIRECTING_NUMBER: N
>
IN_BUSINESS_GROUP: N
>
REDIRECTION_INFORMATION: N
>
PATH_OF_ENTRY: N
>
OPTION:
>
```

1.2.2 Path Of Entry Parameter Format

The DMS-GSP definition for the Path Of Entry parameter in an InitialDP operation is as follows:

```
initialDP OPERATION
   ARGUMENT
      SEQUENCE {
         PathOfEntry[ ] IMPLICIT OCTET STRING (SIZE (1..32)) OPTIONAL,
         ...
      }
```

Here:

- the first 2 BYTEs = 16 BITs of Path Of Entry parameter will be used for POE Group ID {0..2047}

- the 3rd BYTE of Path Of Entry parameter will be used for POE index {0..255}
- the 4th BYTE is reserved for future use.

Below is an INITDP Operation containing Path Of Entry parameter.

Figure 1 Example of printed POE parameter in EINTRACE

```
==============================================
62 34 48 04 00 00 2A 00 6C 2C A1 2A 02 01 00 02
01 00 30 22 80 02 08 A1 82 07 03 10 79 56 20 21
43 83 06 01 13 87 53 54 02 85 01 00 9C 01 03 9F
1F 04 00 01 23 00
==============================================
Type of Package : 62 = BEGIN
  Originating TRID : 00 00 2A 00
  Component Type : A1 = INVOKE
    Invoke ID : 00
    Operation : 00 = INITIAL DP
      Service Key : 08 A1 = 2209
      Called Party Number
        Odd/Even Indicator : 0 = EVEN
        Nature Of Address : 03 = NATIONAL (SIGNIFICANT) NUMBER
        INN Indicator : 0 = ROUTING TO INTERNAL NETWORK NUMBER ALLOWED
        Numbering Plan Indicator : 01 = ISDN (TELEPHONY) NUMBERING PLAN (E164)
        Digits : 79 56 20 21 43 = 9765021234
      Calling Party Number
        Odd/Even Indicator : 0 = EVEN
        Nature Of Address : 01 = SUBSCRIBER NUMBER
        NI Indicator : 0 = COMPLETE
        Numbering Plan Indicator : 01 = ISDN (TELEPHONY) NUMBERING PLAN (E164)
        Presentation Restriction : 00 = PRESENTATION ALLOWED
        Screening Indicator : 03 = NETWORK PROVIDED
        Digits : 87 53 54 02 = 78354520
      Calling Partys Category : 00 = UNKNOWN AT THIS TIME
      Event Type BCSM : 03 = ANALYZED INFORMATION
      Path Of Entry:
        Poe Group : 0001 = POECGRP_P
        Poe Index : 23 = 35
```

Note: **EINTRACE tool is enhanced so that it will be capable of printing the Path Of Entry parameter in the InitialDP Operation.**

1.3 Hardware Requirements or Dependencies

N/A

1.4 Software Requirements or Dependencies

This development covers GSP IN only.

1.5 Limitations and restrictions

The functionality explained in this document works for TDP-3 triggered IN calls only. For a TDP-2 triggered IN call, if Path Of Entry field of INITDP_INFO option in table GSERVINF is set to Y and the POE information is datafilled in table(s) TRKGRP or both TRKGRP and CALLCNTL, Path Of Entry Group is NIL and Path of Entry index is 0 in the INITDP operation.

1.6 Glossary

POE	Path Of Entry
INITDP	Initial Detection Point
SCP	Service Control Point
GSP	Global Services Platform

1.7 References

- A60006660: Path of Entry screening on the DMS GSP
- A60008617: DMS-GSP Routing Engine.
- A59028840: Least Cost Routing

2: Configuration for A00005981

2.1 Data schema (DS) (CM, MIBS, RDB)

2.1.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
GSERVINF	CHANGED	UNCHANGED

2.1.2 Table/MIB/Remote Database Schema information

2.1.2.1 Name: GSERVINF

GSP SERVICE INFORMATION

2.1.2.1.1 Functional description

A new field named PATH_OF_ENTRY is added under INITDP_OPTION.

2.1.2.1.2 Usage sequence and implications (CM Only)

Current datafill order unchanged.

2.1.2.1.3 Datafill example

The following example shows sample datafill for table GSERVINF with the newly defined PATH_OF_ENTRY field which is in bold face.

Figure 1 Example GSERVINF tuple with Path_Of_Entry Datafill

```
 TABLE: GSERVINF
>pos 2209
2209 (INITDP_INFO N N N N N N N N) $
>cha
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
OPTION: INITDP_INFO
>
CALLING_PN: N
>
BEARER_CAPABILITY: N
>
FORWARD_CALL_INDICATOR: N
>
ORIG_CALLED_NUMBER: N
>
REDIRECTING_NUMBER: N
>
IN_BUSINESS_GROUP: N
>
REDIRECTION_INFORMATION: N
>
PATH_OF_ENTRY: N
>
OPTION:
>
```

2.1.2.1.4 Table release history update

PATH_OF_ENTRY field added under INITDP_INFO option.

2.2 User interface changes

2.2.1 Command: EINTRACE:OPEN

The output range of the EINTRACE Open command is enhanced for an INITDP Message with Path Of Entry parameter.

2.2.1.1 Command description

EINTRACE tracks IN messages based on the originating trunk involved in the IN call. The EINTRACE buffer is displayed with the OPEN command.

2.2.1.2 Responses

This table shows an example of a response to the EINTRACE Open command.

Table 2 Usage example for EINTRACE Open command

Command: **MAP response: (Changed for INITDP)**	11:55:31 TCAP MESSAGE Tid : 26 514 Agent : CKT GANSIAT1N01A 1601 ========== ========== 62 33 48 04 00 00 19 00 6C 2B A1 29 02 01 00 02 01 00 30 21 80 02 08 A1 82 06 81 10 80 00 11 01 83 06 80 10 87 53 54 06 85 01 00 9C 01 03 9F 1F 04 02 00 0C 00 ========== ========== Type of Package : 62 = BEGIN Originating TRID : 00 00 19 00 Component Type : A1 = INVOKE Invoke ID : 00 Operation : 00 = INITIAL DP Service Key : 08 A1 = 2209 Called Party Number Odd/Even Indicator : 1 = ODD Nature Of Address : 01 = SUBSCRIBER NUMBER INN Indicator : 0 = ROUTING TO INTERNAL NETWORK NUMBER ALLOWED Numbering Plan Indicator : 01 = ISDN (TELEPHONY) NUMBERING PLAN (E164) Digits : 80 00 11 01 = 0800111 Calling Party Number Odd/Even Indicator : 1 = ODD Nature Of Address : 00 = *** UNSUPPORTED VALUE *** NI Indicator : 0 = COMPLETE Numbering Plan Indicator : 01 = ISDN (TELEPHONY) NUMBERING PLAN (E164) Presentation Restriction : 00 = PRESENTATION ALLOWED Screening Indicator : 00 = USER PROVIDED, NOT VERIFIED Digits : 87 53 54 06 = 7835456 Calling Partys Category : 00 = UNKNOWN AT THIS TIME Event Type BCSM : 03 = ANALYZED INFORMATION Path Of Entry: **Poe Group : POECGRP_T** Poe Index : 000C = 12

Product = World Trade

A00005315--Calling Number Delivery for PRI, ISUP & CS-1

Functional Description

1.1 Applicable Solution(s)

Int'l IAW, DMS

1.1.1 Introduction

This feature implements a specific calling party PI, NI mapping and calling party number manipulation from originating to terminating ISUP/PRI/CS-1 trunk groups, and a new CLI delivery logic according to PI value for specific market of HongKong is enhanced to support terminating ISUP trunk groups. This feature is implemented for GSPISN08 combo load.

For call originating from any agents of IDA-M/R, HK ISUP, ANSI ISUP, ETSI ISUP V1/V2, IDA-P(HK PRI), ANSI PRI or CS-1 and terminating to HK ISUP, ANSI ISUP, ETSI ISUP V1/V2, ANSI PRI, ETSI PRI, IDA-P(HK PRI) and CS-1 trunk, this feature implements the special mapping plan to set the PI, NI field and modify calling party number of outgoing calling party according to the length of incoming CLI, prefixes, PI and NI. Furthermore, this feature also changes the existing CLI delivery logic for the ISUP outgoing trunk.

1.2 Description

Below is the mapping requirement deployed in the Hong Kong (HK) market (table 1).

Table 1 [5]PI and NI Mapping Table

				Terminating agent				
				ISUP		CS-1		PRI
Originating agent	PI	NI	CLI and its Prefix	PI	NI	PI	NI	PI
IDA-M/R	00	-	8-10 Digit, Non 77	00	0	00	0	00
	01	-	8-10 Digit, Non 77	01	0	01	0	01
	10	-	8-10 Digit, Non 77	00	1	10	0	10
	X	-	8-10 Digit, 77	00	1	10	0	10
ISUP	00	0	10 Digit, Non 77	00	0	00	0	00

	01	0	10 Digit, Non 77	01	0	01	0	01
	10	0	10 Digit, Non 77	00	1	10	0	10
	11	0	10 Digit, Non 77	00	1	10	1	10
	00	1	10 Digit, Non 77	00	1	10	1	10
	01	1	10 Digit, Non 77	00	1	10	1	10
	10	1	10 Digit, Non 77	00	1	10	1	10
	11	1	10 Digit, Non 77	00	1	10	1	10
	X	X	10 Digit, 77	00	1	10	1	10
PRI	00	-	10 Digit, Non 77	00	0	00	0	00
	01	-	10 Digit, Non 77	01	0	01	0	01
	10	-	10 Digit, Non 77	00	1	10	0	10
	11	-	10 Digit, Non 77	00	1	10	1	10
CS-1	00	0	10 Digit, Non 77	00	0	-	-	00
	01	0	10 Digit, Non 77	01	0	-	-	01
	10	0	10 Digit, Non 77	00	1	-	-	10
	11	0	10 Digit, Non 77	00	1	-	-	10
	00	1	10 Digit, Non 77	00	1	-	-	10
	01	1	10 Digit, Non 77	00	1	-	-	10
	10	1	10 Digit, Non 77	00	1	-	-	10
	11	1	10 Digit, Non 77	00	1	-	-	10
	X	X	10 Digit, 77	00	1	-	-	10

The following table shows the interworkings of the two agencies which are supported in this feature.

5.

Table 2 Supported Interworkings for MMP

Terminator / Originators	ANSI ISUP	ETSI ISUP V1/V2	HK ISUP	ANSI PRI	HK PRI (CR13)	CS-1	ETSI PRI
ANSI ISUP	Y	Y	Y	Y	Y	Y	Y
ETSI ISUP V1/V2 (no variants)	Y	Y	Y	Y	Y	Y	Y
Hong Kong ISUP (CR14/CR15)	Y	Y	Y	Y	Y	Y	Y
ANSI PRI	Y	Y	Y	Y	Y	Y	N
Hong Kong PRI (CR13)	Y	Y	Y	Y	Y	Y	Y
CS-1	Y	Y	Y	Y	Y	N	Y
ETSI PRI	Y	Y	Y	N	Y	Y	Y

Notes: "Y " denotes supported interworkings; "N" denotes not supported interworkings.

Table 3 Supported Interworkings for GSP

Terminator / Originators	ANSI ISUP	ETSI ISUP V1/V2	HK ISUP	ANSI PRI	HK PRI (CR13)	CS-1	ETSI PRI
IDA-M/R(CR11/CR12)	Y	Y	Y	Y	Y	N	Y
ANSI ISUP	Y	Y	Y	Y	Y	Y	Y
ETSI ISUP V1/V2 (no variants)	Y	Y	Y	Y	Y	Y	Y
Hong Kong ISUP (CR14/CR15)	Y	Y	Y	Y	Y	Y	Y
ANSI PRI	Y	Y	Y	Y	Y	Y	N
Hong Kong PRI (CR13)	Y	Y	Y	Y	Y	Y	Y
CS-1	Y	Y	Y	Y	Y	N	Y
ETSI PRI	Y	Y	Y	N	Y	Y	Y

Notes: "Y " denotes supported interworkings; "N" denotes not supported interworkings.

For any ISUP related function, only trunk type IBNT(IBNTI, IBNTO, IBNT2) is supported for MMP ISUP and trunk type AXXESS is supported for GSP ISUP.

1.2.1 Datafillable PI, NI Mapping and calling party number manipulation

This feature provides a datafillable outgoing calling party PI, NI mapping and calling party number manipulation functionality for the interworkings specified in 2.

The following tables are introduced in feature 59040499 to make the PI mapping rules datafillable for outgoing PRI trunks:

- CGPNBLDR (Calling Party Number Builder)
- CGBLDADD (Address-Type Screening)
- CGBLDDGL (Digit-Length Screening)
- CGBLDDIG (Digit Screening)
- CGBLDNI (NI Screening)
- CGBLDPI (PI Screening)

In this feature, all the tables above are changed to support calling party number manipulation. Also, outgoing ISUP trunks and CS-1 agents are supported. For outgoing ISUP trunks, the screening is also triggered from CGPNBLDR option in table TRKOPTS like outgoing PRI trunk; for outgoing CS-1 agent, the screening is triggered from CGNBD_IN option in table TRKOPTS.

A new table CGBLDSIN is introduced in this feature to enhance the screening mechanism so that incoming agent can be judged:

- CGBLDSIN (SMALLINT Screening)

The CGPNBLDR table acts as the main table for this feature, which is accessed from table TRKOPTS. The CGPNBLDR processing procedures are accessed the corresponding screening tables based on the datafill to decide how to map the PI.

1.2.1.1 Table CGPNBLDR

The format of table CGPNBLDR is shown in below. Only the new options introduced by this feature are listed, other options please refer to A59040499.

Table 4 Format of Table CGPNBLDR

Field	Option	Range of Values	Description
CGNBDKEY		String of up to 20 characters	alphanumeric (1 to 20 characters)

Table 4 Format of Table CGPNBLDR

Field	Option	Range of Values	Description
CBOPTION	IC_VAR_SCRN: Variable Type Variable Name CONTINUE	 {SMALLINT, DIGITS} String of up to 8 characters Y or N	Allows the operator to screen the variables that are datafilled in table VARDEF. This option currently only supports to screen the small integer (0-255) type variables. The value of the variable can be set for the incoming trunk using the SETVAR SMALLINT option in table CALLCNTL or one of its screening tables. The table CGBLDSIN is accessed to find if the match can be found for a given CGPNBLDR Index, variable and its value. If screening fails, the CGPNBLDR process can be terminated or continued based on the datafill of field CONTINUE. *Please note that if a variable is not assigned to the incoming trunk, the screening returns failed result by default.*

Table 4 Format of Table CGPNBLDR

Field	Option	Range of Values	Description
	CND_GOTO: CONDITION NEWBDKEY	 {IC_INAP} String of up to 20 characters(a new CGPNBLDR index)	Allows the operator to change the CGPNBLDR index when the incoming call accords with the condition. Currently, only incoming IN call will be checked
	DIGMAN: DMI	 0 to 32767	Allows the operator to change the CLI. And the field DMI is indexed to the table DIGMAN which is used to manipulate the CLI digits.
	ENHANCED_DIG SCRN: DMI	 0 to 32767	Indicates the digits of the address to be screen, this option is associated with table CGBLDDIG. And the field DMI is indexed to the table DIGMAN which is used to manipulate the CLI digits temporarily before entering the table CGBLDDIG. The manipulation can only be seen when processing in CGBLDDIG, it can not take effect to the real CLI after returning from CGBLDDIG.

Figure 2 Sample datafill - Table CGPNBLDR

```
TABLE: CGPNBLDR
CGNBDKEY CBOPTION
-------------------------
SCRN_CHOSEN_IC_ADDR
(CND_GOTO IC_INAP SCRN_IN_IC_ADDR )(IC_ADDR_SCRN (ADDRTYPE) (DIGLEN) $)
(DIGMAN 8) (ENHANCED_DIGSCRN 4)
(IC_VAR_SCRN (SMALLINT IC_VAR)Y) $
```

1.2.1.2 Table CGBLDADD

Table CGBLDADD allows the operator to identify the type of the incoming address.

Table 5 Format of Table CGBLDADD

Field	Range of Values	Description
CGNADDRK: CGNBDKEY ADDRTYPE	 String of up to 20 characters One of {CLI, RDN, CHARGE, PN, CONTRACTOR, GENERIC_NO}	The key is composed of two subfields.
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index.
CBOPTION	CGPNBLDR Options: SETPI, SETNI, **DIGMAN**	New option DIGMAN is added to perform calling party number manipulation.

Below shows a datafill sample of table CGBLDADD.

Figure 3 Datafill example of Table CGBLDADD

```
TABLE: CGBLDADD
CGNADDRK NEWBDKEY CBOPTION
---------------------------
SCRN_IC_ADDR CLI SCRN_IC_CGPN (DIGMAN 10) $
```

1.2.1.3 Table CGBLDDGL

Table CGBLDDGL allows the operator to screen the length of digits of the incoming address. The format of CGBLDDGL is shown in below table.

Table 6 Format of Table CGBLDDGL

Field	Range of Values	Description
CGNDGLK: CGNBDKEY DIGLEN	 String of up to 20 characters {0-30}	The key is composed of two subfields.
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index
CBOPTION	CGPNBLDR Options: SETPI, SETNI, **DIGMAN**	New option DIGMAN is added to perform calling party number manipulation.

Below shows a datafill example of table CGBLDDGL.

Figure 4 Datafill example of Table CGBLDDGL

```
TABLE: CGBLDDGL
CGNDGLK NEWBDKEY CBOPTION
-----------------------------
SCRN_IC_CGPN 8 SCRN_RETURN $
SCRN_IC_CGPN 9 SCRN_RETURN (SETPI ALLOWED) $
SCRN_IC_CGPN 10 IC_CGPN_LENGTH_10 (DIGMAN 10) $
```

1.2.1.4 Table CGBLDDIG

Table CGBLDDIG allows the operator to screen the digits of incoming address which is chosen to map into the outgoing CGPN.

The format of this table is shown in below table.

Table 7 Format of Table CGBLDDIG

Field	Range of Values	Description
CGNDGKEY:		The key is composed of 3 subfields.
CGNBDKEY	String of up to 20 characters	
FROMDIGS	1-15 digits	
TODIGS	1-15 digits	
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index
CBOPTION	CGPNBLDR Options: SETPI, SETNI, **DIGMAN**	New option DIGMAN is added to perform calling party number manipulation.

Below shows a datafill example of table CGBLDDIG.

Figure 5 Datafill example of Table CGBLDDIG

```
TABLE: CGBLDDIG
CGNDGKEY NEWBDKEY CBOPTION
-----------------------------------------
BASE 77 77 SCRN_RETURN (SETPI NOT_AVAIL)$
BASE 88 88 PREFIX_88 (DIGMAN 10) $
```

1.2.1.5 Table CGBLDNI

Table CGBLDNI allows the operator to screen the NI of the incoming address (a default value 0=complete is use instead, if this field is missing) which is chosen to map into the outgoing CGPN.

Table 8 Format of Table CGBLDNI

Field	Range of Values	Description
CGNNIKEY: CGNBDKEY NI	 String of up to 20 characters One of {COMPLETE, INCOMPLETE}	The key is composed of two subfields.
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index
CBOPTION	CGPN Builder Options: SETPI, SETNI, **DIGMAN**	New option DIGMAN is added to perform calling party number manipulation.

Below is a datafill example table CGBLDNI.

Figure 6 Datafill example of Table CGBLDNI

```
TABLE: CGBLDNI
CGNNIKEY NEWBDKEY CBOPTION
---------------------------
SCRN_IC_CGPN COMPLETE NI_0 (DIGMAN 10) $
SCRN_IC_CGPN INCOMPLETE NI_1 (SETPI NO_AVAIL) $
```

1.2.1.6 Table CGBLDPI

Table CGBLDPI allows the operator to screen the PI of the incoming address which is chosen to map into the outgoing CGPN.

Table 9 Format of Table CGBLDPI

Field	Range of Values	Description
CGNPIKEY: CGNBDKEY PI	 String of up to 20 characters One of {ALLOWED, RESTRICTED, NOT_AVAIL, SPARE}	The key is composed of two subfields.
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index
CBOPTION	CGPNBLDR Options: SETPI, SETNI, **DIGMAN**	New option DIGMAN is added to perform calling party number manipulation.

Below is a datafill example of table CGBLDPI.

Figure 7 Datafill example of Table CGBLDPI

```
TABLE: CGBLDPI
CGNPIKEY NEWBDKEY CBOPTION
----------------------------
SCRN_IC_CGPN ALLOWED PI_00 (SETPI ALLOWED) (DIGMAN
10) $
SCRN_IC_CGPN NOT_AVAIL PI_10 (SETPI NOT_AVAIL) $
```

1.2.1.7 Table CGBLDSIN

The new introduced table CGBLDSIN allows the operator to screen the variable and its value assigned to the incoming trunk.

Table 10 Format of Table CGBLDSIN

Field	Range of Values	Description
SINTVAR: SINTVAR CGNBDKEY VALUE	 Variable name (1-8 characters) from table VARDEF String of up to 20 characters {0 TO 255}	The key is composed of three subfields.
NEWBDKEY	String of up to 20 characters	A new CGPNBLDR Index

Table 10 Format of Table CGBLDSIN

Field	Range of Values	Description
CBOPTION	CGPNBLDR Options: SETPI, SETNI, DIGMAN	Allows setting of the PI, NI and CLI value of the outgoing CGPN as performed in table CGPNBLDR.

Table CGBLDSIN must be datafilled after table TRKOPTS for outgoing trunks.

Below is a datafill example of table **CGBLDSIN**.

Figure 8 Datafill example of Table CGBLDSIN

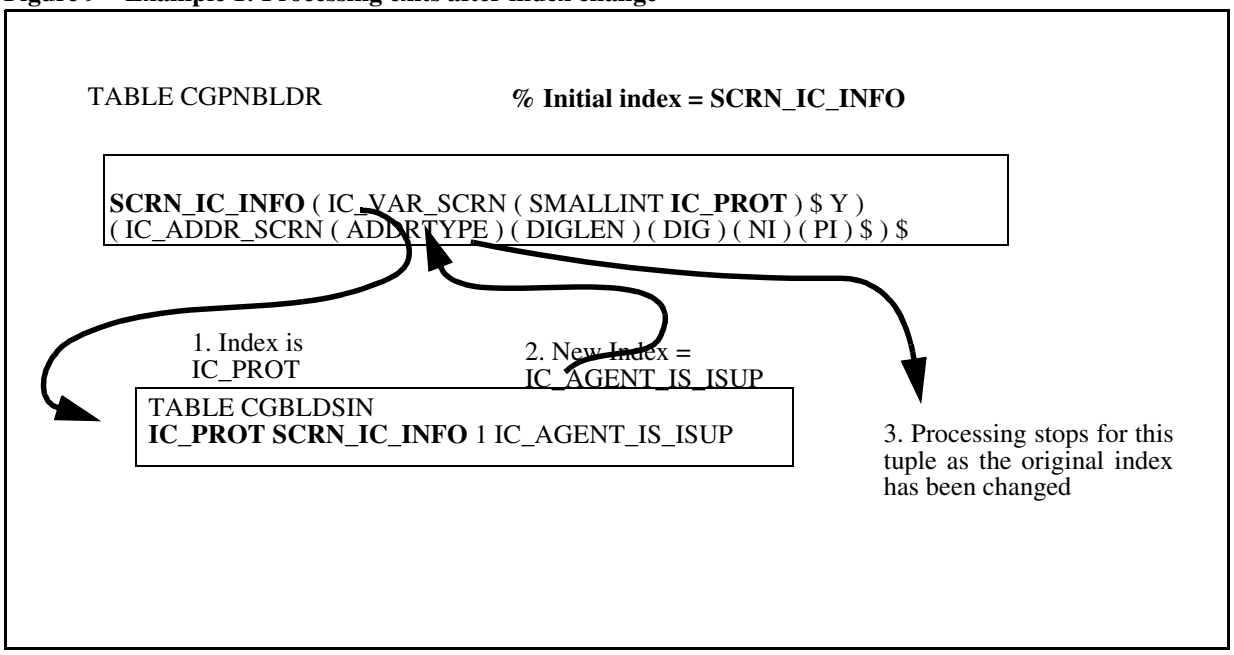
```
TABLE: CGBLDSIN
SINTVAR CGNBDKEY VALUE NEWBDKEY CBOPTION
----------------------------------------
IC_PROT SCRN_IC_PROT 1 IC_AGENT_IS_ISUP (SETPI SPARE) (SETNI INCOMPLETE) $
IC_PROT SCRN_IC_PROT 2 IC_AGENT_IS_PRI (SETPI NOT_AVAIL) $
```

1.2.1.8 CGPNBLDR Processing

The CGPNBLDR mechanism is a recursive structure, which uses the initial CGPNBLDR index specified in table TRKOPTS to start the manipulation process.

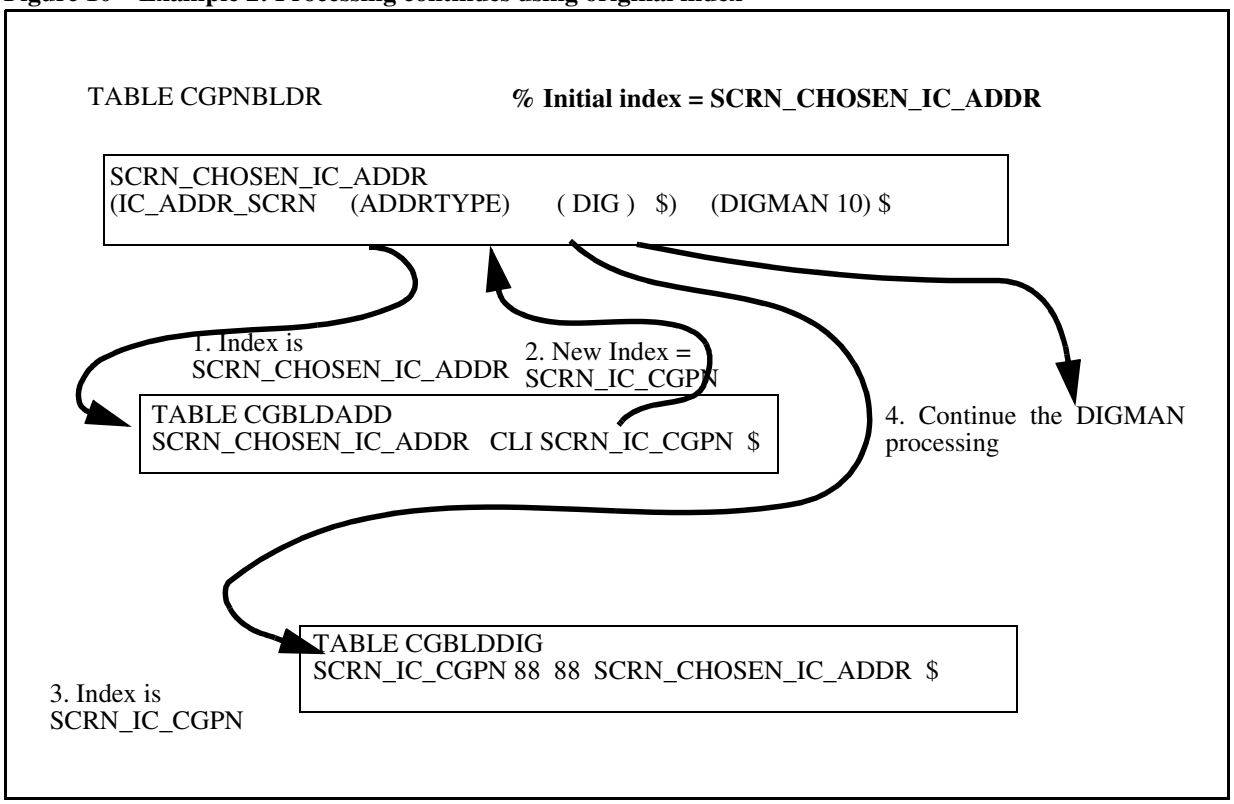
Each option datafilled on the initial tuple in table CGPNBLDR is processed in turn. If any of the IC_ADDR_SCRN or IC_VAR_SCRN options are datafilled, call processing continues to the appropriate screening table using the same index it had in CGPNBLDR. If the CGPNBLDR index is updated via this screening table, CGPNBLDR will use the updated value to re-index this table when processing of the current option is complete. If processing of the current option is not complete, the updated CGPNBLDR index will be used to access any subsequent incoming address screening tables. This process is illustrated in the following example diagrams.

Figure 9 Example 1: Processing exits after index change



In this example the CGPNBLDR index is updated in table CGBLDSIN and the index into CGPNBLDR is re-evaluated after the first “IC_VAR_SCRN” option. Processing continues directly to the next CGPNBLDR tuple (IC_AGENT_IS_ISUP).

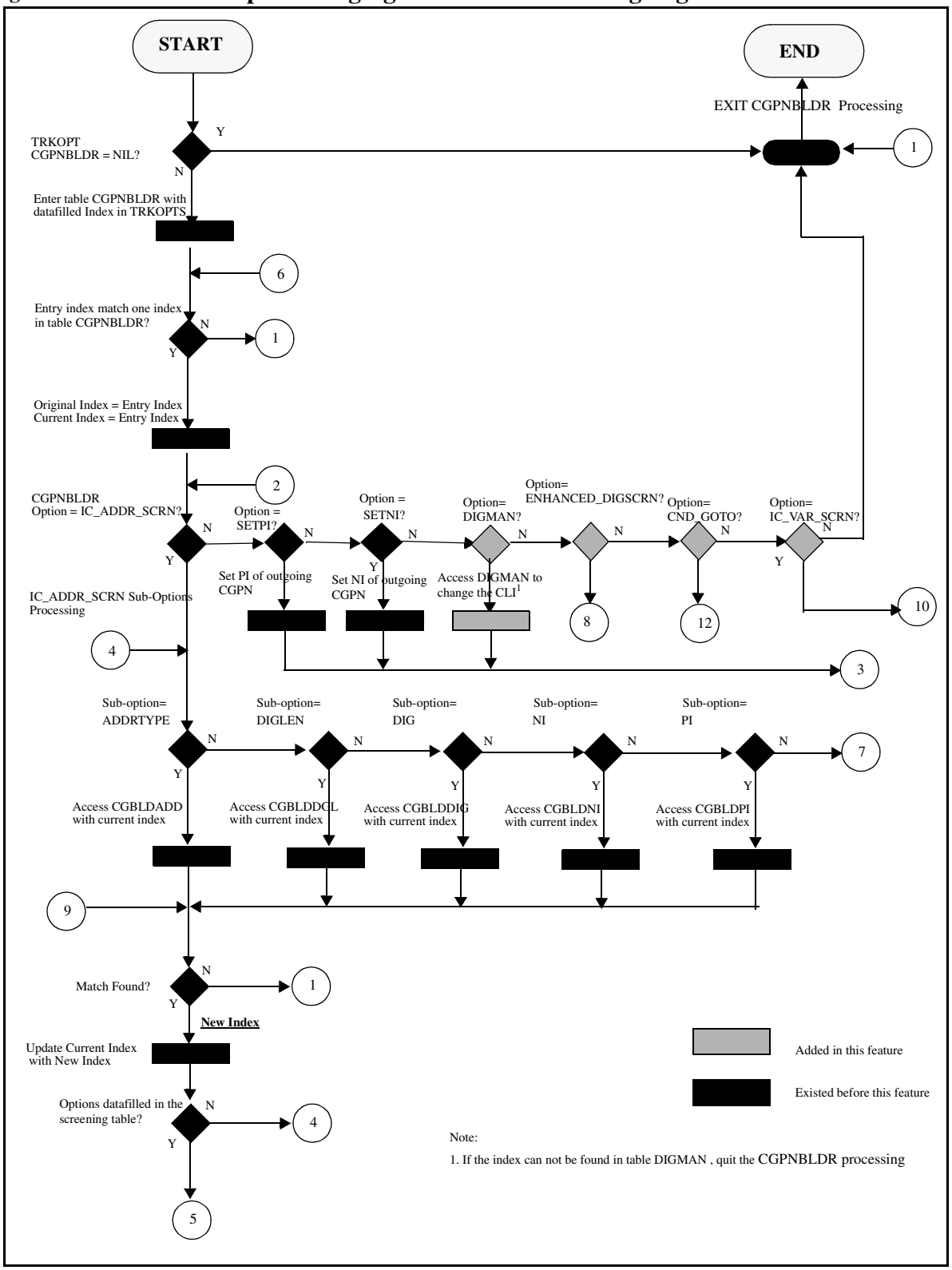
Figure 10 Example 2: Processing continues using original index

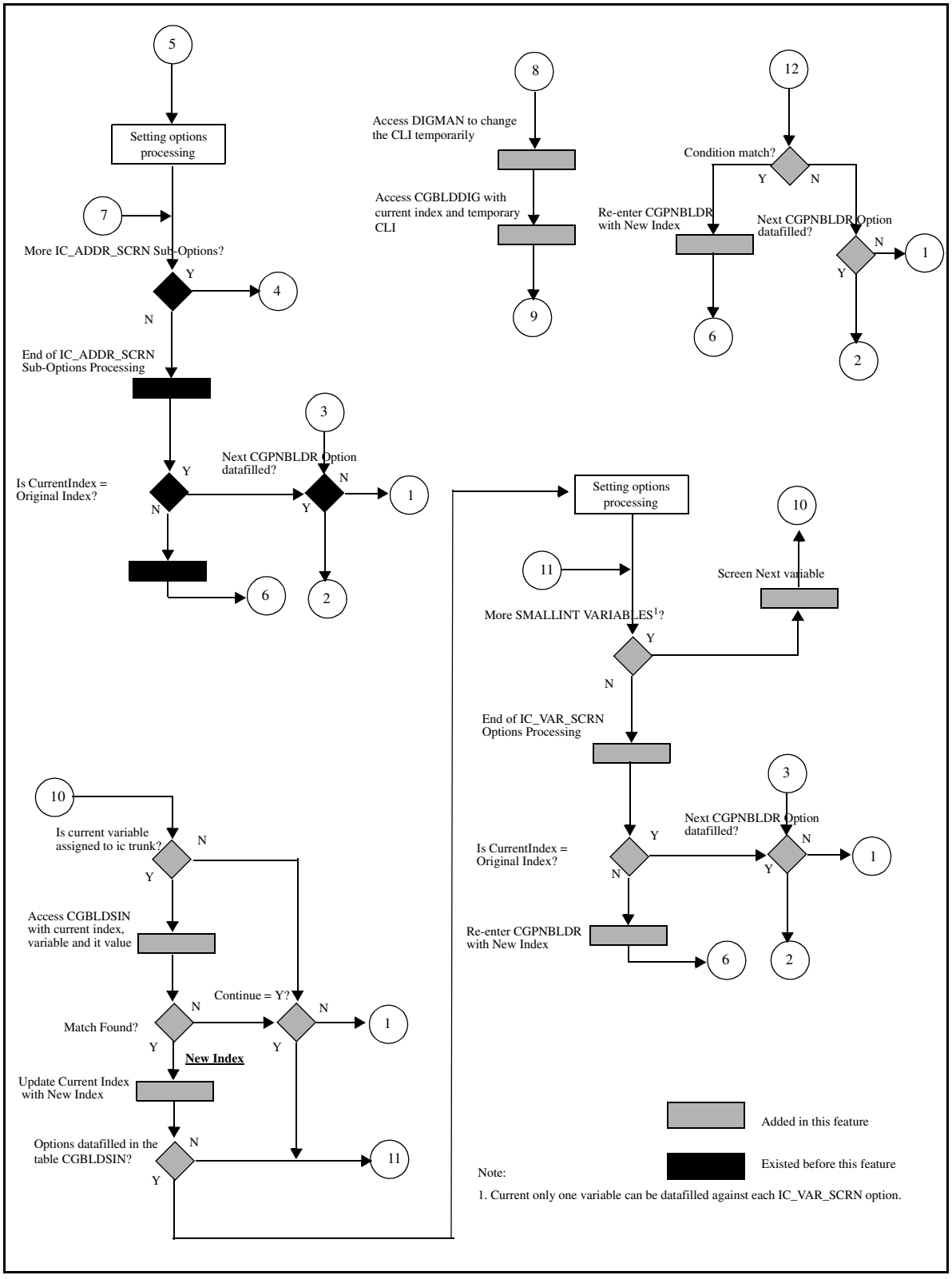


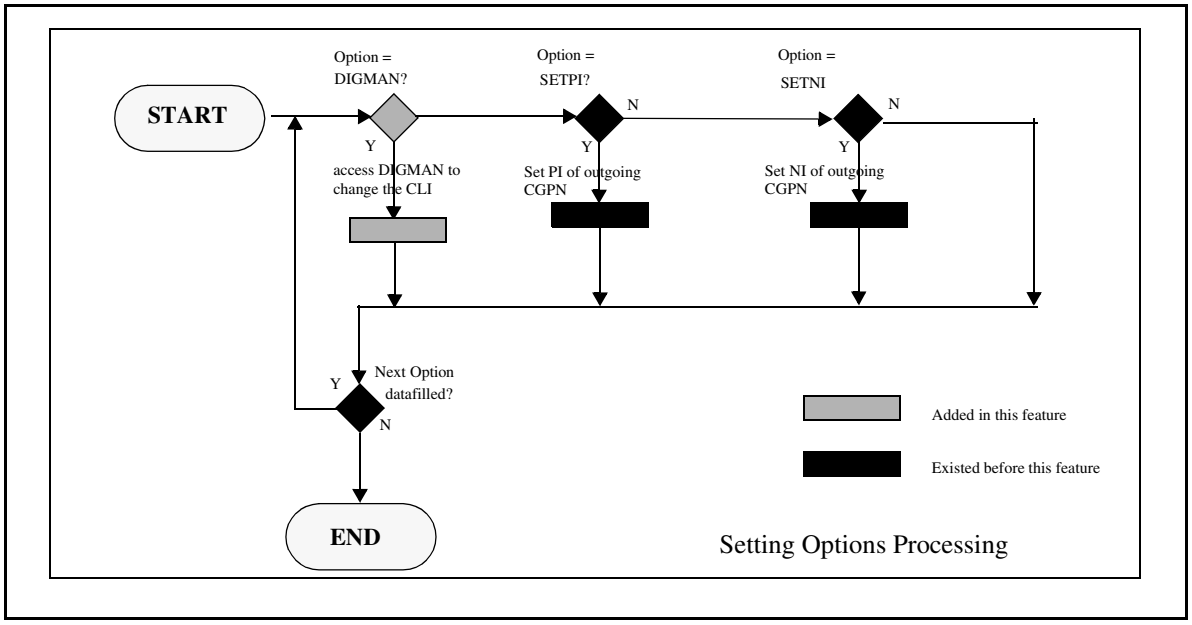
In this example even though the CGPNBLDR index is altered in CGBLDADD it is reset to “SCRN_CHOSEN_IC_ADDR” in table CGBLDDIG, so the next option (DIGMAN 10) is processed.

Below is the CGPNBLDR processing figure for PRI and ISUP outgoing trunk:

Figure 11 CGPNBLDR processing figure for PRI/ISUP outgoing trunk




5
Setting options processing
7
More IC_ADDR_SCRN Sub-Options?
Y
4
N
End of IC_ADDR_SCRN Sub-Options Processing
3
Next CGPNBLDR Option datafilled?
Is CurrentIndex = Original Index?
Y
N
N
Y
1
6
2
8
Access DIGMAN to change the CLI temporarily
Access CGBLDDIG with current index and temporary CLI
9
12
Condition match?
Y
N
Re-enter CGPNBLDR with New Index
Next CGPNBLDR Option datafilled?
N
Y
1
6
2
Setting options processing
11
10
Screen Next variable
More SMALLINT VARIABLES[1]?
Y
N
End of IC_VAR_SCRN Options Processing
3
Next CGPNBLDR Option datafilled?
Is CurrentIndex = Original Index?
Y
N
N
Y
1
Re-enter CGPNBLDR with New Index
6
2
10
Is current variable assigned to ic trunk?
N
Y
Access CGBLDSIN with current index, variable and it value
Continue = Y?
Match Found?
N
N
Y
Y
1
New Index
Update Current Index with New Index
Options datafilled in the table CGBLDSIN?
N
Y
11
Added in this feature
Existed before this feature
Note:
1. Current only one variable can be datafilled against each IC_VAR_SCRN option.



1.2.1.9 Datafill example for a particular PI mapping plan (Access from option CGPNBLDR, apply to terminating PRI trunk)

Refer to a PI mapping example requirement: if the incoming agent is ISUP trunk, then mapping PI=00; otherwise, adopting the mapping plan shown in Table 10 below.

Table 11 PI Mapping Example for terminating PRI trunk

Originating non ISUP trunk			Terminating ISUP or PRI trunk
PI	NI	10-digit CLI's Prefix	PI
11	0	Non 77	10

Here is the datafill implementation:

For the all incoming ISUP trunks

```
+------------------------------------------------------------+
TABLE VARDEF
------------
IC_PROT

+------------------------------------------------------------+
TABLE CALLCNTL
--------------
SET_IC_PROT_ISUP (SETVAR SMALLINT IC_PROT 1) $
```

```
%% Note: This example prescribes the value 1 stands for ISUP protocol

+------------------------------------------------------+
TABLE TRKOPTS
-------------
<ISUP TRUNK CLLI> CCNTLIDX CCNTLIDX SET_IC_PROT_ISUP
```

For the outgoing PRI trunks

```
+------------------------------------------------------+
TABLE TRKOPTS
-------------
<PRI or ISUP TRUNK CLLI> CGPNBLDR CGPNBLDR SCRN_IC_INFO
+------------------------------------------------------+
TABLE DIGMAN
-------------
10 (CL BEG) (REM 2) $
+------------------------------------------------------+
TABLE CGPNBLDR
--------------
SCRN_IC_INFO (IC_VAR_SCRN (SMALLINT IC_PROT) Y)
(IC_ADDR_SCRN (ADDRTYPE) (DIGLEN) (DIG) (NI) (PI) $) $
IC_AGENT_IS_ISUP (SETPI ALLOWED) (DIGMAN 10) $

+------------------------------------------------------+
TABLE CGBLDSIN
--------------
IC_PROT SCRN_IC_INFO 1 IC_AGENT_IS_ISUP $

%% Note: According to assumption before, if the incoming agent is ISUP trunk, then
the variable IC_PROT will be set to 1.

+------------------------------------------------------+
TABLE CGBLDADD
--------------
SCRN_IC_INFO CLI SCRN_IC_CGPN $ $

+------------------------------------------------------+
TABLE CGBLDDGL
--------------
SCRN_IC_CGPN 10 CLI_LENGTH_10 $

+------------------------------------------------------+
TABLE CGBLDDIG
------------
CLI_LENGTH_10 0 76 CLI_PREFIX_NON_77 $
CLI_LENGTH_10 78 9 CLI_PREFIX_NON_77 $

+------------------------------------------------------+
TABLE CGBLDNI
------------
CLI_PREFIX_NON_77 COMPLETE NI_0 $

+------------------------------------------------------+
TABLE CGBLDPI
------------
NI_0 SPARE SCRN_RETURN (SETPI NOT_AVAIL) $
```

Below is the processing steps, suppose the incoming CGPN (CLI=88123456, PI=11 and NI=0) is chosen to outpulse into outgoing CGPN:

In case of ISUP -> PRI

1. Screen table TRKOPTS, get entry index from CGPNBLDR option: “SCRN_IC_INFO”.
2. Screen table CGPNBLDR using the index, find the tuple.
3. Screen the tuple of table CGPNBLDR, option “IC_VAR_SCRN” is datafilled, get the first variable “IC_PROT”.
4. Screen the table CGBLDSIN using the index "SCRN_IC_INFO", because the incoming is ISUP trunk, then the new index "IC_AGENT_IS_ISUP" is set and return to table CGPNBLDR.
5. The tuple with index "IC_AGENT_IS_ISUP" in table CGPNBLDR sets the PI=00.
6. Get the DIGMAN index "10", go to table DIGMAN, find the tuple whose index is 10, and delete the first 2 digits in CLI

In case of incoming Non-ISUP -> PRI

1. Screen table TRKOPTS, get entry index from CGPNBLDR option: “SCRN_IC_INFO”.
2. Screen table CGPNBLDR using the index, find the tuple.
3. Screen the tuple of CGPNBLDR, option “IC_VAR_SCRN” is datafilled, get the first variable “IC_PROT”.
4. Screen the table CGBLDSIN using the index "SCRN_IC_INFO", because the incoming is Non-ISUP trunk, the screening of table CGBLDSIN is failed, the process will return to table CGPNBLDR with original index, the processing will be continued with next option in the same tuple because the field "CONTINUE" of option "IC_VAR_SCRN" is set to Y.
5. The next option is “IC_ADDR_SCRN”, get the first sub-option “ADDRTYPE”.
6. Screen the corresponding table CGBLDADD using the index “SCRN_IC_INFO”, because the address type to be outpulsed into outgoing CGPN is CLI, find the tuple and get new index “SCRN_IC_CGPN”.
7. Go back to the tuple of CGPNBLDR, next sub-option is “DIGLEN”.
8. Screen the corresponding table CGBLDDGL using new current index “SCRN_IC_CGPN”, because length of CLI is 10, find the tuple and get new index “CLI_LENGTH_10”.
9. Go back to the tuple of CGPNBLDR, next sub-option is “DIG”.
10. Screen the corresponding table CGBLDDIG using new current index “CLI_LENGTH_10”, because DIG prefix is ‘88’, find the tuple and get new index “CLI_PREFIX_NON_77”.

11. Go back to the tuple of CGPNBLDR, next sub-option is “NI”.
12. Screen the corresponding table CGBLDNI using new current index “CLI_PREFIX_NON_77”, because NI is ‘COMPLETE’, find the tuple and get new index “NI_0”.
13. Go back to the tuple of CGPNBLDR, next sub-option is “PI”.
14. Screen the corresponding table CGBLDPI using new current index “NI_0”, because PI is ‘SPARE’, find the tuple, set PI according to the option in the tuple, and get new index “SCRN_RETURN”.
15. Go back to the tuple of CGPNBLDR, end of sub-option is met. The index is changed, so will continue using new index “SCRN_RETURN”.
16. Tuple “SCRN_RETURN” is not found in table CGPNBLDR, so the processing is stopped.

1.2.1.10 Datafill example for a particular PI mapping plan (Access from option CGNBD_IN, apply to trunks invoke INAP service - CS-1 agent equivalent)

For outgoing CS-1 agent, CGPNBLDR process is triggered from CGNBD_IN option in table TRKOPTS. Refer to a PI mapping example requirement (Table 11 below) for CS-1 agent.

Table 12 PI Mapping Example for CS-1 agent

Originating ISUP trunk invokes INAP service			Terminating CS-1 agent
PI	NI	10-digit CLI's Prefix	PI
11	0	Non 77	10

Here is the datafill implementation:

```
+------------------------------------------------------+
TABLE TRKOPTS
-------------
<ISUP Trunk CLLI> CGNBD_IN CGNBD_IN SCRN_IC_ADDR

+------------------------------------------------------+
TABLE CGPNBLDR
-------------
SCRN_IC_ADDR
(IC_ADDR_SCRN (ADDRTYPE) (DIGLEN) (DIG) (NI) (PI) $) $

+------------------------------------------------------+
TABLE CGBLDADD
-------------
SCRN_IC_ADDR CLI SCRN_IC_CGPN $ $

+------------------------------------------------------+
TABLE CGBLDDGL
-------------
SCRN_IC_CGPN 10 CLI_LENGTH_10 $ $
```

```
+------------------------------------------------------+
TABLE CGBLDDIG
------------
CLI_LENGTH_10 0 76 CLI_PREFIX_NON_77 $
CLI_LENGTH_10 78 9 CLI_PREFIX_NON_77 $

+------------------------------------------------------+
TABLE CGBLDNI
------------
CLI_PREFIX_NON_77 COMPLETE NI_0 $

+------------------------------------------------------+
TABLE CGBLDPI
------------
NI_0 SPARE SCRN_RETURN (SETPI NOT_AVAIL) $
```

Below is the processing steps, suppose the incoming CGPN (CLI=88123456, PI=11 and NI=0) is chosen to outpulse into outgoing CGPN of InitialDP message:

1. Screen table TRKOPTS, get entry index from CGNBD_IN option: “SCRN_IC_ADDR”.
2. Screen table CGPNBLDR using the index, find the tuple.
3. Other steps refer to the previous example in the case of incoming non-ISUP trunk.

1.2.2 New CLI Delivery Logic Supported by outgoing ISUP trunk

Prior to this feature, the field CLIDELV in table TRKOPTS has three options:

- If CLIDELV is set to ‘Y’, CLI will be delivered.
- If CLIDELV is set to ‘N’, CLI will not be delivered.
- If CLIDELV is set to ‘SCRN_PI’, CLI will be delivered unless the PI is set to ‘Presentation Restricted’.

In feature 59040499, a new CLI delivery logic is implemented for PRI outgoing trunk. For CLIDELV=SCRN_PI, the delivery logic is changed to:

— The CLI will only be delivered when the PI is ‘00’, i.e. ‘Allowed’.

— If the PI is ‘01’ (Restricted), ‘10’ (Not available) or ‘11’ (Spare), no CLI digits will be delivered but the PI will be delivered.

The modified CLI delivery logic is illustrated in 13.

Table 13 CLI Delivery Logic for ISUP/PRI outgoing trunk

PI of outgoing CGPN	CLIDELV		
	Y	SCRN_PI	N
00	CLI = Y , PI = Y	CLI =Y, PI = Y	no CGN IE
01	CLI = Y, PI = Y	CLI = N, PI = Y	no CGN IE
10	CLI = Y, PI = Y	CLI = N, PI = Y	no CGN IE
11	CLI = Y, PI = Y	CLI = N, PI = Y	no CGN IE

Note: In Table 12, “CLI = Y” denotes sending CLI digits, “CLI = N” denotes not sending CLI digits, “PI = Y” denotes sending Presentation Indicator and “no CGPN IE” denotes no Calling Party Number Information Element will be contained in the outgoing PRI SETUP message , or no Calling Party Number Parameter will be contained in the outgoing ISUP IAM message.

The new CLI delivery activation or deactivation is controlled by an option CLIDLVPI in table TRKOPTS on a per trunk group basis.

Moreover, if we select only option CLIDELV=SCRN_PI without CLIDLVPI option, no CGN IE at the result of CLI's PI = 01 by CGPNBLDR should be applied.

This feature enhances the CLI delivery logic also to support the ISUP trunk.

1.3 Hardware Requirements or Dependencies

N/A.

1.4 Software Requirements or Dependencies

N/A.

1.5 Limitations and restrictions

If want to activate the option "CGPNBLDR" for the PI and NI mapping on MMP, the operator has to datafill option CLIOUTP first in table TRKOPTS against the same terminating trunk. The option CLIOUTP was introduced in feature A59023300 "CLI Delivery Control".

According to current implementation, PI of '11' could not be outpulsed to terminating PRI agent. If the PI mapping result is '11', a PI of '01' will be outpulsed to the outgoing PRI agent as currently implemented.

On MMP side, for originating ETSI PRI, the PI may be changed before entering the PI mapping functionality. For details, Please refer to PRI

Screening Enhancements (Functional Group ISD00006). If no ISD00006 related datafill is filled, PI=00,01,10 are changed to 00 before entering the PI mapping functionality of this feature.

1.6 Interactions

The existing outgoing calling party PI Mapping and CLI delivery logic are modified according to the requirements of this feature when this feature is activated.

When table DEFNUM is datafilled and chosen to be outpulsed, the mapping is based on the default number datafilled.

For the new CLI delivery logic, the PI may be changed and the CLI may be set according to the changed PI before entering the PI mapping functionality.

1. On MMP side, when the incoming is ISUP/PRI trunk, the outgoing is HK ISUP(CR14/CR15) trunk:

   when the PI in the incoming IAM is 11, it is mapped to 01 before entering the new CLI delivery logic;

   when the PI in the incoming IAM is 10, the CLI would be not available.

2. On MMP side, when the incoming is ISUP trunk, the outgoing is ANSI ISUP trunk:

   when the PI in the incoming IAM is 10/11, it is mapped to 01 before entering the new CLI delivery logic.

3. Currently, on MMP side, in the Calling Party Number of the CONNECT message from SCP, only PI='00' and '01'are supported.

1.7 Applicable customer facing sections

Fault Management	
Logs	N/A
Alarms	N/A
Configuration	
Data Schema	X
User Interface	N/A
Element Management	N/A
Security	N/A
Service Order	N/A
Office Parameters	N/A
Accounting (includes AMA billing)	N/A

Performance (includes operational measurements)	N/A
Realtime	N/A
Engineering Information	N/A

1.8 Glossary

Term	Description
CGPN	CallinG Party Number
CLI	Calling Line Identification
CS-1	Capability Set 1
DMS-MMP	DMS switch with MMP software load
IE	Information Element
ISUP	ISDN User Part
NI	Number Incomplete Indicator
PI	Presentation Indicator
PRI	Primary Rate Interface

1.9 Reference

1. A59040499 Calling Number Delivery Enhancement for ISDN PRI - MMP
2. A59039145 Calling Number Delivery Enhancement for ISDN PRI - GSP
3. A59039152 Default 10 digits CLI for IDA-M/R trunk

Product = World Trade

A00005932--Removing Loopback Trunks in CEPT DISA calls for Remote Feature Activation

Functional Description

1.1 Applicable Solution(s)

DMS

1.1.1 Introduction

This feature enhances the digit collection in DISA features which are CEPT Call Forwarding Remote Access (CFRA) and CEPT Remote Access (CEPTRA). In existing functionality, digit collection is performed via loopback CAS trunks for all originating agents although they have capability to use UTR; that means, following kinds of originating agents below, loopback trunk is inserted between the agent and DISA feature by default:

- ISDN BRI lines
- ETSI ISUP trunks
- ETSI PRI trunks

This feature changes this behavior, and provides flexibility in digit collection as in following hierarchical order.

1. collect digits via UTR if possible
2. collect digits via DTMF receiver (for PRI agents only)
3. collect digits via LOOPBACK trunk

This feature provides the possibility not to use superfluous loopback equipment and optimize the digit collection for mentioned agents on CEPT markets; when the user of CFRA/CEPTRA feature will need to send digits for remote call activation, UTR or DTMF receivers (on MTMs) will be used for it. If both of them are not available, loopback trunk will be inserted as in existing functionality.

Note: Throughout this document, “originating agent” refers to the originating agent of the call in the switch where DISA feature is located on.

1.1.2 General Considerations

This feature is applicable for only CEPT features related with DISA framework, and provides the algorithm as explained below.

a. Firstly, digit collection via UTR is tried to perform if it’s already available.

b. Secondly, if UTR is not available for originating agent, digit collection via DTMF receiver on MTMs is tried to perform. (for PRI agents only)

c. Thirdly, if both of them are not available, digit collection is performed via LOOPBACK trunks.

The following table illustrates the originating agents versus supported digit collection types.

Table 14 Supported digit collection types versus originating agents

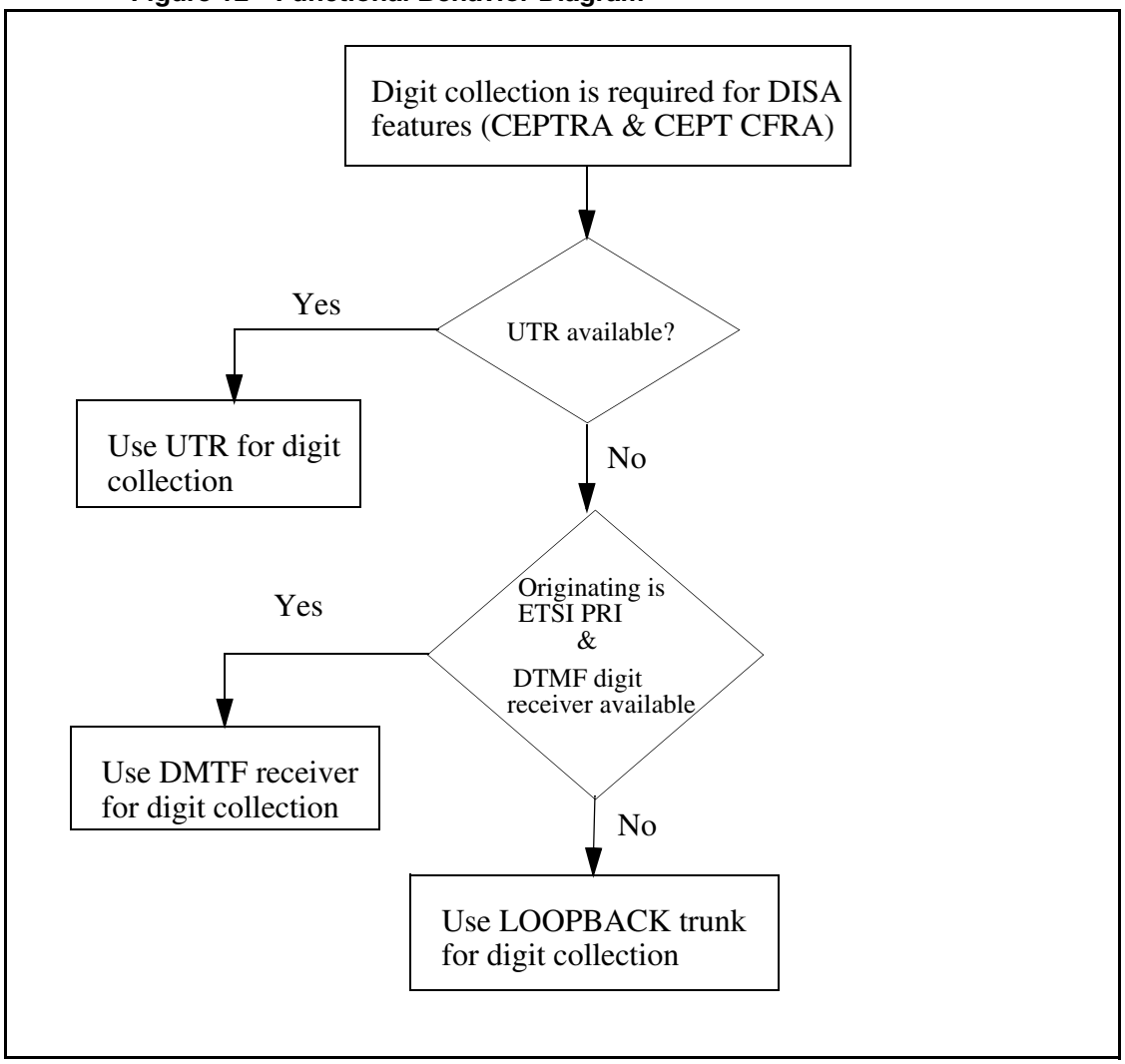
Originating Agents	Digit collection type		
	via UTR	via DTMF digit receiver	via LOOPBACK trunks
ETSI ISUP	X		X
ETSI PRI	X	X	X
R1 (NTLS01, 02, 09), R2 (Base)	X		
ETSI BRI lines	X		X
IBN/EBS lines	X		

X abbreviates this type of digit collection is supported on that agent.

As seen from Table 1, Digit collection via DTMF digit receiver cards is supported for only ETSI PRI trunks on which digit collection can be performed by UTR or Loopback trunks also.

Algorithm of choosing of which digit collection type used is simple. UTR has the first priority, DTMF digit receiver has the second, whereas loopback trunk has the last priority. The functional behavior diagram is as shown below.

Figure 12 Functional Behavior Diagram



1.2 Hardware Requirements or Dependencies

The RCVRDGT pool will be used as DTMF digit receiver in this activity, and digit receiver cards (2X48xx, where xx refers to “AB, BA, CC”) should be located in MTMs.

Table RECEIVER should be provisioned as illustrated in Figure 2 below for using DTMF digit receiver in DISA calls. In order to be in service, each RCVRDGT must be taken in service by “**bsy;rts**” using the “**mapci;mtc;trks;ttp**” level.

Figure 13 DTMF digit receiver provisioning

```
TABLE: RECEIVER
>lis all
TOP
            RCVRKEY   RCVRTYPE   TMTYPE   TMNO   TMCKTNO
CARDCODE
-----------------------------------------------------------
RCVRDGT   0      D   MTM   0      6        2X48CC
RCVRDGT   1      D   MTM   0      7        2X48CC
BOTTOM
```

1.3 Software Requirements or Dependencies

N/A

1.4 Limitations and restrictions

In case of originating agent is ETSI PRI agent, Dial Tone is applied to the subscriber instead of SDT where it requires.

1.5 Interactions

N/A

1.6 Applicable customer facing sections

Fault Management

- Logs _____
- Alarms _____

Configuration

- Data Schema _____
- User Interface _____
- Element Management _____
- Security _____
- Service Order _____
- Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

1.7 Glossary

Term	Description
BRI	Basic Rate Interface
CAS	Channel Associated Signaling
CEPT	Counsel for European Postal and Telecommunications
DISA	Direct Inward System Access
DTMF	Dual-Tone Multifrequency
DTM	Digital Trunk Module
EBS	Electronic Business Set
ETSI	European Telecommunications Standards Institute
IBN	International Business Network
ISDN	Integrated Services Digital Network
MTM	Maintenance Trunk Module
SDT	Special Dial Tone
UTR	Universal Tone Receiver

Product = World Trade

A00005962--CLIR Removal for Centrex Intragroup Calls

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Introduction

Calling Number Delivery Blocking Overriding (CNDBO) feature gives the customer the ability to get the calling number on his CPE even it is restricted at the originating site. This option is provisioned either customer group basis or assigned to a line via servord.

On this activity, the functionality on customer group basis is enhanced according to the requirements of Turk Telekom. A new subfield is added to customer group option CNDBO in this aim. When CNDBO is assigned to a customer group, according to the value of this subfield, first it will be determined if the option will be valid on all calls arriving to subscribers on that customer group or it will be valid only for calls where the originator and the terminator are both on this customer group.

CNDBO is a SOC option with code BPRD0001. This SOC must be ON in order to this feature be available at the office. Both nodal and network CNDBO options are activated via this SOC instead of RES00100 and RES00101.

1.2.2 New subfield CNDBOTYPE

The CNDBO customer group option is provisioned at table CUSTSTN. On current implementation, the option has no subfields. It either exists or not.

A subfield is added to the option called CNDBOYPE. It has two values:

- **ALL:** When the subfield has the value ALL, the option will be valid for all calls terminating on a subscriber at this customer group. In other words, current implementation will be valid on this choice.
- **INTRAONLY:** When the subfield has value INTRAONLY, then the CNDBO option will be valid only on calls where the originator and the terminator are both on this customer group. Calls arriving to the subscribers at this customer group from other agents, will not be affected.

Figure 14 Example of table CUSTSTN datafill

```
CI:
>table custstn
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: CUSTSTN
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
CUSTNAME:
>custyas
OPTNAME:
>cndbo
OPTION:
>cndbo
CNDBOTYPE:
>intraonly
TUPLE TO BE ADDED:
      CUSTYAS      CNDBO                          CNDBO INTRAONLY
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

After ONP from a previous load to the ISN08 load, the suboption CNDBOTYPE will have the value ALL.

All trunks are not capable of carrying the customer group information. Here is an example which this information is carried: MBG trunks.

The NETCGID value for the customer group datafilled at table CUSTNTWK is used for this aim. The netinfo parameter can be seen at IAM as an optional information. Also the BGID and BGXLA parameters must be entered for corresponding customer group in BGDATA table for the MBG trunk over ANSI ISUP network. The BGID value for customer group is used for carrying customer group information via MBG trunks.

Figure 15 Example for BGDATA table datafill

```
 BGID BGXLA OPTIONS
------------------
LOCAL 1111 (212 242 7 212) $  (DSR ) (CUSTGRP CENTREX Y 9 Y 0 60) $
```

Figure 16 Example for netinfo parameter carried at MBG trunk

```
CCS7 MESSAGE TYPE:  ISUP_IAM
.....

OPTIONAL PART:   CALLING PARTY :
                   EVEN_ODD_IND:                    EVEN_NUM_NIBBLES
                   NATURE_OF_ADD :                   UNIQUE_NATIONAL_SIG_NUMBER
                   ADDR_PRES_RESTRICTED_IND :   PRESENTATION_ALLOWED
                   NUMBERING_PLAN :                 ISDN_TELEPHONY_NUM_PLAN
                   SCREENING_IND  :                 NETWORK_PROVIDED
                   ADDRESS_INFORMATION = 1027835479

                 NETWORK_INFO_PARM :
                   PARTY_SEL_CODE  :          NETINFO_CALLING_PARTY
                   EXTERNAL_NETID  :          0
                   EXTERNAL_NETCGID:          8
                   NETNCOS         :          0
```

The External_Netcgid parameter is used to compare the calling and called party customer groups.

1.3 Hardware Requirements or Dependencies

No hardware dependency.

1.4 Software Requirements or Dependencies

None.

1.5 Limitations and restrictions

All limitations and restrictions of CNDBO feature are valid.

When INRAONLY is datafilled as subfield, for calls over trunks, the customer group information is not always carried. So, the option will be available only for calls made over trunks which netinfo information is carried through (for example MBG).

1.6 Interactions

Please refer to the interactions of basic CNDBO feature.

1.7 Applicable customer facing sections

Fault Management

Logs _____

Alarms _____

Configuration

Data Schema __X____

User Interface _____

Element Management _____

Security _____

Service Order _____

Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

1.8 Glossary

Term	Description
CND	Calling Number Delivery
CNDBO	Calling Line Delivery blocking Overriding
MGB	Meridian Business Group
CLIR	Calling Line Identity Restriction
CPE	Customer Premises Equipment
ONP	One Night Process

1.9 Recommended Reading/References

AJ1494 - Calling Number Delivery Blocking Overriding

AG0781 - Calling Number Delivery

AG0778 - Calling Number Delivery Blocking

AG1155 - Calling Number Delivery Blocking

Configuration for A00005962

1.10 Hardware and Software Requirements

1.11 Initial Configuration

1.12 Office/Subnet parameters (OP/SP) (CM & SESM)

1.13 Upgrade Impact

1.14 Data schema (DS) (CM, MIBS, RDB)

1.14.1 New/modified tables, MIBs, or Database Schema

CUSTSTN

Table 15 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
CUSTSTN	CHANGED	UNCHANGED

1.14.2 Table/MIB/Remote Database Schema information

1.14.2.1 Name: CUSTSTN

This table is used for customer group basis option provisioning.

1.14.2.1.1 Functional description

This activity enhances one of the CUSTSTN options named CNDBO by adding a subfield named CNDBOTYPE.

CNDBOTYPE: {ALL, INTRAONLY}

This subfield determines whether CNDBO option will be valid for all calls terminating to subscribers at this customer group in existing way by being datafilled as ALL, or the option will be valid only on calls which both originating and terminating subscribers are in that customer group by being datafilled as INTRAONLY.

Figure 17 Example CUSTSTN datafill for customer group option CNDBO

```
TABLE: CUSTSTN
CUSTNAME   OPTNAME                    OPTION
-------------------------------------------------------------------------------------------
CUSTYAS    CNDBO                      CNDBO   INTRAONLY
```

1.14.2.1.2 Usage sequence and implications (CM Only)

There is no requirement to datafill tables in a specific order.

1.14.2.1.3 Size

Table 16 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
CUSTSTN	0	1	

1.14.2.1.4 Fields/OIDs

The following table lists fields/OIDs for CUSTSTN.

Table 17 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
CNDBOTYPE	NEW	subfield	ALL, INTRAONLY	Determines weather the CNDBO option will be

1.14.2.1.5 Datafill example

The following example shows sample datafill for table CUSTSTN.

Figure 18 Example of table CUSTSTN datafill

```
CI:
>table custstn
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: CUSTSTN
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
CUSTNAME:
>custyas
OPTNAME:
>cndbo
OPTION:
>cndbo
CNDBOTYPE:
>intraonly
TUPLE TO BE ADDED:
      CUSTYAS      CNDBO                          CNDBO INTRAONLY
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

1.14.2.1.6 Table release history update
None.

1.14.2.1.7 Supplementary information
None.

1.14.2.1.8 Translation verification other tools
None.

1.15 Service Orders (SO) (CM & SESM)

1.16 Software optionality control (SOC)

1.17 Element Management

1.18 Command interface changes

1.19 Security

1.20 Configuration Walkthrough

Product = World Trade

A00006064--DNSCRN Disable CCR Screening

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

The purpose of this activity is to disable CCR (Cumulative Charge Restriction) screening in Universal Translations Tables under certain circumstances. In current behavior, CCR screening for Third Party Billed Calls occurs for called party number datafilled with THIRDPTY or V3PTYBIL option with FEATINFO VALIDATE selector.

With this functionality, CCR screening for Third Party Billed Calls should not occur for called number datafilled THIRDPTY option with FEATINFO VALIDATE selector.

Feature AU2351 implements functionality of CCR DN screening call restriction attribute and uses DN screening base functionality provided by activity AR0100. This new feature involves flexibility of CCR screening for Third Party Billed Calls and uses Cumulative Charge Restriction (CCR) provided by activity AU2351.

The activity is optional with a SOC option. When state of SOC is ON, feature becomes active, otherwise system behaves as it was before this functionality.

The feature is implemented in ISN08.

1.2.1 Background:

CCR attribute is introduced in feature AU2351 for CCR call screening functionality, which is used to indicate when subscribers have exceeded their cumulative charge limit. CCR attribute is to be used to block calls in order to prevent fraudulent charges and route them to an appropriate treatment, as datafilled in table OPTTREAT, once subscribers have exceeded their cumulative charge limit.

A subscriber's cumulative charge limit is determined by the operating company in their downstream billing process. When the downstream billing process determines that a subscriber's cumulative charge limit has been exceed, table DNSCRN can be datafilled with the new CCR attribute against the subscriber's DN.

For enabling CCR screening, once CCR attribute is datafilled in table DNSCRN for a subscriber and then call screening is setup in Universal Translations using the FEATINFO VALIDATE selector with the SUBSCRN option, and the CHKCCR field for a subscriber type datafilled to Y, so that CCR screening becomes enable, and the call is blocked, routed to treatment. In this scenario call fails since CCR screening fails.

Figure 1 describes datafill example of DNSCRN and PXCODE (Universal Translation Table) table for CCR screening.In this figure 1, CHKCCR field in PXCODE table must be Y to do CCR screening for each subscriber types (General, Payphone, Mobile, Personal). Subscriber type CCR screening fails because, CHKCCR is set to Y and CCR attribute is datafilled in table DNSCRN against the subscriber DN (1027835453).

In figure 1, the tuple in table PXCODE does the following:

- Use the calling party number for screening purposes
- Allow all subscribers (General, Payphone, Mobile, Personal)
- Check for only CCR attribute in table DNSCRN
- If screening passed would continue, with remaining digits, into table PXCODE using PTTXLA translation name

FEATINFO VALIDATE CCR screening on the calling party number (by default) or called party number (using the CALLED option) is controlled by the CHKCCR field for each of the subscriber types of General, Payphone, mobile and Personal.

Figure 19 Datafill Example of DNSCRN and PXCODE Tables for CCR Screening

```
TABLE: DNSCRN
>pos 1027835453
1027835453 (CCR) $

>TABLE PXCODE
>pos pttxla 111 111
PTTXLA 111 111 FEATINFO VALIDATE (SUBSCRN (GENERAL N N N Y)
(PAYPHONE N N N Y) (MOBILE N N N Y) (PERSONAL N N N Y) $) $ 0 2
24 PX PTTXLA
```

Order of precedence for FEATINFO VALIDATE Subscriber type screening with CCR is Unpaid attribute, CCR attribute, Blckcall attribute respectively. In figure 2, the assumption is that the DN belongs to a General subscriber type, and the CHKUNPD, CHKBLKCL and CHKCCR fields for a GENERAL subscriber type are datafilled to 'Y'.

Figure 20 Order of Precedence for FEATINFO VALIDATE Subscriber Type Screening with CCR

```
DNSCRN Entry                                    OPTTREAT Screening Event

1027835455          (UNPAID)          (BLCKCALL)          (CCR)          $
    VLD_GEN_UNPAID_DN_SCRN
1027835455 (UNPAID) (CCR) $                          VLD_GEN_UNPAID_DN_
1027835455 (BLCKCALL) (CCR)  $                        VLD_GEN_CCR_DN_SC
1027835455 (CCR) $                                    VLD_GEN_CCR_DN_SC
```

In feature AU2351 Third Party Billed calls are screened for CCR against the THDPTYDN (Third Party DN) of THIRPTY attribute in table DNSCRN.

THIRDPTY attribute is used for doing automatic Third Party Billing. When this attribute is specified a Third Party Billing number must also be entered

Figure 3 describes datafill examples of tables that enable CCR screening for Third Party Billed Calls with feature AU2351. Assumption here is that the DN belongs to a general subscriber type and CHKCCR field for a general subscriber type is datafilled to Y.

Third Party Billing DN Screening is done in addition to subscriber type screening, and is not part of subscriber type screening.

Figure 21 General Subscriber Failing Third Party DN CCR Screening

TABLE: PXCODE
>pos pttxla 111 111
PTTXLA 111 111 FEATINFO VALIDATE
(SUBSCRN (GENERAL N N N **Y**) $) (**THIRDPTY**) $ 0 2 24 PX PTTXLA
For calling party DN 1027835452;
TABLE: DNSCRN
>pos 1027835453 ------->Third Party Billing DN
1027835453 (**CCR**) $

>pos 1027835452 ----->This DN is calling number
1027835452 (**THIRDPTY 1027835453**) $

Note: Third Party DN is 1027835453.

In figure 3, if a call is made by subscriber who's DN is 1027835452 and who is identified as a GENERAL subscriber, then with the above translations the call will be routed to the treatment. Subscriber Type CCR Screening passes because, CHKCCR field is set to Y for GENERAL subscribers, but the CCR attribute is not datafilled in table DNSCRN against the subscriber DN (1027835452). Third Party CCR Screening fails because, the THIRDPTY attribute in PXCODE triggers the Third party DN to be screened for the CCR attribute in table DNSCRN. As a result of the CCR attribute being datafilled against the Third Party DN (1027835453), screening fails.

1.2.2 Functional Description

With this new functionality, CCR screening part is skipped whenever the THIRDPTY option is datafilled in the FEATINFO VALIDATE selector of Universal Translation tables and DNSCRN table. So that Third Party Billed call screening for Third Party DN in table DNSCRN is only done for the UNPAID DN call restriction attribute

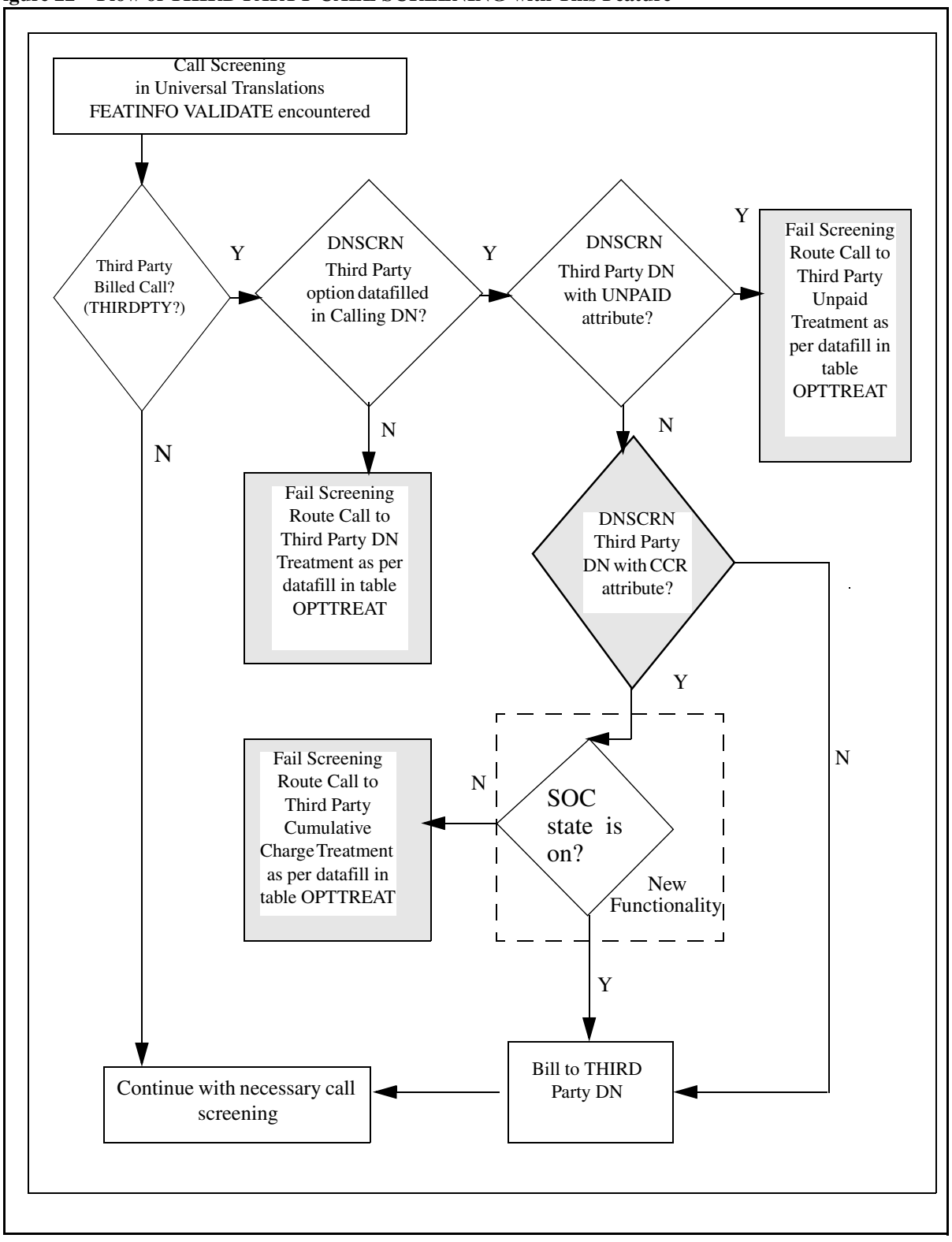
Desired Behavior of the activity can be summarized as follows;

When a call goes through Universal Translations and hits the FEATINFO VALIDATE selector the following is what occurs:

- Subscriber type screening is done. This is same with functionality in feature AU2351. FEATINFO VALIDATE CCR screening on the Calling Party number (by default) or Called Party number (using called option) is controlled by the CHKCCR field for each of the subscriber type of GENERAL, PAYPHONE, MOBILE and PERSONAL.
- When the THIRDPTY option is present in Universal Translations, table DNSCRN is checked for datafill of the THIRDPTY attribute for the subscriber DN
- If the THIRDPTY attribute in DNSCRN is datafilled against the subscriber DN, then table DNSCRN is checked for datafill of the UNPAID attribute against the Third Party DN
- If the UNPAID attribute is datafilled against the Third Party DN then the calls fails call screening as before
- If the UNPAID attribute is not datafilled, but the CCR attribute is datafilled against the Third Party DN, and If SOC option state is ON, CCR functionality is skipped, billing record is updated and then call continues translation.
- If the UNPAID attribute is not datafilled, but the CCR attribute is datafilled against the Third Party DN, and If SOC option state is OFF, translation continues same with functionality in feature AU2351. In other words, the call is routed to the treatment datafilled in table OPTTREAT against the screening event VLD_THRDPTY_BILLNUM_CCR.
- If the UNPAID and CCR attribute is not datafilled, translation continues.

Figure 4 describes the flow of FEATINFO VALIDATE third party call screening with changes made by this feature for CCR screening.

Figure 22 Flow of THIRD PARTY CALL SCREENING with This Feature



1.3 Hardware Requirements or Dependencies

None

1.4 Software Requirements or Dependencies

SOC option must be ON for activation of this feature.

1.5 Limitations and restrictions

CCR screening for Third Party Billed Calls can be enabled/disabled by of this feature.

The following JI_ISUP interworkings are supported as in RS section of activity 59017299:

JI-ISUP <==> JI-ISUP

JI-ISUP <==> ANSI7+

JI-ISUP <==> ETSI ISUP V2

JI-ISUP <==> NCC ISUP

JI-ISUP <==> Japan T1 CAS (R1)

JI-ISUP <==> Japan PRI (INS1500)

JI-ISUP <==> IBN Line

1.6 Interactions

N/A

1.7 Applicable customer facing sections

Fault Management

Logs	N/A
Alarms	N/A
Configuration	N/A
Data Schema	N/A
User Interface	N/A
Element Management	N/A
Security	N/A
Service Order	X
Office Parameters	N/A

Accounting (includes AMA billing) N/A

Performance (includes operational measurements) N/A

1.8 Glossary

Table 18

Term	Description
CCR	Cumulative Charge Restriction

1.9 References

- AU2351 - Cumulative Charge Restriction
- RS section of FN document of activity 59017299- JI-ISUP
- Spec RFF 368
- AR0101 - Call Screening Applications

Configuration for A00006064

2.1 Hardware and Software Requirements

N/A

2.2 Initial Configuration

NA

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

NA

2.4 Upgrade Impact

None

2.5 Data schema (DS) (CM, MIBS, RDB)

NA

2.6 Service Orders (SO) (CM & SESM)

NA

2.7 Software optionality control (SOC)

There is one new SOC option that is introduced with this feature.

Table 19 SOC

SOC option name:	XLAS
SOC option title:	CCR Screen Enh
SOC option control type:	<state
New SOC option?	Yes
SOC option order code	XLAS0056
Option defined in DRU:	WT
Affected products:	ISN)*

2.8 Element Management

NA

2.9 Command interface changes

NA

2.10 Security

NA

2.11 Configuration Walkthrough

N/A

Product = World Trade

A00006271--CEPT Act/Deact and Interrogation for ETSI BRI CFK, CFB/CFD K

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Background

Activation, deactivation and interrogation of CFB (Call Forwarding Busy), CFD (Call Forwarding Don't Answer) and CFU (Call Forwarding Unconditional) features based on the CEPT Dialing Sequence has been already implemented per loop (or a chosen DN keylist) (for more information, please refer to [1] (A59034125 "ISDN BRI CEPT Call Forwarding" in PLS FMDOC).

CFx and CFx per Key are administration assigned features but the subscriber as well as the administrator has the ability of activating, deactivating and interrogating the feature.

This activity is only interested in the activation, deactivation and interrogation of the previously assigned CFx per Key option based on CEPT Dialing Sequence and neither interested in the provisioning of the CFx per Key option nor the existing CFx per Key activation, deactivation and interrogation code (for more information, please refer to [2] A59028702 "Support of CFx for Multiple DNs for ETSI BRI" in PLS FMDOC).

1.2.1.1 Existing CFB and CFD Types

There are 4 types of CFB and CFD:

- N (Normal) -"Forwarded to DN" is specified during assignment of feature, and forwarding capability is immediately activated and remains activated.
- F (Fixed) - "Forwarded to DN" is specified during assignment of feature, but forwarding capability is activated and deactivated by the user from the set to which the feature is assigned.
- P (Programmable) - Similar to F type, but upon activation, user from set also specifies forwarded to DN. No "Forwarded to DN" is specified during assignment of the feature.
- K (Programmable per Key) - For every DN in the KEYLIST, a new tuple is created in table CFX (for the other types of CFB and CFD, a common tuple is created for all the DNs in the keylist). This means that each DN might have its own data.

The CFB and CFD call forwarding features are assignable only to KEY 1 of an ISDN BRI set. Those DN Keys which receive the functionality of such an assignment are specified in a KEYLIST.

1.2.1.2 Existing CFK Feature

The CFK (Call Forwarding per Key) feature can be assigned to KEY 1 or to any vacant key on a set. Again, those DN Keys which receive the functionality of such an assignment are specified in a KEYLIST. For CFK, the user can program a separate "Forwarded to DN" to each key specified in the KEYLIST.

This activity is only interested in CFK option and the K (Programmable per Key) type of the CFB and CFD options.

1.2.2 Feature Overview

This document describes the Functional Description of the ETSI BRI activity A00006271 “CEPT Act/Deact and Interrogation for ETSI BRI CFK, CFB/CFD K” in ISN08.

This feature is needed to make available the activation, deactivation and interrogation of CFB per Key (Call Forwarding Busy per Key), CFD per Key (Call Forwarding Don’t Answer per Key) and CFK (Call Forwarding Unconditional per Key) features based on the CEPT Dialing Sequence.

In this document, CFD is used instead of ETSI CFD or CFNR (Call Forwarding No Reply). With the existing implementation, CFD is used in Servord and in provisioning tables, and CFNR is invisible to the crafts person. Therefore, only CFD is used in this document to mean CFNR.

In this document, “MSN A” is used to define the DN which is assigned to ISDN BRI set or IBN set by configuring the TA’s (Terminal Adaptor) port as the first DN by subscriber and can be different than the primary DN (Key 1) provisioned at the exchange.

The following abbreviations are used in describing the activation, deactivation and interrogation control procedures of ETSI BRI CFX per Key in CEPT Dialing Sequence:

LH: Lift Handset, RH: Replace on Hook, DT: Dial Tone, ACK: Acknowledge Tone, NACK: Negative ACKnowledge Tone, AC: Access Code, DN: Directory Number, *: Dialing Star, #: Dialing Octothorpe.

According to Turk Telecom tender, the feature CFx per Key is enhanced to function on ETSI BRI lines by using CEPT Dialing Sequence.

Although, subscriber can activate and deactivate a CFx per Key option by using ISDN BRI Set’s menu options and keys (for more information, please refer to [2] A59028702 “Support of CFx for Multiple DNs for ETSI BRI” in PLS FMDOC), if there is an “Analog Telephone” on the loop which is connected to the ISDN loop over TA (Terminal Adaptor) user has no chance to use menu options and keys. So, this activity supplies CEPT dialing ability to the “Analog Telephone” user which is connected to the ISDN loop over TA (and also to the ISDN BRI user) to activate, deactivate and interrogate a CFx per Key option.

While explaining the desired behavior, example configuration in Figure 1 is considered. It is supposed that DN1, DN2, DN3, DN4 and DN5 of the “ISDN

loop A" have CFx per Key options. If a subscriber has the configuration like Figure 1, subscriber might:

d. Activate, deactivate or interrogate the CFx per Key option assigned to DN 1 by using "ISDN Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN A of the ISDN BRI terminal which is used to dial CEPT sequence),

e. Activate, deactivate or interrogate the CFx per Key option assigned to DN 4 by using "ISDN Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN X -an MSN of the ISDN BRI set different than MSN A- of the ISDN BRI terminal which is used to dial CEPT sequence),

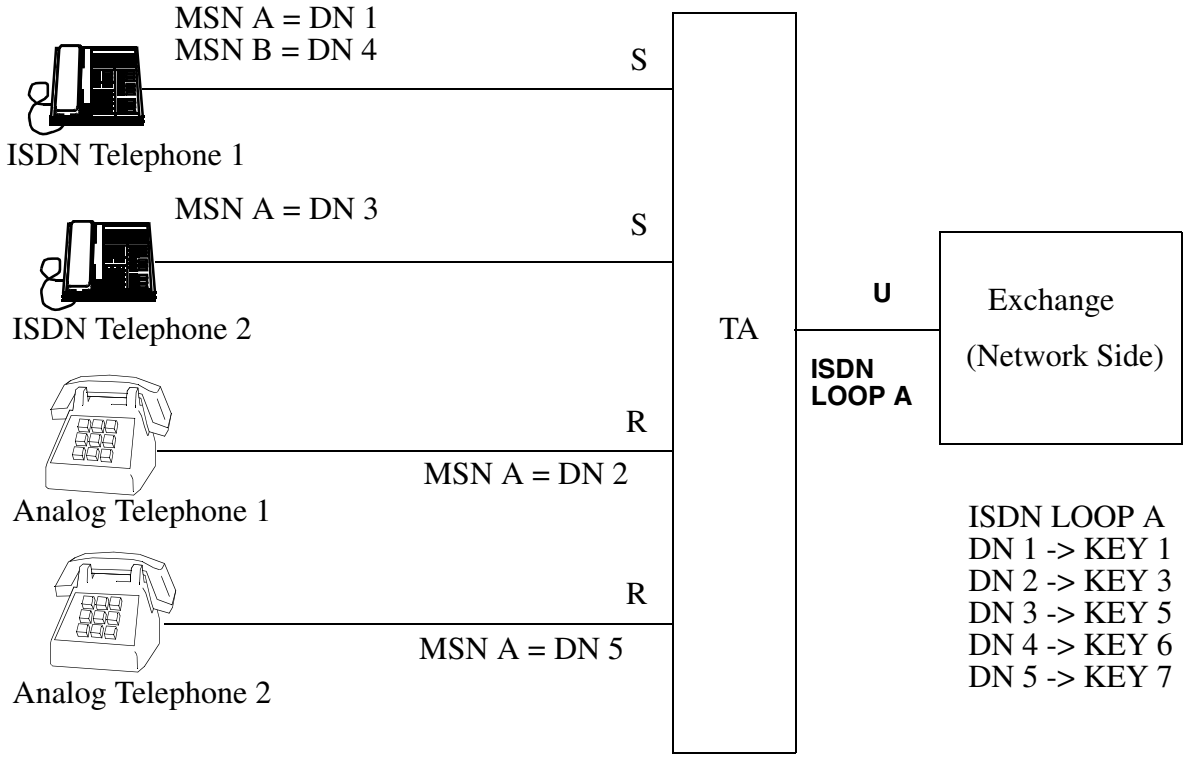
f. Activate, deactivate or interrogate the CFx per Key option assigned to DN 3 by using "ISDN Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN A of the other ISDN BRI terminal on the same ISDN loop),

g. Activate, deactivate or interrogate the CFx per Key option assigned to DN 2 by using "Analog Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA),

h. Activate, deactivate or interrogate the CFx per Key option assigned to DN 5 by using "Analog Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN A of the other Analog Telephone on the same ISDN loop by dialing from another Analog Telephone on the same loop which is connected to the ISDN loop over a TA),

i. Activate, deactivate or interrogate the CFx per Key option assigned to DN 3 by using "Analog Telephone 1" (subscriber might activate, deactivate or interrogate a CFx per Key option assigned to DN of the MSN A of an ISDN BRI terminal on the same ISDN loop by dialing from an Analog Telephone on the same loop which is connected to the ISDN loop over a TA).

Figure 23 Sample Configuration of an ISDN loop



TA : Terminal Adaptor

1.2.2.1 Activating CFx per Key Option

1. If subscriber wants to activate;

a CFx per Key option assigned to DN of the MSN A of the ISDN BRI terminal which is used to dial CEPT sequence (item “a” of the Section 2.2.2),

or

a CFx per Key option assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA (item “d” of the Section 2.2.2);

LH DT * AC * Forwarded to DN # ACK RH

The ETSI BRI Call Forward per Key option becomes active immediately after execution of this sequence. DN entered must be translatable number, that means “Forwarded to DN” is validated.

Any incomplete activation sequence will result in NACK:

LH DT * AC * invalid-dialing-sequence NACK RH

The implementation of this behavior for the CFB per Key and CFD per Key options are already available in the existing code (if CFB per Key or CFD per Key options are assigned to MSN A of an ISDN BRI terminal which is used to dial CEPT sequence or assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA, it already works). **This activity only implements this functionality for the CFK option.**

2. If subscriber wants to activate,

   a CFx per Key option assigned to DN of the MSN X -an MSN of a terminal different than MSN A- of that terminal which is used to dial CEPT sequence (item “b” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of the other ISDN BRI terminal on the same ISDN loop (item “c” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of an Analog Telephone on the same ISDN loop by dialing from another Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “e” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of an ISDN BRI terminal on the same ISDN loop by dialing from an Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “f” of the Section 2.2.2);

   LH DT * AC * Forwarded to DN * DN of MSN X # ACK RH

   The ETSI BRI Call Forward per Key option becomes active immediately after execution of this sequence. DN entered must be translatable number, that means Call Forwarded to DN is validated.

   Any incomplete activation sequence will result in NACK:

   LH DT * AC * invalid-dialing-sequence NACK RH

1.2.2.2 Deactivating CFx per Key Option

1. If subscriber wants to deactivate;

   a CFx per Key option assigned to DN of the MSN A of the ISDN BRI terminal which is used to dial CEPT sequence (item “a” of the Section 2.2.2),

or

a CFx per Key option assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA (item “d” of the Section 2.2.2);

LH DT # AC # ACK RH

The ETSI BRI Call Forward per Key option becomes inactive immediately after execution of this sequence.

The implementation of this behavior for the CFB per Key and CFD per Key options are already available in the existing code (if CFB per Key or CFD per Key options are assigned to MSN A of an ISDN BRI terminal which is used to dial CEPT sequence or assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA, it already works). **This activity only implements this functionality for the CFK option.**

2. If subscriber wants to deactivate;

a CFx per Key option assigned to DN of the MSN X -an MSN of a terminal different than MSN A- of that terminal which is used to dial CEPT sequence (item “b” of the Section 2.2.2),

or

a CFx per Key option assigned to DN of the MSN A of the other ISDN BRI terminal on the same ISDN loop (items “c” of the Section 2.2.2),

or

a CFx per Key option assigned to DN of the MSN A of an Analog Telephone on the same ISDN loop by dialing from another Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “e” of the Section 2.2.2),

or

a CFx per Key option assigned to DN of the MSN A of an ISDN BRI terminal on the same ISDN loop by dialing from an Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “f” of the Section 2.2.2);

LH DT # AC * DN of MSN X # ACK RH

The ETSI BRI Call Forward per Key option becomes active immediately after execution of this sequence.

Any incomplete activation sequence will result in NACK:

LH DT * AC * invalid-dialing-sequence NACK RH

1.2.2.3 Interrogating CFx per Key Option

1. If subscriber wants to interrogate a “Forwarded to DN” of;

   a CFx per Key option assigned to DN of the MSN A of the ISDN BRI terminal which is used to dial CEPT sequence (item “a” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA (item “d” of the Section 2.2.2);

   if DN is equivalent to the DN stored,

   LH DT *# AC * Forwarded to DN # ACK RH

   if DN stored does not match the DN entered

   LH DT *# AC * Forwarded to DN # NACK RH

   The implementation of this behavior for the CFB per Key and CFD per Key options are already available in the existing code (if CFB per Key or CFD per Key options are assigned to MSN A of an ISDN BRI terminal which is used to dial CEPT sequence or assigned to DN of the MSN A of an Analog Telephone by dialing from that Analog Telephone which is connected to the ISDN loop over a TA, it already works). **This activity only implements this functionality for the CFK option.**

2. If subscriber wants to interrogate a “Forwarded to DN” of;

   a CFx per Key option assigned to DN of the MSN X -an MSN of a terminal different than MSN A- of that terminal which is used to dial CEPT sequence (item “b” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of the other ISDN BRI terminal on the same ISDN loop (item “c” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of an Analog Telephone on the same ISDN loop by dialing from another Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “e” of the Section 2.2.2),

   or

   a CFx per Key option assigned to DN of the MSN A of an ISDN BRI terminal on the same ISDN loop by dialing from an Analog Telephone on the same loop which is connected to the ISDN loop over a TA (item “f” of the Section 2.2.2);

if DN is equivalent to the DN stored,

LH DT *# AC * Forwarded to DN * DN of MSN X # ACK RH

if DN stored does not match the DN entered

LH DT *# AC * Forwarded to DN * DN of MSN X # NACK RH

1.3 Hardware Requirements or Dependencies

N/A

1.4 Software Requirements or Dependencies

N/A

1.5 Limitations and restrictions

- Maximum number of digits for Forwarded-to-DN is 30.
- Restrictions for the maximum number of digits for DN-of -MSNX are as follows:
  i. SNPA + OFC CODE + STN CODE <= 15
  ii. OFC CODE + STN CODE <= 14
  iii. STN CODE <= 8
  iv. OFC CODE <= 7
- If dialed Forwarded-to-DN contains a DN which is available at the same office with the subscriber and if subscriber dials extra digits after the valid Forwarded-to-DN by following the restriction of the maximum number of digits for Forwarded-to-DN, extra digits are removed and the rest of the translatable digits are stored as Forwarded-to-DN.
- Since DN-of-MSNX must be a DN which is available ISDN loop of the subscriber (at the same office), if subscriber dials extra digits after the valid DN-of-MSNX by following the restriction of the maximum number of digits for DN-of-MSNX, it is acceptable.
- This activity is not supported for the Centrex offices.
- CEPT Act/Deact and Interrogation are not supported via Keypad Facility Messages.
- This activity is not affected from the “Flexible Digit Analysis”. Although this activity uses “Flexible Digit Analysis” until collecting first three digits (until translation finding the feature), digit collection part of the FPE does not use “Flexible Digit Collection”.
- If CEPT dialing sequence is not finished with octothorpe (#), after a time interval, a time-out message and a “last digit” message are received. When this message is received, it is evaluated as an error and a NACK (negative acknowledgement) tone is given to the user.

This time interval can vary for different CEPT dialing sequences (for example; according to number of digits dialed, between overlap and enblock dialing and between NDGT and STDCOLL digit collection types defined in NCOS table). Some of the test results for the available office settings (DGCOLNM: NDGT) are as follows:

	ENBLOCK	OVERLAP
***14*7831023**	40s	10s
***14**	40s	40s
#14	40s	40s
14	40s	10s
***14*7831023*7831093**	40s	5s

1.6 Interactions

This activity follows the existing feature interaction rules. Existing interactions remain unchanged:

If RESL option types OTR and ORR are datafilled, Call Forward Deactivation and Interrogation are allowed. However, Activation of Call Forward is not allowed. If RESL option type TRR is datafilled, Call Forward Activation, Deactivation and Interrogation are allowed.

If OCB is active at the same DN, Call Forward Activation is not allowed according to restriction class of OCB. On the other hand, Deactivation and Interrogation are allowed to be programmed.

1.7 Applicable customer facing sections

Fault Management	
Logs	N/A
Alarms	N/A
Configuration	
Data Schema	N/A
User Interface	N/A
Element Management	N/A
Security	N/A
Service Order	N/A
Office Parameters	N/A
Accounting (includes AMA billing)	N/A

Performance (includes operational measurements) N/A

1.8 Glossary

Term	Definition
BRI	Basic Rate Interface
WT	World Trade
CEPT	Conference of European Postal and Telecommunications
CFNR	Call Forward No Reply
CFB	Call Forward Busy
CFD	Call Forward Don't Answer
CFU	Call Forward Unconditional
CFx	Call Forward
TA	Terminal Adaptor
DN	Directory Number
MSN	Multiple Subscriber Number
AC	Access Code
ETSI	European Telecommunications Standard Institute
FPE	Feature Process Environment
KEYSET	Key telephone set

1.9 Recommended Reading/References

1. A59034125 "ISDN BRI CEPT Call Forwarding"
2. A59028702 "Support of CFx for Multiple DNs for ETSI BRI" in PLS FMDOC
3. ETS 300 199, 200, 201, 202 Chapter 6.1
4. AD9698 "CFB/CFD Per Key Destination" in PLS FMDOC

Product = World Trade

A00006387--Support of SUSpend/RESume over ETSI ISUP QFT (QSIG Feature Transparency)

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Purpose

The goal of the work covered by this activity is to provide new functionality to generate network initiated SUSpend/RESume messages over ETSI ISUP QFT (QSIG Feature Transparency) in response to on-hook/off-hook indications (respectively) from an analogue called party (IBN line).

Note: *Throughout this document, the phrase "ETSI ISUP" is by implication referring to "ETSI ISUP V2 and ETSI ISUP V3".*

Note that it is assumed that the reader is familiar with the following specifications:

- ITU-T recommendations Q.761-Q.764
- ITU-T recommendation Q.767 D.2.5
- ETSI ISUP version 2+ APM/QSIG Feature Transparency

1.2.2 Background information

The current implementation of ETSI ISUP QFT mechanism does not support the generation of ISUP SUSpend message when an analogue line goes on-hook. The same applies to the generation of RESume message when a suspend message had previously been sent and the analogue called party goes off-hook. This feature enhances the DMS software to allow SUS/RES generation over ETSI ISUP QFT for public calls.

1.2.3 Functional description

By enabling the feature via datafilling the QFT_SUS_RES_SUPPORT parameter in table ISERVOPT the generation of the SUS/RES messages will be supported over ETSI ISUP QFT.

1.2.4 Feature Operation

This activity provides control of SUS/RES generation support over ETSI ISUP QFT to Line calls by introducing a new service option QFT_SUS_RES_SUPPORT of type Y or N in table ISERVOPT.

When service option QFT_SUS_RES_SUPPORT in table ISERVOPT is datafilled and assigned to Y, SUS/RES messages are generated for ETSI ISUP QFT to Line calls when the terminating Line goes on-hook and off-hook respectively.

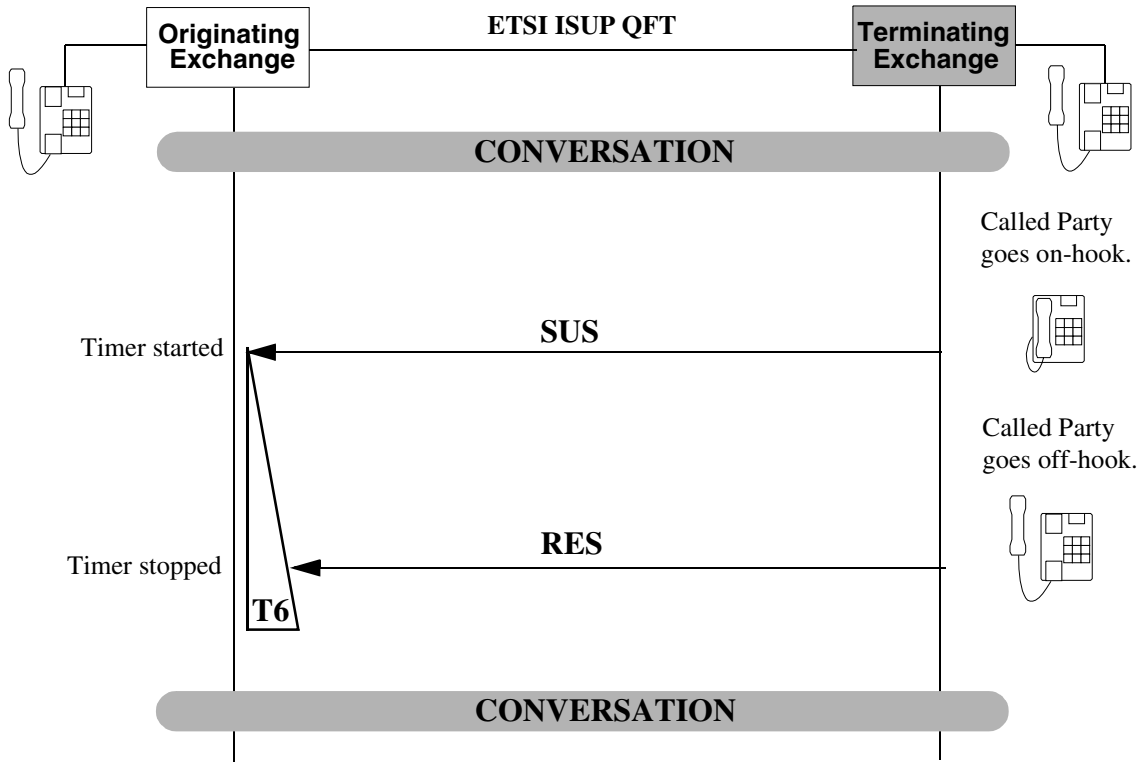
When service option QFT_SUS_RES_SUPPORT in table ISERVOPT is datafilled and assigned to N, ETSI ISUP QFT to Line call behavior remains unchanged and when the terminating Line goes on-hook the call is released immediately.

When service option QFT_SUS_RES_SUPPORT in table ISERVOPT is not datafilled, ETSI ISUP QFT to Line call behavior remains unchanged and when the terminating Line goes on-hook the call is released immediately.

The diagrams below show the desired behavior when the feature is activated.

1.2.4.1 Actions at the Originating and Terminating exchanges

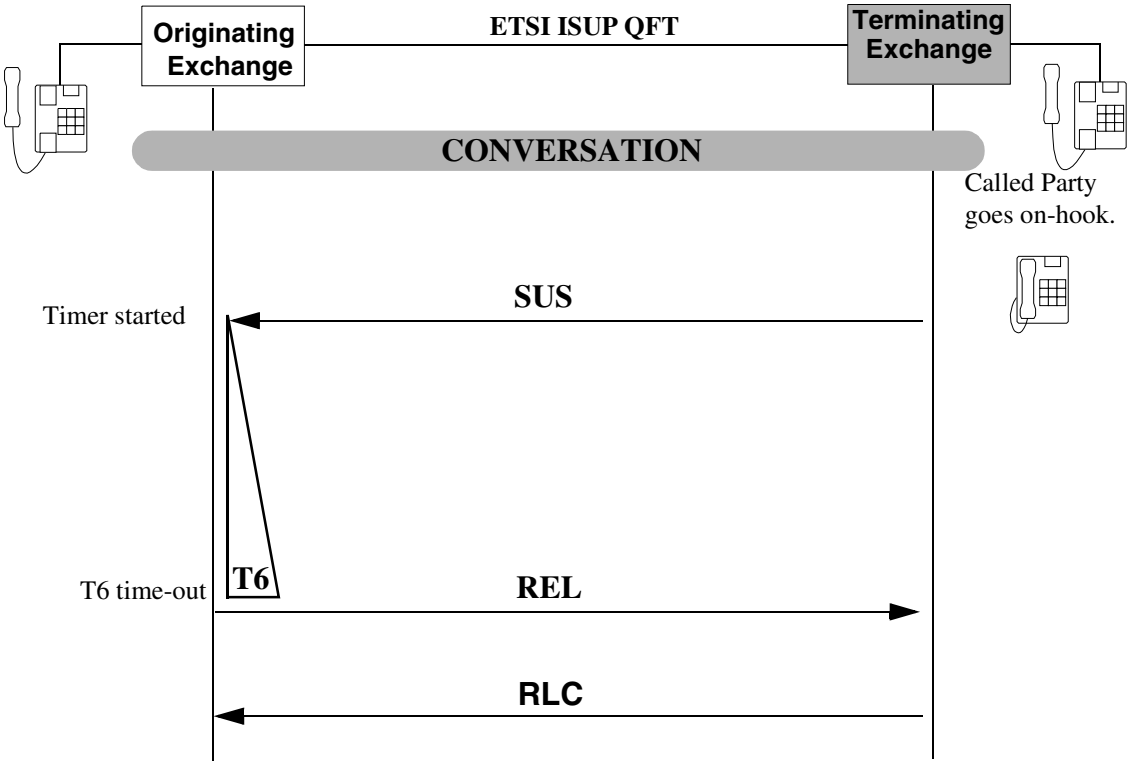
Figure 1 Resume before Re-answer time-out



At the terminating exchange, on receipt of an on-hook indication from the analogue called party, send a network Suspend message to the preceding exchange. On detection of the off-hook indication, the network Resume message is sent to the preceding exchange.

At the originating exchange on receipt of the network Suspend message, start the suspend timer T6. On receipt of the network Resume message, stop the timer T6 and continue with the call.

Figure 2 Re-answer timer expires.



On suspend timer (T6) expiry, a REL message with cause 102 (Recovery On Timer Expiry) is sent from the originating exchange. The call is released.

1.2.4.2 Actions at the interworking (Protocol X <-> ETSI ISUP QFT call) exchange

Figure 3 T6 Timer starting at Interworking (controlling) exchange

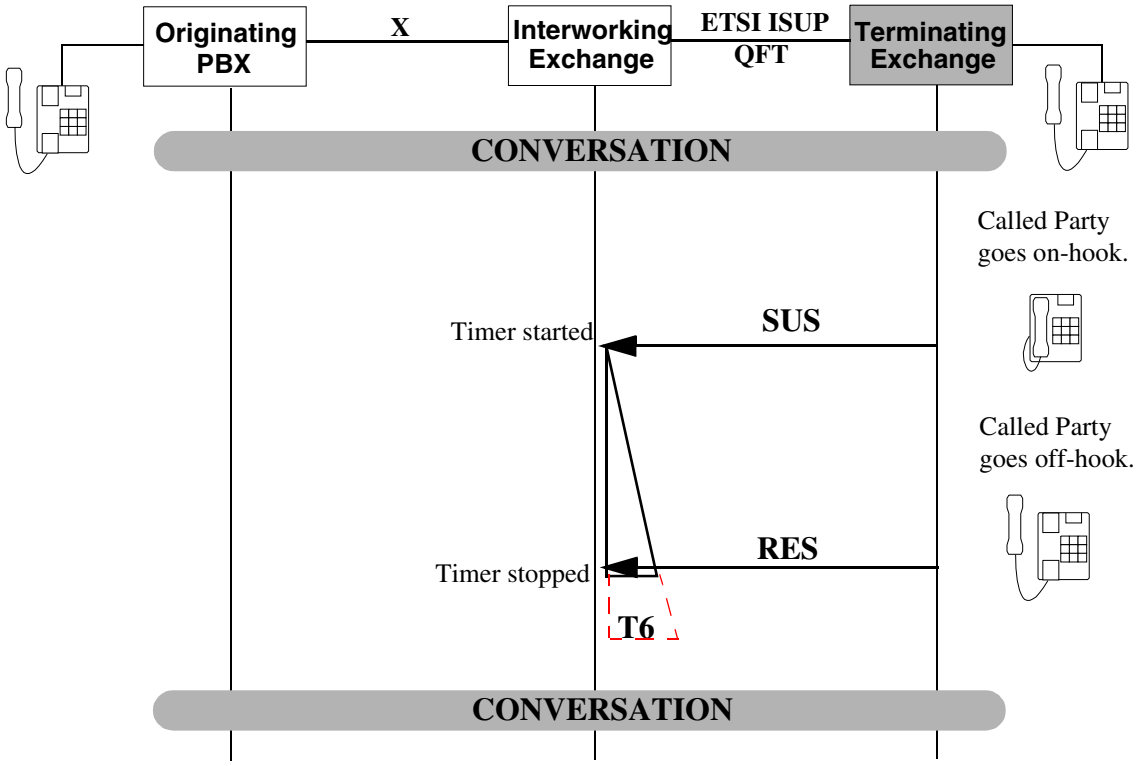


Figure 3 shows the message sequence for interworking to protocols (X) which neither support clear back indication nor suspend message (e.g.: QSIG/ PRI). The interworking exchange acts as the controlling exchange by running the timer T6.

Figure 4 T6 timer starting at the originating (controlling) exchange

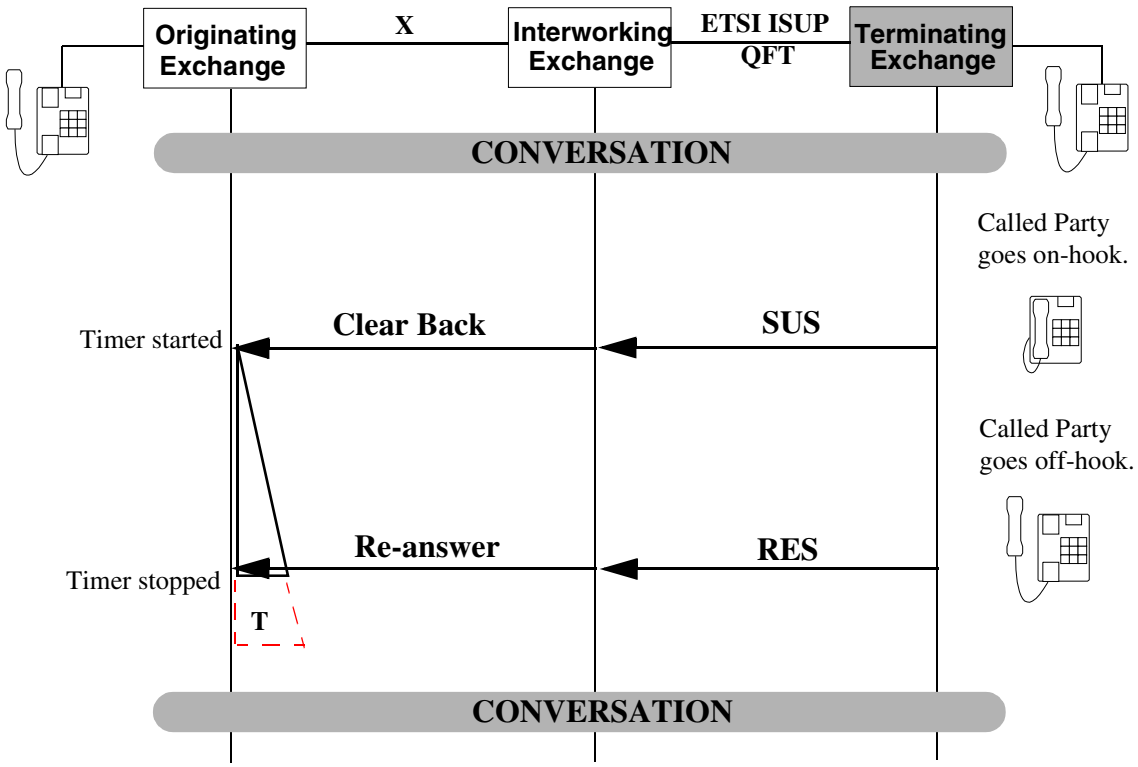


Figure 4 shows the re-answer timer (T) and the message sequence when interworking with protocol (X) which supports clear back indication (e.g.: BTUP/ R2/ R1). The originating exchange acts as the controlling exchange and starts the re-answer timer.

Figure 5 T6 time-out at interworking (controlling) exchange

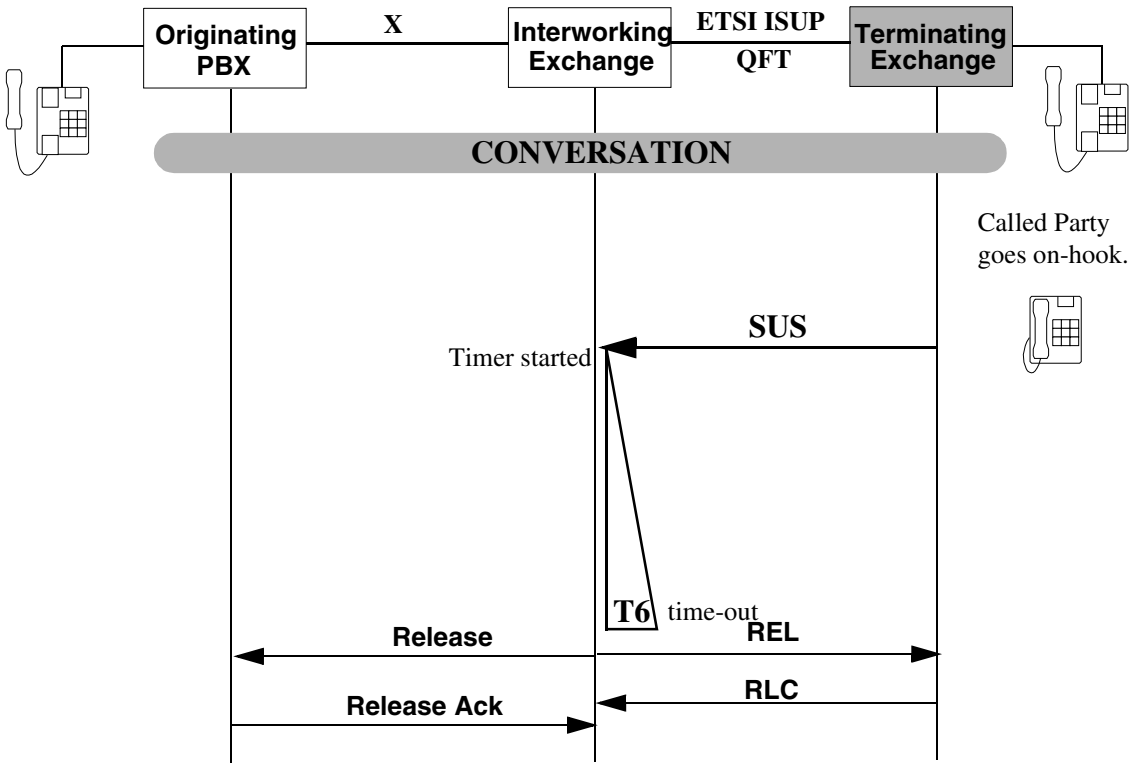


Figure 5 shows the Suspend timer T6 expiry at the interworking (controlling) exchange. This is governed by the fact that protocol X is not supporting clear back or re-answer indications (e.g.: QSIG/ PRI).

Figure 6 T6 timer interrupted by a REL message

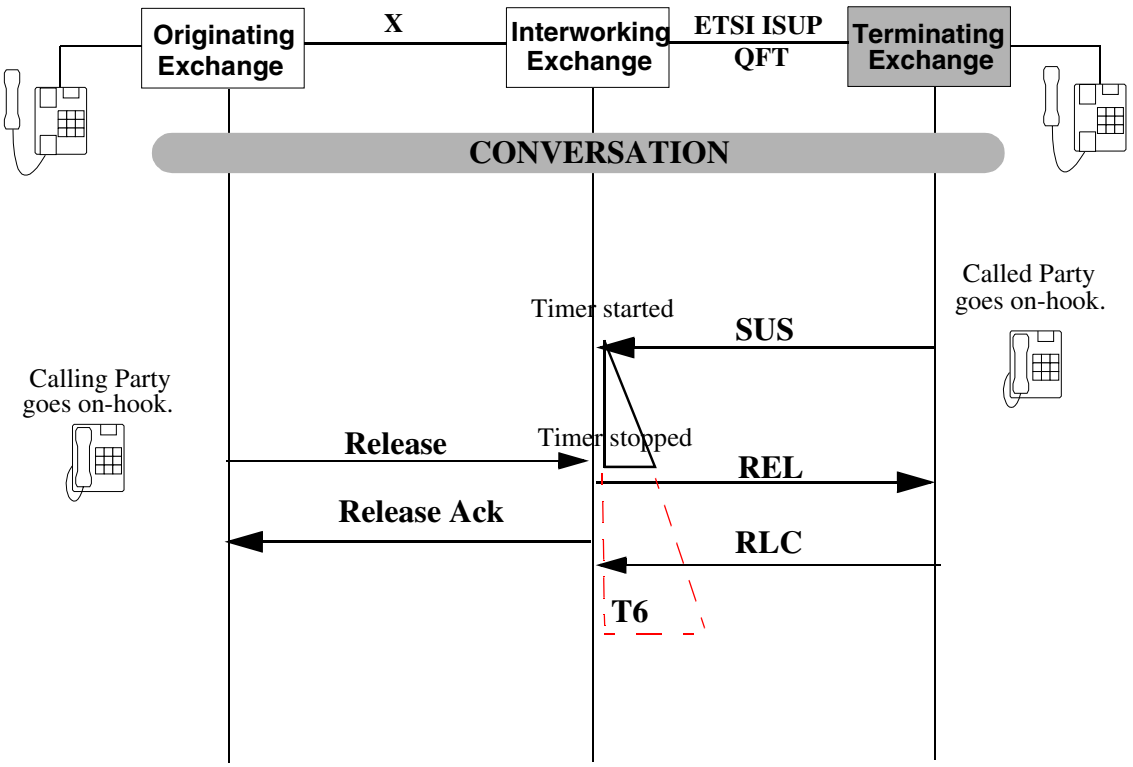
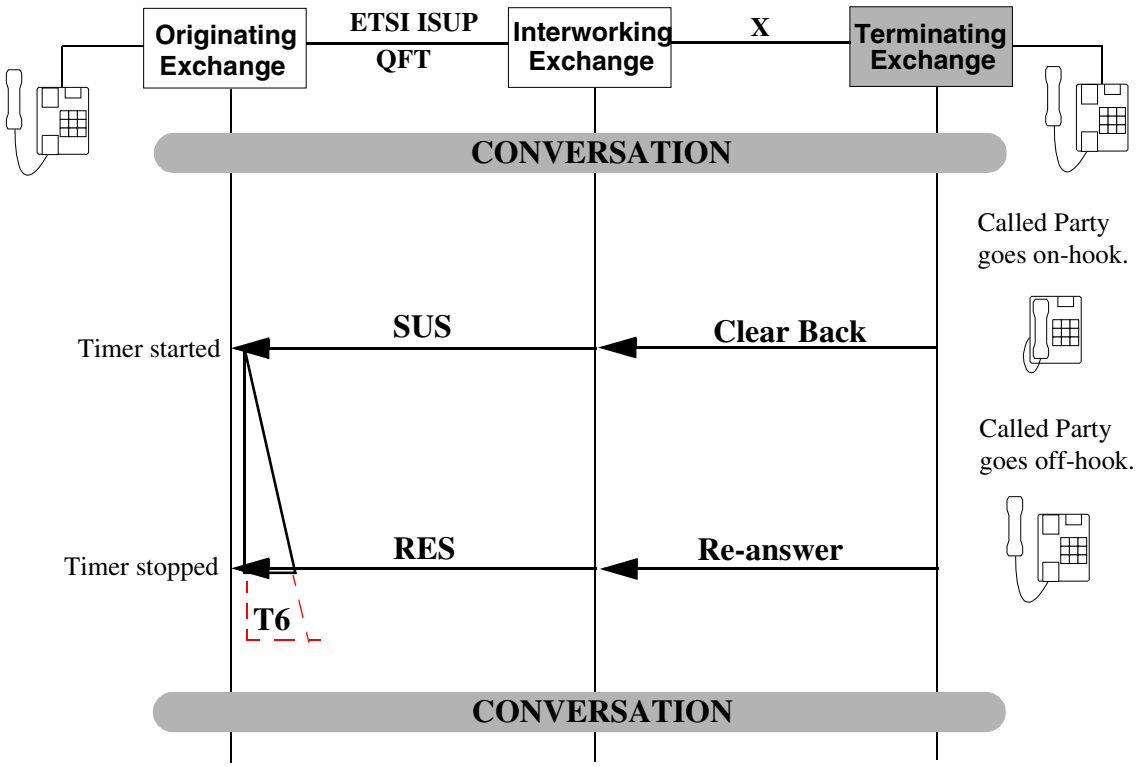


Figure 6 shows the result of a REL message being received while the timer T6 is running. The timer is stopped and the call is released.

Figure 7 Interworking Exchange.Suspend/Resume (network) message generation

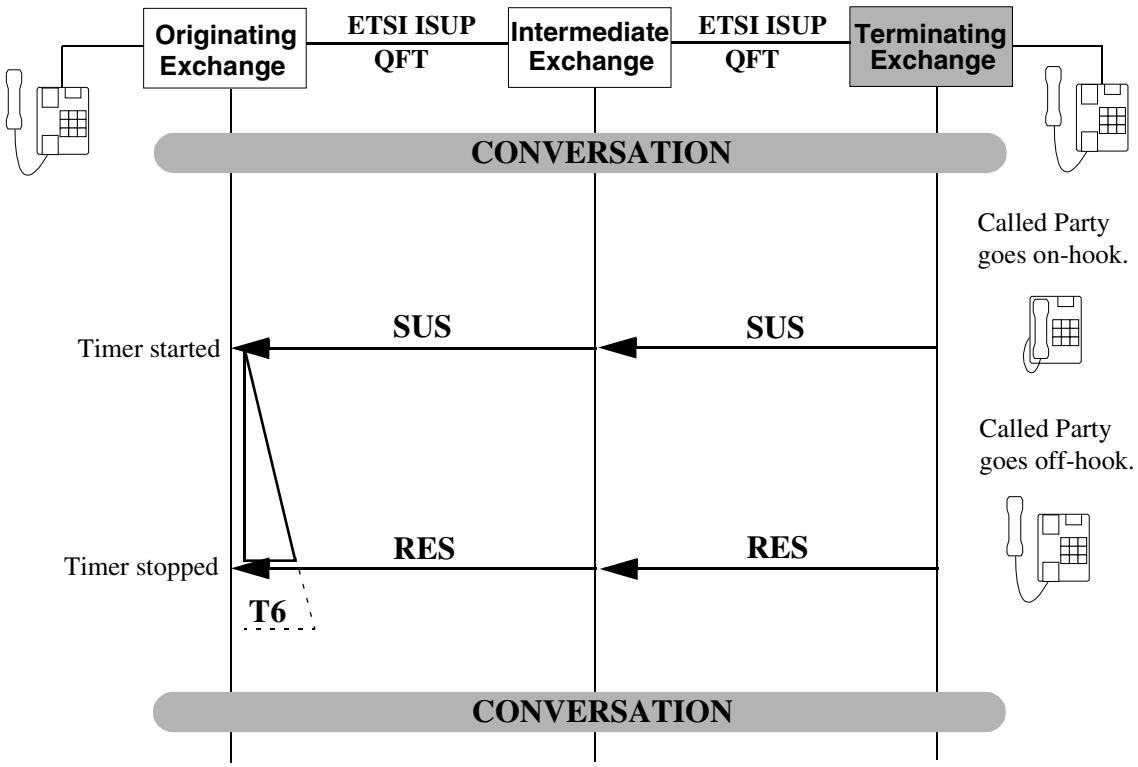


At the interworking exchange on receipt of the clear back indication from protocol (X) (e.g.: BTUP/ R2/ R1), send the suspend message to the preceding exchange. On receipt of the Re-answer indication, send a resume (network) message to the preceding exchange.

1.2.4.3 Actions at the Intermediate (Tandem-ETSI ISUP QFT to ETSI ISUP QFT call) exchange

At the intermediate exchange on receipt of the suspend/resume (network) message, the message is sent to the preceding exchange.

Figure 8 Network SUS/RES at Intermediate exchange



1.2.5 Activation

Feature activation is done by datafilling the service option QFT_SUS_RES_SUPPORT in table ISERVOPT and assigning to Y.

Please find the sample datafill below:

TABLE: ISERVOPT

>lis

SOPTSKEY SOPTSVAR

QFT_SUS_RES_SUPPORT QFT_SUS_RES_SUPPORT Y

1.3 Hardware Requirements or Dependencies

No changes due to this feature.

1.4 Software Requirements or Dependencies

The new functionality provided by this activity is being implemented using the existing interfaces. As such, no new software dependencies are being introduced.

This functionality requires release SN08 or higher loads.

1.5 Limitations and restrictions

This activity supports only analogue called parties (IBN line-host, remote and V5.2) as ETSI ISUP does. SUS/RES generation is not supported for ACD, UCD agents, BRI lines and PPhones.

1.6 Patch Availability

The activity is implemented in SN08 and patched back to SN04.

1.7 Interactions

Networked Centrex Services supported over ETSI ISUP QFT are in the scope of this activity.

Please refer to Chapter 14 (APM Feature Transparency) in ISN06 (TDM) Product Description (Issue ISN06TDM.4) document for the list of Networked Centrex Services supported over ETSI ISUP QFT.

1.8 Applicable customer facing sections

Fault Management

Logs	___N/A___
Alarms	___N/A___

Configuration

Data Schema	____X____
User Interface	___N/A___
Element Management	___N/A___
Security	___N/A___
Service Order	___N/A___
Office Parameters	___N/A__

Accounting (includes AMA billing)	___N/A___
Performance (includes operational measurements)	___N/A___

1.9 Glossary

Term	Explanation
QFT	QSIG Feature Transparency
REL	ISUP Release Message
RES	ISUP Resume Message
RLC	ISUP Release Complete Message
SUS	ISUP Suspend Message

1.10 References

1. AJ4986 ETSI ISUP V2 Support for QFT (QSIG Feature Transparency) on the DMS100E

2. AU3360 ETSI ISUP (Q764) SUSpend/RESume Compliance

3. ISN06 (TDM) Product Description (Issue ISN06TDM.4)

4. ETSI ISUP version 2+ APM Feature Transparency DMS/CS2000 (Version: PRE 4.0)

5. ETSI ISUP version 2+ Q.SIG Feature Transparency DMS-MMP/CS2000 (Version: AUT 3.2)

6. AJ4356 QSIG Basic Call for the DMS-100 Phase 1

7. A59039741 Network Wide Calling Name Display (CNAMD over QFT)

8. ITU Q.767 D.2.5 and ITU Q.764 2.4 specifications

2: Configuration for A00006387

2.1 Hardware and Software Requirements

N/A.

2.2 Initial Configuration

N/A.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

N/A.

2.4 Upgrade Impact

N/A.

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
ISERVOPT	CHANGED	UNCHANGED

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: ISERVOPT

This table is used to configure switch wide information for service related feature.

2.5.2.1.1 Functional description

This activity introduces a new tuple named **QFT_SUS_RES_SUPPORT** of type Y or N in table ISERVOPT.

2.5.2.1.2 Usage sequence and implications (CM Only)

There is no requirement to datafill tables in a specific order.

2.5.2.1.3 .Size

Table 2 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
ISERVOPT	0	1	

2.5.2.1.4 Fields/OIDs

The following table lists fields/OIDs for ISERVOPT.

Table 3 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
SOPTSKEY	NEW		QFT_SUS_RES_SUPPORT	This is the key in ISERVOPT
OPTION	NEW		QFT_SUS_RES_SUPPORT	This is the option name

Table 3 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
QFT_SUS_RES_SUPPORT	NEW		Y, N	control the enablement/disablement of SUS/RES generation over ETSI ISUP QFT.

2.5.2.1.5 Datafill example

The following example shows sample datafill for table ISERVOPT.

Figure 9 Example of ISERVOPT table datafill (QFT_SUS_RES_SUPPORT is Y)

```
>table iservopt
>add
SOPTSKEY:
>qft_sus_res_support
OPTION:
>qft_sus_res_support
QFT_SUS_RES_SUPPORT:
>y
TUPLE TO BE ADDED:
QFT_SUS_RES_SUPPORT QFT_SUS_RES_SUPPORT Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
```

Figure 10 The View of QFT_SUS_RES_SUPPORT Tuple in ISERVOPT Table (QFT_SUS_RES_SUPPORT is Y)

```
>table iservopt

SOPTSKEY                    SOPTSVAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
QFT_SUS_RES_SUPPORT QFT_SUS_RES_SUPPORT Y$
```

Figure 11 Example of ISERVOPT table datafill (QFT_SUS_RES_SUPPORT is N)

```
>table iservopt
>add
SOPTSKEY:
>qft_sus_res_support
OPTION:
>qft_sus_res_support
QFT_SUS_RES_SUPPORT:
>n
TUPLE TO BE ADDED:
QFT_SUS_RES_SUPPORT QFT_SUS_RES_SUPPORT Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
```

Figure 12 The View of QFT_SUS_RES_SUPPORT Tuple in ISERVOPT Table (QFT_SUS_RES_SUPPORT is N)

```
>table iservopt

SOPTSKEY                    SOPTSVAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
QFT_SUS_RES_SUPPORT QFT_SUS_RES_SUPPORT N$
```

2.5.2.1.6 Supplementary information

N/A.

2.5.2.1.7 Translation verification other tools

N/A.

2.6 Service Orders (SO) (CM & SESM)

N/A.

2.7 Software optionality control (SOC)

N/A.

2.8 Element Management

N/A.

2.9 Command interface changes

N/A.

2.10 Security

N/A.

2.11 Configuration Walkthrough

N/A.

Product = World Trade

A00006407--China ISUP Enhancement

Functional Description

1.1 Applicable Solution(s)

Int'l IAW, Int'l PT-IP

1.2 Description

1.2.1 Background

YD/T 1157-2001 "The Transfer of Calling Party Number between Operators" [reference 1] is released by China MII. In this specification, calling party number format is revised against the former China MII spec YDN038-1997 and YDN038.1-1999.

The existing China ISUP (CISUP) implementation originally complies with YDN038 and YDN038.1. This activity enhances it to comply with the following new specification on calling party number format in YD/T 1157.

1. YD/T1157 6.1.1 For originating local switch (line->trunk), the calling party number (CGPN) should be a local number, regardless whether it is a local call or a toll call.
2. YD/T1157 6.1.1 For local tandem switch (trunk->trunk), CGPN should be tandemed unchanged, regardless whether it is a local call or a toll call.
3. YD/T 1157 6.1.2 For originating toll switch (trunk->trunk), CGPN should be changed from local number format to national significant number format with '0' toll-prefix ('0'+ area code + local number).
4. YD/T 1157 6.1.2 For toll tandem switch (trunk->trunk) and terminating toll switch (trunk->trunk), CGPN should be tandemed unchanged.

5. YD/T 1157 8.1.1 If call forward (A->B->C) occurs among the same local network, i.e. A, B, C have the same area code, CGPN should be A's local number, the original called number (OCN) should be B's local number.
6. YD/T 1157 8.1.2 If call forward to toll number (A->B->C) occurs between different local networks, i.e. A and B have the same area code, while C has different area code from A and B, CGPN and OCN should be transferred as below:

- For originating local switch, CGPN and OCN should be a local number.
- For local tandem switch, CGPN and OCN should be tandemed unchanged.
- For originating toll switch, CGPN should be a national significant number with '0' toll-prefix, OCN should be a national significant number without '0' toll-prefix.
- For terminating switch, CGPN and OCN should be tandemed unchanged.

7. YD/T 1157 8.1.3 If called party in a toll call registered call forward to local number (A->B->C), i.e. A and B have different area code while C has the same area code as B, CGPN and OCN should be as below:

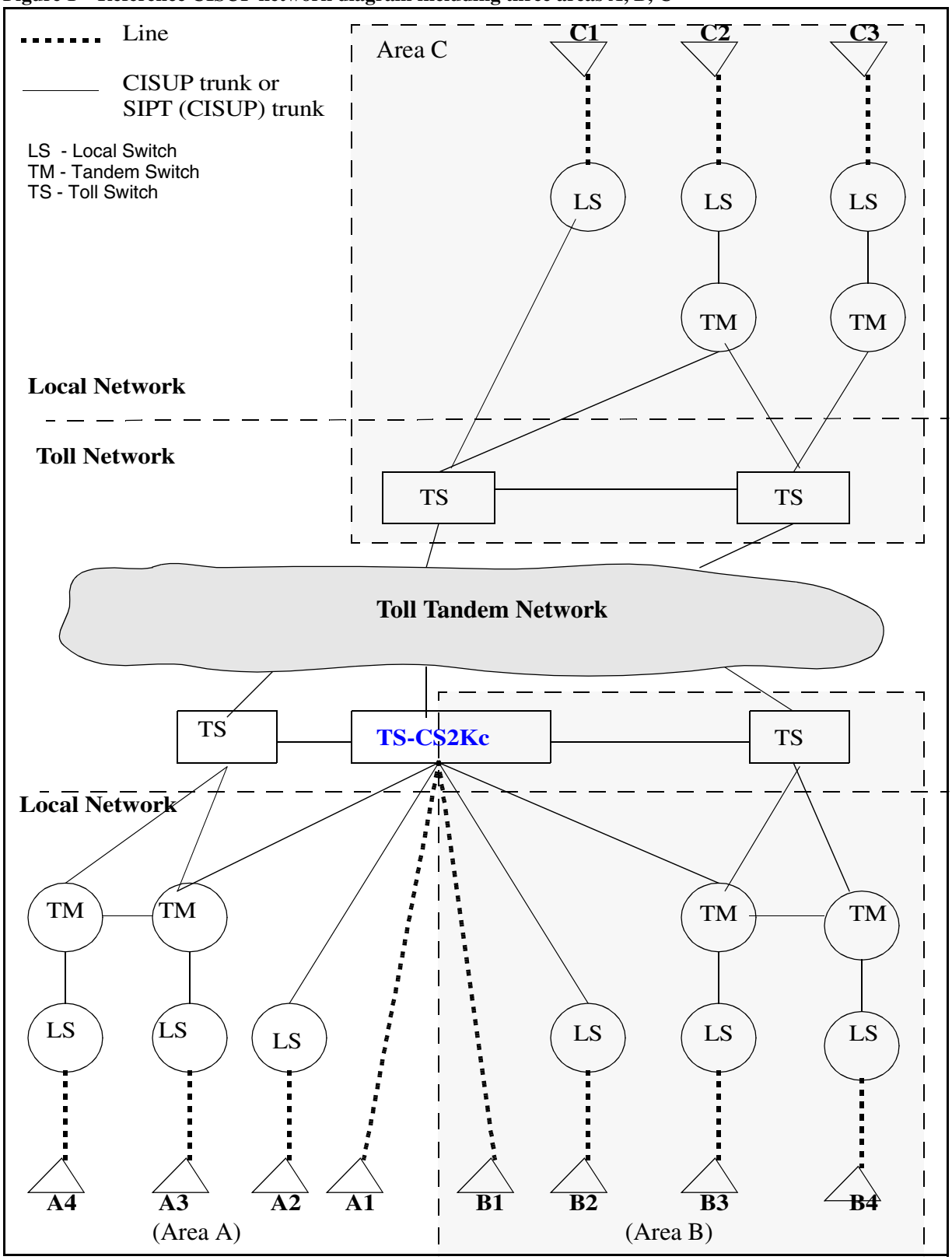
- For terminating tandem or local switch, CGPN should be tandemed unchanged. OCN should be a local number.

Moreover, the CISUP implementation on CS2Kc is required to have the capability to serve as local switch, local tandem switch and toll switch at the same time, and have the capability to serve multiple local networks.

Please refer to figure 1 for a reference CISUP network diagram.

Besides the general requirement above, there are still many specific deploy requirements from different customers. Please refer to SFR [reference 5] for a detail description.

Figure 1 Reference CISUP network diagram including three areas A, B, C



To meet the above requirements, a call control based CISUP parameter manipulation solution is provided by this activity. Operators can manipulate the following CISUP parameters according to different requirements through call control framework.

- calling party number (CGPN) CLI and NOA
- original called party number (OCN) CLI and NOA
- redirecting number (RGN) CLI and NOA

1.2.2 Introduction to Call Control

Universal Screening and call control allows the operator to 'Control' call processing events via datafill. Such events include invocation of screening and setting of internal translation/routing parameters.

Please refer to activity A59028780, A59033687 and A00004743 [reference 2, 3, 4] for more details on call control framework.

This activity enhances the call control functionality by:

1. supporting pre-translation call control trigger in table CUSTSTN for line originating calls.
2. supporting two new SCRN options: 'OCN' and 'RGN'
3. enhancing DIGMAN setting option to manipulate CLI in OCN and/or RGN.
4. supporting a new setting option: 'NOA'

1.2.3 Feature Description

1.2.3.1 New Call Control Trigger in Table CUSTSTN

A new option 'CCNTLIDX' is added in table CUSTSTN to trigger call control functionality before translation for line originating calls. This option consists of a string of up to 32 characters which is used to set the index into table CALLCNTL. Only values that already exist in CALLCNTL can be datafilled in table CUSTSTN. This option allows CALLCNTL index to be associated with an IBN line.

Figure 2 Sample Datafill - Table CUSTSTN

```
TABLE CUSTSTN
CUSTNAME OPTNAME OPTION
----------------------
CSGRPMB CCNTLIDX CCNTLIDX CDPNSCRN
```

1.2.3.2 Two New SCRN Options: ‘OCN’ and ‘RGN’

Two new SCRN options are added by this activity.

Table 1 New SCRN options

Option	Range of values	Description	Note
SCRN	SCRN_OPTION_RANGE: {CDPN, VAR, UKKCDPN, KK, CUSTGRP, CPCNAME, CDNNAME, CSP_CIC, RDRINFO, CGPNNOA, BC, CIP, TNS_CIC, TNS_CKT, OLI, CGPN, IPI, NCOS, CDPNLEN, **OCN, RGN**}	**Enter OCN to screen original called number. The screen table is CGPNSCRN.** Enter RGN to screen redirecting number. The screen table is CGPNSCRN.	‘OCN’ and ‘RGN’ are added by this activity

Figure 3 Sample Datafill - Table CALLCNTL

```
TABLE CALLCNTL
CALCTL_KEY CALCTL_OPTIONS
----------------------
20OCNSCRN (SCRN (OCN) $)$
20OCNSCRN (SCRN (RGN) $)$
```

- OCN screening

For line orignating calls, OCN is present when call forwards occur in this switch. If SCRN option OCN is datafilled, the redirecting number in first call forword is retrieved and screened with the rule datafilled in the table CGPNSCRN.

For ISUP trunk originating calls, OCN is present when call forwards occur in proceeding switch or in this switch. If call forward occurs in proceeding switch, the OCN parameter in incoming message (CISUP IAM, CPRI SETUP or SIP INVITE) is retrived and screened with the rule that datafilled in the table CGPNSCRN. If call forward occurs in this switch, the redirecting number in the first call forward is retrieved and screened with the rule datafilled in the table CGPNSCRN.

- RGN screening

For line orignating calls, RGN is present when call forwards occur in this switch. If SCRN option RGN is datafilled, the redirecting number in last call forward is retrieved and screened with the rule datafilled in the table CGPNSCRN.

For ISUP trunk originating calls, RGN is present when call forwards occur in proceeding switch or in this switch. If call forward occurs in proceeding switch, the RGN parameter in incoming message (CISUP IAM, CPRI SETUP or SIP INVITE) is retrived and screened with the rule that datafilled in the table

CGPNSCRN. if call forward occurs in this switch, the redirecting number in the last call forward is retrieved and screened with the rule datafilled in the table CGPNSCRN.

1.2.3.3 Call control setting enhancement

- New DIGMAN_PARM ‘OCN’ and ‘RGN’ are added

Besides the existing DIGMAN_PARM ‘CGPN’and ‘CDPN’, new DIGMAN_PARM ‘OCN’ and ‘RGN’ are provided in this activity to support CISUP OCN and RGN digit manipulation. The parameters in the outgoing CISUP messages (IAM/INF) can be changed according to the manipulation rule in table DIGMAN that the DMI index points to.

The OCN or RGN can be captured as calling dn in first AMA block for toll calls in toll originating switch when it is present in the incoming message (CISUP IAM, CPRI SETUP or SIP INVITE), the format is ‘area code + local number’.

For forwarded calls in this switch, the original redirecting number is captured in ‘CALLING DN’ field in AMA blocks for forwarded calls.

- A new setting option ‘NOA’ is added

The NOA of CGPN, OCN and RGN in the outgoing CISUP messages (IAM/INF) can be set according to the datafilled NOA_Value.

Table 2 Enhanced Call Control Setting Options

Option	Range of Values	Description	Notes
DIGMAN	DIGMAN_PARM: {CDPN, CGPN, **OCN, RGN**}	Indicates which parameter is to be manipulated.	DIGMAN_PARM OCN and RGN are provided by this activity
	DMI: {0-32767}	Index into table DIGMAN to perform digit manipulation of the CDPN/CGPN/OCN/RGN (0 indicates NIL index).	
NOA	NOA_PARM: CGPN, OCN, RGN	Indicates which parameter is to be manipulated.	This option is added by this activity
	NOA_Value: {LCL, NATL}	overrides the NOA associated with the parameter.	

Figure 4 Sample Datafill - Table CGPNSCRN

```
TABLE: CGPNSCRN 20CGPNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-------------------------------------
20 20 20CGPNSCRN (DIGMAN CGPN 020)(NOA CGPN LCL)

TABLE: CGPNSCRN 20OCNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
8331 8331 20OCNSCRN (DIGMAN OCN 30) (NOA OCN NATL)

TABLE: CGPNSCRN 20RGNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
8331 8331 20RGNSCRN (DIGMAN RGN 30) (NOA RGN NATL)$
```

1.2.3.4 Traver tool support

The enhanced call control functionality can be verified using either the TRAVER tools.

Please refer to figure 6 for a example traver with SCRN OCN, RGN and DIGMAN OCN, RGN and NOA (triggered from TRKOPTS)

1.2.3.5 New option CISUPAMA in table ISERVOPT

For China markect specific requirment, a new option CISUPAMA is provided to control the format in AMA record for CISUP calls. The new option is added into table ISERVOPT.

New subfield PREFIX_0_TO_NATL_NUM_IN_AMA is provided under CISUPAMA option to control calling DN format. It can be datafilled as ‘Y’ or ‘N’.

Figure 5 Sample Datafill - Table ISERVOPT

```
TABLE: ISERVOPT
SOPTSKEY SOPTSVAR
-----------------
CISUPAMA CISUPAMA Y
```

For the interworking mentioned in the next section, if PREFIX_0_TO_NATL_NUM_IN_AMA is datafilled as Y and the NOA of corresponding calling party number, OCN or RGN in the outgoing CISUP IAM is 0000011-national, the format of the calling DN in AMA should be ‘0+areacode+local number’ to indicate it is a national number. For wireless number, it should be ‘0+Carrier ID (13xx) + Subscriber number”.

For the interworking mentioned in the next section, if PREFIX_0_TO_NATL_NUM_IN_AMA is datafilled as N and the NOA of

corresponding calling party number, OCN or RGN in the outgoing CISUP IAM is 0000011-national, the format of the calling DN in AMA should be ‘areacode+local number’.For wireless number, it should be ‘Carrier ID (13xx) + Subscriber number”.

If the option is not dataafilled, the numbers in AMA record are the same as implemented as currently.

1.2.3.6 Interworking supported

The enhanced call control functionality are supported for following interworkings:

- Interworking from IBN line to CISUP/SIPT(CISUP)
- Interworking from V5.2 line to CISUP/SIPT (CISUP)
- Interworking from CISUP/ SIPT (CISUP) to CISUP/ SIPT (CISUP)
- Interworking form SIP to CISUP/ SIPT (CISUP)
- Interworking from China PRI to CISUP/SIPT (CISUP)

1.2.4 Usecase 1: Comply YD/T 1157 using enhanced call control

By using the enhanced call control functionality introduced above, requirements in YD/T 1157 can be met in CS2Kc.

CS2Kc can play different roles in the CISUP network. Please refer to figure1 for a reference network diagram.

Table 3 CS2Kc CISUP (including SIPT (CISUP) YD/T 1157 compliance)

IC China ISUP IAM/INF (from CISUP trunk or SIPT (CISUP) trunk)	CS2Kc role	call control is involved?	OG China ISUP IAM/INF (to CISUP trunk or SIPT (CISUP) trunk)	calling dn in AMA

Table 3 CS2Kc CISUP (including SIPT (CISUP) YD/T 1157 compliance)

NA	LS - local switch (Subscriber in this switch originates a call)	NA	**CGPN:** **CGPN is built from the originating line.** - Address Signal: local number - NOA: 0000001 - local **OCN:** **OCN is built from the first call forward if call forwards occur in this switch.** - Address Signal: local number - NOA: 0000001 - local **RGN:** **RGN is built from the last call forward if call forwards occur in this switch.** - Address Signal: local number - NOA: 0000001 - local	**leg1:** The originating number is captured in calling dn field. format: Depend on CISUPAMA option **Leg2-n are present if call forwards occur in this switch** **leg2-n:** The redirecting number is captured in calling dn field. format: Depend on CISUPAMA option

Table 3 CS2Kc CISUP (including SIPT (CISUP) YD/T 1157 compliance)

CGPN: local national **OCN:** local national OCN is not present **RGN:** local national RGN is not present	TM - tandem switch	NA	**CGPN:** **CGPN is tandemed unchanged, regardless whether call forwards occur in this switch.** - Address signal: tandem unchanged. - NOA: tandem unchanged **OCN:** **OCN is tandemed unchanged if it is present in IC IAM, regardless whether call forwards occur in this switch.** - Address signal: tandem unchanged. - NOA: tandem unchanged **OCN is built from the first call forward if it is not present in IC IAM and call forwards occur in this switch.** - Address Signal: local number - NOA: 0000001 - local **RGN:** **RGN is tandemed unchanged if it is present in IC IAM and no call forwards occur in this switch.** - Address signal: tandem unchanged. - NOA: tandem unchanged **RGN is built from the last call forward if call forwards occur in this switch.** - Address Signal: local number - NOA: 0000001 - local	**AMA is not required in tandem switch.**

Table 3 CS2Kc CISUP (including SIPT (CISUP) YD/T 1157 compliance)

NA	TS - Toll switch (Subscriber in this switch orignates a call)	Call control is triggered from table CUSTSTN (Please refer to figure5 for datafill example)	**CGPN:** CGPN is built from the originating line. If it has the same area code as the last forwarded number: - Address Signal: local number - NOA: 0000001 - local If it has different area code to the last forwarded number, - Address Signal: 0+ area code + local number - NOA: 0000011 - national **OCN:** **OCN is built from the first call forward if call forwards occur in this switch.** If it has the same area code as the last forwarded number: - Address Signal: local number - NOA: 0000001 - local If it has different area code to the last forwarded number, - Address Signal: area code + local number - NOA: 0000011 - national **RGN:** **RGN is built from the last call forward if call forwards occur in this switch.** If it has the same area code as the last forwarded number: - Address Signal: local number - NOA: 0000001 - local If it has different area code to the last forwarded number, - Address Signal: area code + local number - NOA: 0000011 - national	**leg1:** The originating number is captured in calling dn field format: Depend on CISUPAMA option **Leg2-n are present if call forwards occur in this switch** **leg2-n:** The redirecting number is captured in calling dn field. format: Depend on CISUPAMA option

Table 3 CS2Kc CISUP (including SIPT (CISUP) YD/T 1157 compliance)

CGPN: local national **OCN:** local national OCN is not present **RGN:** local national RGN is not present	TS - toll switch	Call control is triggered from table TRKOPTS (Please refer to figure5 for datafill example)	**CGPN:** **CGPN is tandemed if it is present in IC IAM/INF, regardless whether call forwards occur in this switch.** If it has the same area code as CDPN, - Address Signal: local number - NOA: 0000001 - local If it has different area code to CDPN, - Address Signal: 0 + area code + local number - NOA: 0000011 - national **OCN:** **OCN is tandemed if it is present in IC IAM, regardless whether call forwards occur in this switch.** If it has the same area code as CDPN, Address Signal: local number NOA: 0000001 - local If it has different area code to CDPN, Address Signal: area code + local number NOA: 0000011 - national **OCN is built from the first call forward if it is not present in IC IAM and call forwards occur in this switch. Its format follows the same rule above.** **RGN:** **RGN is tandemed if it is present in IC IAM and no call forward occurs in this switch.** If it has the same area code as CDPN, Address Signal: local number NOA: 0000001 - local If it has different area code to CDPN, Address Signal: area code + local number NOA: 0000011 - national **RGN is built from the last call forward if call forward occurs in this switch. Its format follows the same rule above**	**For local tandem calls, AMA is not required.** **The AMA for toll calls is as below:** **Leg1:** If RGN is present in the incoming IAM message, the RGN is captured in calling dn field. If RGN is not but OCN is present in the incoming IAM message, the OCN is captured in calling dn field. If both RGN and OCN are not present in the incoming IAM message, the CGPN is captured in calling dn field. format: Depend on CISUPAMA option **Leg2-n are present if call forwards occur in this switch.** **Leg2-n:** The redirecting number is captured in calling dn field. format: Depend on CISUPAMA option

Figure 5 shows a example datafill for CS2Kc toll switch in reference CISUP network diagram (figure1) to comply YD/T 1157 requirements using call control. In this case, the CS2Kc is not only serving as toll switch for two local areas: 20 and 30, but also is serving as originating switch and tandem switch at the same time for the two local areas.

Figure 6 shows traver example with SCRN OCN, RGN and DIGMAN OCN, RGN and NOA (triggered from TRKOPTS)

Figure 6 Call control datafill example for toll switch serving multiple local network

```
TABLE: CUSTSTN
CUSTNAME OPTNAME OPTION
-----------------------
CSGRPMB CCNTLIDX CCNTLIDX CDPNSCRN

Table TRKOPTS
OPTKEY OPTINFO
--------------
CISUPTB_MB CCNTLIDX CCNTLIDX CDPNSCRN

TABLE: CALLCNTL
CALCTL_KEY CALCTL_OPTIONS
-------------------------
CDPNSCRN (SCRN (CDPN)) $
20CGPNSCRN (SCRN (CGPN))(goto callcntl 20OCNSCRN)$
20OCNSCRN (SCRN (OCN))(goto callcntl 20RGNSCRN)$
20RGNSCRN (SCRN (RGN))$
30CGPNSCRN (SCRN (CGPN))(goto callcntl 30OCNSCRN)$
30OCNSCRN (SCRN (OCN))(goto callcntl 30RGNSCRN)$
30RGNSCRN (SCRN (RGN))$
40CGPNSCRN (SCRN (CGPN))(goto callcntl 40OCNSCRN)$
40OCNSCRN (SCRN (OCN))(goto callcntl 40RGNSCRN)$
40RGNSCRN (SCRN (RGN))$

TABLE CDPNSCRN
CDPNSCRN_KEY CDPNDATA
----------------------
CDPNSCRN (1)

TABLE: CDPNSCRN CGPNSCRN: CDPNDATA
FROMDIGS TODIGS CDPNINDX CCOPTION CDPNOPT
-----------------------------------------
% screen the CDPN and route to correct index.
% following tuples screen the toll call
030 030 30CGPNSCRN $
040 040 40CGPNSCRN $
050 050 50CGPNSCRN $
% following tuples screen the local call
020 020 20CGPNSCRN $
8222 8222 20CGPNSCRN $
8223 8223 20CGPNSCRN $
030 030 30CGPNSCRN $
8332 8332 30CGPNSCRN $
8333 8333 30CGPNSCRN $

TABLE CGPNSCRN
CGPNKEY CDPNDATA
------------------
20CGPNSCRN (1)
20OCNSCRN  (1)
20RGNSCRN  (1)
30CGPNSCRN (1)
30OCNSCRN  (1)
30RGNSCRN  (1)
40CGPNSCRN (1)
40OCNSCRN  (1)
40RGNSCRN  (1)
```

```
TABLE: CGPNSCRN 20CGPNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% area code 20 is served by this switch
% 1. CGPN is in this serving area (20) and in local format - do nothing
% 2. CGPN is in this serving area (20) and in national format - remove SNPA
% 3. CGPN is in other serving areas (30) and in local format - add SNPA
% 4. CGPN is in other serving areas (30) and in national format - do nothing
% 5. CGPN is out of serving areas, this is a tandem toll call. - tandem it
020 020 20CGPNSCRN (DIGMAN CGPN 020)(NOA CGPN LCL)
20 20 20CGPNSCRN (DIGMAN CGPN 020)(NOA CGPN LCL)(BILLCLI ORIG)
8331 8331 20CGPNSCRN (DIGMAN CGPN 20) (NOA CGPN NATL)
8332 8332 20CGPNSCRN (DIGMAN CGPN 20) (NOA CGPN NATL)

TABLE: CGPNSCRN 20OCNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% the same screen rules as 20CGPNSCRN, but OCN is manipulated this time.
020 020 20OCNSCRN (DIGMAN OCN 020)(NOA OCN LCL)
20 20 20OCNSCRN (DIGMAN OCN 020)(NOA OCN LCL)
8331 8331 20OCNSCRN (DIGMAN OCN 20) (NOA OCN NATL)
8332 8332 20OCNSCRN (DIGMAN OCN 20) (NOA OCN NATL)

TABLE: CGPNSCRN 20RGNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% the same screen rules as 20CGPNSCRN, but OCN is manipulated this time.
020 020 20RGNSCRN (DIGMAN RGN 020)(NOA RGN LCL)
20 20 20RGNSCRN (DIGMAN RGN 020) (NOA RGN LCL)
8331 8331 20RGNSCRN (DIGMAN RGN 20) (NOA RGN NATL)
8332 8332 20RGNSCRN (DIGMAN RGN 20) (NOA RGN NATL)

TABLE: CGPNSCRN 40CGPNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% area code 40 is not served by this switch
% 1. CGPN is in serving areas (20, 30) and in local format - add SNPA
% 2. CGPN is in serving areas (20, 30) and in national format - do nothing
% 3. CGPN is out of serving areas, this is a tandem toll call. - tandem it
8221 8221 40CGPNSCRN (DIGMAN CGPN 20) (NOA CGPN NATL)
8222 8222 40CGPNSCRN (DIGMAN CGPN 20) (NOA CGPN NATL)
8331 8331 40CGPNSCRN (DIGMAN CGPN 30) (NOA CGPN NATL)
8332 8332 40CGPNSCRN (DIGMAN CGPN 30) (NOA CGPN NATL)

TABLE: CGPNSCRN 40OCNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% the same screen rules as 40CGPNSCRN, but OCN is manipulated this time.
8221 8221 40OCNSCRN (DIGMAN OCN 20) (NOA OCN NATL)
8222 8222 40OCNSCRN (DIGMAN OCN 20) (NOA OCN NATL)
8331 8331 40OCNSCRN (DIGMAN OCN 30) (NOA OCN NATL)
8332 8332 40OCNSCRN (DIGMAN OCN 30) (NOA OCN NATL)
```

```
TABLE: CGPNSCRN 40RGNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
% the same screen rules as 40CGPNSCRN, but RGN is manipulated this time.
8221 8221 40RGNSCRN (DIGMAN RGN 20) (NOA RGN NATL)
8222 8222 40RGNSCRN (DIGMAN RGN 20) (NOA RGN NATL)
8331 8331 40RGNSCRN (DIGMAN RGN 30) (NOA RGN NATL)
8332 8332 40RGNSCRN (DIGMAN RGN 30) (NOA RGN NATL)

TABLE: DIGMAN
DMIKEY DMIDATA
--------------
20 (INC 020) $
020 (REM 3) $
30 (INC 030) $
030 (REM 3) $
40 (INC 040) $
040 (REM 3) $
```

Figure 7 Example TRAVER showing SCRN OCN, RGN and DIGMAN OCN, RGN and NOA

```
traver tr cisuptb_mb 03083333200 b
TABLE TRKGRP
CISUPTB_MB IBNT2 0 NPDGP NCRT CSGRPTB 0 MIDL 2 N ANSDISC 0 N N N N N N N 0 0 N 0
    0 0 0 N N N N N N N N N NATL (ANISEND ALWAYS) $
TABLE TRKOPTS
CISUPTB_MB CCNTLIDX CCNTLIDX CDPNSCRN
TABLE CALLCNTL
CDPNSCRN
    (SCRN ( CDPN ) $)$
 .  . TABLE CDPNSCRN
 .  . CDPNSCRN (1)
 .  . SUBTABLE CDPNDATA
 .  . 03083333200 03083333200 30CGPNSCRN $ $
 . TABLE CALLCNTL
 . 30CGPNSCRN
 .     (SCRN ( CGPN ) $) (GOTO CALLCNTL 30OCNSCRN ) $
PLEASE ENTER CLI DIGITS:
>82223200
 .  . TABLE CGPNSCRN
 .  . 30CGPNSCRN (1)
 .  . SUBTABLE CGPNDATA
 .  . 82223200 82223200 30CGPNSCRN ( DIGMAN CGPN 20)(NOA CGPN NATL)$ $
The Original Calling Party Number is: 82223200
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Calling Party Number has been set to: 02082223200
 . TABLE CALLCNTL
 . 30OCNSCRN
 .     (SCRN ( OCN ) $) (GOTO CALLCNTL 30RGNSCRN ) $
PLEASE ENTER DIGITS FOR ORIGINAL CALLED NUMBER:
>82223201
 .  . TABLE CGPNSCRN
 .  . 30OCNSCRN (1)
 .  . SUBTABLE CGPNDATA
 .  . 82223201 82223201 30OCNSCRN ( DIGMAN OCN 20) (NOA OCN NATL)$ $
The Pre-modified Original Called Number is: 82223201
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Original Called Number has been set to: 02082223201
 . TABLE CALLCNTL
 . 30RGNSCRN
 .     (SCRN ( RGN ) $) $
PLEASE ENTER DIGITS FOR REDIRECTING NUMBER:
>82223202
 .  . TABLE CGPNSCRN
 .  . 30OCNSCRN (1)
 .  . SUBTABLE CGPNDATA
 .  . 82223202 82223202 30RGNSCRN ( DIGMAN RGN 20) (NOA RGN NATL)$ $
The Pre-modified Redirecting Number is: 82223202
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Redirecting Number has been set to: 02082223202
```

```
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
INAP Origination Attempt TDP:  no subscribed trigger.
TABLE NCOS
CSGRPTB 2 0 0 NCOSTB ( XLAS CSXLTB FEATXLA CSDIG)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
CSGRPTB NXLA CSXLTB NXLA 0 CSDIG
TABLE DIGCOL
CSDIG 0 COL L 7
INAP Info Collected TDP:  no subscribed trigger.
TABLE IBNXLA: XLANAME CSXLTB
CSXLTB 0 NET N N 0 N CSDIG N Y DOD N CSXLTB CSXLTB CS_NIL NONE $
TABLE DIGCOL
CSDIG 0 COL L 7
TABLE LINEATTR
CSXLTB IBN NONE NT 2 0 NILSFC 0 PX CSXLTB NIL 00 CSXLTB CS_NIL $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
CSXLTB NSCR 20 NPRT NONE N $ $
TABLE RATEAREA
CS_NIL NLCA NIL NILLATA $
TABLE PXHEAD
CSXLTB SDFLT NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE:                    03083333200
TABLE PXCODE
CSXLTB 030 030 RTE ( MM 3 18) ( DEST 33) ( CLASS NATL)$
TABLE: PXRTE
KEY:   CSXLTB   33
 . S CISUPTB_TA
EXIT TABLE PXRTE
INAP Info Analyzed TDP:  no subscribed trigger.
INAP Route Select Failure TDP:  no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++


DIGIT TRANSLATION ROUTES

1 CISUPTB_TA            03083333200                 ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 BUSY

+++ TRAVER: SUCCESSFUL CALL TRACE +
```

1.2.5 Usecase2: CGPN, OCN and RGN manipulation for interworking from SIP (no payload) to CISUP

For SIP to CISUP interworkings, the CGPN, OCN and RGN in the outgoing CISUP messages (IAM/INF) can be manipulated using enhanced call control framework.

Table 4 shows a general manipulation rule for SIP to CISUP interworkings.

Figure 7 shows a sample datafill in TM-CS2Kc or LS-CS2Kc for SIP to CISUP interworking.

Table 4 CGPN, OCN and RGN manipulation for SIP to CISUP interworking

IC SIP INVITE	CS2Kc role	call control is involved?	OG CISUP IAM/INF (to CISUP or SIPT (CISUP) trunk)	calling dn format in AMA
From header username: national number **First "Remote-Party-ID" header in which party=redirect** username: national number **First "Remote-Party-ID" header in which party=redirect** username: national number	LS - local switch or TM - tandem switch	Call control is triggered from table TRKOPTS (Please refer to figure7 for datafill example)	**CGPN:** **CGPN is built from the From header.** - Address Signals: local number - NOA: 0000001 - local **OCN:** **OCN is built from the first Remote-Party-ID header in which party = redirect.** - Address Signals: local number - NOA: 0000001 - local **RGN:** **RGN is built from the first Remote-Party-ID header in which party = redirect.** - Address Signals: local number - NOA: 0000001 - local	**Leg1:** **The RGN in incoming INVITE message is captured in calling dn field.** format: Depend on CISUPAMA option **If RGN is not present and CGPN is present in the incoming INVITE message, the CGPN is captured in calling dn field.** format: Depend on CISUPAMA option

Table 4 CGPN, OCN and RGN manipulation for SIP to CISUP interworking

From header username: national number **First Remote-Party-ID header in which party=redirect** username: national number **First Remote-Party-ID header in which party=redirect** username: national number	TS - Toll switch	Call control is triggered from table TRKOPTS The example datafill in figure5 for general toll switch can also be used in this case.	**CGPN:** **CGPN is built from the From header.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: 0 + area code + local number - NOA: 0000011 - national **OCN:** **OCN is built from the Remote-Party-ID header in which party = redirect.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: area code + local number - NOA: 0000011 - national **RGN:** **OCN is built from the Remote-Party-ID header in which party = redirect.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: area code + local number - NOA: 0000011 - national	**Leg1:** **The RGN in incoming INVITE message is captured in calling dn field.** format: Depend on CISUPAMA option **If RGN is not present and CGPN is present in the incoming INVITE message, the CGPN is captured in calling dn field.** format: Depend on CISUPAMA option

Figure 8 Sample datafill in TM-CS2Kc or LS-CS2Kc for SIP to CISUP interworking

```
TABLE: CUSTSTN
CUSTNAME OPTNAME OPTION
-----------------------
CSGRPMB CCNTLIDX CCNTLIDX CDPNSCRN

Table TRKOPTS
OPTKEY OPTINFO
--------------
SIP_MCS CCNTLIDX CCNTLIDX SIPCGPNSCRN

TABLE: CALLCNTL
CALCTL_KEY CALCTL_OPTIONS
-------------------------
SIPCGPNSCRN (SCRN (CGPN))(goto callcntl SIPOCNSCRN)$
SIPOCNSCRN (SCRN (OCN))(goto callcntl SIPRGNSCRN)$
SIPRGNSCRN (SCRN (RGN))$


TABLE CGPNSCRN
CGPNKEY CDPNDATA
--------------------
SIPCGPNSCRN (1)
SIPOCNSCRN  (1)
SIPRGNSCRN  (1)

TABLE: CGPNSCRN SIPCGPNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
% 1. CGPN is in serving areas (20,30) and in local format - do nothing
% 2. CGPN is in serving areas (20,30) and in national format - remove SNPA
% 3. CGPN is out of serving areas (40), this must be a terminating toll call or
%    tandem toll call. jsut tandem it.
020 020 SIPCGPNSCRN (DIGMAN CGPN 020)(NOA CGPN LCL)
030 030 SIPCGPNSCRN (DIGMAN CGPN 030)(NOA CGPN LCL)

TABLE: CGPNSCRN SIPOCNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
% the same screen rules as SIPCGPNSCRN, but OCN is manipulated this time.
020 020 SIPOCNSCRN (DIGMAN OCN 020)(NOA OCN LCL)
030 030 SIPOCNSCRN (DIGMAN OCN 030)(NOA OCN LCL)

TABLE: CGPNSCRN SIPRGNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
-----------------------------------------
% the same screen rules as SIPCGPNSCRN, but OCN is manipulated this time.
020 020 SIPRGNSCRN (DIGMAN RGN 020)(NOA RGN LCL)
030 030 SIPRGNSCRN (DIGMAN RGN 030)(NOA RGN LCL)
```

1.2.6 Usecase3: CGPN, OCN and RGN manipulation for interworking from China PRI to CISUP/SIPT(CISUP)

For China PRI (CPRI) to CISUP/SIPT(CISUP) interworkings, the CGPN, OCN and RGN in the outgoing CISUP messages (IAM/INF) can be manipulated using enhanced call control framework.

Table 5 shows a general manipulation rule for CPRI to CISUP/SIPT(CISUP) interworkings.

Table 5 CGPN, OCN and RGN manipulation for CPRI to CISUP/SIPT(CISUP) interworking

IC CPRI SETUP	CS2Kc role	call control is involved?	OG CISUP IAM/INF (to CISUP or SIPT (CISUP) trunk)	calling dn format in AMA
Calling Party Number IE **Number digits:** area code + local number **TypeofNumber:** 010 - National number **DivertingLegInfo 2 component of FACILITY IE** **diverting number:** areacode + local number **original called number:** areacode + local number	LS - local switch	Call control is triggered from table TRKOPTS	**CGPN:** **CGPN is built from the From header.** - Address Signals: local number - NOA: 0000001 - local **OCN:** **OCN is mapped from diverting number in DivertingLegInfo2 component of FACILITY IE.** - Address Signals: local number - NOA: 0000001 - local **RGN:** **OCN is mapped from original called number in DivertingLegInfo2 component of FACILITY IE.** - Address Signals: local number - NOA: 0000001 - local	**Leg1:** **The diverting number in incoming SETUP message is captured in calling dn field.** format: Depend on CISUPAMA option **If diverting number is not present and CGPN is present in the incoming SETUP message, the CGPN is captured in calling dn field.** format: Depend on CISUPAMA option

Table 5 CGPN, OCN and RGN manipulation for CPRI to CISUP/SIPT(CISUP) interworking

Calling Party Number IE **Number digits:** area code + local number **TypeofNumber:** 010 - National number **DivertingLegInfo2 component of FACILITY IE** **diverting number:** areacode + local number **original called number:** areacode + local number	TS - Toll switch	Call control is triggered from table TRKOPTS The example datafill in figure5 for general toll switch can also be used in this case.	**CGPN:** **CGPN is built from the From header.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: 0 + area code + local number - NOA: 0000011 - national **OCN:** **OCN is built from the Remote-Party-ID header in which party = redirect.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: area code + local number - NOA: 0000011 - national **RGN:** **OCN is built from the Remote-Party-ID header in which party = redirect.** If it has the same area code as CDPN, - Address Signals: local number - NOA: 0000001 - local If it has the different area code as CDPN, - Address Signals: area code + local number - NOA: 0000011 - national	**Leg1:** **The diverting number in incoming SETUP message is captured in calling dn field.** format: Depend on CISUPAMA option **If diverting number is not present and CGPN is present in the incoming SETUP message, the CGPN is captured in calling dn field.** format: Depend on CISUPAMA option

1.2.7 Usecase4: Manipulate non-wireline number resource

In China, some operators are using wireless number resource for lines in CS2Kc. wireless number plan is Carrier ID (13xx) + Subscriber number, which is different from the wireline number plan. For calls originating from lines with wireless number, CGPN, OCN and RGN in the outgoing CISUP messages (IAM/INF) should be a national significant number as below:

- Address Signals: 13xx + subscriber number
- NOA: 0000011 - national

The enhanced call control functionality can meet this specific requirement. Please refer to figure 9 for sample datafill in CS2Kc. In this case, subscriber with wireless number originates a call in this switch.

Figure 9 Manipulate non-wireline number resource in LS-CS2Kc, TM-CS2Kc and TS-CS2Kc

```
TABLE: CGPNSCRN 20CGPNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
% 1. CGPN is of wireless number plan format - change it to national significant
%    number
1360 1360 CGPNSCRN (NOA CGPN NATL)
```

1.3 Hardware Requirements or Dependencies

N/A

1.4 Software Requirements or Dependencies

N/A

1.5 Limitations and restrictions

1. New DIGMAN_PARM ‘OCN’ and ‘RGN’ are for CISUP outgoing OCN and RGN manipulation only. Other protocols are not considered in this activity.
2. New setting option ‘NOA’ is for CISUP outgoing NOA manipulation only. Other protocols are not considered in this activity.
3. This activity supports following interworkings:
   - — Interworking from IBN line to CISUP/SIPT(CISUP)
   - — Interworking from V5.2 line to CISUP/SIPT (CISUP)
   - — Interworking from CISUP/ SIPT (CISUP) to CISUP/ SIPT (CISUP)
   - — Interworking form SIP to CISUP/ SIPT (CISUP)
   - — Interworking from CPRI to CISUP/SIPT (CISUP)

4. Currently, AMA billing is required only in local originating switch and toll originating switch. AMA billing in other types of switch is not considered in this activity.
5. The second leg line originated call in complex call scenarios except CFW is not supported by CUSTSTN line trigger.
6. The cases that the office code of CGPN, OCN or RGN in the incoming trunk (CISUP/ SIPT (CISUP)/SIP/CPRI) is same as the line area code when CS2kc roles as originating toll switch are not considered in this activity.

1.6 Interactions

1. Interaction between Call Control and Call Forward is as below:

- For line originating calls with call control triggered in table CUSTSTN, if call forward occurs in this switch, call control functionality is triggered for the redirecting call with the call control index datafilled in table CUSTSTN for the redirecting line.
- For trunk originating calls with call control triggered in table TRKOPTS, if call forward occurs in this switch, call control functionality is triggered for the redirecting call with the call control index datafilled in table CUSTSTN for the redirecting line.
- Call Forward feature supported by this activity is as below:
  - — Call Forward Unconditional
  - — Call Forward Busy
  - — Call Forward Don’t answer

1.7 Applicable customer facing sections

Fault Management	
Logs	_N/A_
Alarms	_N/A_
Configuration	
Data Schema	__X__
User Interface	_N/A_
Element Management	_N/A_
Security	_N/A_
Service Order	_N/A_
Office Parameters	_N/A_
Accounting (includes AMA billing)	_N/A_

Performance (includes operational measurements) _N/A_

1.8 Glossary

Term	Description
IAM	Initial Address Message
CISUP	China ISUP
CGPN	CallinG Party Number
CDPN	CalleD Party Number
MII	Ministry of Information Industry
OCN	Original Called Number
RGN	RedirectinG Number

1.9 References

1. YD/T 1157-2001 The Transfer of Calling Party Number between Operators

2. A59028780: Call Control and Universal Screening

3. A59033687: Call Control and Universal Screening - Phase 2

4. A00004743: Line originations CLI modification through CALLCNTL

5. SFR V4 for China ISUP Enhancement

Configuration for A00006407

2.1 Hardware and Software Requirements

N/A

2.2 Initial Configuration

N/A

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

N/A

2.4 Upgrade Impact

N/A

2.5 Data schema (DS) (CM, MIBS, RDB)

Table 6 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
CUSTSTN	CHANGED	UNCHANGED
CALLCNTL	CHANGED	UNCHANGED
CGPNSCRN	CHANGED	UNCHANGED
CDPNSCRN	CHANGED	UNCHANGED
BCSCRN	CHANGED	UNCHANGED
CDPNLSCR	CHANGED	UNCHANGED
CGRPSCRN	CHANGED	UNCHANGED
CKTSCRN	CHANGED	UNCHANGED
CPCNSCRN	CHANGED	UNCHANGED
CPNNSCRN	CHANGED	UNCHANGED
IPISCRN	CHANGED	UNCHANGED
NCOSSCRN	CHANGED	UNCHANGED
NOASCRN	CHANGED	UNCHANGED
OLISCRN	CHANGED	UNCHANGED
RDRISCRN	CHANGED	UNCHANGED

2.5.1 Table/MIB/Remote Database Schema information

2.5.1.1 Name: CUSTSTN

Customer Group Station Option

2.5.1.1.1 Functional description

Unchanged

2.5.1.1.2 Usage sequence and implications (CM Only)

Unchanged.

2.5.1.1.3 Size

Unchanged.

2.5.1.1.4 Fields/OIDs

The following table lists fields/OIDs for CUSTSTN.

Table 7 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
OPTNAME	Changed		One of {CPC, CNDDTMF, CMI, SPL, CEPT, PCI, ACB, AIN, AINLATA, AINPRECE, AMBISC, AMBZERO, AR, ASP, AUTODISP, CBQ, CFCW, CFDATIM, CFDCET, CFIND, CFRA, CFWVAL, CFXFEAT, CFXOL, CFXOPT, CHD, CMCF, CNAB, CNDB, CNDBO, CNDBRI, COT, CPARK, CRINTER, CRRNOKSH, CTFP, CTW, CWD, CWO, CWTC, CXFER, CXFERSUP, DCBITONE, DENYCWTC, DINALT, DISPDIGS, DISTCWTN, DMCT, DND, DRING, EBOM, GICNOCFW, GICPAGE, INSPACT, INSPDISP, JCNDFORM, KSMOH, MBSCAMPO, MCGROUP, MSB, NAMEDISP, NUMDGCMP, N3WCRRNG, PCACIDS, PCSOPT, PCWTTO, PHOLD, RAGRCOPT, RAGTIM, REASDISP, REDIRECT, RND, SCPAUSE, SCUTDNO, SCVAL, SERVCTL, SLE, SOR, SPP, 3WCSFLSH, TAFAS, UAWUCR, BRITONUN, MOT, VOWDN, **CCNTLIDX**}	Option nameEnter the name of the option,
OPTION	Changed			OptionThis field consists of subfield OPTION.
	New	OPTION	CCNTLIDX	Enter the name of option, and datafill refinement CCNTLIDX.
	New	CCNTLIDX	SCRN_INDX	Call Control Index enter the index into table CALLCNTL.

2.5.1.1.5 Datafill example

The following example shows sample datafill for table CUSTSTN

Figure 10 Sample Datafill - Table CGPNSCRN

```
TABLE CUSTSTN
CUSTNAME OPTNAME OPTION
-----------------------
CSGRPMB CCNTLIDX CCNTLIDX CDPNSCRN
```

2.5.1.1.6 Table release history update

The following information is added:

New option ‘CCNTLIDX’

2.5.1.1.7 Supplementary information

None

2.5.1.1.8 Translation verification other tools

The following example shows the output from TRAVER when it is used to verify CUSTSTN.

Figure 11

```
traver l 82223202 03083333200 b
TABLE IBNLINES
LG 00 2 01 82 0 DT STN IBN 82223202 CSGRPTB 0 2 20 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE CUSTSTN
CSGRPTB CCNTLIDX CCNTLIDX CGPNSCRN
TABLE CALLCNTL
CGPNSCRN
    (SCRN ( CGPN) $)$
PLEASE ENTER CLI DIGITS:
>82223202
TABLE CGPNSCRN
 . CGPNSCRN
 . SUBTABLE CGPNDATA
 .  . 82223202 82223202 CGPNMAN $
TABLE CALLCNTL
CGPNMAN (DIGMAN CGPN 20)(NOA CGPN NATL)$
The Original Calling Party Number is: 82223202
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Calling Party Number has been set to: 02082223202
```

2.5.1.2 Name: CALLCNTL

CALL CONTROL

2.5.1.2.1 Functional description
Unchanged

2.5.1.2.2 Usage sequence and implications (CM Only)
Unchanged.

2.5.1.2.3 Size
Unchanged.

2.5.1.2.4 Fields/OIDs
The following table lists fields/OIDs for CALLCNTL.

Table 8 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
CALCTL_OPTIONS	Changed		Vector of up to 8 of {SCRN, SETCODEC, DIGCOLL, DEFNUM, TNS_OVERI, CNDGOTO, SAT, SETVAR, BC, POECNAME, CLICNTL, DIGMAN, CHECKRETRY, COLLECTCALL, INCRRETRY, MCTLOG, LNP, TREAT, CLIXLA, ACCTVIDX, CUSTGRP, GOTO, SRVCODE, NCOS, SETCDN, COS, **NOA**}	List of up to 8 CALLCNTL options
	Changed	SCRN	Vector of up to 8 of {CDPN, VAR, UKKCDPN, KK, CUSTGRP, CPCNAME, CDNNAME, CSP_CIC, RDRINFO, CGPNNOA, BC, CIP, TNS_CIC, TNS_CKT, OLI, CGPN, IPI, NCOS, CDPNLEN, **OCN, RGN**}	List of 1 to 8 parameters to screen.Datafill the subfield SCRN. OCN - Original Called Number RGN - Redirecting Number

Table 8 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
	Changed	DIGMAN	One of {CDPN, CGPN, **OCN, RGN**} DMI	Enter the parameter to manipulate. OCN - Original Called Number RGN - Reidrecting Number. Enter the index into table DIGMAN.
	New	NOA	NOA_PARM NOA_VALUE	Override the NOA of CGPN, OCN or RGN, datafill subfield NOA_PARM and NOA_VALUE.
	New	NOA_PARM	One of {CGPN, OCN, RGN}	Enter the parameter to override. CGPN - Calling Party Number OCN - Original Called Number RGN - Redirecting Number
	New	NOA_VALUE	One of {LCL, NATL}	Enter the new NOA value. LCL - NOA is local NATL - NOA is national

2.5.1.2.5 Datafill example

The following example shows sample datafill for table CALLCNTL.

Figure 12 Sample Datafill - Table CALLCNTL

```
TABLE CALLCNTL
CALCTL_KEY CALCTL_OPTIONS
-----------------------
OCNSCRN (SCRN (OCN) $)$
RGNSCRN (SCRN (RGN) $)$
CGPNMAN (DIGMAN CGPN 30)(NOA CGPN LCL)
OCNMAN (DIGMAN OCN 30)(NOA OCN LCL)
RGNMAN (DIGMAN RGN 30)(NOA RGN NATL)
```

2.5.1.2.6 Table release history update

The following information is added:

New SCRN option ‘OCN’ and ‘RGN’

New DIGMAN_PARM ‘OCN’ and ‘RGN’

New CALLCNTL_OPTIONS ‘NOA’

2.5.1.2.7 Supplementary information

None

2.5.1.2.8 Translation verification other tools

The following example shows the output from TRAVER when it is used to verify CALLCNTL.

```
traver tr cisuptb_mb 03083333200 b
TABLE TRKGRP
CISUPTB_MB IBNT2 0 NPDGP NCRT CSGRPTB 0 MIDL 2 N ANSDISC 0 N N N N N N N 0 0 N 0
    0 0 0 N N N N N N N N N NATL (ANISEND ALWAYS) $
TABLE TRKOPTS
CISUPTB_MB CCNTLIDX CCNTLIDX OCNSCRN
TABLE CALLCNTL
OCNSCRN
    (SCRN ( OCN) $)$
PLEASE ENTER DIGITS FOR ORIGINAL CALLED NUMBER:
>82223200
TABLE CGPNSCRN
 . OCNSCRN
 . SUBTABLE CDPNDATA
 .  . 82223200 82223200 OCNMAN $
TABLE CALLCNTL
OCNMAN (DIGMAN OCN 20)(NOA OCN NATL)$
The Pre-modified Original Called Number is: 82223200
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Original Called Number has been set to: 02082223200
```

2.5.1.3 Name: List as below

The following screening tables are changed since the field CCOPTION is of TYPE CALLCNTL_OPTION_RANGE which is changed in table CALLCNTL.

BCSCRN Bearer Capability Screen

CDPNLSCR Called Party Number Length Screen

CDPNSCRN Called Party Number Digits Screen

CGPNSCRN Calling Party Number Screen

CGRPSCRN Customer Group Screen

CKTSCRN Transit Network Selector Circuit Screen

CPCNSCRN Called Number NOA & NPI Screen

CPNNSCRN Calling Number NOA Screen

IPISCRN Carrier Indentification Code Screen

NCOSSCRN Network Class of Service Screen

NOASCRN ISDN Preference Indicator Screen

OLISCRN Originating Line Identity Screen

RDRISCRN Redirection Information Indicator Screen

2.5.1.3.1 Functional description

Unchanged

2.5.1.3.2 Usage sequence and implications (CM Only)

Unchanged

2.5.1.3.3 Size

Unchanged.

2.5.1.3.4 Fields/OIDs

The following table lists fields/OIDs for screening tables.

Table 9 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
CCOPTION	Changed		Vector of up to 8 of {SCRN, SETCODEC, DIGCOLL, DEFNUM, TNS_OVERI, CNDGOTO, SAT, SETVAR, BC, POECNAME, CLICNTL, DIGMAN, CHECKRETRY, COLLECTCALL, INCRRETRY, MCTLOG, LNP, TREAT, CLIXLA, ACCTVIDX, CUSTGRP, GOTO, SRVCODE, NCOS, SETCDN, COS, **NOA**}	List of up to 8 CALLCNTL options
	Changed	DIGMAN	One of {CDPN, CGPN, **OCN, RGN**} DMI	Enter the parameter to manipulate. OCN - Original Called Number RGN - Redirecting Number. Enter the index into table DIGMAN.
	New	NOA	NOA_PARM NOA_VALUE	Override the NOA of CGPN, OCN or RGN, datafill subfield NOA_PARM and NOA_VALUE.
	New	NOA_PARM	One of {CGPN, OCN, RGN}	Enter the parameter to override. CGPN - Calling Party Number OCN - Original Called Number RGN - Redirecting Number
	New	NOA_VALUE	One of {LCL, NATL}	Enter the new NOA value. LCL - NOA is local NATL - NOA is national

2.5.1.3.5 Datafill example

The following example shows sample datafill for table CGPNSCRN.

Figure 13 Sample Datafill - Table CGPNSCRN

```
TABLE: CGPNSCRN OCNSCRN: CGPNDATA
FROMDIGS TODIGS CGPNINDX CCOPTION CGPNOPT
----------------------------------------
020 020 20OCNSCRN (DIGMAN OCN 020)(DIGMAN RGN 020)(NOA OCN LCL)(NOA RGN NATL)
```

The following example shows sample datafill for table CDPNSCRN.

Figure 14 Sample Datafill - Table CDPNSCRN

```
TABLE: CDPNSCRN OCNSCRN: CDPNDATA
FROMDIGS TODIGS CDPNINDX CCOPTION CDPNOPT
----------------------------------------
020 020 20CDNSCRN (DIGMAN OCN 020)(DIGMAN RGN 020)(NOA OCN LCL)(NOA RGN 020)$$
```

2.5.1.3.6 Table release history update

The following information is added:

New DIGMAN_PARM ‘OCN’ and ‘RGN’

New CALLCNTL_OPTIONS ‘NOA’

2.5.1.3.7 Supplementary information

None

2.5.1.3.8 Translation verification other tools

The following example shows the output from TRAVER when it is used to verify CGPNSCRN.

The following example shows the output from TRAVER when it is used to

```
traver tr cisuptb_mb 03083333201 b
TABLE TRKGRP
CISUPTB_MB IBNT2 0 NPDGP NCRT CSGRPTB 0 MIDL 2 N ANSDISC 0 N N N N N N N 0 0 N (
    0 0 0 N N N N N N N N NATL (ANISEND ALWAYS) $
TABLE TRKOPTS
CISUPTB_MB CCNTLIDX CCNTLIDX OCNSCRN
TABLE CALLCNTL
OCNSCRN
    (SCRN ( OCN) $)$
PLEASE ENTER DIGITS FOR ORIGINAL CALLED NUMBER:
>82223200
TABLE CGPNSCRN
 . OCNSCRN
 . SUBTABLE CGPNDATA
 .  . 82223200 82223200 OCNSCRN (DIGMAN OCN 20)(NOA OCN NATL)$
The Pre-modified Original Called Number is: 82223200
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Original Called Number has been set to: 02082223200
```

verify CDPNSCRN.

Figure 15

```
>traver tr cisuptb_mb 03083333200 b
TABLE TRKGRP
CISUPTB_MB IBNT2 0 NPDGP NCRT CSGRPTB 0 MIDL 2 N ANSDISC 0 N N N N N N N 0 0 N (
    0 0 0 N N N N N N N N NATL (ANISEND ALWAYS) $
TABLE TRKOPTS
CISUPTB_MB CCNTLIDX CCNTLIDX CDPNSCRN
TABLE CALLCNTL
CDPNSCRN
    (SCRN ( CDPN ) $)$
 .  . TABLE CDPNSCRN
 .  . CDPNSCRN (1)
 .  . SUBTABLE CDPNDATA
 .  . 03083333200 03083333200 CDPNSCRN ( DIGMAN OCN 20) (NOA OCN NATL)$ $
PLEASE ENTER DIGITS FOR ORIGINAL CALLED NUMBER:
>82223201
The Pre-modified Original Called Number is: 82223201
 .  .  . TABLE DIGMAN
 .  .  .    20 (INC 020)
 .  .  . EXIT TABLE DIGMAN
The Original Called Number has been set to: 02082223201
```

2.5.1.4 Name: ISERVOPT

International Service Option

2.5.1.4.1 Functional description

Unchanged

2.5.1.4.2 Usage sequence and implications (CM Only)
Unchanged.

2.5.1.4.3 Size
Unchanged.

2.5.1.4.4 Fields/OIDs
The following table lists fields/OIDs for ISERVOPT.

Table 10 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
SOPTSKEY	Changed			Service Options Key. This field contains the option name.
	New	SOPTSKEY	CISUPAMA	CISUPAMA - China ISUP AMA option
SOPTSVAR	Changed			
	New	OPTION	CISUPAMA	CISUPAMA - China ISUP AMA option
	New	PREFIX_0_TO_NATL_NUM_IN_AMA	Y,N	Y - The format of calling DN in AMA for CISUP outgoing calls is '0+areacode+local number' N - The format of calling DN in AMA for CISUP outgoing calls is 'areacode+local number'

2.5.1.4.5 Datafill example
The following example shows sample datafill for table ISERVOPT

Figure 16 Sample Datafill - Table ISERVOPT

```
TABLE: ISERVOPT
SOPTSKEY SOPTSVAR
-----------------
CISUPAMA CISUPAMA Y
```

2.5.1.4.6 Table release history update
The following information is added:

New option 'CISUPAMA'

2.5.1.4.7 Supplementary information

This option is supported for following interworkings:

- Interworking from IBN line to CISUP/SIPT(CISUP)
- Interworking from V5.2 line to CISUP/SIPT (CISUP)
- Interworking from CISUP/ SIPT (CISUP) to CISUP/ SIPT (CISUP)
- Interworking form SIP to CISUP/ SIPT (CISUP)
- Interworking from China PRI to CISUP/SIPT (CISUP)

Please refer to A00006407 FN for more detail.

2.5.1.4.8 Translation verification other tools

None

2.6 Service Orders (SO) (CM & SESM)

N/A

2.7 Software optionality control (SOC)

N/A

2.8 Element Management

N/A

2.9 Command interface changes

N/A

2.10 Security

N/A

2.11 Configuration Walkthrough

N/A

Product = World Trade

A00006636--First ITX on Answer

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

This activity, A00006636 “First ITX on Answer” in ISN08, provides the generation of the first ITX 500 msecs after an answer. This is a TDM activity implemented on DMS100 MMP. Prior to this activity, first ITX is generated when the first interval (which is determined by the SSUTR2_ITX_RATE parameter in the table OFCENG) expires.

This feature is optional with a new SOC option. When the state of SOC is ON, the feature becomes active, otherwise the system behaves as it was before this functionality.

1.2.1 Background information

Currently, first ITX is generated when the first interval, which is equal to the SSUTR2_ITX_RATE value, expires. In the case of the call termination prior to the first interval expiry, the originator will not be charged for that call since no ITX message is received until the end of the call. With this activity the first ITX message is generated 500 msecs after the RIU/ANM message is sent and therefore short duration calls can be charged for both the SSUTR2 and SPIROU terminating calls.

1.2.2 Existing ITX generation functionality

Please refer to the section AU3283, FN, Section 1.4.4. Datafill to Control ITX Generation.

1.2.3 Activation of the feature

Activation of the functionality is controlled by the SOC option NETKXXXX-”First ITX on Answer”.

First ITX on Answer is a state SOC and it has two states, ON and IDLE. Default state of *First ITX on Answer* is IDLE. When its state is ON, this feature becomes functional.

Table 1 SOC for Activation of Feature

SOC group:	NETK
SOC option name:	First ITX on Answer
SOC option title:	First ITX on Answer
SOC option control type:	state
New SOC option?	Yes
SOC option order code	NETK0086
Option defined in DRU:	WT21
Affected products:	ISN08

1.3 Sending first ITX after answer

Using this activity, the aim is to send the first ITX 500 msecs after the ANM/RIU message is sent. Currently, calling subscriber cannot be charged, if the call is terminated prior to first ITX being sent. By sending the first ITX message 500 msecs after RIU/ANM, short duration calls can be charged.

The count, to be carried by the first ITX sent 500 msecs after the answer, is calculated according to the existing tuple in the MTRTARIF table for the first SSUTR2_ITX_RATE timer duration. There may be a difference between the first ITX count and the calculated count at the first SSUTR2_ITX_RATE expiry. This can be observed:

- If tariff changeover occurs (because of Time of Day, Day of Week, Day of Year etc.) or the tariff changes because of DMS system time changes before the first expiry of the SSUTR2_ITX_RATE during an active call.

Please refer to the sections 1.4.1.1, 1.4.1.2, 1.4.1.3 to find how to handle this situation.

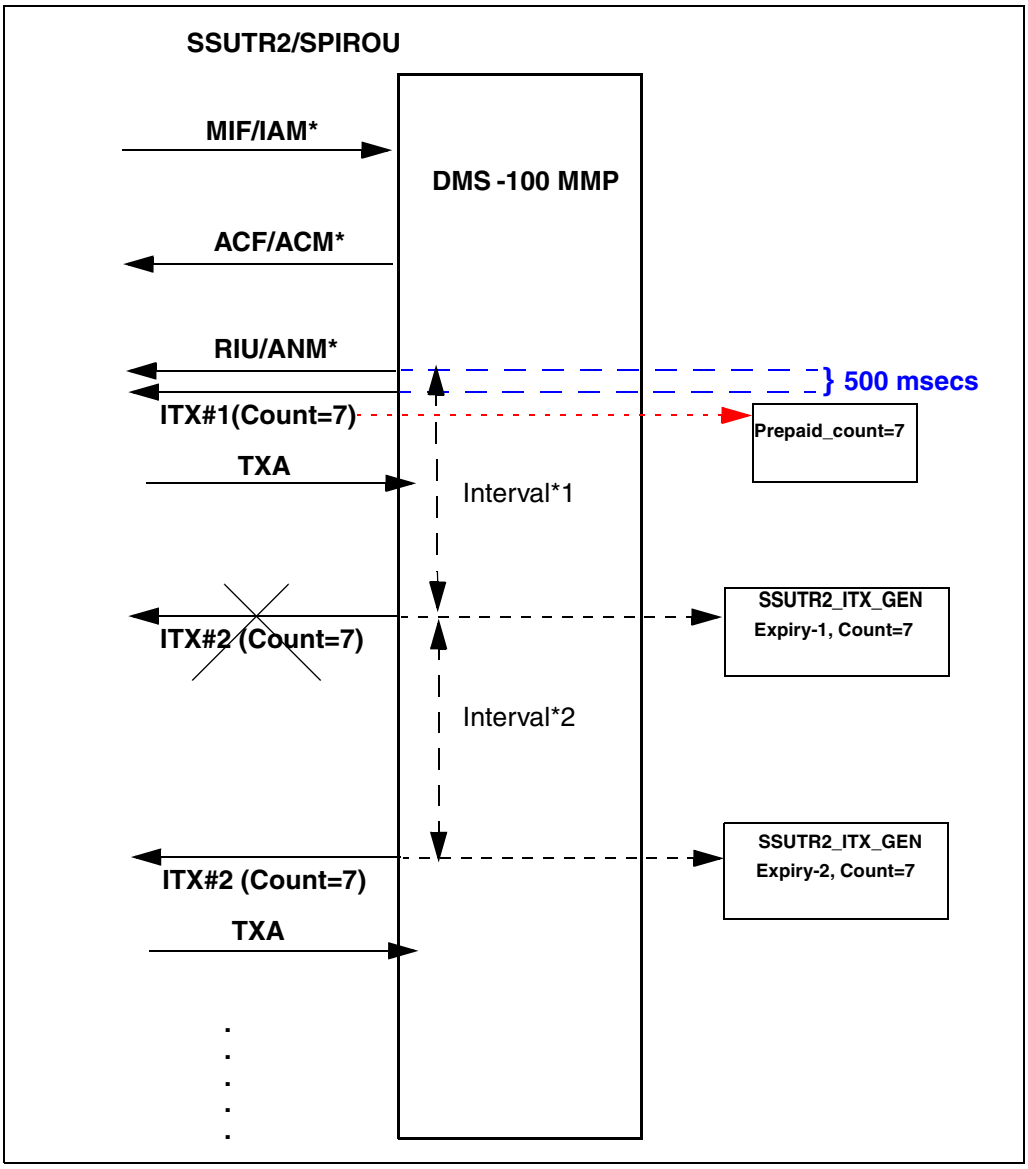
- If the phase starting times coincide with the times ITX messages are sent (determined by SSUTR2_ITX_RATE), please refer to 1.15 Appendix B to find examples for the following cases:
    i. The case where SSUTR2_ITX_RATE coincides with datafilled burst duration.
    ii. The case where SSUTR2_ITX_RATE does not coincide with datafilled burst duration.

1.3.1 ITX generation according to the tariff changes

1.3.1.1 No tariff change in active call:

If no tariff change occurs during an active call, no ITX is generated at the first SSUTR2_ITX_RATE expiry. At the second SSUTR2_ITX_RATE expiry, a second ITX is generated. Please refer to Figure 1 as an example.

Figure 1 No Tariff Change During Active Call

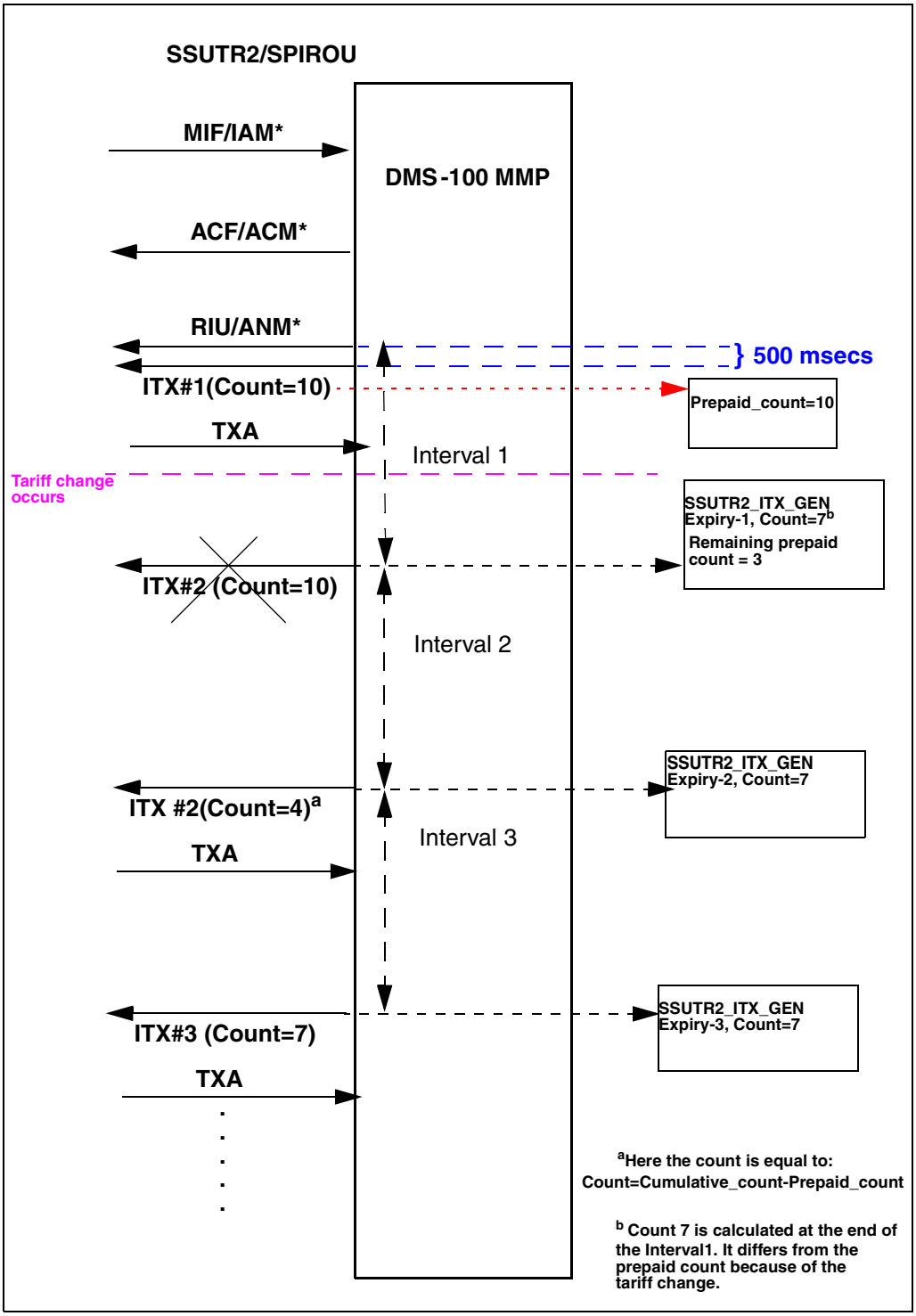


*Interval value is determined by the SSUTR2_ITX_RATE parameter in the table OFCENG and is the same for all intervals.

1.3.1.2 Tariff Change to Lower Price in Active Call

Please refer to Figure 2 as an example.

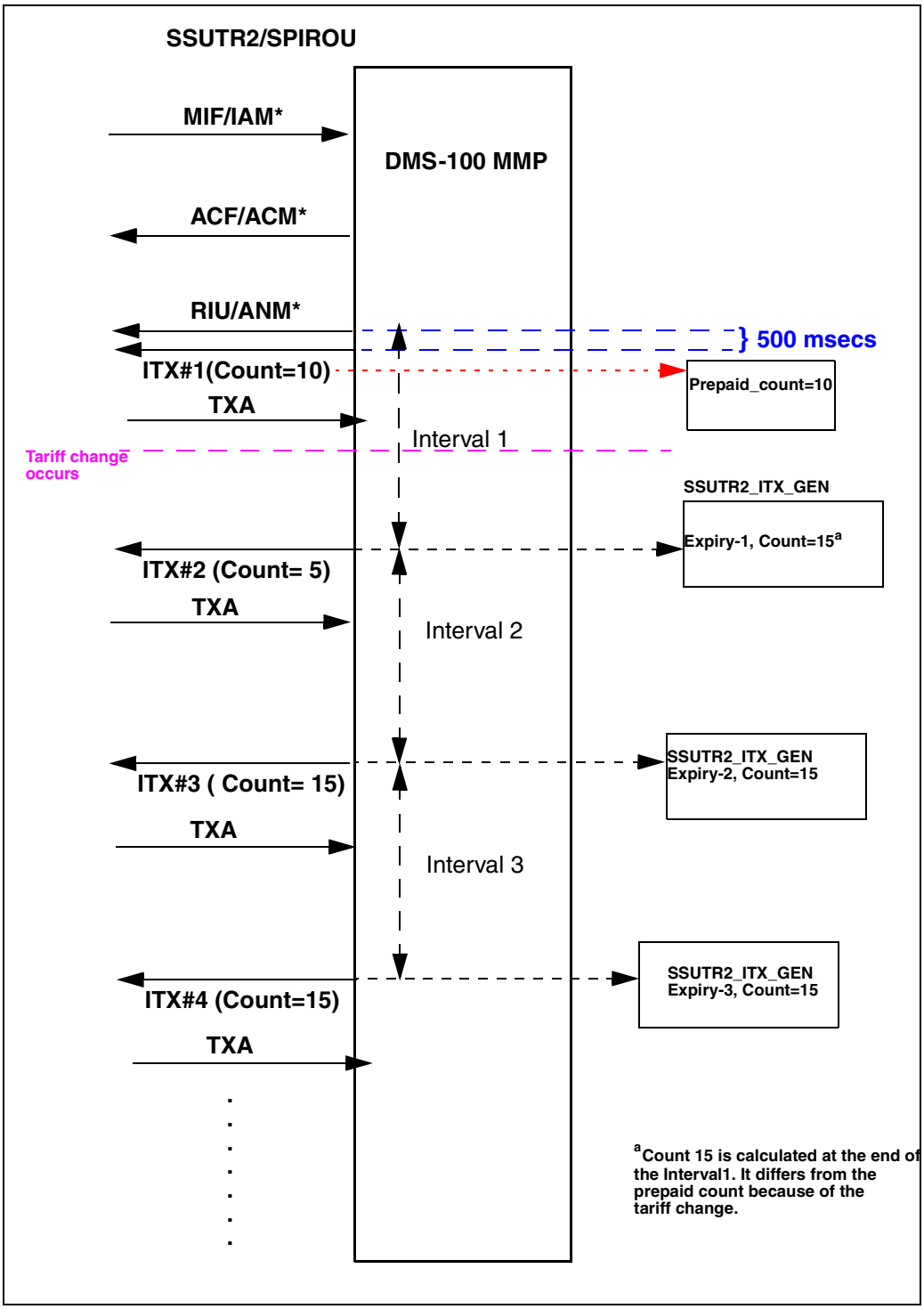
Figure 2 Tariff Change to Lower Price in Active Call



1.3.1.3 Tariff Change to Higher Price in Active Call

Please refer to Figure 3 as an example.

Figure 3 Tariff Change to Higher Price in Active Call



1.4 Interworkings

- SSUTR2 -> SPIROU
- SPIROU -> SSUTR2
- SSUTR2/SPIROU -> ETSI ISUP V1
- SSUTR2/SPIROU -> ETSI ISUP V2
- SSUTR2/SPIROU -> ETSI PRI
- SSUTR2/SPIROU -> QSIG
- SSUTR2/SPIROU -> Numeris VN4 PRI
- SSUTR2/SPIROU -> Numeris VN6 PRI

Note 1: If the required datafill exists for ITX generation, the first ITX is generated 500 msecs after an answer at the SSUTR2/SPIROU side for interworkings listed above when the relevant SOC state is 'ON'.

Note 2: For non-SSUTR2/SPIROU to SSUTR2/SPIROU interworking, ITX which is sent by succeeding exchange is received. The mapping of this ITX message is not affected by this activity.

1.5 Datafill Requirements

There is no new datafill requirement for this feature. The existing datafill examples are provided in 1.14. Appendix A.

1.6 Hardware Requirements or Dependencies

This feature is supported only on the SX05 DTCO/DTCO2 processor.

1.7 Software Requirements or Dependencies

To make this new feature functional, the new state SOC option, "*First ITX on Answer"* is used. Since the SOC state will be IDLE after ONP is completed, it must be changed to ON manually to make the feature functional.

1.8 Limitations and restrictions

- All restrictions and limitations in AU3283-SSUTR2 SUPPORT FOR BACKWARD CHARGING, PLS DOC will be valid for this activity as well.
- It is recommended to use a metering tariff which does not coincide with the SSUTR2_ITX_RATE period for ITX generation.

  As seen in the existing behavior, under some circumstances, the SSUTR2_ITX_RATE timer might coincide with the relevant phase duration timer datafilled in the MTRTARIF table. SSUTR2_ITX_RATE might expire just before or after the update of the stored metering count. Therefore, no precise count can be determined for that ITX if datafilled

burst duration for the relevant phase coincides with ITX generation period. That is why such usage is not recommended. Please refer the 1.15. Appendix B.

- If a tariff changeover occurs (because of Time of Day, Day of Week, Day of Year etc.) before the first expiry of the SSUTR2_ITX_RATE timer during an active call, then this change over is not considered for the first ITX message 500 msec after an answer.

For this exceptional case, any difference between the pulse count sent in the first ITX message and the real value at the ITX rate timer expiry will be reflected to the following (2nd, 3rd) ITX messages and total of the transmitted pulses will have the correct value at the end of the call.

If the call is ended before the mentioned pulse difference is reflected through subsequent ITX messages, then, the tariff change may not be applied to the call.

1.9 Interactions

No changes due to this feature.

1.10 Applicable customer facing sections

Fault Management

Logs	N/A
Alarms	N/A

Configuration

Data Schema	N/A
User Interface	N/A
Element Management	N/A
Security	N/A
Service Order	N/A
Office Parameters	N/A

Accounting (includes AMA billing)	N/A
Performance (includes operational measurements)	N/A

1.11 Glossary

Term	Description
ACF	ISDN address complete message with user to user facilities

Term	Description
ACM	Address Complete Message
AMA	Automatic Message Accounting
ANM	Answer Message
CM	Computing Module
DMS	Digital Multiplex System
FN	Functional Description
IAM	Initial Address Message
ITX	Charge Unit message
MIF	ISDN initial address message with user to user facilities
MMP	Multi-Market Product
RIU	Answer message with user to user information
SOC	Software Optionality Control
SPIROU	Signalization Pour l'Interconnexion des Réseaux Ouverts
SSUTR2	Sous Systeme Utilisateur
TUP	Telephony User Part
TXA	Charging Acknowledgement message

1.12 References

a. V 11-T 1998 Recommendation, Specification of the SSUTR2 user subsystem on the interface between the France Telecom fixed network and the third party networks at the VN6 functional phase

b. AU3283-SSUTR2 SUPPORT FOR BACKWARD CHARGING, PLS DOC - CM part

c. AU3284-SSUTR2 SUPPORT FOR BACKWARD CHARGING, PLS DOC - XPM part

d. NTP 297-9051-020 MMP Metering Guide

e. A00002101-Allow ITX only SSUTR2

f. CR.Q00749093 - Zero ITX Charge count

1.13 Appendix A - Example datafill and traver for SSUTR2/SPIROU

1.13.1 Table TRKSGRP Datafill

- SSUTR2 trunk datafill:

2WFTUPAB 0 DS1SIG C7UP 2W N N UNEQ NONE Q767 THRH 0 DMS_NODE N N **FRANCE 100_BLUE** $ FTUP2W CIC

- SPIROU trunk datafill:

SPIROUAB 0 DS1SIG C7UP 2W N N UNEQ NONE Q767 THRH 0 DMS N N **SPIROU 100_EIV3** $ 2WN7 CIC

1.13.2 Metering datafill example

TABLE OFCENG

SSUTR2_ITX_RATE 20

TABLE AMAOPTS

BACK_CHARGE ON

TABLE LTCINV

PDTC 1 1 IDTE 1 18 1 C 8 6X02UI QDT21XX (ABTRK DTCEX) $ (2 48) (2 49) (2 50) (2 51) (2 52) (2 53) (2 54) (2 55) (2 56) (2 57) (2 58) (2 59) (2 60) (2 61) (2 62) (2 63) $ (UTR9) (RAM6X69) (NT6X28) $ TURKR1R2 **SX05AA SX05AA** 0 UPFWQM01 (CCS7) (FSTR2) (**METER**) $ 6X40AC N

TABLE MTRLNET

LOC

TABLE MTRTARIF

---

53 SEC Y 0 1 0 12 1 15 0 1 0 16 1 15

TABLE MTRTTS

LOC 8 Y 53 $ $ $ $ $ $ $ $ $

TABLE MTRMOTS

MOTS_2 LOC 4 8

TABLE MTRMOG

MDI4 MOTS_2 $

TABLE DAYTYPES

NORMAL

SATDAY

SUNDAY

HOLIDAY

TABLE TODHEAD

LOC MTR LOC 0 NORMAL SATDAY SUNDAY $

TABLE DAYOWEEK

LOC WED NORMAL

TABLE AOCBASIC

LOC 4 0 30

TABLE AOCOPT

LOC 30 4 0 $

TABLE CLISERV

METERING 1 SERVSCRN $

TABLE CLISRVPF

---

1 METERING $ $

TABLE DNSCRN

1027835479 NETAOCD 30 CLISERV 1 $

1.13.3 Traver example for SSUTR2-SSUTR2 call when NETAOCD is datafilled:

>traver tr mftupba 3967835480 tariff b

TABLE TRKGRP

MFTUPBA IBNT2 0 NPDGP NCRT SERKAN 0 LIDL 0 N ANSDISC 0 Y N N N N N N N 0

0 N 0 1 0 1 N N N N N N N N N NATL $

TABLE CUSTSTN

TUPLE NOT FOUND

TABLE OFCVAR

AIN_OFFICE_TRIGGRP NIL

INAP Origination Attempt TDP: no subscribed trigger.

TABLE NCOS

SERKAN 0 0 0 $ (XLAS MEHTAP MEHTAP NDGT)$

TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT,

AND DIGCOL

SERKAN NXLA NETXLA NXLA 0 NDGT

TABLE DIGCOL

NDGT specified: digits collected individually

INAP Info Collected TDP: no subscribed trigger.

TABLE IBNXLA: XLANAME MEHTAP

TUPLE NOT FOUND

Default from table XLANAME:

MEHTAP

(NET N Y 0 N NDGT N Y DOD N 2 102_NPRT_1 NLCA_NILLA_1 NONE $) $ 9

TABLE DIGCOL

NDGT specified: digits collected individually

TABLE LINEATTR

2 IBN NONE NT 0 0 NILSFC 4 PX MEHTAP NIL 00 102_NPRT_1 NLCA_NILLA_1 $

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE

TABLE XLAPLAN

102_NPRT_1 NSCR 102 NPRT NONE N $ GG

TABLE RATEAREA

NLCA_NILLA_1 NLCA NIL NILLATA $

TABLE PXHEAD

MEHTAP DFLT FEATINFO VALIDATE (SUBSCRN (GENERAL N N N N)$) (CLISERV

METERING)$ 0 1 20 PX NETXLA NODFOP NOCON F

THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
3967835480

TABLE PXCODE

TUPLE NOT FOUND

DEFAULT FROM HEAD TABLE USED

PLEASE ENTER CLI DIGITS:

>1027835479

TABLE CLISERV

. METERING 1 (SERVSCRN)$

TABLE DNSCRN

. 1027835479 (NETAOCD 30) (CLISERV 1) $

TABLE CLISRVPF

. 1 (METERING $)$

. Matched on METERING

. Service screening succeeded

TABLE PXHEAD

NETXLA SDFLT NODFOP NOCON F

THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
3967835480

TABLE PXCODE

NETXLA 396 396 RTE (PF 3) (MM 9 15) (DEST 394) (CLASS NATL) (LNET LOC)

(MZONE 4)$

TABLE: PXRTE

KEY: NETXLA 394

. S MFTUPBC

EXIT TABLE PXRTE

INAP Info Analyzed TDP: no subscribed trigger.

INAP Route Select Failure TDP: no subscribed trigger.

TABLE MTRMOG

MDI4 MOTS_2 $

TABLE MTRLNET

LOC

TABLE MTRMOTS

MOTS_2 LOC 4 8

TABLE MTRNETIF

TUPLE NOT FOUND

TABLE MTRMOTS

MOTS_2 LOC 4 8

TABLE MTRNAMES

TUPLE NOT FOUND

TABLE TODHEAD

LOC MTR LOC 0 (NORMAL) (SATDAY) (SUNDAY) $

TABLE DAYOYEAR

TUPLE NOT FOUND

TABLE DAYOWEEK

LOC WED NORMAL

TABLE TIMEODAY

TUPLE NOT FOUND

WARNING: TIMEODAY datafill missing

The default TNT in table TODHEAD will be used

TABLE MTRTTS

LOC 8 Y 53 $ $ $ $ $ $ $ $ $

TABLE MTRTARIF

53 SEC Y 0 1 0 12 1 15 0 1 0 16 1 15

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 MFTUPBC 7835480 ST

TREATMENT ROUTES. TREATMENT IS: GNCT

1 OFL

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>traver tr mftupcb 7835480 tariff b

TABLE TRKGRP

MFTUPCB IBNT2 0 NPDGP NCRT SERKAN 0 LIDL 0 N ANSDISC 0 Y N N N N N N N 0

0 N 0 1 0

1 N N N N N N N N N NATL $

TABLE CUSTSTN

TUPLE NOT FOUND

TABLE OFCVAR

AIN_OFFICE_TRIGGRP NIL

INAP Origination Attempt TDP: no subscribed trigger.

TABLE NCOS

SERKAN 0 0 0 $ (XLAS MEHTAP MEHTAP NDGT)$

TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT,

AND DIGCOL

SERKAN NXLA NETXLA NXLA 0 NDGT

TABLE DIGCOL

NDGT specified: digits collected individually

INAP Info Collected TDP: no subscribed trigger.

TABLE IBNXLA: XLANAME MEHTAP

TUPLE NOT FOUND

Default from table XLANAME:

MEHTAP

(NET N Y 0 N NDGT N Y DOD N 2 102_NPRT_1 NLCA_NILLA_1 NONE $) $ 9

TABLE DIGCOL

NDGT specified: digits collected individually

TABLE LINEATTR

2 IBN NONE NT 0 0 NILSFC 4 PX MEHTAP NIL 00 102_NPRT_1 NLCA_NILLA_1 $

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE

TABLE XLAPLAN

102_NPRT_1 NSCR 102 NPRT NONE N $ GG

TABLE RATEAREA

NLCA_NILLA_1 NLCA NIL NILLATA $

TABLE PXHEAD

MEHTAP DFLT FEATINFO VALIDATE (SUBSCRN (GENERAL N N N N)$) (CLISERV

METERING)$ 0 1 20 PX NETXLA NODFOP NOCON F

THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
7835480

TABLE PXCODE

TUPLE NOT FOUND

DEFAULT FROM HEAD TABLE USED

PLEASE ENTER CLI DIGITS:

>1027835479

TABLE CLISERV

. METERING 1 (SERVSCRN)$

TABLE DNSCRN

. 1027835479 (NETAOCD 30) (CLISERV 1) $

TABLE CLISRVPF

. 1 (METERING $)$

. Matched on METERING

. Service screening succeeded

TABLE PXHEAD

NETXLA SDFLT NODFOP NOCON F

THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
7835480

TABLE PXCODE

NETXLA 783 783 CONT (PF 3) (MM 7 7) (CLASS NATL) (XLT OFC OFC783) (LNET

LOC) (MZONE 4)$

TABLE OFCHEAD

OFC783 DFLT TRMT (OFC VACT)$ NODFOP NOCON STD

THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 5480

TABLE OFCCODE

OFC783 5 5 RTE (DEST 1)$

TABLE: OFCRTE

KEY: OFC783 1

. T OFRT 783

. . TABLE OFRT

. . 783 DN 102 783 4

. . . TABLE TOFCNAME

. . . 102 783 $

. . . TABLE DNINV

. . . 102 783 5480 L HOST 03 0 00 10

TABLE DNFEAT

TUPLE NOT FOUND

. . . TABLE DNATTRS

. . . TUPLE NOT FOUND

. . . TABLE DNGRPS

. . . TUPLE NOT FOUND

. . EXIT TABLE OFRT

EXIT TABLE OFCRTE

INAP Info Analyzed TDP: no subscribed trigger.

INAP Route Select Failure TDP: no subscribed trigger.

INAP Termination Attempt TDP: no subscribed trigger.

TABLE MTRMOG

MDI4 MOTS_2 $

TABLE MTRLNET

LOC

TABLE MTRMOTS

MOTS_2 LOC 4 8

TABLE MTRNETIF

TUPLE NOT FOUND

TABLE MTRMOTS

MOTS_2 LOC 4 8

TABLE MTRNAMES

TUPLE NOT FOUND

TABLE TODHEAD

LOC MTR LOC 0 (NORMAL) (SATDAY) (SUNDAY) $

TABLE DAYOYEAR

TUPLE NOT FOUND

TABLE DAYOWEEK

LOC WED NORMAL

TABLE TIMEODAY

TUPLE NOT FOUND

WARNING: TIMEODAY datafill missing

The default TNT in table TODHEAD will be used

TABLE MTRTTS

LOC 8 Y 53 $ $ $ $ $ $ $ $ $

TABLE MTRTARIF

53 SEC Y 0 1 0 12 1 15 0 1 0 16 1 15

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE 1027835480 ST

TREATMENT ROUTES. TREATMENT IS: GNCT

1 OFL

+++ TRAVER: SUCCESSFUL CALL TRACE +++

1.14 Appendix B - Example datafills for the case where metering tariff coincides/not coincides with the SSUTR2_ITX_RATE

It is recommended to use a metering tariff which does not coincide with the SSUTR2_ITX_RATE period for ITX generation.

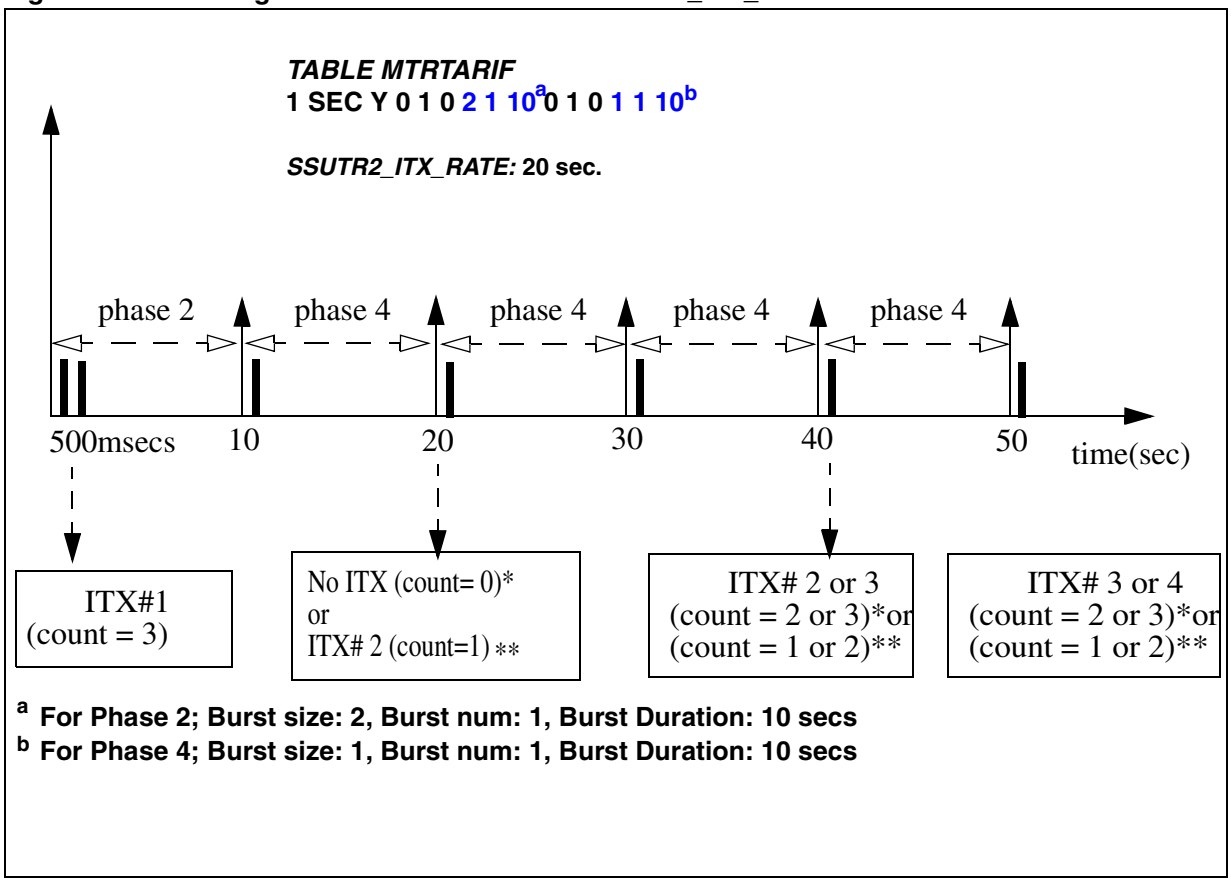
1.14.1 If metering tariff coincides with the SSUTR2_ITX_RATE

As an existing behavior, if the phase starting times of the tariff coincides with the ITX generation time (whose period is determined by the SSUTR2_ITX_RATE value), then it is not possible to determine the exact pulse count value to be sent within the ITX message. This is because metering is increased at the beginning of the phase and an ITX message which is generated at the phase starting time may include the pulses for the new phase and these pulses are sent with the next ITX message.

Therefore, the count in the ITX message (e.g. as seen in Figure 4) is not precise since the metering tariff coincides with the SSUTR2_ITX_RATE, that is why such usage is not recommended.

Below you can find an example MTRTARIF datafill and the relevant ITX generation diagram in Figure 4.

Figure 4 If metering tariff coincides with the SSUTR2_ITX_RATE



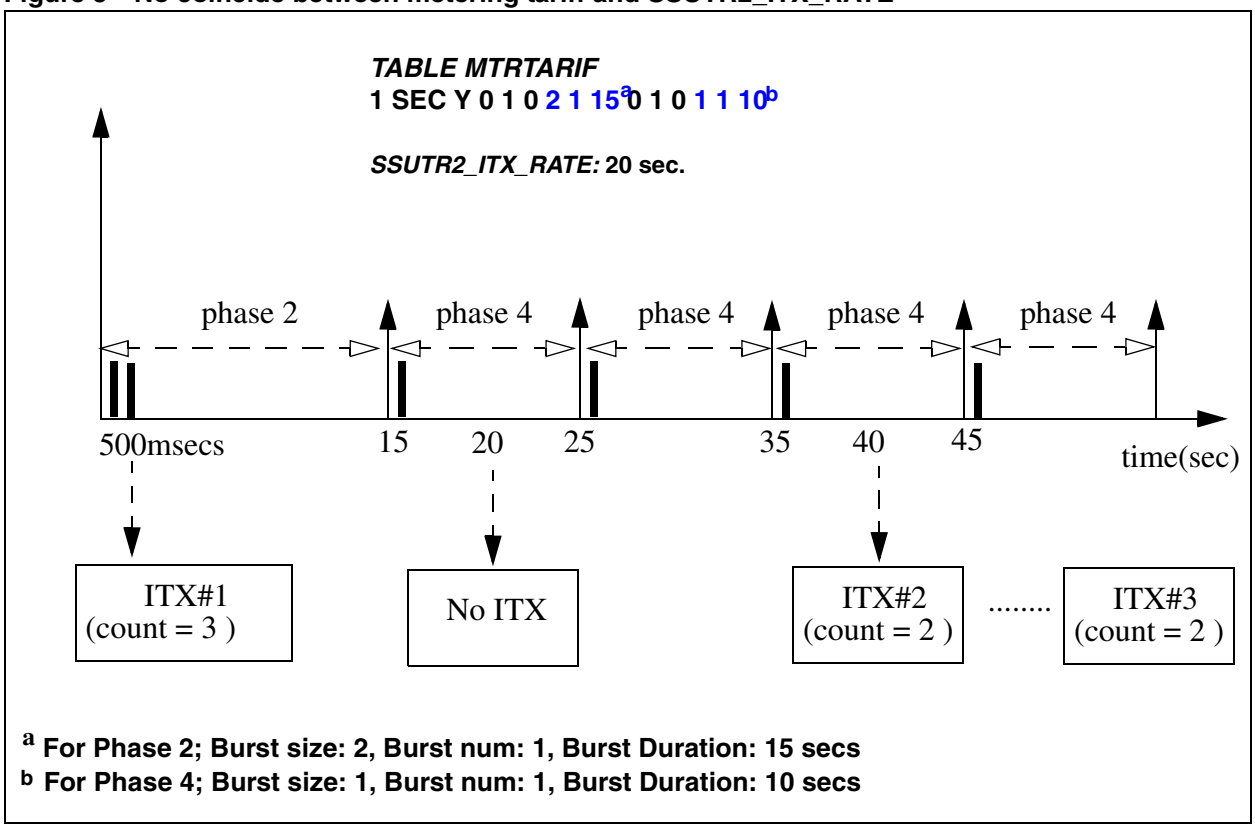
[a] For Phase 2; Burst size: 2, Burst num: 1, Burst Duration: 10 secs
[b] For Phase 4; Burst size: 1, Burst num: 1, Burst Duration: 10 secs

* If no ITX is generated at 20 sec, next ITX generated at 40 sec has the count 2 or 3.

**If ITX is generated with count 1 at 20 sec, next ITX generated at 40 sec has the count 1 or 2.

1.14.2 If metering tariff does not coincide with the SSUTR2_ITX_RATE

Figure 5 No coincide between metering tariff and SSUTR2_ITX_RATE



[a] For Phase 2; Burst size: 2, Burst num: 1, Burst Duration: 15 secs
[b] For Phase 4; Burst size: 1, Burst num: 1, Burst Duration: 10 secs

2: Configuration for A00006636

2.1 Hardware and Software Requirements

This feature is supported only on the SX05 DTCO/DTCO2 processor.

2.2 Initial Configuration

N/A.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

N/A.

2.4 Upgrade Impact

2.4.1 Dump and Restore

None.

2.4.2 Element Management Upgrade

N/A.

2.5 Data schema (DS) (CM, MIBS, RDB)

N/A.

2.6 Service Orders (SO) (CM & SESM)

N/A.

2.7 Software optionality control (SOC)

There is a new SOC option that is introduced with this feature: ***First ITX on Answer.***

First ITX on Answer is defined under NETK SOC group. Functionality of the feature is controlled with this SOC option. It is a state SOC, whose states can be ON or IDLE. When state of *First ITX on Answer* is ON, the feature becomes functional and the first ITX is sent 500 msecs after an answer for SSUTR2/SPIROU ITX generating calls.

Table 2 SOC for Activation of Feature

SOC group:	NETK
SOC option name:	First ITX on Answer
SOC option title:	First ITX on Answer
SOC option control type:	state
New SOC option?	Yes
SOC option order code	NETKXXXX
Option defined in DRU:	WT21
Affected products:	ISN08

2.8 Element Management

N/A.

2.9 Command interface changes

N/A.

2.10 Configuration Walkthrough

N/A.

Product = World Trade

A00006660--DDRM Node Definition and Provisioning

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

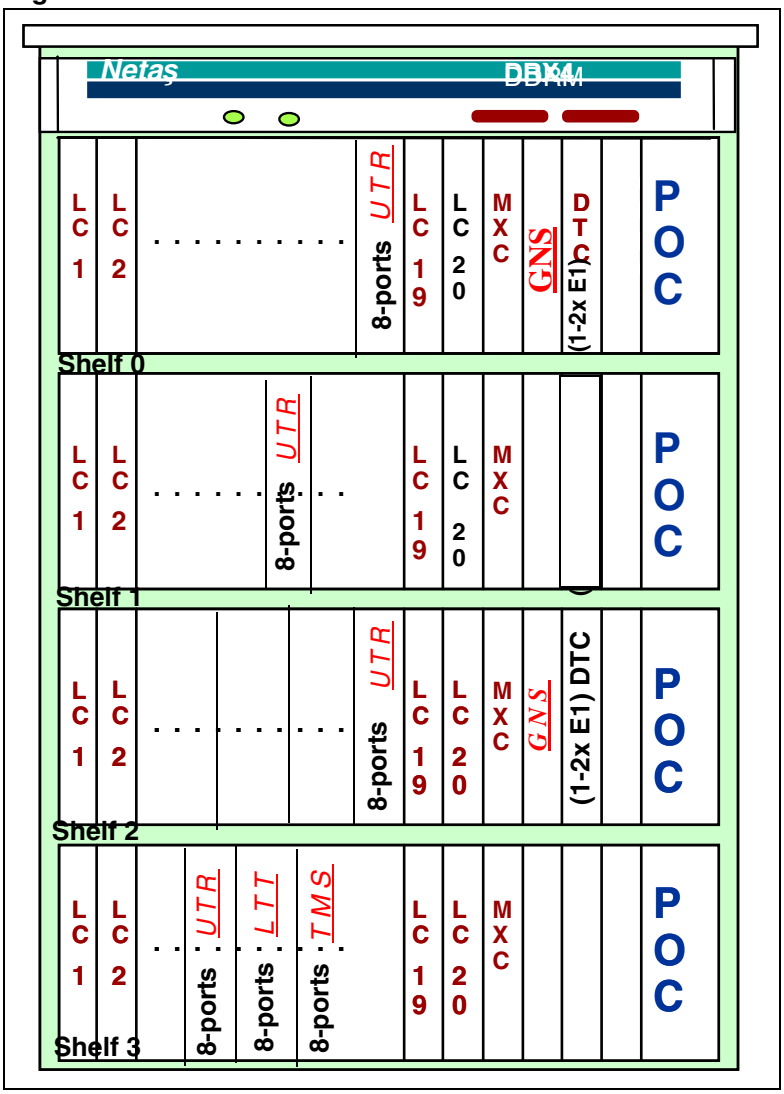
1.2.1 Introduction

DDRM(DMS Dicle Remote Module) project as a whole provides a platform which supports DDRM node as a remote line module of DMS. DDRM is connected to PLGC(SX05) via E1 links and upon successful deployment of this project it will be possible to maintain and administer DDRM related operations from DMS switches.

DDRM node is defined and provisioned in table LCMINV and this part of DDRM project implements the necessary changes for DDRM in table LCMINV.

1.2.2 DDRM Hardware Properties

Figure 1 DDRM hardware



DTC cards are E1 interface cards and support the C-side PCM30 links. DTC cards have 2 types; one can have 1 E1 link and the other can have 2 E1 links. There are 2 DTC cards per DDRM and hence the number of E1 links supported is between 2 and 4 and their locations are dedicated (can not be placed in the line card slots).

MXC is capable of detecting on/off hooks and has call processing capabilities. There is 1 MXC per shelf and hence the number of MXCs implies the number of shelves and their locations are dedicated.

GNS provides the communication between the MXCs. There may be 1-2 GNSs per DDRM and are called single plane and double plane respectively. Double plane implies at least 2 shelves. Locations are again dedicated.

MTA is optional and consists of a pair of test cards (LTT (Line and Trunk Test Simulator) for loop terminations and TMS (Test Measurement and Signalling) for test). These cards are plugged into 2 line card slots (their locations are not dedicated but both must be on the same shelf) and occupy 16 ports (each line card slot provides 8 ports) per node.

UTR generates tones and receives tones. 1 UTR is enough for the whole DDRM but there may be more than 1 up to 4 each being plugged into line card slots and hence each occupying 8 ports.

POC is the power converter card and there is 1 POC card per shelf and their locations are dedicated.

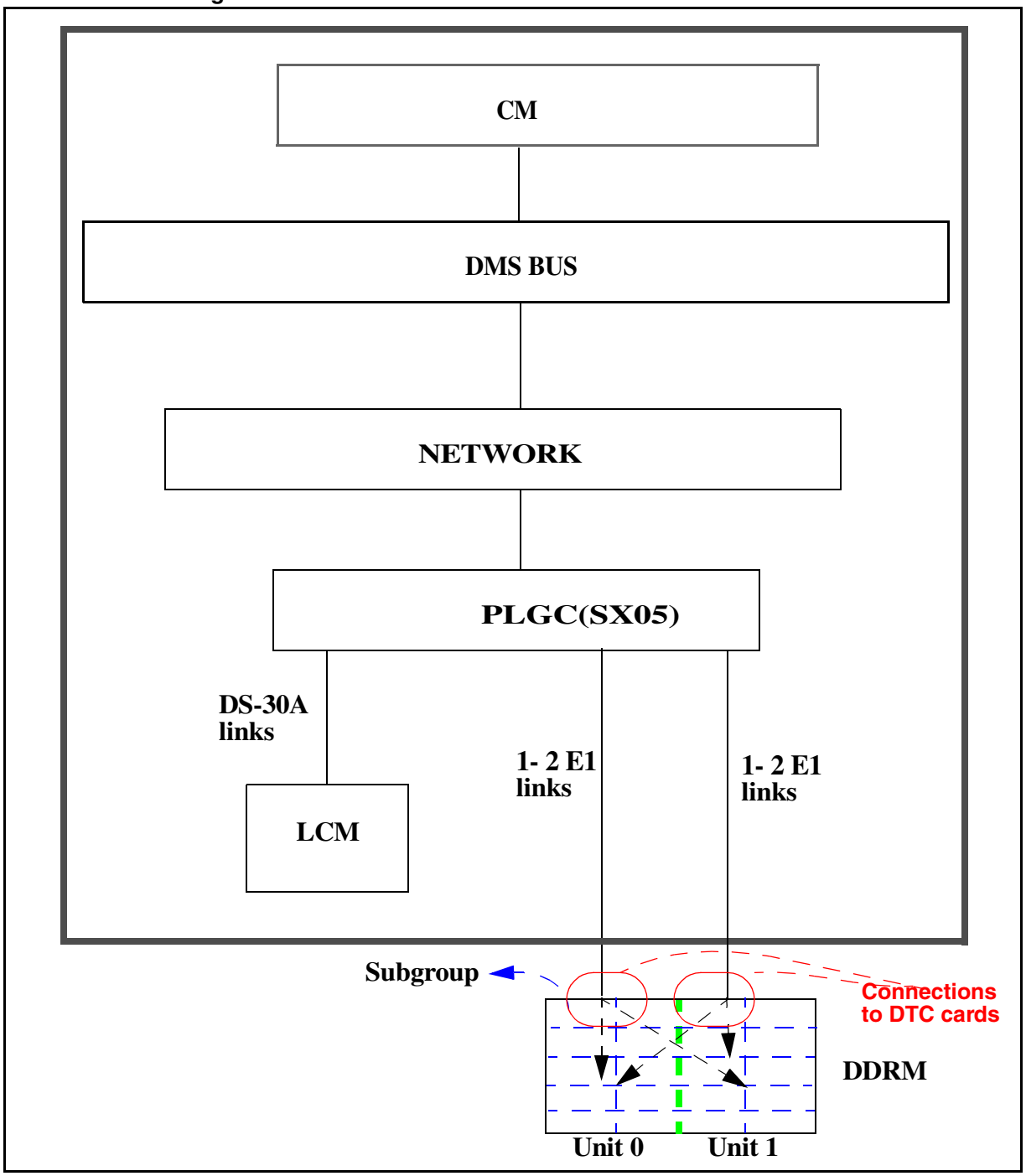
LC is the line card which provides 8 ports (lines). For more information on this please refer to A00006662 DDRM LINES INVENTORY FN.

MTA (consists of LTT and TMS) card set can be optional but UTR must be equipped for the ESA mode (A DDRM configuration without at least a UTR can not be ESA enabled). If ESA will not be used, UTR is also optional. Also the shelf configuration is flexible, that is, between 1 and 4 shelves may be configured.

There are 20 line card slots per shelf and there are up to 4 shelves per cabinet. Each line card provides 8 ports (lines) and hence the maximum number of lines supported by DDRM is 4(shelves) x 20(line card slots) x 8(ports) = 640. If there are MTA card set and 4 UTRs then this number decreases to 4(shelves) x 16(6 allocated for MTA card set and 4 UTRs) x 8(ports) = 592. For more information on this please refer to A00006662 DDRM LINES INVENTORY FN.

1.2.3 DMS-DDRM Connection

Figure 2 DMS host and DDRM node connection



1.2.4 LCMINV Datafill for DDRM

In order to define DDRM, the steps explained in Table 3, “Steps For Defining DDRM,” on page 805 have to be performed.

Table 3 Steps For Defining DDRM

Table	Explanation
LTCINV	Existing logic is used. PLGC-host to which DDRM is connected is defined.
CARRMTC	Existing carrier logic for host PLGC is used.
LTCPSINV	Existing definitions and logic for host PLGC are used.
SITE	Existing logic is used. Site which the DDRM is situated is defined.
LCMINV	Existing logic is used with modifications and additions for DDRM. Current configuration of DDRM is defined.

No changes exist and existing datafill logic is used in tables LTCINV, CARRMTC, LTCPSINV and SITE.

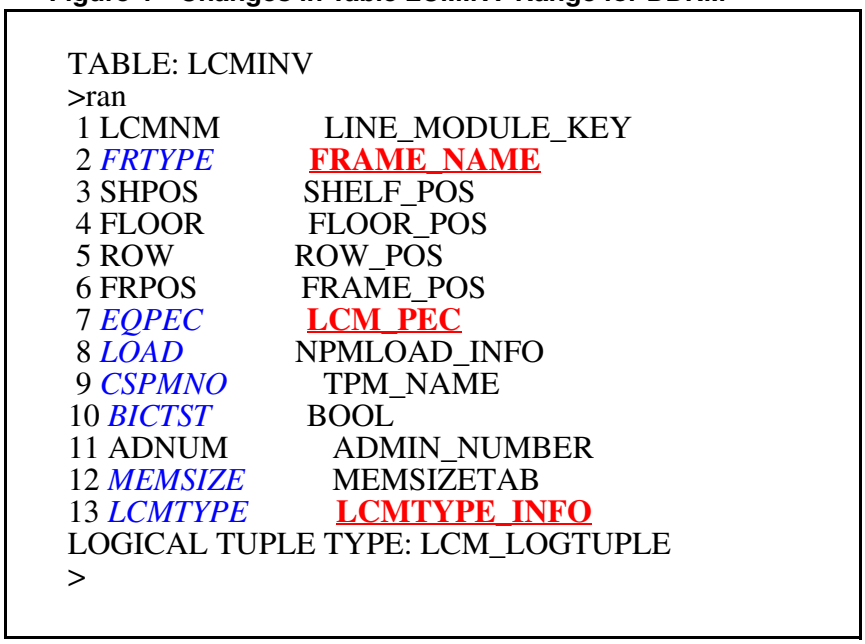
A sample datafill for table CARRMTC is shown in Please refer to “Figure 3 Sample datafill for table CARRMTC” on page 805..

Figure 3 Sample datafill for table CARRMTC

```
PLGC DEFAULT 255 255 D30 NT6X27BB A_LAW NATL 30 30 4 20 30 30 4 20 30 30 4
20 30 30 4 20 30 30 4 20 4 20 4 20 Y 4 4 17 255 N N 5 5 205 914 G714 CASX
```

For the changes in table LCMINV, refer to “Changes in Table LCMINV Range for DDRM” on page 806.

Figure 4 Changes in Table LCMINV Range for DDRM



The datafill guide for DDRM is shown in the following table.

Table 4 Datafill Guide for DDRM in Table LCMINV

Field	Explanation
LCMNM	No change. Existing logic is used.
FRTYPE	FRAME_NAME range now includes “DDRM”. “DDRM” should be datafilled.
SHPOS	No change. Existing logic is used.
FLOOR	No change. Existing logic is used.
ROW	No change. Existing logic is used.
FRPOS	No change. Existing logic is used.
EQPEC	LCM_PEC range now includes “DDRMPC”. “DDRMPC” should be datafilled.
LOAD	No change. It will not be verified whether the load file exists in table PMLOADS or not. DRM21AA should be datafilled.
CSPMNO	No change. PLGC should be datafilled.

Table 4 Datafill Guide for DDRM in Table LCMINV

Field	Explanation
BICTST	No change. N needs to be datafilled as DDRM does not support BICTST otherwise an existing error message for LCMINV is generated which indicates that 'BIC Relay test only valid for XLCM and STAR HUB, LCMTYPE must be LCM or UREM'.
ADNUM	No change. Existing logic is used.
MEMSIZE	No change. 256K 256K should be datafilled for both units like RLCM.
LCMTYPE	• LCMTYPESEL This range now includes "DDRM". "DDRM" should be datafilled. • RGEQUIP Datafilled similar to RLCM. • LINKMAP Between 2-4 links is datafilled. • ESA Indicates whether ESA is allowed or not. Possible values: N, Y

Table 4 Datafill Guide for DDRM in Table LCMINV

Field	Explanation
	• GNS Indicates whether the DDRM is single plane or double plane. Possible values: SINGLE, DOUBLE • MXC_CONFIG Indicates which shelves have MXC cards in the format of SHELF0 SHELF1 SHELF2 SHELF3. Possible values: N,Y Example: Y Y N N means Shelves 0 and 1 have MXC cards. • UTR_CONFIG Indicates which shelves and which slots have UTR cards in the format of SHELF0 SHELF1 SHELF2 SHELF3. Possible values: UTRD0, UTRD1,...,UTRD18, UTRD19, N Example: UTRD3 UTRD5 N N means SHELF0 has UTR on 3rd slot and SHELF1 has UTR on 5th slot. Note that it is called UTRD in order to distinguish it from the DMS UTR. • MTA_AVAILABLE Indicates whether LTT-TMS cards are configured. Possible values: N, Y • If MTA_AVAILABLE is datafilled as Y • LTT-TMS Indicates which shelf and which slots have LTT-TMS cards in the format of SHELF_NUMBER LTT_SLOT TMS_SLOT. Possible values: SHELF0, SHELF1, SHELF2, SHELF3 Possible values: LTT0,..., LTT19 Possible values: TMS0, ..., TMS19

Verification messages which prevent datafill are shown in the following table.

Table 5 Verification Messages(errors) for DDRM Datafill in Table LCMINV

Field	Explanation
FRTYPE	If another value other than “DDRM” is datafilled: “Invalid FRTYPE...DDRM only.”
EQPEC	If another value other than “DDRMPC” is datafilled: “Invalid PEC...DDRMPC only.”
LOAD	No check is applied for this field but it must reflect the DDRM load.
CSPMNO	If another value other than PLGC is datafilled: “DDRM allowed off PLGC only.”
LCMTYPE	• LINKMAP If the number of links datafilled is not between 2 and 4: “Number of links must be between 2 and 4.” • GNS, MXC_CONFIG, UTR_CONFIG, LTT_TMS, ESA If GNS is double plane and only 1 shelf is datafilled: “There must be at least 2 shelves.” If ESA is enabled and no UTR is datafilled: “To activate ESA there must be at least 1 UTR.” If UTR is datafilled on a non-datafilled shelf: “UTR can not be datafilled on a nonexistent shelf.” If UTR is datafilled on a non-empty slot: “UTR should be datafilled on an empty slot.”

Table 5 Verification Messages(errors) for DDRM Datafill in Table LCMINV

Field	Explanation
	If LTT-TMS is datafilled on a non-datafilled shelf: "LTT-TMS can not be datafilled on a nonexistent shelf." If LTT-TMS is datafilled on a non-empty slot: "LTT-TMS should be datafilled on an empty slot." If LTT and TMS is datafilled on the same slot: "LTT and TMS can not be on the same slot." If MXC_CONFIG is datafilled as N N N N: "There must be at least one MXC." If a MXC is set to N while there are lines datafilled on the corresponding shelf: "There are lines datafilled on the shelf."

Verification messages which does not prevent datafill are shown in the following table.

Table 6 Verification Messages (warnings) for DDRM Datafill in Table LCMINV

Field	Explanation
MEMSIZE	If another value other than 256K 256K is datafilled: "Warning: Memory size for both units are 256K by default."
LCMTYPE	If GNS, MXC, UTR, ESA or MTA configuration is changed: "Warning: Static data should be sent to DDRM. Please BUSY and RTS the node."

Existing dynamic update process is also valid for DDRM. This does not however include card configuration and ESA field change. Card configuration and ESA field change is allowed but related information is not sent to DDRM via dynamic update process and it requires a manual action.

A sample datafill in action is shown in Table 7, “Adding DDRM in Table LCMINV,” on page 812.

The final look for a sample datafill is shown in Figure 5 “LCMINV Sample Datafill for DDRM” on page 814.

Table 7 Adding DDRM in Table LCMINV

```
>TABLE LCMINV
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: LCMINV
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
LCMNM:
>REMO 00 0
FRTYPE:
>DDRM
SHPOS:
>0
FLOOR:
>0
ROW:
>A
FRPOS:
>0
EQPEC:
>DDRMPC
LOAD:
>DRM21AA
CSPMNO:
>PLGC 0
BICTST:
>N
ADNUM:
>55
MEMSIZE:
>256K 256K
```

Table 7 Adding DDRM in Table LCMINV

LCMTYPESEL:

>**DDRM**

RGEQUIP:

>Y

RNGTYPE:

>C

LINKMAP:

>0

LINKMAP:

>2

LINKMAP:

>$

ESA:

>Y

GNS:

>DOUBLE

MXC_CONFIG:

>Y Y N N

UTR_CONFIG:

>UTRD1 UTRD2 N N

MTA_AVAILABLE:

>Y

LTT_TMS:

>SHELF0 LTT3 TMS4

TUPLE TO BE ADDED:

REMO 00 0 DDRM 0 0 A 0 DDRMPC DDRMLD PLGC 0 N 55 256K 256K DDRM Y C (0) (2)

$Y DOUBLE Y Y N N UTRD1 UTRD2 N N Y SHELF0 LTT3 TMS4

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

>Y

Figure 5 LCMINV Sample Datafill for DDRM

```
TABLE LCMINV

LCMNM FRTYPE SHPOS FLOOR ROW FRPOS    EQPEC       LOAD     CSPMNO
BICTST ADNUM   MEMSIZE
LCMTYPE
-------------------------------------------------------------------------------------------------------
REMO 00 0 DDRM 0         0       A         2 DDRMPC DDRMLD PLGC   0
         N         7 256K 256K
DDRM Y    C   (0) (2) (1) (3)$Y DOUBLE Y Y Y Y UTRD10 UTRD10 UTRD10 UTRD10
Y SHELF0 LTT17 TMS10
```

1.3 Hardware Requirements or Dependencies

N/A.

1.4 Software Requirements or Dependencies

N/A.

1.5 Limitations and restrictions

N/A.

1.6 Interactions

N/A.

1.7 Applicable customer facing sections

Fault Management

- Logs _____
- Alarms _____

Configuration

- Data Schema ___X___
- User Interface _____
- Element Management _____
- Security _____
- Service Order _____
- Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

1.8 Glossary

Term	Description
DDRM	DMS Dicle Remote Module
DTC	Digital Trunk Card
ESA	Emergency Stand Alone
GNS	Group Network Switching
LC	Line Card
LCM	Line Concentrating Module
LTT	Line and Trunk Test Simulator
MTA	Metallic Test Access
MXC	Module Switching Controller
POC	Power Converter Card
RLCM	Remote Line Concentrating Module
TMS	Test Measurement and Signalling
UTR	Universal Tone Receiver

1.9 References

a. A00006638 DMS - DDRM HLD

b. DMS_DDRM Spec.

2: Configuration for A00006660

2.1 Hardware and Software Requirements

2.2 Initial Configuration

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

2.4 Upgrade Impact

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
LCMINV	CHANGED	UNCHANGED

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: LCMINV

LCM Inventory Table

2.5.2.1.1 Functional description

It is not a new table.

2.5.2.1.2 Usage sequence and implications (CM Only)

Current datafill order unchanged.

2.5.2.1.3 Size

It is not a new table.

2.5.2.1.4 Fields/OIDs

The following table lists fields/OIDs for LCMINV.

Table 2 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
FRTYPE	Changed		DDRM is added to the range.	DDRM is the frame name for DDRM node.

Table 2 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
EQPEC	Changed		DDRMPC is added to the range.	DDRMPC is the equipment pec for DDRM node.
LCMTYPE	Changed	DDRM refinement is added.	DDRM is added to the range of LCMTYPESEL. RGEQUIP LINKMAP ESA GNS MXC_CONFIG UTR_CONFIG MTA_AVAILABLE LTT-TMS	RGEQUIP is the ringing data for DDRM. LINKMAP indicates the C-side links to the host PLGC. ESA shows whether ESA mode is enabled or not. GNS indicates whether the DDRM node is single plane or double plane. MXC_CONFIG shows which shelves have MXC. UTR_CONFIG shows which shelves have UTR. MTA_AVAILABLE shows whether the DDRM has the MTA card set or not. LTT_TMS shows the MTA card set configuration.

2.5.2.1.5 Datafill example

The following example shows sample datafill for table LCMINV.

Figure 1 LCMINV Sample Dataflow for DDRM

```
TABLE LCMINV

LCMNM FRTYPE SHPOS FLOOR ROW FRPOS    EQPEC       LOAD     CSPMNO
BICTST ADNUM   MEMSIZE
LCMTYPE
-------------------------------------------------------------------------------------------------------
REMO 00 0 DDRM 0         0       A         2 DDRMPC DDRMLD PLGC   0
         N         7 256K 256K
DDRM Y     C    (0) (2) (1) (3)$Y DOUBLE Y Y Y Y UTR10 UTR10 UTR10 UTR10 Y
SHELF0 LTT17 TMS10
```

2.5.2.1.6 Table release history update

DDRM node can now be datafilled in table LCMINV.

2.5.2.1.7 Supplementary information

None.

2.5.2.1.8 Translation verification other tools

LCMINV does not use translation verification tools.

2.6 Software optionality control (SOC)

2.7 Element Management

2.8 Command interface changes

2.9 Security

2.10 Configuration Walkthrough

Product = World Trade

A00006661--DDRM Node Maintenance

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

DRX-4 (Dicle Rural Exchange-4) is a rural area exchange developed for Turkey Market. DDRM(DMS Dicle Remote Module) project as a whole provides a platform which supports DDRM as a remote module of DMS based as an Remote Module. Because of DDRM deployment requested to maintain and administer DDRM related operations over DMS switches via using E1 links over SX05 PLGC. By this way the benefits of DDRM in Turkey market will be enhanced and the demands from the customer to reuse these switches as remote modules will be satisfied.

This activity provides DDRM **static data downloading, maintenance, and Human Machine Interface supports.** This activity also eliminates unnecessary maintenance requests for DDRM.

1.2.1 STATIC DATA DOWNLOADING

The main aim of Static data system to publish the configuration information and other related data from CM to XPM.

Static Data declares functionality and of XPM hardware and software, like node type and number, Pside nodes, terminals, option cards, application options etc.

But some differences from LCM are also available, DDRM need card configuration, Line card codes, some of office parameters (flash, ringing cadence) and ESA SD, translation tables, line Inventory informations and System Time &Date. All of them are delivered by messages destined to DDRM through host PLGC.

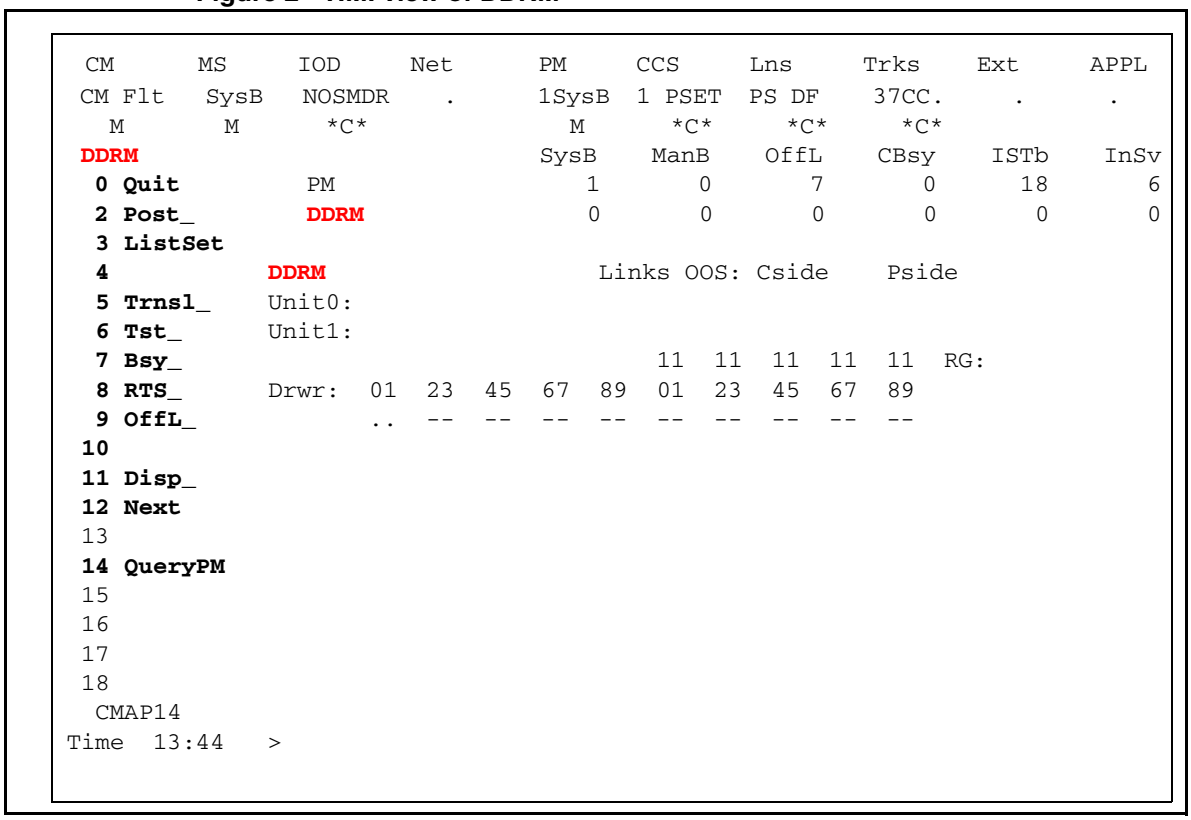
- MAINTENANCE

This part regarding the execution of maintenance commands which are seen in user interface. For instance, BSY, RTS, TST, commands are implemented in this part. These are generally behind scene for the customer.

- HUMAN MACHINE INTERFACE

HMI gives a user interface platform to the craft person, DDRM can be maintained from this level. Following figure gives a HMI view of DDRM.

Figure 2 HMI view of DDRM



1.3 Functional Behavior

Following information mentions about DDRM specific supported and un-supported functionalities of DDRM, rest behaviors are kept same with RLCM.

1.3.1 Configuration requirements for E1 and Node Maintenance

DDRM node is connected to DMS side by E1 links. This E1 connection is ended to a DTC card on the DDRM cabinet. Logically DDRM seems with two units as in the existing DMS architecture like standard LCM and each DTC means one DDRM unit as view of DMS. In that case, it is recommended that DTC cards into shelf 1 and shelf 3 like in Figure2.

- At least one E1 link must be connected to the DTC card from PLGC.
- Even though two E1 links available for one DTC card, only one of them has got a message channel.
- If DDRM configuration has just two shelf and one DTC, it means DDRM will work in Takeover mode.
- Even two DTCs are replaced first two shelf, while 3rd and 4th shelf empty, it will be seen two unit on DMS. But 1st and 2nd shelf line cards will be controlled by one DTC.

1.3.2 Human Machine Interface

Because of DDRM capability, some commands are not available for DDRM, in example, DDRM can not be loaded with new load remotely. Because it could only be loaded by EPROM chips. So, **Loadpm** command will not be processed for DDRM. and similarly, DDRM architecture is not suitable for **SwRg, SwLd** and **RgStbit** commands.

Commands can also be separated in two parts as DMS-X requireds or not.

Following table shows the commands for standard LCM commands. Bolds are not required any DMS-X messages, plains are send the necessary DMS-X messages to DDRM and wait for response, strikethroughs are out of scope of DDRM, and italics are non-menu command.

Table 3 Command classification for DDRM[6]

No	LCM
0	**Quit**
2	**Post_**
3	**ListSet**
4	~~**SwRg_**~~
5	**Trnsl_**
6	Tst_
7	Bsy_
8	RTS_
9	OffL_
10	~~**LoadPM_**~~
11	**Disp_**
12	**Next**
13	~~**SwLd_**~~
14	QueryPM
15	~~**RgStbit**~~
16	*ABTK*

1.3.3 Validated PM states for DMS

Following PM states in “Table 2: PM maintenance states” will be valid for DDRM PM type as well.

During unexpected cases (card failures, alarms) DDRM state can be set ISTB or SYSB by DDRM maintenance structure. “Table3: DDRM pm state

6. For detailed information about commands, please refer to CN section of this document.

regarding the card alarms" shows the Card alarms related actions on DDRM state.

According to the DDRM card configuration mismatches DDRM node state is updated after DDRM RTS sequence. Due to the fact that configured cards during RTS (MXCs, GNSs, UTRDs, LTT and TMS) are not associated with a unit no action is taken in order to change the Unit states of the DDRM. Only the DDRM state is updated regarding to table 3. Also DDRM node state is updated to ISTB state when a load name mismatch occurs between DDRMs load name which is burned on a ROM and datafilled LCMINVDDRM name.

Table 4 PM maintenance states

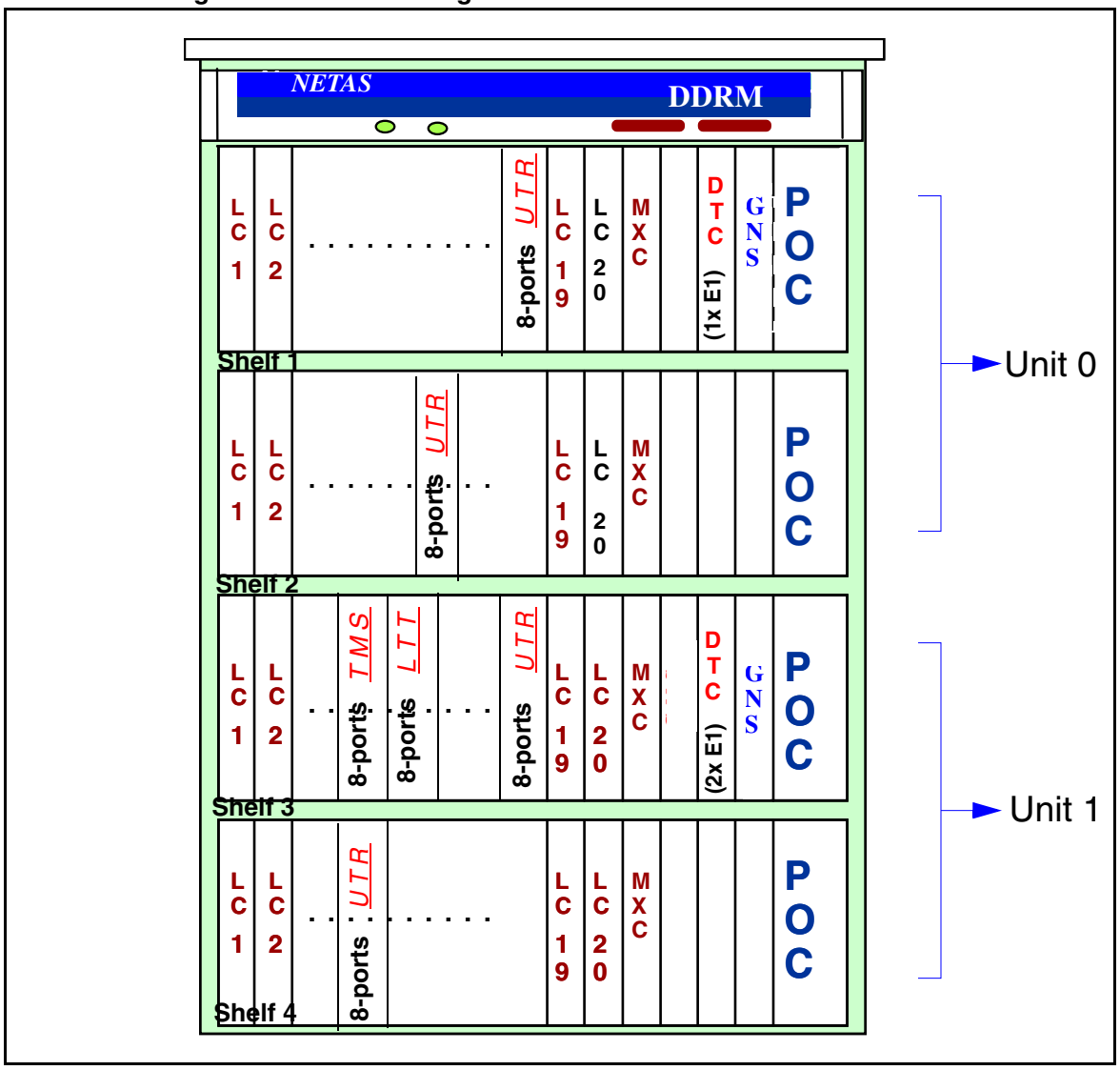
Code	Line state	Description
CBsy	Central side busy	The PM can not communicate with the CM. The E1 links used to carry messages between PM and DMS-100 switch are not available.
InSv	In service	The PM is free of service-affecting faults and can support any intended process, such as call processing.
ISTB	In-service trouble	The PM is in service(Insv).The PM has a minor fault.
ManB	Manual busy	The PM is busy.The switch operator issued Busy/BSY) command from MAP position.
Offl	Offline	The switch operator removed PM from service to allow commissioning testing.The switch operator performed this procedure to hold the PM out of service (OOS) temporarily.
SysB	System busy	The system maintenance removed the PM from service as a result of faults.

Table 5 DDRM pm state regarding the configuration mismatches during RTS sequence

Card problems causing alarm message on DDRM	DDRM State
Last GNS Card (single and double plane)	SYSB
One GNS Card (double plane)	ISTB
MXC card (except the last MXC)	ISTB
Last MXC card	SYSB
UTR card (except the last UTR)	ISTB
Last UTR card	ISTB
LTT - TMS card	ISTB

1.4 Hardware Requirements or Dependencies

Figure 3 Hardware Diagram



DTC cards are E1 interface cards and support the C-side PCM30 links. DTC cards have 2 types; one can have 1 E1 link and the other can have 2 E1 links. There are 2 DTC cards per DDRM and hence the number of E1 links supported is between 2 and 4 and their locations are dedicated (can not be placed in the line card slots).

MXC is capable of detecting on/off hooks and transmits to GNS in the same shelf. There is 1 MXC per shelf and hence the number of Midsts denotes the number of shelves and their locations are dedicated.

GNS provides the communication between the shelves. There may be 1-2 GNSs per DDRM and are called single plane and double plane respectively. Double plane implies at least 2 shelves. Locations are again dedicated.

MTA (not shown above) is optional and consists of a pair of test cards (LTT for loop terminations and TMS for test). These cards are plugged into 2 line card slots (their locations are not dedicated) and occupy 16 ports (each line card slot provides 8 ports) per node.

UTR (not shown above) generates tones and receives tones in ESA mode. 1 UTR is enough for the whole DDRM but there may be more than 1 up to 4 each being plugged into line card slots and each occupying 8 ports.

LTT - TMS LTT (Line and Trunk Test Simulator) and TMS (Test Measurement and Signalling) cards are used to ensure MTA test facilities for DDRM subscribers. LTT and TMS cards use 16 ports on any LC slot and the slots are not dedicated for them. These cards can be positioned in any shelf and in any LC slot. There is no obligation to replace these cards as adjacent to each other. But both of them should be replace in same shelf.

POC is the power converter card and there is 1 POC card per shelf and their locations are dedicated. It also works as a Ring Generator

LC is the line card which provides 8 ports (lines) and is support different LC card types (5 new line cards are defined with A00006662)

MTA (consists of LTT and TMS) card set can be optional but UTR must be equipped for the ESA mode.

For supported lines please refer to FN document of A00006662 DDRM LINES INVENTORY

1.5 Software Requirements or Dependencies

This Feature depends on another activity which is implemented for DDRM: ACT.A00006660“DDRM NODE DEFINITION AND PROVISIONING”

1.6 Limitations and restrictions

DDRM is not standard LCM, it is new remote peripheral and no limitations/ restriction are being introduced on existing RLCM variant in LCM family by this feature However DDRM can not accommodate all of specification of existing RLCMs.

DDRM Node is connected to the DMS by one messaging E1 link in ISN08. In ISN09 DDRM node will be upgraded to two messaging E1 linked structure. Therefore issues that requires two messaging E1 links between DDRM and DMS will be implemented in ISN09 stream.

1.7 Interactions

Some interactions be possible for providing infrastructure for following two projects

- DDRM ALARMS AND AUDITS fmdoc.A00006663
- DDRM ESA SUPPORT fmdoc.A00006665

1.8 Applicable customer facing sections

Fault Management

Logs _____

Alarms _____

Configuration

Data Schema _____

User Interface __X___

Element Management _____

Security _____

Service Order _____

Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

1.9 Glossary

Term	Description
DDRM	DMS Dicle Remote Module
DRX-4	Dicle Rural Exchange-4
DTC	Digital Trunk Card
ESA	Emergency Stand Alone
GNS	Group Network Switching
LC	Line Card
LCM	Line Concentrating Module
LTT	Line and Trunk Test Simulator
MTA	Metallic Test Access
MXC	Module Switching Controller
POC	Power Converter Card

Term	Description
RLCM	Remote Line Concentrating Module
TMS	Test Measurement and Signalling
HMI	Human Machine Interface
UTR	Universal Tone Receiver Cards

1.10 Recommended Reading/References

a. A00006638 DMS - DDRM HLD
b. DMS_DDRM
c. A00006660 DDRM NODE DEFINITION AND PROVISIONING
d. A00006662 DDRM LINES INVENTORY
e. A00006663 DDRM ALARMS AND AUDITS
f. A00006664 DDRM LINE TESTING
g. A00006665 DDRM ESA SUPPORT
h. A00006666 DDRM XPM SUPPORT AND MONITORING

2: Configuration for A00006661

2.1 Hardware and Software Requirements

DDRM should be connected to DMS properly, And DDRM should be defined on DMS switch. This is implemented by another Activity A00006660 “DDRM Node definition and Provisioning”.

2.2 Initial Configuration

Not Applicable.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

Not Applicable.

2.4 Upgrade Impact

Not Applicable.

2.5 Data schema (DS) (CM, MIBS, RDB)

Not Applicable.

2.6 Service Orders (SO) (CM & SESM)

Not Applicable.

2.7 Software optionality control (SOC)

Not Applicable.

2.8 Element Management

Not Applicable.

2.9 Command interface changes

2.9.1 Directory: DDRMDIR

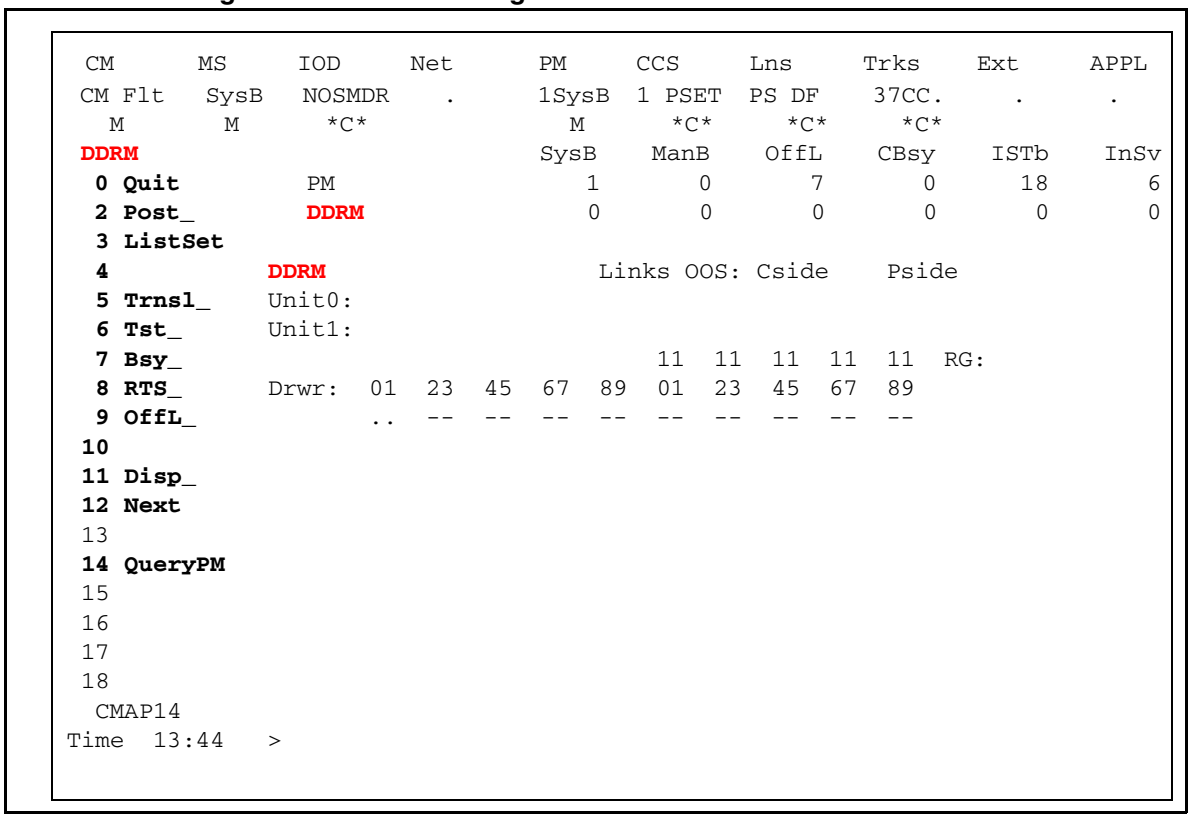
This feature implements commands in the DDRMDIR directory.

2.9.1.1 Directory description

The commands in this directory help craft person to operate and maintain the DMS DICLE Remote Module (DDRM) at the node level.

Following figure shows the MAP view when DDRM posted.

Figure 1 Functional Diagram



2.9.1.2 Accessing directory: DDRMDIR

2.9.1.2.1 Access to directory or MAP level and return to CI

To access the DDRMMDIR level from the CI environment, type:
>MAPCI;MTC;PM;POST DDRM <node_no>
or
>MAPCI;MTC;PM;POST DDRM all
This is an example of entering the command:
>MAPCI;MTC;PM;POST DDRM 0

To return to the CI environment, type:
>QUIT ALL

2.9.2 Command: QUIT

2.9.2.1 Command type: MENU

2.9.2.2 Command target: All

2.9.2.3 Command availability: RES

2.9.2.4 Command description.

This command provide to go upper levels

2.9.2.5 Command syntax

Figure 2 DDRM QUIT command syntax

```
QUIT
Parms: < nlevels | incrname | ALL >
```

2.9.2.6 Qualifications and warnings

No warnings are displayed.

2.9.2.7 Responses.

N/A.

2.9.3 Command: POST

2.9.3.1 Command type: MENU

2.9.3.2 Command target: All

2.9.3.3 Command availability: RES

2.9.3.4 Command description.

This command provide post specified PMs for maintenance

2.9.3.5 Command syntax

Figure 3 DDRM POST command syntax

```
POST
Parms: [<All PMs> {AllPMs}]
  [<All> {All}]
  [<Site> STRING]
  [<Frame> {0 TO 511}]
  [<Unit> {0 TO 9}]
  [<PMType>... {TM2 [<All> {All}]
        [<PMNo>... {0 TO 2047}],
          RMM [<All> {All}]
        [<PMNo>... {0 TO 254}],
          IDTC [<All> {All}]
         [<PMNo>... {0 TO 255}],
          ILCM [<All> {All}]
         [<Site> STRING]
         [<Frame> {0 TO 511}]
         [<Unit> {0 TO 9}]
         [<...> {0 TO 0}],
                      ....
          DDRM [<All> {All}]
         [<Site> STRING]
         [<Frame> {0 TO 511}]
         [<Unit> {0 TO 9}]
         [<...> {0 TO 0}]}]
  [<State>... {SysB,
               ManB,
               OffL,
               CBsy,
               ISTb,
               InSv}]
  [<Alarm>... {Minor,
               Major,
               Crit}]
```

2.9.3.6 Qualifications and warnings

No warnings are displayed.

2.9.3.7 Responses.

N/A.

2.9.4 Command: LISTSET

2.9.4.1 Command type: MENU

2.9.4.2 Command target: All

2.9.4.3 Command availability: RES

2.9.4.4 Command description.

This Command Lists the contents of the post set

2.9.4.5 Command syntax

Figure 4 DDRM LISTSET command syntax

```
LISTSET

no parm - the current pm type on the screen
ALL     - The entire post set
Parms: [<PARMS> {TM2,
                 TM4,
                 ATM,
                 ILCM,
                 VLCM
                 DDRM}
```

2.9.4.6 Qualifications and warnings

No warnings are displayed.

2.9.4.7 Responses.

DDRM will be listed as below (example is given for 4 DDRM)

>post DDRM all >Listset "DDRM 1,2,3,4."	>post DDRM 1 >Listset "DDRM 1."

2.9.5 Command: TRNSL

2.9.5.1 Command type: MENU

2.9.5.2 Command target: All

2.9.5.3 Command availability: RES

2.9.5.4 Command description.

The Translate command identifies the C-side and P-side speech links of a posted DDRM. It also displays the status and type of the links, But for DDRM there is no P-Side link.

2.9.5.5 Command syntax

Figure 5 DDRM TRNSL command syntax

```
TRNSL: DISPLAY C SIDE LINK INFORMATION
Parms: <FUNCTION> {C}
```

2.9.5.6 Qualifications and warnings

"TRNSL P" command is removed from MAP screen as DDRM has no P side links.

2.9.5.7 Responses.

For C-side, TRNSL command gives following response. Like in RLCM

```
Link  1: PLGC 1        2;Cap MS;Status:OK    ,P;MsgCond:CLS
Link  0: PLGC 1        0;Cap MS;Status:OK    ,P;MsgCond:CLS
```

2.9.6 Command: TST

2.9.6.1 Command type: MENU

2.9.6.2 Command target: All

2.9.6.3 Command availability: RES

2.9.6.4 Command description.

Test the whole PM, a UNIT, or a LC. ALL parameter will execute TST on all PMs in the post set of the same PM type as the PM displayed on the MAP.

Card configuration test will also be processed during this period, It means that card configuration on DDRM will be compared with Static Data configuration.

In a parenthesis is BICRELAY (Bus Interface Card Relay) and Covrex[7] are not applicable for DDRM. But REX (Routine exercise) tests are applicable

2.9.6.5 Command syntax

Figure 6 DDRM TST command syntax

```
TST
Parms: <DEVICE> {UNIT <UNIT_NO> {0 TO 1}
                     [<ALL> {ALL}],
                PM [<ALL> {ALL}],
                LC   <DRAWER_NO> {0 TO 19}
                REX <REX_ACTION> {ON,
                                  OFF,
                                  QUERY,
                                  NOW [<NOWAIT> {NOWAIT}]},
```

2.9.6.6 Qualifications and warnings

“TST LINK” command is removed from MAP screen as DDRM has no P side links.

“TST DRWR“ command is replaced as “TST LC“ command. TST LC command gets drawer numbers (0..19) and it checks the Line Card

7. Voltage test and continuity test are not applicable for POC card.

Configuration on DDRM side given the DRWR number. For instance TST LC 0 execution checks 4 line cards for the 0th Drawer.

“TST COVREX” command is removed from MAP screen too. Because COVREX test is not supported for DDRM.

2.9.6.7 Responses.

For MANB unit OOS test will be processed and following results will be able to shown. (We suppose that unit 0 is MANB)

“Unit 0 OSvce Tests Initiated”
“Unit 0 Tst Passed” /Failed (if failed, reason will be shown)

For InSv unit InSvce test will be processed and following results will be able to shown. (We suppose that unit 1 is InSv)

“Unit 1 InSvce Tests Initiated”
“Unit 1 Tst Passed” /Failed (if failed, reason will be shown)

For DRWR 0 InSv test will be processed and following results will be able to shown.

“InSvce Tests Initiated”
“Drwr 0 Tst Passed”.

For TST LC *Drwaer_no* test, according to the DDRM reply PM181 logs will be issued for the missing LC cards for given *Drwaer_no*. Following PM181 logs are samples when TST LC command is executed on drawer 0. This logs will be available at LOGUTIL level. Instead of monitoring PM181 logs Craft person may issue QueryPM LC command in order to display the LC card status of DDRM after executing TST LC commands.

```
RSNW6D08AR       PM181 OCT01 15:50:23 4118 INFO
DDRM REMO 09 0  Unit 0
Node: ISTb, Unit0   : ISTb, Unit1   : ManB
0.  LC  is missing on 0. DDRM Drawer :

RSNW6D08AR       PM181 OCT01 15:50:23 4118 INFO
DDRM REMO 09 0  Unit 0
Node: ISTb, Unit0   : ISTb, Unit1   : ManB
1.  LC  is missing on 0. DDRM Drawer :
```

2.9.7 Command: BSY

2.9.7.1 Command type: MENU

2.9.7.2 Command target: All

2.9.7.3 Command availability: RES

2.9.7.4 Command description.

DDRM is posted to the ManB state via this command. Command is applicable for one or both units of the posted DDRM or to a specified P-side link.

2.9.7.5 Command syntax

Figure 7 DDRM BSY command syntax

```
BSY
Parms: <DEVICE> {UNIT <UNIT_NO> {0 TO 1},
     PM,
     DRWR <DRWR_NO> {0 TO 19}}
       [<FORCE> {FORCE}]
       [<NOWAIT> {NOWAIT}]
       [<ALL> {ALL}]
```

2.9.7.6 Qualifications and warnings

“BSY LINK“ command is removed form MAP screen as DDRM has no P-side links.

For “BSY DRWR“ command, DRAWER number is ranged as 0 to 19.

“BSY SMEM“ is removed as it is not supported for DDRM.

If DDRM is InSv following warning message will be shown

“DDRM will be taken out of service
Please confirm (“YES”, “Y”, “NO”, or “N”):

2.9.7.7 Responses.

After DDRM status changed to MANB following response will be shown

“Bsy Passed”

2.9.8 Command: RTS

2.9.8.1 Command type: MENU

2.9.8.2 Command target: All

2.9.8.3 Command availability: RES

2.9.8.4 Command description.

Returns to service one or both units or a specified P-side link in a posted DDRM. Test routines are performed and RTS is executed if tests succeed. Each unit must be in the ManB or SysB state.

In same way, inservice (InSv) and out of service comments will be processed for RTS like in TST command, But with an exception; PM status can be set InSv, ISTb or SysB as the result of these test.

2.9.8.5 Command syntax

Figure 8 DDRM RTS command syntax

```
RTS
Parms: <DEVICE> {UNIT <UNIT_NO> {0 TO 1},
     PM,
     DRWR <DRWR_NO> {0 TO 19}}
      [<NOWAIT> {NOWAIT}]
       [<ALL> {ALL}]
```

2.9.8.6 Qualifications and warnings

“RTS LINK“ command is removed form MAP screen as DDRM has no P-side links.

For “RTS DRWR“ command, DRAWER number is ranged as 0 to 19.

“RTS SMEM“ and “RTS SWLD“ and “RTS FORCE” is removed as it is not supported for DDRM.

No warnings are displayed.

2.9.8.7 Responses.

After DDRM status changed to InSv following response will be shown for both unit.(X is unit #).

“Unit X OSvce Tests Initiated”
“Unit X Tst Passed”
“Unit X Rts Passed”
“Unit X InSvce Tests Initiated”
“Unit X Tst Passed”

2.9.9 Command: OFFL

2.9.9.1 Command type: MENU

2.9.9.2 Command target: All

2.9.9.3 Command availability: RES

2.9.9.4 Command description.

Simultaneously makes offline all the specified DDRM unit(s) or whole DDRM or the posted set

2.9.9.5 Command syntax

Figure 9 DDRM OFFL command syntax

```
OFFL
Parms: <DEVICE> {PM [<ALL> {ALL}],
                 DRWR <DRWR_NO> {0 TO 19}}
```

2.9.9.6 Qualifications and warnings

For “Offl DRWR“ command, DRAWER number is ranged as 0 to 19.

DDRM should be MANB to set OFFLINE. If it is INSERVICE following message will be shown

“Request Invalid: PM is InSv”

2.9.9.7 Responses.

After DDRM status changed to OFFL following response will be shown

“Offl Passed”

2.9.10 Command: DISP

2.9.10.1 Command type: MENU

2.9.10.2 Command target: All

2.9.10.3 Command availability: RES

2.9.10.4 Command description.

Display all PMs in specified PM state. DiagHist option displays a summary of diagnostic failures.

2.9.10.5 Command syntax

Figure 10 DDRM DISP command syntax

```
DISP
Parms: <Option> {STATE <state> {SysB,
                                ManB,
                                OffL,
                                CBsy,
                                ISTb,
                                InSv},
                DIAGHIST}
       [<PM Type> {TM2,
                   TM4,
                   ATM,
                   TM8,
                   MTM,
                   ...
                   DDRM}]
```

2.9.10.6 Qualifications and warnings

No warnings are displayed.

2.9.10.7 Responses.

In example, if we want to list offline PMs; Following response can be shown for offline PMs.

>Disp state offl
OffL DDRM : 0

2.9.11 Command: NEXT

2.9.11.1 Command type: MENU

2.9.11.2 Command target: All

2.9.11.3 Command availability: RES

2.9.11.4 Command description.

Step to next PM in post set or to first PM of next pm_type in post set

2.9.11.5 Command syntax

Figure 11 DDRM NEXT command syntax

```
Next
Parms: [<PM TYPE> {PMTYPE}]
```

2.9.11.6 Qualifications and warnings

No warnings are displayed.

2.9.11.7 Responses.

N/A.

2.9.12 Command: QueryPM

2.9.12.1 Command type: MENU

2.9.12.2 Command target: All

2.9.12.3 Command availability: RES

2.9.12.4 Command description.

Query miscellaneous information about the DDRM.The fault conditions on the posted DDRM units, the DDRM link and unit maintenance counters, resetting the link and unit maintenance counters.

2.9.12.5 Command syntax

Figure 12 DDRM QueryPM command syntax

```
QueryPM
Parms: [<OPTION> {FLT,
          CNTRS [<CLEAR CNTRS> {CLEAR}],
          DRWR,
          LC}]
```

2.9.12.6 Qualifications and warnings

“QUERYPM OOS“ command is removed form MAP screen as it is not supported for DDRM.

“QUERYPM LC“ command is added to MAP screen to be able to display Line Card status of DDRM.

No warnings are displayed.

2.9.12.7 Responses.

For “FLT” option, suspected Cards will be listed with this command.

Suspected cards and their related alarms will be kept in a table which is implemented in Feature “DDRM ALARMS AND AUDITS” (fmdoc.A00006665)

For “QUERYPM LC“ command LC status will be showed like DRWRs. LC cards that are present is shown “.” and missing LC cards are showed as “-”. QueryPM LC command should also be used after performing TST LC *Drwr_no* in order to see the LC card status for the given Drwr_no.

Below is an example:

```
QueryPM LC

LC                11 1111 1111 2222 2222 2233 3333 3333
Number: 0123 4567 8901 2345 6789 0123 4567 8901 2345 6789
State : ..-- ---- ---- ---- ---- ---- ---- ---- ---- ----

LC      4444 4444 4455 5555 5555 6666 6666 6677 7777 7777
Number: 0123 4567 8901 2345 6789 0123 4567 8901 2345 6789
State : ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
```

For “CNTRS” option, maintenance counters in “Table 1: OM fields for QueryPM CNTRS command” will be shown

Table 1 OM fields for QueryPM CNTRS command

OM Fields	Explanation
WFSND	Wait for send timeout on message to LTC
WFNX	Wait for link idle after NACK
DNACK	(Double) negative acknowledgement
WFNR	Wait for link idle after positive acknowledgement
OVFL	Message had more than permitted number of bytes
IDL_STATE	Spurious frame output
RCVD_SUCC	successfully received message count
IUC_NACK	IUC (Inter unit communication link) NACK received
IUC_INV_BYTE	IUC received invalid byte
IUC_INV_MSG	IUC received invalid message
WFACK	Wait for acknowledgement timeout on message to LTC
NACK	(single) Negative acknowledgement
WFMSG	Wait for start of message timeout on msg from LTC
CRC	Incorrect CRC on received message
NULL_MSG	NULL message received that was not reset message
INV_NODE	Message received had invalid node number
XMIT_SUCC	Successfully transmitted messages
IUC_INV_CHAR	IUC received invalid character

OM Fields	Explanation
IUC_INV_CKSM	IUC received invalid checksum

2.9.13 Command: ABTK

2.9.13.1 Command type: NON-MENU

2.9.13.2 Command target: All

2.9.13.3 Command availability: RES

2.9.13.4 Command description.

This Command aborts all active maintenance tasks on the peripheral

2.9.13.5 Command syntax

There is no additional parameter, So directly run “ABTK” command from PM level While DDRM is posted

2.9.13.6 Qualifications and warnings

No warnings are displayed.

2.9.13.7 Responses.

N/A.

2.9.14 Unsupported Non-Menu Commands

Following LCM commands in Table2 are not supported by DDRM.

Table 2 Unsupported Non Menu Commands for DDRM

Level and command	Explanation
ILD Remark: Not supported in CO	Used to access to ILD level.
ZLCM Remark: Not exist in NTP	It sets OFFICE_CAN_DATAFILL_ZLCM Parameter to ‘true‘ or ‘false‘.
OPM256	Can only be performed on an OPM‘Outside Plant Module
pretrip	AVAILABLE RINGING PRETRIP OPTIONS

2.10 Security

Not Applicable.

2.11 Configuration Walkthrough

Not Applicable.

Product = World Trade

A00006662--DDRM Line Definition and Line Maintenance

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Background Information

The DDRM (DMS Dicle Remote Module) project, as a whole, provides a platform which supports the DDRM node as a remote line module of DMS like a Remote Line Concentrating Module (RLCM).

A00006662 is responsible for handling the line provisioning and maintenance actions of the DDRM Remote Module on a regular MMP switch for ISN08 stream.

Note: *As the whole DDRM project has been divided into two phases, some of the activities have been churned out from ISN08 and they will be implemented in ISN09, including A00006664, DDRM Line Tests.*

Some parts of this activity, A00006662, have interactions with activity A00006664. Affected parts are highlighted and detailed in red fonts throughout this document.

1.2.1.1 DDRM Node Configuration

DDRM is a new, remote peripheral connected to a MMP Switch via a host XPM peripheral (PLGC) through a maximum of 4 E1(PCM30) links.

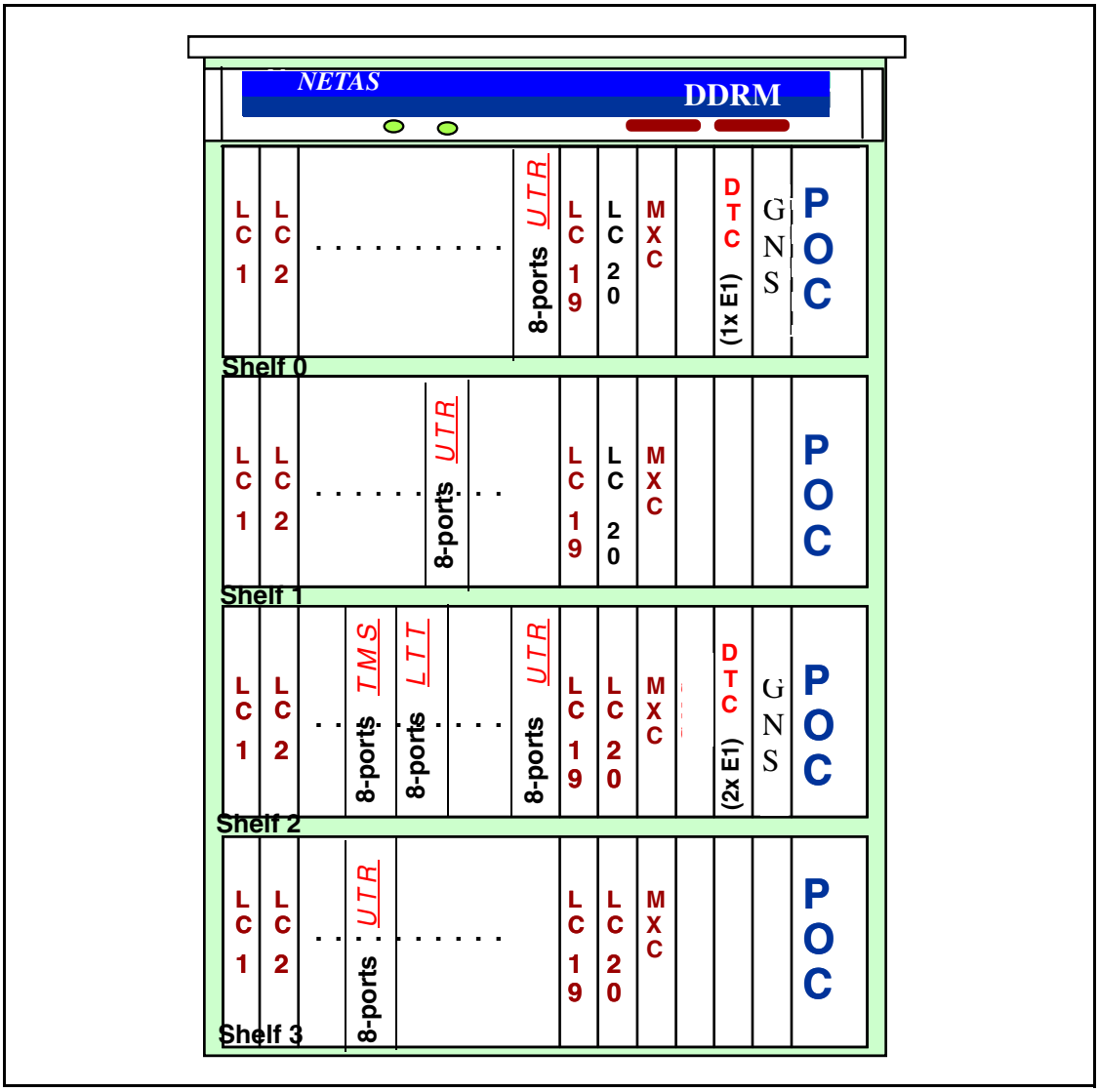
DDRM is based on a MMP RLCM which is developed for the Turkey Market. The purpose of the whole project is to enhance the benefits of the DDRM Rural Switches and to provide RLCM Node facility to the DDRM Rural exchanges in the Turkey Market. Thus maintenance and administration related operations are processed on DMS exchanges.

The DDRM module is configured as a one cabinet DDRM Local Switch, each of which consists of 4 shelves.*

Note: * The configuration with 4 shelves is not fixed and DDRM nodes with less than 4 shelves are available in the Turkey Market.

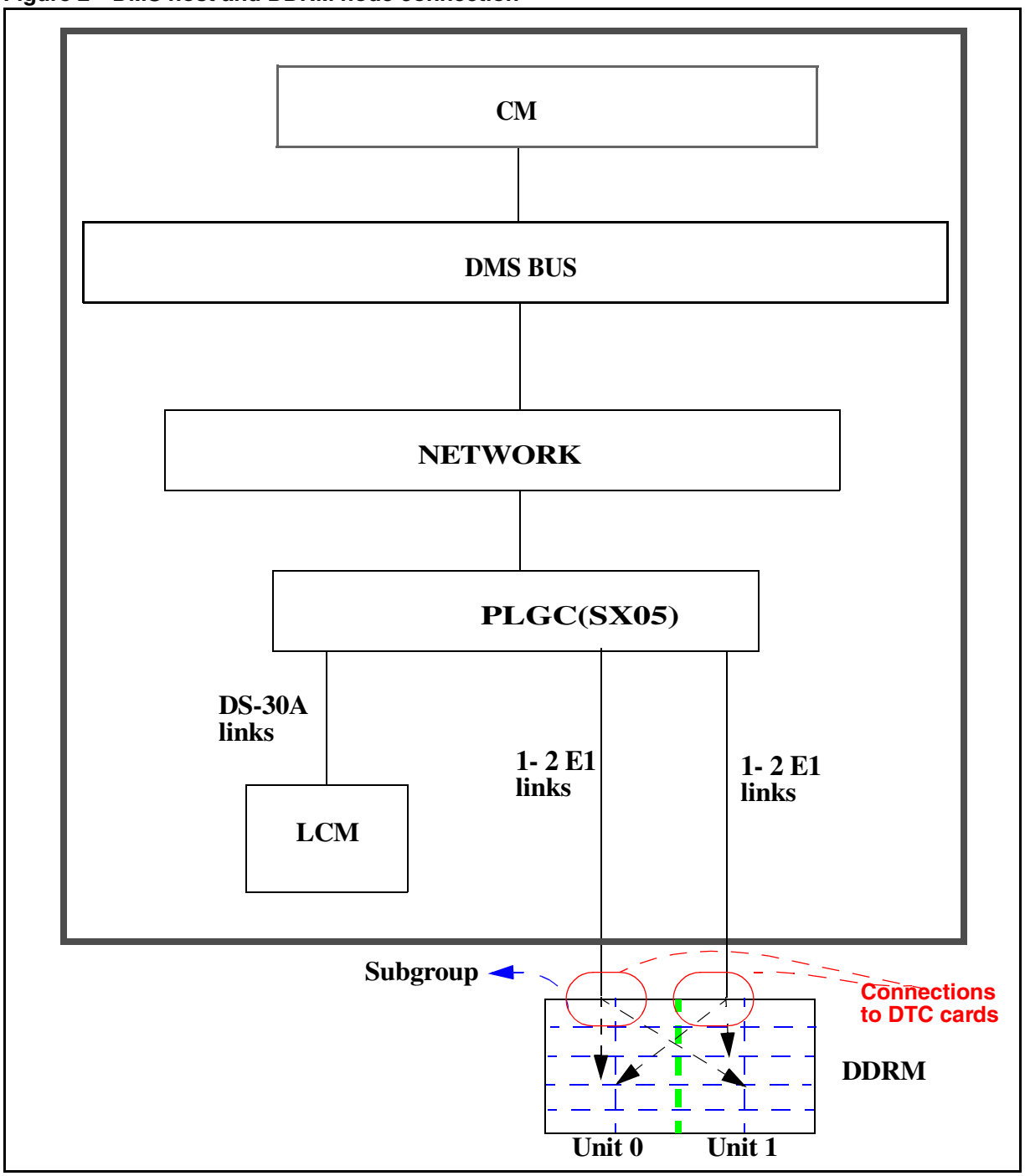
A DDRM node with a 4-shelf card configuration is as follows:

Figure 1 DDRM Hardware



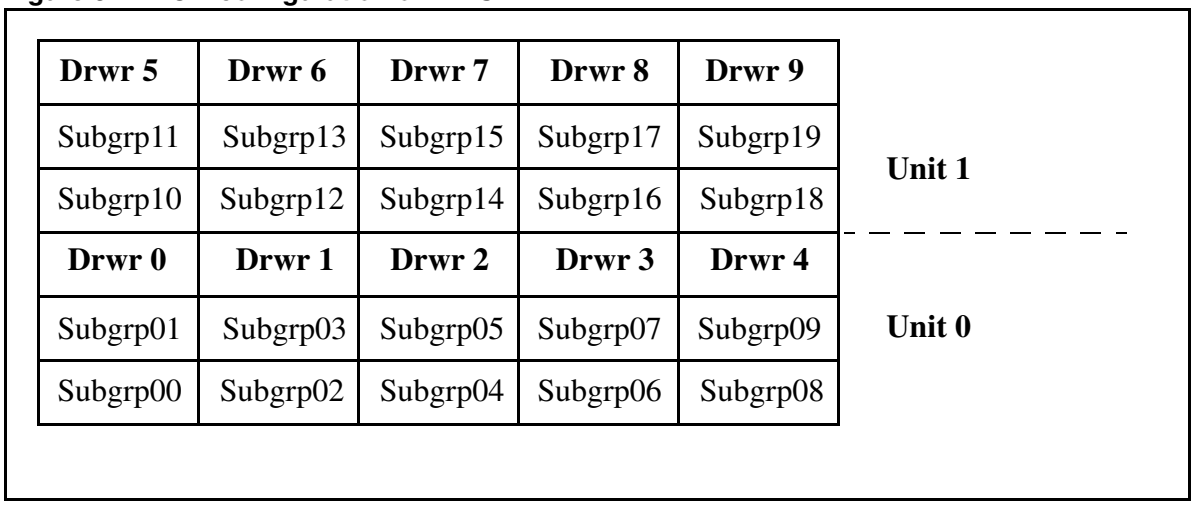
The DDRM is connected to the PLGC with E1 links (between 2 and 4) and communicates via the DMS-X protocol. E1 link connections are provided by the DTC cards of DDRM. The connection is shown below:

Figure 2 DMS host and DDRM node connection



1.2.1.2 DDRM Line Configuration

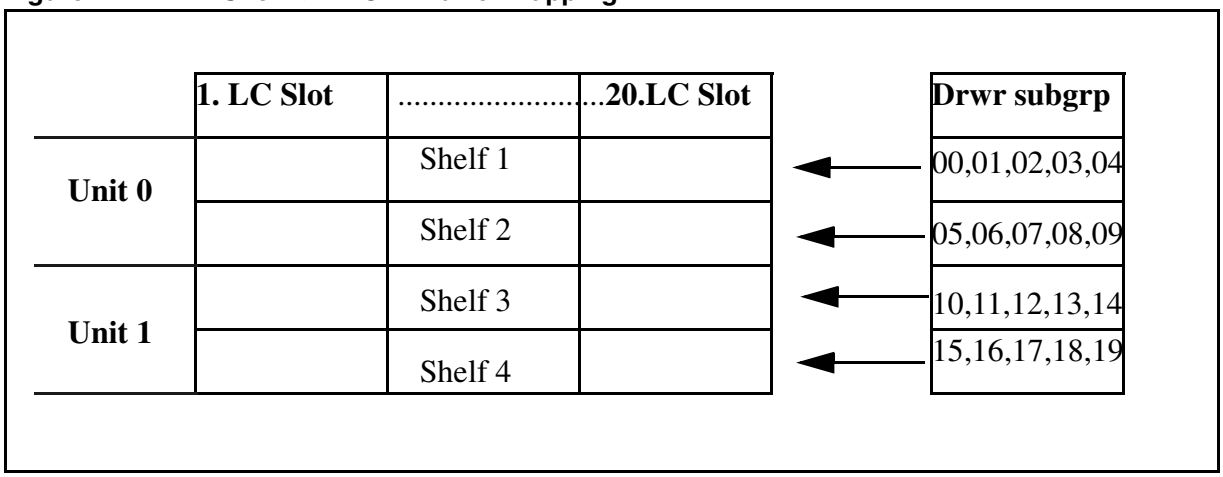
Figure 3 RLCM configuration on DMS



According to the DDRM Configuration given in section 1.3.1.1, DDRM shelves must be mapped to a logical view of the RLCM Drawer configuration regarding 64 lines per drawer. This is because of the mismatch between the Shelf-based DDRM architecture and the Drawer-based RLCM architecture.

The architecture of the RLCM (shown above in Figure 3) is valid for the DDRM as well. The view of DMS line drawers are seen in order on the DDRM node starting from shelf 0 and ending with shelf 3.

Figure 4 DDRM Shelf -> RLCM Drawer Mapping:



The drawers 0, 1, 2, 3 and 4 are presented by shelf 1 and shelf 2 of the DDRM node.This means that:

i. the lines on subgroups 00, 01, 02, 03 and 04 correspond to the lines on shelf 1 of the DDRM.

ii. the lines on subgroups 05, 06, 07, 08 and 09 correspond to the lines on shelf 2 of the DDRM.

The drawers 5, 6, 7, 8 and 9 are represented by shelf 3 and shelf 4 of the DDRM. This means that:

iii. the lines on subgroups 10, 11, 12, 13 and 14 correspond to the lines on shelf 3 of the DDRM.

iv. the lines on subgroups 15, 16, 17, 18 and 19 correspond to the lines on shelf 4 of the DDRM.

Note: Logical mapping of the shelf-based DDRM architecture to the drawer-based DMS architecture will be done on the DDRM side internally. The DMS recognizes the DDRM as it has really a drawer-based architecture. All of the DMS-X messages will be sent and got in this form. (Please refer to the DMS_DDRM architecture or the DDRM HLD.)

The supported number of subscribers is based on the DDRM Configuration.

The supported number of subscribers on the DDRM node are differentiated based on the shelf number, and the existence of UTR and/or LTT-TMS cards in the TT network.

The maximum shelf number on a DDRM cabinet is 4 and each shelf has 20 LC slots.

Thus the supported subscriber numbers of a DDRM node is 640 ((20*8) * 4).

UTR configuration - one LC slot on each shelf is generally used for a UTR card and each shelf supports 152 subscribers. So 608 subscribers are supported for 4 shelves. But it is possible that one UTR card can serve all subscribers of a DDRM node. In that case 8 more subscribers can be defined for a shelf.

UTR &LTT-TMS configuration - besides UTR cards on each shelf, if a pair of LTT-TMS cards is placed into 2 LC slots for the MTA facility the supported number of subscribers is decreased with 16 subscribers less. In the configuration with 4 shelves, the maximum number of supported subscribers is 592.

For one shelf:

- no UTR and no LTT-TMS: 160 subscribers
- no UTR only LTT-TMS: 144 subscribers
- UTR and no LTT-TMS: 152 subscribers

- UTR and LTT-TMS: 136 subscribers

For 4 shelves (one cabinet):

- no UTR and no LTT-TMS: 640 subscribers
- 4 UTR and no LTT-TMS: 608 subscribers
- 4 UTR and LTT-TMS: 592 subscribers
- no UTR only LTT-TMS: 624 subscribers
- 1 UTR and no LTT - TMS: 632 subscribers
- 1 UTR and LTT - TMS: 616 subscribers

There are frames with 2 and 3 shelves in the Turkey Market and supported number of subscribers are calculated based on the above formula.

1.2.2 Feature Synopsis

With the A00006662 activity, DDRM line provisioning and line maintenance actions on DMS site are provided. The feature includes:

- Support for new DDRM line cards
- Line provisioning
  - — Line Provisioning in Table LNINV
  - — Coin Line Provisioning
  - — CI Tool for DDRM LEN mapping
- Table controls specific to the DDRM node
- Line maintenance actions and Line diagnostics:

  Only the maintenance commands POST, BSY, RTS, FRLS and DIAG are in the scope of this activity whereas line tests will be handled by the activity “A00006664 - DDRM Line Testing“.
- Line Audits
- Static data handling of line cards needed by the DDRM node

1.2.3 Feature Description

The DDRM node only uses Standard IBN and Coin lines. Thus support is needed for these cards which can be grouped with the facilities below:

- Basic LCs
- Basic LCs with the Over-voltage Option
- Basic Testable LCs with the Over-voltage Option
- Basic Metering LCs
- Basic Metering Testable LCs with the Over-voltage Option

Table 1 DDRM Line Card Properties

	Testable	Metering	Over voltage
Basic LC			
Basic LC with Over-voltage			+
Basic Testable LCs with Over-voltage	+		+
Basic Metering LC		+	
Basic Metering Testable LCs with Over-voltage	+	+	+

According to this information and the background information about the DDRM node and the DDRM line configurations in section 1.3.1, expected behaviors for DDRM lines are detailed in the sections below.

1.2.4 Behavior Scenarios described

1.2.4.1 Line Provisioning Scenarios

Line provisioning is done in table LNINV for the DDRM lines by using node number, unit number, drawer number and circuit number, as it is done for RLCM.

The Table LNINV format is given below:

Figure 5 Table LNINV

```
TABLE: LNINV
>ran
 1 LEN LNINV_KEY
 2 CARDCODE AVAILABLE_LINE_CARDS_INDEX
 3 PADGRP PAD_GROUP
 4 STATUS CARD_STATE
 5 GND BOOL
 6 BNV BALANCED_NETWORK_VALUE
 7 MNO BOOL
 8 CARDINFO CARDINFO_TYPE
LOGICAL TUPLE TYPE:LNINV_LOG_TUPLE
>
```

The bold fields are the data that specifies the DDRM lines. Here is a brief explanation about these fields:

LEN: defines the physical location of the equipment that is connected to a specific telephone line.

Subfields of field LEN are: SITE, FRAME, LCM NUMBER, DRAWER, CIRCUIT.

Note: SITE information is taken according to the node definition made on table LCMINV. Please refer to software dependencies in section 1.5.

CARDCODE: Cardcodes will be one of the defined line card codes of a DDRM node. The following card codes will be used for DDRM line cards:

- DRBLCN---> Basic LC
- DRBLCP ---> Basic LC with Over-voltage Option
- DRDLCP ---> Basic Testable LC with Over-voltage Option
- DRMLCN ---> Basic Metering LC
- DRMLCP ---> Basic Metering Testable with Over-voltage Option

All fields of table LNINV, their explanation and valid entries for DDRM lines are shown in the table below:

Table 2 Field Descriptions of Table LNINV

Field	Entry	Explanation and Action
LEN	SITE, FRAME and LCM NUMBER information will be taken according to the node definition made on table LCMINV. For example if DDRM 01 0 is used in table LCMINV then DDRM 01 0 must be used in table LNINV. EX: DDRM 01 0 0 1	Line equipment number This field defines the physical location of the equipment that is connected to a specific telephone line. Field LEN consists of subfields SITE, FRAME, LCM NUMBER, LSG and CIRCUIT. (No change from existing RLCM logic)
CARDCODE	One of the line cards of the DDRM can be used. DRBLCN DRBLCP DRDLCP DRMLCN DRMLCP	Card code Enter the product engineering code (PEC) of the line card. (No change from existing logic).

Table 2 Field Descriptions of Table LNINV

Field	Entry	Explanation and Action
PADGRP	No change. One of the pre-defined values from table PADDATA can be used.	Pad group Enter the name of the pad group that is assigned to the line circuit in table PADDATA. Field PADGRP contains the name of the pad group in table PADDATA that lists the value of the pad circuits that can be switched into the line when the line is involved in a call. Different values for the pad circuits can be specified when the circuit connects to an agent with a different pad group.
STATUS	No change.One of the below values can be used: CUTOFF, HASU (hardware assigned/software unassigned), RESERVED, UNEQUIP (unequipped), or WORKING	Line inventory availability status. Enter the line inventory availability status.
GND	DDRM lines do not support ground start mode. N	Ground If the line is ground start, enter Y (yes). If the line is loop start, enter N (no).
BNV	DDRM lines do not support Balance Network tests. NL	Balanced network value Enter L if the line circuit is configured for a loaded network. Enter NL for a non-loaded network.
MNO	Manual Override is not allowed for DDRM lines as Balance Network Test is not supported. N	Manual override Enter Y if the on-hook balance network test is to be prevented from updating field BNV in table LNINV. Enter N to allow the off-hook balance network test to update field BNV.
CARDINFO	Default value will be used for DDRM lines. NIL	Card information

According to this explanation, the DDRM LEN definition in table LNINV will be as follows:

```
LEN CARDCODE  PADGRP      STATUS  GND  BNV  MNO CARDINFO
-------------------------------------------------------------------------------------------------
DDRM 01 0 06 17 DRBLCN STDLN    WORKING     N     NL      N          NIL
```

As usage of some values for some fields in table LNINV is restricted, verification messages about LNINV datafill will be used. They can be seen in the table below:

Table 3 Verification Messages for DDRM Line Datafill in table LNINV.

Field	Explanation
CARDCODE	Only DDRM line cards: DRBLCN, DRMLCN, DRBLCP, DRDLCP, DRMLCP can be assigned to a DDRM line
GND	Ground Start is not allowed for a DDRM line
BNV	Balance Network Value is not allowed for a DDRM line
MNO	Manual Override is not allowed for a DDRM line
CARDINFO	No card info is allowed for a DDRM line

Note: As it is the existing behavior for RLCM, a hardware configuration check will not be done in the datafill step to LNINV. Datafill can be done regardless of the hardware check. A hardware mismatch can only be understood when the LC config alarm is sent to DMS during RTS(RTS Drwr) and Test step (Tst Drwr). (Please refer to A00006663: “DDRM Alarms and Audits activity for LC config alarm”. And refer to A00006660: “DDRM node maintenance activity for handling LC mismatch message in RTS step”.)

1.2.4.1.1 Coin Line Provisioning

There is a hardware restriction about coin lines of a DDRM node which is:

Total COIN Line number per shelf cannot exceed the 10% of total line number in shelf. (10% x 160 lines = 16 MAX coin per shelf)

This restriction will be provided by counting the coin card codes used in table LNINV. After a maximum count is reached for one shelf (2 coin cards per shelf), no more usage of the coin LC will be allowed in this shelf. A warning will be prompted then.

“No more coin card codes can be used for this shelf“

1.2.4.1.2 Command Interface (CI) Tool for DDRM Lines

A CI tool (named DDRMLEN) is provided for DDRM lines that map the Shelf information of a line to Drawer information. This is needed because calculating the drawer information of a shelf is already difficult for a craft person.

Mapping will be done in both directions: shelf,lc,slot <-> LSG(logical drawer),circuit. To map shelf,lc,slot -> LSG, circuit SL option will be used and to map LSG, circuit -> shelf,lc,slot LS option will be used.

Here below the CI tool's format is given mainly:

```
>help ddrmlen
DDRM line SHELF <-> DRAWER Mapping Tool.
Parms: <Option> {SL [<Shelf> {0 TO 3}]
[<LC> {0 TO 19}]
[<Slot> {0 TO 7}],
  LS [<LSG> {0 TO 19}]
[<Circuit> {0 TO 31}]}

> ddrmlen sl 0 1 7
> DMS: Line Subgroup = 0, Circuit = 15

>ddrmlen ls 0 15
>DDRM: Shelf= 0, LC=1, Slot=7
```

Details of the CI tool can be seen in the Configuration Section of this document.

1.2.4.2 Table Control Scenarios

Changes are needed in the table control procedures of LNINV in order to support DDRM.

New controls are stated below:

- One of the card codes of the DDRM must be used for the DDRM node.

  (CardCode <-> DDRM PM Type)

- If there is an attempt to define a line into a LC slot of the DDRM that does not have a line card but UTR and/or LTT-TMS, a failure prompt on the DMS MAP is given:

  "UTR/LTT/TMS has already defined for this slot in table LCMINV"

- For all of the table control operations (add, change and delete), line card code information (card index) will be sent to the DDRM node via a DMS-X message.

Table Control operations will be as follows:

- Write

  Same card code must be used for the 8 slots in the same LCC.

```
            LEN  CARDCODE  PADGRP     STATUS  GND  BNV  MNO CARDINFO
-------------------------------------------------------------------------------
DDRM 09 0 01 00 DRBLCN STDLN    WORKING     N    NL     N          NIL
DDRM 09 0 01 01 DRBLCN.....
DDRM 09 0 01 02 DRBLCN.....
DDRM 09 0 01 03 DRBLCN.....
DDRM 09 0 01 04 DRBLCN.....
DDRM 09 0 01 05 DRBLCN.....
DDRM 09 0 01 06 DRBLCN.....
DDRM 09 0 01 07 DRBLCN.....
DDRM 09 0 01 08 DRBLCP .....
...
...
...
DDRM 09 0 01 15 DRBLCP.....
```

After the first entry has been added for one of the 8 slots, the others will be verified against this entry. This means the LCC with 8 slots will be identified by the first entry. When another card code needs to be used, the user will be prompted:

"All lines in this LC must use same card code, <>."
"(On LSG: <drawer number>,"
" between circuit <no>,"
" and circuit <no>"

Line card code information will be sent to the DDRM when the first entry of the 8 slot has been added.

- Delete

  Existing DMS behavior will be kept. LENs can be deleted one by one if they are not in use. Deleting the 8 lines together in the same LCC is not provided.

  When the last entry of the 8 slots has been deleted, card code information for the empty LC will be sent to DDRM.

- Change

Changing the cardcode of 8 lines together will be provided and users will be informed via a message:

“All lines on this LC will be updated with card code <>.”
“(On LSG: <drawer number>,“
“ between circuit <no>,”
“ and circuit <no>“

As the DMS does for World Line Cards, line states, before changing operation, must in the MB/INB for the DDRM lines to prevent possible problems as a line can be using in CallP in that phase. If one of the 8 lines is not in the MB/INB then the prompt below will be printed:

“Cannot change the CARDCODE when the line is in service“

“Line states of each line on this LC must be MB/ INB“

Also, when the change operation succeeds, new card code information will be sent to the DDRM for that LC.

1.2.4.3 Line Maintenance and Line Diagnostic Scenarios

Line maintenance is responsible for the proper function of line cards, loop transmission facilities, subscribers terminating equipment and transitions of line states. It is handled in the same way as the RLCM, and so the same behaviors are kept for the DDRM.

Valid line maintenance commands (in LTP map level and its sub-levels) for DDRM Lines will be:

Command	Function
Post	Posts a line or set of lines to the LTP.
Bsy	Changes the state of the line in the control position, or optionally the complete set of posted lines, from IDL to MB.
RTS	The RTS command changes the state of the line in the control position, or optionally the complete set of posted lines, from MB to IDL.
Diag	Diagnose the posted line.
FRLS	This command is not visible al the LTP level. The FRLS command forcibly disconnects a line circuit from the test equipment or any other circuit and changes its state to MB.

DIAG (Diagnostic) will be provided for DDRM lines which has one of the testable line card codes.

Whereas SDIAG (Short Diagnostic in ALT level) will not be supported as the line diagnostic set is already very restricted for the DDRM. It consists of

Battery Feed Resistor, Current Limit Test and Metering Test (for only testable Coin lines).

Table 4 Line Maintenance and Diagnostic Sets

	DRBLCN	DRBLCP	DRDLCP	DRMLCN	DRMLCP
Card Property	Basic IBN	Basic IBN with Over-voltage	Basic Testable IBN with Over-voltage	Basic Metering	Basic Metering Testable with Over-voltage
Maintenance Commands	POST BSY RTS	POST BSY RTS	POST BSY RTS	POST BSY RTS	POST BSY RTS
Diagnostics	Not Allowed	Not Allowed:	Allowed: Battery Feed Current Limit	Not Allowed	Allowed: Battery Feed Current Limit Metering Test

Existing line states and line state transitions for DMS lines will also be valid for DDRM lines. They can be seen in the tables below:.

Table 5 Valid Line States

Line State	Interpretation
IDL	Line is in service and on-hook.
CPB	Line is involved in a call.
MB	Line has been removed from service by the BSY command.
CPD	In CPB state, MB pending.
LMB	DDRM is either out of service, or both its C-side links are out-of-service.
LO	The switch has put the line in temporary out-of-service state.
PLO	Line is in off-hook state for an excessive time.
DEL	Temporary state between CPD and MB.
NEQ	Line is not data filled in LNINV table.
INB	Line is not datafilled in LENLINES table or the BSY INB command was performed.
CUT (For only over-voltage cards)	The cutoff relay in the line circuit is operated, disconnecting the subscriber loop from the line circuit.

Table 5 Valid Line States

Line State	Interpretation
HAZ (For only over-voltage cards)	A line hazard condition (foreign line voltage, leakage resistance) has been detected; the line's cutoff relay is operated.
SB	The line has been removed from service by the DMS switch because of an incoming message overload.

Table 6 Line State Transitions on DMS

From	To CPD	CUT	DEL	IDL	INB	MB
CPB	+			+		+
CPD			+			
CUT				+	+	+
DEL				+	+	+
IDL		+				+
INB		+				+
LMB				+	+	+
LO		+		+	+	+
MB		+		+	+	
PLO		+		+	+	

Line states can be changed according to some manual actions or can be done automatically by system maintenance. Maintenance actions performed on drawers such as RTS DRWR, TST DRWR will effect line status. Also, when LC Config mismatch is sent from the DDRM, line states will be updated if needed.

Note: *Line diagnostics will be implemented with the activity A00006664 in the ISN09 stream.*

1.2.4.4 Line Audits

DDRM is added to the list of peripherals on which line sync audit and babbler audits run. Thus they will be supported for the DDRM lines too.

The purpose of the babbler audit is to revisit babbling lines and return them to service instead of just denying them service because they once failed a diagnostic.

For all of the other scenarios for line audits, existing RLCM behavior will be kept for the DDRM lines.

Note: *Line audit related DMS implementations are completed in ISN08. But as line audits execute line diagnostics, and as they will be available in ISN09, line audits will be available with the activity A00006664 in the ISN09 stream.*

Line audits can be tested fully in ISN09.

1.2.4.5 Static Data Handling

The DDRM needs line card codes as static data. The codes will be sent to DDRM via DMS-X messages through the host PLGC. As DDRM supports 5 different type card codes, DMS will send an index to DDRM to indicate the card code.

LNINV static data is downloaded under the following conditions

- LCM RTS

  Table LNINV card codes will be the part of the LCM RTS static data.

- LNINV table control operations: write, delete, change

  While adding, deleting or changing a cardcode of a LEN, dynamic update of this data is needed.

1.3 Hardware Requirements or Dependencies

Not Applicable

1.4 Software Requirements or Dependencies

For successful deployment of this activity, the following two activities are required as DDRM lines can not be defined or maintained unless the DDRM node itself is defined and maintained:

- A00006660 - DDRM Node Definition and Provisioning

  Line provisioning is dependent on a node definition made on table LCMINV by means of SITE information in table LNINV.

- A00006661 - DDRM Node Maintenance

  Line maintenance is dependent on node maintenance.

- A00006666 - DDRM XPM Support and Monitoring

  The DDRM emulator is needed for UT tests.

1.5 Limitations and restrictions

- Only DDRM Basic and COIN lines are supported for DDRM. All of the other types such as ISDN, PPHONE, V5.2 etc. will not be supported.

- The DDRM node has a restriction about Coin lines:

  "*Total COIN Line number per shelf cannot exceed the 10% of total line number in the shelf. (10% x 160 lines = 16 MAX coin per shelf).*

- Maintenance: Non-menu command "FRLS" is supported for all DDRM lines. There are some actions which will not be supported: SDIAG (in ALT level.)

1.6 Interactions

Other line related activities may have some interactions with this activity:

- A00006664 - DDRM Line Testing
- A00006663 - DDRM Alarms and Audits

1.7 Applicable customer facing sections

Fault Management

Logs	_____
Alarms	_____

Configuration

Data Schema	_____
User Interface	___X__
Element Management	_____
Security	_____
Service Order	_____
Office Parameters	_____

Accounting (includes AMA billing)	_____
Performance (includes operational measurements)	_____

Indicate with an X if you are completing the sections of the DDOC listed below. Indicate with "N/A" if these sections do not apply to this functionality.

1.8 References

- DDRM Spec. - module DMS_DDRM in fmdoc
- A00006638 DMS- DDRM HLD

1.9 Glossary

Term	Description
DDRM	DMS Dicle Remote Module
DTC	Digital Trunk Card
ESA	Emergency Stand Alone
GNS	Group Network Switching
LC	Line Card
LCM	Line Concentrating Module
LTT	Line and Trunk Test Simulator
MTA	Metallic Test Access
MXC	Module Switching Controller
POC	Power Converter Card
RLCM	Remote Line Concentrating Module
TMS	Test Measurement and Signalling
UTR	Universal Tone Receiver

2: Configuration for A00006662

2.1 Hardware and Software Requirements

The DDRM should be connected to the DMS switch and the DDRM node should be maintained properly. These items are in the scope of the following two activities:

A00006660 - DDRM Node Definition

A00006661 - DDRM Node Maintenance

2.2 Initial Configuration

N/A

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

N/A

2.4 Upgrade Impact

N/A

2.5 Data schema (DS) (CM, MIBS, RDB)

N/A

2.6 Service Orders (SO) (CM & SESM)

N/A

2.7 Software optionality control (SOC)

N/A

2.8 Element Management

N/A

2.9 Command interface changes

This feature adds a new CI command (DDRMLEN), whose function is to transform the Physical View of a DDRM line's location (shelf, LC, slot) into the Logical View (line subgroup, circuit).

Table 7 DDRMLEN CI command

Command Name	Abbreviation	Option	Parameters	Range
Transform DDRM shelf, LC, slot into LEN line subgroup, circuit	DDRMLEN	SL (Shelf to LEN Mapping) or LS (LEN to Shelf Mapping)	shelf, LC, slot (for SL option) or line subgroup, circuit (for LS option)	shelf --> 0 to 3 LC --> 0 to 19 slot --> 0 to 7 LSG --> 0 to 19 circuit --> 0 to 31

Table 8 Examples

Some examples of legal commands
DDRMLEN 0 1 6 % shelf 0, LC 1, slot 6
DDRMLEN 1 19 3 % shelf 1, LC 19, slot 3
DDRMLEN 2 4 0 % shelf 2, LC 4, slot 0
DDRMLEN 3 10 7 % shelf 3, LC 10, slot 7
Some examples of illegal commands

Table 8 Examples

Some examples of legal commands
DDRMLEN 1 20 6 % DDRM shelves has only 20 LCs, ranging from 0 to 19.
DDRMLEN 2 19 9 % slot must be in range 0 to 7
DDRMLEN 5 1 3 % DDRM has only 4 shelves, ranging from 0 to 3

Table 9 System Responses

input	output
HELP DDRMLEN	DDRM line SHELF <-> DRAWER Mapping Tool. Parms: <Option> {SL [<Shelf> {0 TO 3}] [<LC> {0 TO 19}] [<Slot> {0 TO 7}], LS [<LSG> {0 TO 19}] [<Circuit> {0 TO 31}]}
DDRMLEN SL 0 2 7	Line Subgroup = 0, Circuit = 23
DDRMLEN SL 2 8 4	Line Subgroup = 12, Circuit = 3
DDRMLEN SL 2 19 9	Invalid Slot: Shelves have a maximum 7 slots available.
DDRMLEN LS 0 31	Shelf= 0, LC=3, Slot= 7

Note: The DDRMLEN command makes no assumptions about the actual system configuration. It simply reports what the line subgroup and circuit would be for a specified shelf, LC and slot, or vice versa.

2.10 Security

N/A

2.11 Configuration Walkthrough

N/A

Product = World Trade

A00006666--DDRM XPM Support and Monitoring

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Background Information

DDRM (DMS Dicle Remote Module) project as a whole provides a platform which supports DDRM node as a remote line module of DMS like a Remote Line Concentrating Module (RLCM).

A00006666 is a sub feature of DDRM project and it is aimed to support XPM part of this project on Host PLGC (XPM).

1.2.1.1 DDRM Node Configuration

DDRM is a new remote peripheral connected to a MMP Switch via host XPM peripheral (PLGC) through maximum 4 E1 (PCM30) links.

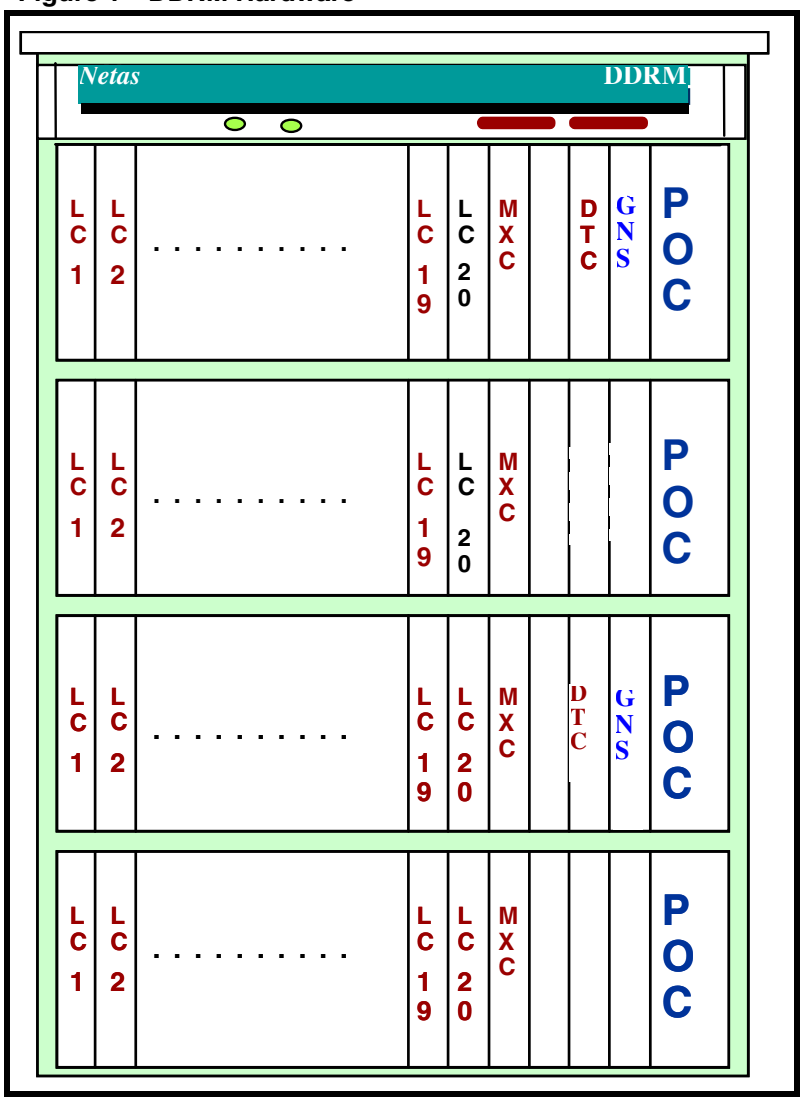
DDRM is based on MMP RLCM which is developed for Turkey Market. The purpose of the whole project is to enhance the benefits of DDRM Rural Switches and to provide RLCM Node facility to DDRM Rural exchanges in Turkey Market network. Thus maintenance and administration related operations are processed on DMS exchanges.

DDRM module is configured as one cabinet DDRM Local Switch, each of which consists of 4 shelves.*

Note: * The configuration with 4 shelves is not fixed and DDRM node less than 4 shelves are available in Turkey Market network.

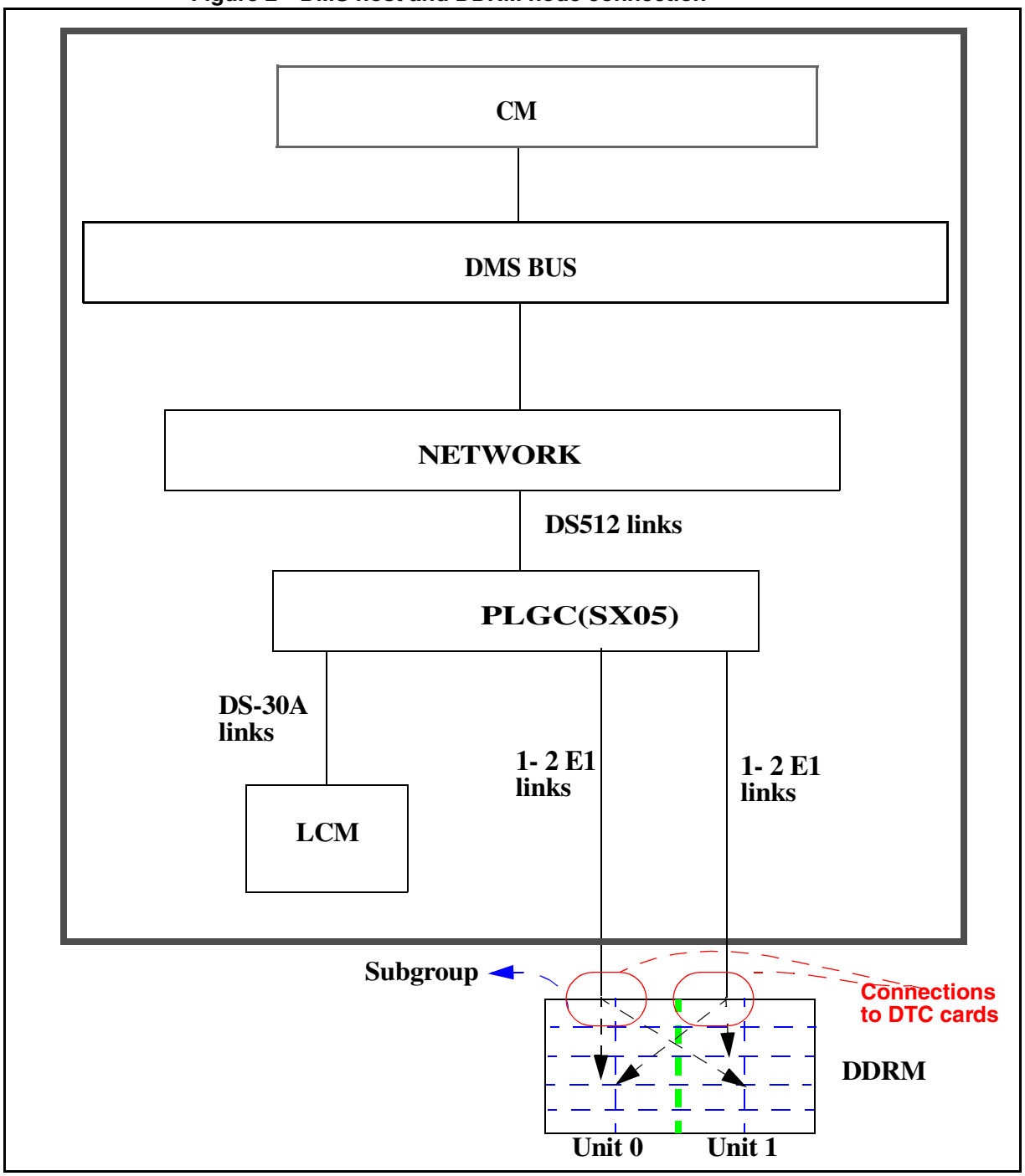
DDRM node with 4 shelves card configuration is as follows:

Figure 1 DDRM Hardware



DDRM is connected to PLGC with E1 links (between 2 and 4) and communicates via DMS-X protocol. E1 link connections are provided by DTC cards of DDRM. Connection is shown below:

Figure 2 DMS host and DDRM node connection



1.2.2 Feature Synopsis

With A00006666 activity, it is required to provide DDRM XPM support and monitoring on DMS site. Feature includes:

- New XPM DDRM PM Type and all relevant definitions on Host PLGC.

Besides the above feature items call process issues will be investigated under this feature. None of the related CM DDRM activities are aimed to change CALLP behavior. Therefore it is expected for DDRM to have similar callp as existing RLCM has.

1.2.3 Feature Description

1.2.3.1 Node Definition - XPM Part

According to selective design in related DDRM CM activities, DDRM PM type need to be defined as downloaded PM type information during PLGC RTS time as static data field.

Behind a new PM type there is usually a specific hardware. DDRM is also a new hardware which has its own characteristics--the number of line drawers are the same but the number of lines may not be the same since line card slots can also be used for other cards like UTRD and MTA cards. Likewise, DDRM can be defined in a different configuration (single plane, double plane) while LCM can not.

Despite the similarities existing between the RLCM peripherals, DDRM differs from existing RLCM peripherals. In order to differentiate peripherals on the basis of their functional characteristics, definition of a new PM_TYPE is required.

1.3 Hardware Requirements or Dependencies

In order to test CallP it is required to have a INSV DDRM Node.

1.4 Software Requirements or Dependencies

For successful deployment of this activity following two activities are required as DDRM lines can not be defined or maintained unless DDRM node itself is defined and maintained:

- A00006660 - DDRM Node Definition and Provisioning

  DMS CM part of DDRM provisioning has been implemented by this activity.

- A00006661 - DDRM Node Maintenance

  DDRM Node maintenance is implemented by this activity. And it is required to have a INSV DDRM node.

- A00006662 - DDRM Lines Inventory

DDRM lines are provisioned by this activity. In order to test supplementary services on DDRM this feature is required.

Also:

- DDRM node, internal software

  Mapping that is detailed in section 3.2.1.2 will be done internally in DDRM node. DMS recognizes DDRM as it has really Drawer Based architecture.And all of the DMS-X messages will be sent and get in this form.

1.5 Limitations and restrictions

Because of the fact that there is no enhancements targeted for DDRM it is required to verify whether existing RLCM call process has the similar problem during CALLP related tests.

1.6 Interactions

None.

1.7 Applicable customer facing sections

Fault Management

Logs _____

Alarms _____

Configuration

Data Schema _____

User Interface _____

Element Management _____

Security _____

Service Order _____

Office Parameters _____

Accounting (includes AMA billing) _____

1.8 Glossary

Term	Description
DDRM	DMS Dicle Remote Module
DRX-4	Dicle Rural Exchange-4
DTC	Digital Trunk Card
ESA	Emergency Stand Alone

Term	Description
LC	Line Card
LCM	Line Concentrating Module
RMM	Remote Maintenance Module
MCT	Malicious Call Trace
RLCM	Remote Line Concentrating Module

1.9 Recommended Reading/References

a. DMS_DDRM at FMDOC

b. A00006638 DDRM New Remote LCM High Level Design at PLS FMDO

Product = World Trade

A00006980--AMA Module Code 130 Flexibility
Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

This activity in ISN08 release is targeted to provide an optionality by datafill which allows the customer to append the Module Code 130 on tandem or terminating DMS-100 offices when a call is normally clear forwarded before the terminator goes off hook.

In fact, the AMA Module Code 130 is known as Termination Attributes Module and is appended to the AMA record when a treatment is applied to rejected or failed calls. A rejected call is a call that has not been answered and has been routed to a treatment or an announcement. There was an update in WT14 to conform the MC130 generation to this definition (that is also NTP 297-9051-800 definition). By this update, generation of MC130 was prevented for the calls that are clear forwarded before answer (not rejected and treated).

But, on this update, the Case 030316-85514 “Abort Swact due to Changes in AMA Module Code 130" was raised by a customer with the requirement to append MC130 again for the calls clear forwarded before the terminator goes

off hook as well as the rejected calls. To meet this requirement, the patch FBB45 (for WT15 and WT17) was provided to remove the WT14 update and to append MC130 as requested by the customer.

The main purpose of this activity is to remove the need for patch FBB45 and implement the same functionality under optionality control by datafill.

This optionality is provided by a new AMA option in Table AMAOPTS. The name of the new option is MC130_FOR_CLF and it is set to ON to activate this feature. If it is set to OFF, the MC130 is appended for only rejected calls as before.

1.3 Background Information

The following information is provided by the NTP 297-9051-800 “DMS-100 MMP AMA Reference Guide”.

AMA behavior for rejected calls:

For rejected calls, the record generation depends on whether the DMS is acting as:

- an originating node
- a terminating node
- a tandem node

- Originating node:

  Interworkings from a line origination to the following agents are supported by the SOC option BILL0003: Lines, Trunks, Attendant Consoles, and digital recorded announcement machines (DRAM).

  The call must route to treatment at this node so that the reject information is available. For such calls, the following information is captured:

  - Representation of the Treatment Code as applied to the originator.

  - Treatment origin and application. That is, where the call was rejected and where the treatment was applied.

- Terminating node:

  Interworkings from a trunk termination to the following agents are supported: Lines, Attendant Console and DRAM.

  This is supported if a treatment is set at the terminating node. This can result in a backwards release being sent from the terminator to the originator. For such calls the following information is provided:

  - Representation of the Release Cause indication as given in the backwards release message.

- Treatment origin and application. That is, where the call was rejected and where the treatment was applied.

  A terminating node can apply the treatment locally if required by datafill within table TMTMAP. In such a situation, the provision of the release cause is replaced by a numerical representation of the applied treatment.

  Note: In a situation where a backwards release has been sent and it is unable to determine the true release cause, a release cause of 16 (Normal Call Clearing) is used.

- Tandem node:

  Support is only provided for calls where either treatment is applied at this node or the release message is received by the CM (for example, interworking trunk types: BTUP-ETSI). No support is provided for calls where the release message is bounced by the XPMs (for example, same trunk types: BTUP-BTUP). The provided information is the same as when the DMS-100E switch acts as a Terminating Node.

  The information for rejected call recording is contained in the Module Code 130 appended to Structure Code in the main AMA record.

Existing behavior for Module Code 130:
The Module Code 130 contains the treatment applied to the call or the CCITT release reason (as appropriate) for rejected or failed calls.

Module code 130 is only produced with Module 025 (unanswered call), since a treated call has to be an unanswered call.

Table 1 Module Code 130 Format

Information	Table Number	Number Of BCD Characters
Identification for Termination Attributes Module Code 130	88	4
Facility Release Cause	338	6
Call Characteristic	339	4

Module Size: 7 Bytes.

Field 88 ‘Module code’ identifies a module of data fields that can be appended to the record.

Field 338 ‘Facility Release Cause’ contains the definition of reject reason or treatment.

The range 500-995, is a specific numerical representation of a treatment or release reason, depending on the value of the Call Characteristic Field (339).

If the Call Characteristic = 004, then the termination cause value represents the DMS treatment applied to the call. If the Call Characteristic = 005, then the termination cause value represents the CCITT release reason given in a backwards release message. For the mapping between the numerical values and treatment names, please refer to the NC0507FN document for the activity "Bellcore AMA (EBAF) Reject Call Recording".

Table 2 Field 338-Facility Release Cause

BCD Character	Meaning
1	Source Of Termination Signal 0 = Character Not Used (used) 1 = Calling Party **2 = Called Party** 3 = Originating Party 9 = Unknown
2	Context Of Termination Cause 0 = Character Not Used 1 = Completed **2 = Not Completed (used)** 9 = Unknown
3-5	Termination Cause 000 = Character Not Used 001 = Busy 002 = No Circuits 003 = Ringing **500-995 = Mapped Termination Reason** 999 = Unknown
6	Sign (hex C)

Field 339 'Call Characteristic' is used to record whether treatment has been applied locally (004) or externally (005) in Module 130. These values are used to interpret the numerical values defined in the termination cause field (338).

Table 3 Field 339-Call Characteristic

BCD Character	Meaning
1-3	001 = Intra-site 002 = Intra-citywide 003 = Least Cost Routing **004 = Treated Locally** **005 = Treated Externally** 006 = IN standard announcement 007 = Special announcement 008 = IN return error 009 = IN reject 999 = Unknown
4	Sign (hex C)

Necessary provision for MC130:
The capture of billing information from rejected calls is triggered by the option FLEXRJCT in table AMAXLAID and/or FLEXAMA. This option is referenced from the related translation tables. The FLEXRJCT option has the sub-field REJECTMOD. If this is set to Y, it appends the module 130 to the triggered AMA record. However only FLEXRJCT does not trigger an AMA record by itself. Also, the related SOC option must be active. The Order Code of this SOC option is BILL00003 and the name is “AMA Reject Call”.

A SOC (Software Optionality Control) option is a grouping of one or more functionalities to form a customer controllable unit. The state of an option (IDLE or ON) may be changed directly by the customer, on site, causing the option’s component functionality to change state.

If the FLEXRJCT option is encountered in translations, an AMA record will be produced for rejected calls. If the SOC option BILL0003 is ON and the boolean datafilled with FLEXRJCT is set to Y, Module Code 130 will be appended to the record.

1.4 Desired Behavior in this activity

In addition to the existing conditions given above to generate the MC130, it is requested to append this module on the transit and terminating DMS-100 nodes for the calls clear forwarded before the terminator goes off hook (i.e. no treatment is applied and a normal clearing cause produced). This requirement has already been provided by the patch FBB45 for a customer (for Case 030316-85514). The aim of this activity is to remove the need for the patch FBB45 by providing the same functionality under optionality control by datafill.

For this purpose, a new AMA option is created in the Table AMAOPTS. The name of the new option is MC130_FOR_CLF and it is set to ON to activate this feature. The default value is OFF for this option.

Figure 3 New AMA option MC130_FOR_CLF in Table AMAOPTS

```
TABLE: AMAOPTS
OPTION SCHEDULE
---------------
...
MC130_FOR_CLF ON
```

While activating and deactivating this option, a caution is printed as given below to indicate the change in the functionality:

For activation (ON state):

“This change results MC130 generation for unanswered calls clear forwarded normally”

For deactivation (OFF state):

“This change prevents MC130 generation for unanswered calls clear forwarded normally”

(For detailed information, please refer to the CN section of this activity.)

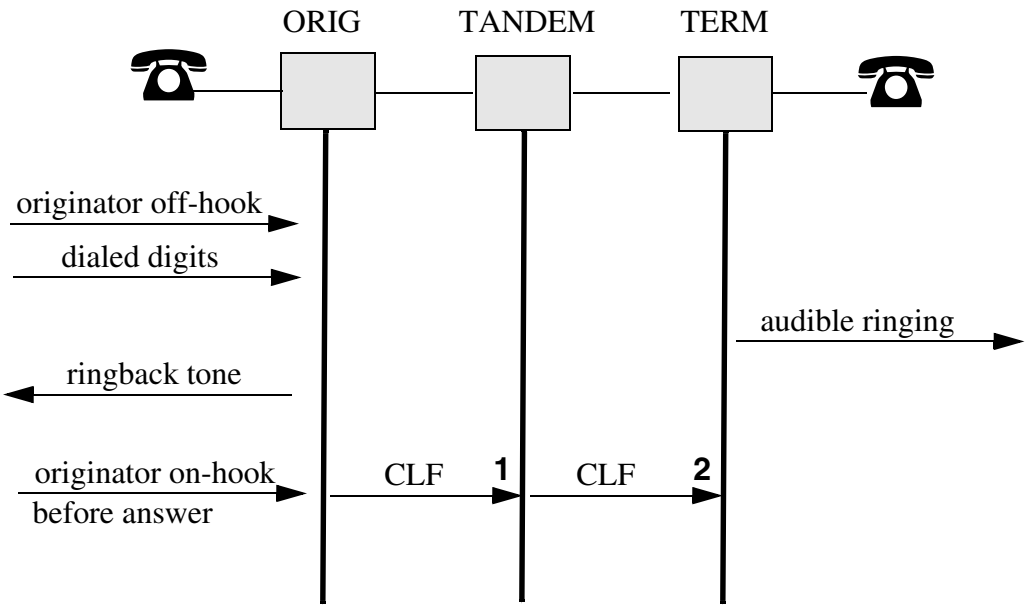
When the necessary provision (given in the “Section. 1.4 -Background Information” under the title “Necessary provision for MC130”) is done to generate the MC130 and the new option MC130_FOR_CLF is activated, then the MC130 is appended to the generated AMA record for the clear forward messages (CLF) before answer as well as the rejected calls. If the MC130_FOR_CLF is set to OFF, the MC130 is appended for only rejected calls as before.

Also, the option MC130_FOR_CLF is automatically set to ON over ONP if the patch FBB45 is active in the old side. This provides the continuity of the feature in the new side after transition. But this auto-activation facility is only for three releases from ISN08 (i.e. until ISN11).

Clear Forward Message (CLF) is the message indicating that the calling party (originator) goes on-hook in a call. When a PDTC receives a Release message, it sends a CLF message to CM to inform it for calling (originating) party release.

The following figure shows the case of the activated MC130_FOR_CLF option:

Figure 4 Functional Behavior



1,2: At these point(s), MC130 is generated on tandem or terminating DMS-100 nodes if the MC130_FOR_CLF is set to ON in Table AMAOPTS.

In this case: when the call is clear forwarded before the terminating agent goes off hook, the Module Code 130 is appended to the AMA records generated on the tandem or terminating DMS-100 offices.

The patch FBB45 was requested and tested with the following interworkings:

- IBN-ISUP(V2)-ISUP(V2)-IBN
- IBN-BTUP-BTUP-IBN
- IBN-DPNSS-DPNSS-IBN
- IBN-PRI-ISUP(V2)-IBN
- IBN-RBTUP-ISUP(V2)-IBN
- IBN-DPNSS-ISUP(V2) -IBN
- IBN-ISUP(V1)-PRI-IBN
- BRI-ISUP(V1)-PRI-IBN
- BRI-BTUP-BTUP-EBS
- EBS-DPNSS-ISUP(V2)-BRI

1.5 Hardware Requirements or Dependencies

No new customer hardware requirements or dependencies are introduced in this feature.

1.6 Software Requirements or Dependencies

No new customer software requirements or dependencies are introduced in this feature.

1.7 Limitations and restrictions

None.

1.8 Interactions

This feature uses the existing AMA/Billing framework and the existing components of this framework (MC130) with no change in their existing structures to realize customer's requirements.

1.9 Applicable customer facing sections

Fault Management

- Logs _____
- Alarms _____

Configuration

- Data Schema __X___
- User Interface _____
- Element Management _____
- Security _____
- Service Order _____
- Office Parameters _____

Accounting (includes AMA billing) _____

Performance (includes operational measurements) _____

1.10 Glossary

Term	Description
AMA	Automatic Message Accounting
CCITT	International Telegraph and Telephone Consultative Committee
CLF	Clear Forward Message

Term	Description
DMS	Digital Multiplex System
DRAM	Digital Recorded Announcement Machines
MC130	Module Code 130
MMP	Multi Market Product
SOC	Software Optionality Control
WT	World Trade (Non- North America contacts responsible for introducing products or solutions into new markets. Here it is used to identify a layer of the DMS software intended for the World Trade market. WT14, WT15 and WT17 are the particular releases of the WT software layer.

1.11 Recommended Reading/References

c. Request For Feature (RFF) 292 ‘Module 130 Optionality’ that is accessible from the link http://plm-pnd.europe.nortel.com/PLM/.

d. Design Document NC0507FN for the activity “Bellcore AMA (EBAF) Reject Call Recording”.

e. Design Document AG5040FN for the activity “AMA Billing Enhancements for Indirect Access, CLI Capture and Rejected”.

f. NTP 297-9051-800 “DMS-100 MMP AMA Reference Guide”

2: Configuration for A00006980

2.1 Hardware and Software Requirements

No new software and hardware requirements.

2.2 Initial Configuration

The following provisioning is already present and initially required to append Module Code 130 to the AMA record. For more details, please refer to the NTP 297-9051-800 “DMS-100 MMP AMA Reference Guide”.

The capture of billing information from rejected calls is triggered by the option FLEXRJCT in table AMAXLAID and/or FLEXAMA. This option is referenced from the related translation tables. The FLEXRJCT option has the sub-field REJECTMOD. If this is set to Y, it appends the module 130 to the triggered AMA record.

However only FLEXRJCT does not trigger an AMA record by itself. Also, the SOC option BILL0003 “AMA Reject Call” must be active.

2.3 Upgrade Impact

None.

2.4 Data schema (DS)

2.4.1 New/modified tables

Table 4 New or modified tables

Table name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
AMAOPTS	CHANGED (A new option is defined)	UNCHANGED

2.4.2 Table modification information

A new option is created in Table AMAOPTS. The name of the option is MC130_FOR_CLF and it is set to ON to activate this feature. The default value is OFF for this option.

While activating and deactivating this option, a caution is printed as given below to indicate the change in the functionality:

For activation (ON state):

“This change results in MC130 generation for unanswered calls clear forwarded normally”

For deactivation (OFF state):

“This change prevents MC130 generation for unanswered calls clear forwarded normally”

2.4.2.1 Datafill example

Figure 5 Activating the new option MC130_FOR_CLF.

```
>table AMAOPTS
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: AMAOPTS
>pos MC130_FOR_CLF
MC130_FOR_CLF OFF
>cha
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
AMASEL: OFF
>on
TUPLE TO BE CHANGED:
MC130_FOR_CLF ON
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
This change results MC130 generation for unanswered
calls clear forwarded normally.
TUPLE CHANGED
JOURNAL FILE INACTIVE
>
>pos MC130_FOR_CLF
MC130_FOR_CLF ON
>cha
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
AMASEL: ON
>off
TUPLE TO BE CHANGED:
MC130_FOR_CLF OFF
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
This change prevents MC130 generation for unanswered
calls clear forwarded normally.
TUPLE CHANGED
JOURNAL FILE INACTIVE
>
>pos MC130_FOR_CLF
MC130_FOR_CLF OFF
>
```

Figure 6 The view of the option MC130_FOR_CLF in Table AMAOPTS

```
TABLE: AMAOPTS
OPTION SCHEDULE
---------------
...
MC130_FOR_CLF ON
...
```

2.4.2.2 Functional description

This ISN08 activity is targeted to provide an optionality by datafill which allows the customer to append the Module Code 130 on tandem or terminating DMS-100 offices when a call is normally clear forwarded before the terminator goes off hook.

This optionality is provided by a new AMA option MC130_FOR_CLF in Table AMAOPTS.

If the MC130_FOR_CLF option is set to ON, MC130 is appended to the AMA records generated on the tandem or terminating DMS-100 offices for the clear forward messages (CLF) before terminator goes off hook, as well as the rejected calls.

If the MC130_FOR_CLF option is set to OFF, the MC130 is appended for only rejected calls as before.

2.5 Service Orders (SO) (CM & SESM)

Not applicable.

2.6 Software optionality control (SOC)

Not applicable.

2.7 Element Management

Not applicable.

2.8 Command interface changes

Not applicable.

2.9 Security

Not applicable.

2.10 Configuration Walkthrough

Not applicable.

Product = World Trade

A00007255--Dial Plan Enhancement for ETSI MWI TCAP

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 Introduction

As a brief explanation, MWI enables the DMS-100MMP product to communicate with Voice Mail Centers (CU, Controlling User) and to inform the MWI subscriber (RU, Receiving User) of pending voice mails. MWI SCCP/TCAP provides network wide transmission of MWI supplementary service messages using CCS7 SCCP/TCAP signalling.

This feature provides flexibility in setting the DN of MWI subscriber in ETSI SS7 TCAP message for MWI (Message Waiting Indication). This activity covers

- stripping NAC (National Access Code) from MWI agent's DN in outgoing TCAP
- delivering MWI request even the called DN parameter of incoming ETSI MWI TCAP is different than the DN of actual MWI agent.

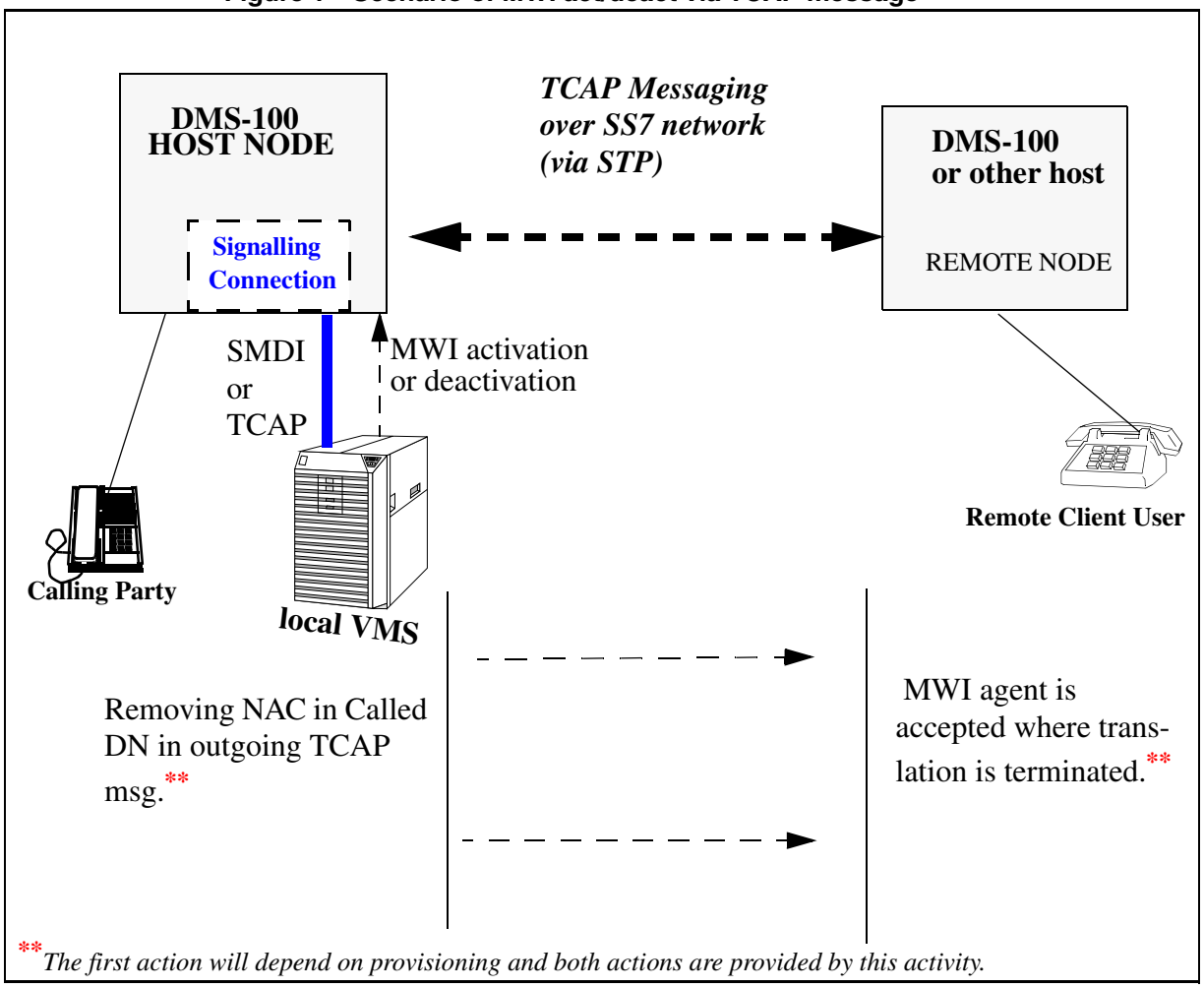
In existing functionality, while preparing MWI TCAP message, if the called DN (MWI agent) starts with NAC, NAC is removed from called DN by default. However, this issue causes translation problems in some markets which have some SNPA codes started with NAC.

Additionally, in existing functionality, the MWI agent DN should be same as the called DN in TCAP message in order to deliver MWI request even if the translation goes to correct agent. This activity changes this process, and the agent where translation is terminated is accepted as MWI agent even DN of this agent is different than the called DN in incoming TCAP msg.

1.2.2 General Considerations

This feature only affects the called DN parameter of EMWI TCAP message, the handling & sending of EMWI TCAP message is not changed/affected by this feature. The related scenario of EMWI is as shown in Figure 1.

Figure 1 Scenario of MWI act/deact via TCAP message



The first action mentioned above is provided as optional via provisioning of newly defined tuple ETSI_MWI in ISERVOPT table.

1.2.3 Provisioning parameters in ISERVOPT table

There is new tuple defined for this feature in ISERVOPT table, and this tuple should be provisioned appropriately in order to make this feature work. This new tuple (EMWI) includes the following parameters:

- **DEFAULT_MWI_XLA_ENTRY**: indicates that the incoming TCAP message for ETSI MWI request is translated according to entered line attribute. This functionality is already provided via office parameter DEFAULT_MWI_XLA_ENTRY by activity A59017265. This office parameter is moved to this ETSI MWI tuple in ISERVOPT table to present whole ETSI MWI provisioning in one place.
- **ALLOW_NAC_IN_TCAP**: indicates that NAC is allowed or not in called DN field of TCAP message sent for MWI activation/deactivation

The ISERVOPT table can be datafilled as follows:

Figure 2 Example of datafilling EMWI tuple

```
TABLE: ISERVOPT
 >add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
SOPTSKEY:
>EMWI
OPTION:
>EMWI
DEFAULT_XLA_ENTRY:
>100
ALLOW_NAC_IN_TCAP:
>n
TUPLE TO BE ADDED:
EMWI EMWI 100 N
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

The tuple can be seen from the listing of ISERVOPT table as follows:

Figure 3 The View of EMWI Tuple in ISERVOPT Table

```
>table iservopt

  SOPTSKEY SOPTSVAR
 -----------------
 EMWI EMWI 100 N
```

While EMWI TCAP message is received, the remote switch tries to find that MWI agent is residing within the switch or not by translating the called DN according to entered line attribute in DEFAULT_MWI_XLA_ENTRY.

Please refer to APPENDIX A for EMWI translation/datafill examples.

1.3 Hardware Requirements or Dependencies

N/A

1.4 Software Requirements or Dependencies

N/A

1.5 Limitations and restrictions

- This feature is applicable for only ETSI MWI TCAP messages.
- MWI request may be delivered to the MWI agent which translation is terminated without comparing called DN in EMWI TCAP msg and the DN of MWI agent.

1.6 Interactions

N/A

1.7 Glossary

Term	Description
CCS7	Common Channel Signalling number 7
EMWI	ETSI Message Waiting Indication
MWT	Message Waiting (Line option for analogue lines)
SCCP	Signaling Connection Control Part
TCAP	Transaction Capabilities Application Part
VMS	Voice Mail Service

1.8 Appendix A: Datafill / Translation examples for EMWI

1.8.1 EXAMPLE 1: MWI agent resides within the local switch where VM is connected directly

TABLE TERMDEV

TCO4S0_3 0 23 SMDI B2400 EIA 1X67BC NONE N NONE ALL N

TABLE SLLNKDEV

TCO4S0_3 1X67 NONE NONE INOUTLK
(SMDIDATA (NUMOFDIGS 10) (XLA_ENTRY 1) (CGNADDRDN) $)$

VM DN: (Hunt Group)

>qdn 1027835466

```
--------------------------------------------------------------------------------
DN:     7835466
TYPE: PILOT OF DNH HUNT GROUP
SNPA: 102   SIG: DP    LNATTIDX: N/A
HUNT GROUP:  1000        HUNT MEMBER:  0
LINE EQUIPMENT NUMBER:     HOST  02 0 00 10
LINE CLASS CODE:  IBN
IBN TYPE: STATION
CUSTGRP:        CUST783     SUBGRP: 0  NCOS: 0
CARDCODE:  6X93AA    GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER     :    44
PM TERMINAL NUMBER :    11
OPTIONS:
DP
GROUP OPTIONS:
RCVD SMDI 63 TCO4S0_3
MEMBER INFO:

--------------------------------------------------------------------------------
```

The translation should be like:

- Assume that VMS sends the MWI request for DN ‘1027835304’. Please note that the TRAVER is performed from VM DN for only simulating. The important points here are

  - The line attribute index should be equal to XLA_ENTRY field of related SMDI link datafilled in SLLNKDEV table.
  - There should be an MWI agent associated with this DN sent by VMS in local switch.

```
>traver l 1027835466 1027835304 b
TABLE IBNLINES
HOST 02 0 00 10 0 DP STN IBN 7835466 CUST783 0 0 102 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
INAP Origination Attempt TDP:  no subscribed trigger.
INAP Info Collected TDP:  no subscribed trigger.
TABLE NCOS
CUST783 0 0 0 $ ( XLAS NETXLA STARCEPT NDGT) ( OCTXLA OCTCEPT)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
```

CUST783 NXLA NETXLA NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE IBNXLA: XLANAME NETXLA
TUPLE NOT FOUND
Default from table XLANAME:
NETXLA
(NET N Y 0 N NDGT N Y GEN (LATTR 1 102_NPRT_1 NLCA_NILLA_1) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
1 IBN NONE NT 0 0 NILSFC 0 PX NETXLA NIL 00 102_NPRT_1 NLCA_NILLA_1 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
102_NPRT_1 NSCR 102 NPRT NONE N $ GG
TABLE RATEAREA
NLCA_NILLA_1 NLCA NIL NILLATA $
TABLE PXHEAD
NETXLA SDFLT NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 1027835304
TABLE PXCODE
NETXLA 102783 102783 DNRTE (DN 102 783)$
TABLE TOFCNAME
102 783 $
TABLE DNINV
102 783 5304 L HOST 02 0 00 18
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
INAP Info Analyzed TDP: no subscribed trigger.
INAP Route Select Failure TDP: no subscribed trigger.
INAP Termination Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE 1027835304 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 MESAJ4
2 2WIBN7AB

+++ TRAVER: SUCCESSFUL CALL TRACE +++

The QDN output of MWI agent :
>qdn 1027835304

DN: 7835304
TYPE: SINGLE PARTY LINE
SNPA: 102 SIG: DT LNATTIDX: N/A
LINE EQUIPMENT NUMBER: HOST 02 0 00 18
LINE CLASS CODE: IBN
IBN TYPE: STATION
CUSTGRP: CUST783 SUBGRP: 0 NCOS: 0

CARDCODE: 6X93AA GND: N PADGRP: STDLN BNV: NL MNO: N
PM NODE NUMBER : 44
PM TERMINAL NUMBER : 19
OPTIONS:
DGT **MWT STD N N N**

1.8.2 **EXAMPLE 2:** MWI agent resides within the REMOTE switch

In this case, there are two possibilities:

- ALLOW_NAC is Y, which corresponds to the Called DN in outgoing TCAP msg. could be started with NAC (National Access Code).
- ALLOW_NAC is N, which corresponds to the Called DN in outgoing TCAP msg. could not started with NAC, and NAC is stripped.

TABLE: OFCENG

NATIONAL_ACCESS_CODE 0

1.8.2.1 The example for ALLOW_NAC is Y.

TABLE: ISERVOPT

EMWI EMWI 100 **Y**

VM sends the MWI request for the DN ‘0297835304’, local DMS decides to send EMWI TCAP message (which means MWI agent is in remote office) if the following conditions are met:

- there should be no agent associated with this DN in originating (local) office,
- the translation should be terminated to EISUP trunk

The translation example in local office would be like:

>traver l 1027835466 **0297835304** b
TABLE IBNLINES
HOST 02 0 00 10 0 DP STN IBN 7835466 CUST783 0 0 102 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL

INAP Origination Attempt TDP: no subscribed trigger.
INAP Info Collected TDP: no subscribed trigger.
TABLE NCOS
CUST783 0 0 0 $ (XLAS NETXLA STARCEPT NDGT) (OCTXLA OCTCEPT)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
CUST783 NXLA NETXLA NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE IBNXLA: XLANAME NETXLA
TUPLE NOT FOUND
Default from table XLANAME:
NETXLA
(NET N Y 0 N NDGT N Y GEN (LATTR 1 102_NPRT_1 NLCA_NILLA_1) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
1 IBN NONE NT 0 0 NILSFC 0 PX NETXLA NIL 00 102_NPRT_1 NLCA_NILLA_1 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
102_NPRT_1 NSCR 102 NPRT NONE N $ GG
TABLE RATEAREA
NLCA_NILLA_1 NLCA NIL NILLATA $
TABLE PXHEAD
NETXLA SDFLT NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 0297835304
TABLE PXCODE
NETXLA 029783 029783 RTE (DEST 151) (CLASS NATL)$
TABLE: PXRTE
KEY: NETXLA 151
. S OGISP2AB
EXIT TABLE PXRTE
INAP Info Analyzed TDP: no subscribed trigger.
INAP Route Select Failure TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGISP2AB 0297835304 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 MESAJ4
2 2WIBN7AB

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>clliref search OGISP2AB (verifying that it's the EISUP trunk)

CLLI "OGISP2AB" occurs in the following tuples:
Table Key: Sub Tuple
-------- -------> ----------
CLLI OGISP2AB 215 200 OG_CCITT_Q767_ISUP_TRK
TRKGRP OGISP2AB IBNTO 0 NPDGP NCRT CUST783 0 MIDL ANSDISC 0 N 0 0 0 0 Y N N N N N NATL $
PXRTE NETXLA 151 (S OGISP2AB) $
ISUPDEST OGISP2AB 0 AB_ROUTES
PSTNTRK OGISP2AB N
N7TRKMEM OGISP2AB 0 3 10
CLLIMTCE OGISP2AB OGISP2 5 10 15 NSS 0 0 N N (1)
TRKSGRP OGISP2AB 0 DS1SIG C7UP OG N N UNEQ NONE **Q767** THRH 0 DMS N N BASE 100_WHITE $ OGN7
TRKMEM OGISP2AB 0 0 PDTC 12 2 7
TRKNAME 215 OGISP2AB
C7TRKMEM OGISP2AB 0 106
==========
Total of 11 occurrences of OGISP2AB

And, when the incoming TCAP message is received in remote switch, it's translated according to the line attribute datafilled in DEFAULT_MWI_XLA_ENTRY (datafilled as '100' in example) as follows:

>traver tr icisp2ba **0297835304** b
TABLE TRKGRP
ICISP2BA IBNTI 0 NPDGP NCRT CUST783 0 2 7675451 ANSDISC 0 Y N N N N N Y 0 0 N N
N N N $ NATL $
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
INAP Origination Attempt TDP: no subscribed trigger.
TABLE NCOS
TUPLE NOT FOUND
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
CUST783 NXLA NETXLA NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
INAP Info Collected TDP: no subscribed trigger.
TABLE IBNXLA: XLANAME NETXLA
TUPLE NOT FOUND
Default from table XLANAME:
NETXLA
(NET N Y 0 N NDGT N Y GEN (LATTR 100 102_NPRT_1 NLCA_NILLA_1) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
100 NLCC NONE NT 0 0 NILSFC 0 PX PTTXLA NIL 00 102_NPRT_1 NLCA_NILLA_1 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
102_NPRT_1 NSCR 102 NPRT NONE N $ GG
TABLE RATEAREA
NLCA_NILLA_1 NLCA NIL NILLATA $
TABLE PXHEAD
PTTXLA DFLT TRMT (OFC VACT)$ NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 0297835304
TABLE PXCODE
PTTXLA 029783 029783 DNRTE (DN 029 783)$
TABLE TOFCNAME
029 783 $
TABLE DNINV
029 783 5304 L HOST 02 0 00 18
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
INAP Info Analyzed TDP: no subscribed trigger.
INAP Route Select Failure TDP: no subscribed trigger.
INAP Termination Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE 0297835304 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 MESAJ4

+++ TRAVER: SUCCESSFUL CALL TRACE +++

1.8.2.2 The example for ALLOW_NAC is N.

TABLE: ISERVOPT

EMWI EMWI 100 **N**

The translation in local switch is same as in previous case where ALLOW_NAC is Y. The difference here is EMWI TCAP msg. sent to local office includes the called DN as ‘297835403’ because NAC is stripped from called DN.

So that, in this case translation in terminating office should be like:

>traver tr icisp2ba **297835304** b
TABLE TRKGRP
ICISP2BA IBNTI 0 NPDGP NCRT CUST783 0 2 7675451 ANSDISC 0 Y N N N N N Y 0 0 N N
N N N $ NATL $
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
INAP Origination Attempt TDP: no subscribed trigger.
TABLE NCOS
TUPLE NOT FOUND
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
CUST783 NXLA NETXLA NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
INAP Info Collected TDP: no subscribed trigger.
TABLE IBNXLA: XLANAME NETXLA
TUPLE NOT FOUND
Default from table XLANAME:
NETXLA
(NET N Y 0 N NDGT N Y GEN (LATTR 100 102_NPRT_1 NLCA_NILLA_1) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
100 NLCC NONE NT 0 0 NILSFC 0 PX PTTXLA NIL 00 102_NPRT_1 NLCA_NILLA_1 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
102_NPRT_1 NSCR 102 NPRT NONE N $ GG
TABLE RATEAREA
NLCA_NILLA_1 NLCA NIL NILLATA $
TABLE PXHEAD
PTTXLA DFLT TRMT (OFC VACT)$ NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE: 297835304
TABLE PXCODE
PTTXLA 29783 29783 DNRTE (DN 029 783)$
TABLE TOFCNAME
029 783 $
TABLE DNINV
029 783 5304 L HOST 02 0 00 18
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
INAP Info Analyzed TDP: no subscribed trigger.
INAP Route Select Failure TDP: no subscribed trigger.
INAP Termination Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE 0297835304 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 MESAJ4

+++ TRAVER: SUCCESSFUL CALL TRACE +++

2: Configuration for A00007255

2.1 Hardware and Software Requirements

2.2 Initial Configuration

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

2.3.1 New/modified office/subnet parameters

Table 1 New or modified parameter

Parm table	Parameter name	NEW/CHANGED/DELETED/RELOCATED	Domain (CM or Subnet Management
OFCENG	default_mwi_xla_entry	DELETED	

2.3.2 Parameter information

2.3.2.1 DEFAULT_MWI_XLA_ENTRY

<DEFAULT_MWI_TRANSLATION_ENTRY>

2.3.2.1.1 Functional description

This parameter is already provided by the activity A59017265, please refer to the OP section of this activity for more details.

As a brief explanation, this office parameter provides a default entry point to translations for ETSI MWI requests. For the ETSI MWI implementation, message waiting indication requests run through universal translations to determine the receiving user of the request.

2.3.2.1.2 Provisioning rules

This office parameter is removed by this activity and it's moved to newly defined EMWI tuple in ISERVOPT tuple as a parameter with same name. So that all the provisioning of ETSI MWI could be performed in same place.

2.3.2.1.3 Range information

There is no change in range of this office parameter.

Table 2 Range Information

Minimum	Maximum	Default
0 alphanumeric characters	16 alphanumeric characters	NIL string

2.3.2.1.4 Activation

Immediate

2.3.2.1.5 Dependencies
String must exist as tuple key in table LINEATTR.

2.3.2.1.6 Consequences
If not present MWI requests incoming on TCAP cannot be processed. Default value not available for SMDI interfaces.

2.3.2.1.7 Verification
Perform traver for incoming ISUP V2 and check line attributes index being used.

2.3.2.1.8 Memory requirements
No memory impact.

2.3.2.1.9 Parameter release history update
Deleted. (moved into EMWI tuple in ISERVOPT table, additionally this parameter will be automatically transferred during ONP)

2.4 Upgrade Considerations

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 3 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
ISERVOPT	Changed	Unchanged

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: ISERVOPT
This table is used to configure switch wide information for service related feature.

2.5.2.1.1 Functional description
This activity introduces a new tuple named as EMWI in ISERVOPT table.

Fields of the EMWI tuple:

- **DEFAULT_MWI_XLA_ENTRY**: indicates that the incoming TCAP message for ETSI MWI request is translated according to entered line attribute. This functionality is already provided via office parameter DEFAULT_MWI_XLA_ENTRY by activity A59017265. This office parameter is moved to this ETSI MWI tuple in ISERVOPT table to present

whole ETSI MWI provisioning in one place. The functionalities of this field are same as the old office parameter as indicated below.

In case the controlling user sending the request is ETSI TCAP this field is always used to get the line attributes index to be used to access the translation system and name of the index in table LINEATTR.

In case the controlling user is SMDI, this field is used to enter universal translation, as stated above, if the line attributes index is not datafilled for the SMDI link in table SLLNKDEV.

If this field is left empty (NIL), which is default datafill, ETSI MWI functionality is deactivated for TCAP controlling users.

If this field is left empty and no XLA_ENTRY option is datafilled in table SLLNKDEV, ETSI MWI functionality is deactivated for SMDI controlling users.

- **ALLOW_NAC_IN_TCAP**: indicates that NAC is allowed or not in called DN field of TCAP message sent for MWI activation/deactivation

2.5.2.1.2 Usage sequence and implications (CM Only)

There is no requirement to datafill tables in a specific order.

2.5.2.1.3 Size

Table 4 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
ISERVOPT	0	1	

2.5.2.1.4 Fields/OIDs

The following table lists fields/OIDs for EMWI tuple of table ISERVOPT.

Table 5 Field descriptions for EMWI tuple in ISERVOPT table

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
SOPTSKEY	NEW		EMWI	This is the key in ISERVOPT
OPTION	NEW		EMWI	This is the option name
DEFAULT_MWI_XLA_ENTRY	NEW		LINEATTR_KEY	Translation of incoming ETSI MWI message is done according to this LATTR index.
ALLOW_NAC_IN_TCAP	NEW		Y, N	indicates NAC is allowed or not in outgoing ETSI MWI TCAP message.

2.5.2.1.5 Datafill example

The following example shows sample datafill for table ISERVOPT.

```
TABLE: ISERVOPT
 >add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
SOPTSKEY:
>EMWI
OPTION:
>EMWI
DEFAULT_XLA_ENTRY:
>100
ALLOW_NAC_IN_TCAP:
>n
TUPLE TO BE ADDED:
EMWI EMWI 100 N
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

The tuple can be seen from the listing of ISERVOPT table as follows:

Figure 1 The View of EMWI Tuple in ISERVOPT Table

```
>table iservopt

  SOPTSKEY SOPTSVAR
 -----------------
 EMWI EMWI 100 N
```

2.5.2.1.6 Table release history update

2.5.2.1.7 Supplementary information

If MARKET_OF_OFFICE is AUSTRALIA, ALLOW_NAC field is set as ‘Y’ by default in order not to affect existing behavior since this functionality is already provided for this market before.

This EMWI tuple automatically added/updated during the ONP.

2.5.2.1.8 Translation verification and other tools

ISERVOPT table does not use translation verification tools.

Product = World Trade

A00007349--CPC Screening support for FDCP Trunks

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

This feature implements Calling Party Category (CPC) routing on the MMP-100 for MFC trunks using the FDCP platform. The global CPC routing functionality was implemented on the DMS-MMP by feature AJ5343 "*Calling Party Category Routing*" and by feature A59028780 "*Call Control and Universal Screening*". Our feature does not attempt to change the existing CPC routing functionality, but rather to allow FDCP trunks to support CPC routing. All the FDCP variants will be supported.

There is the feature A59014287 in MMP-100 that provides CPC routing for Brazilian R2/MFC trunks. However, the use of this feature was limited due to MFC signalling limitations allowing requests to CPC only after all the called digits were already collected. It really restricts use of CPC routing for such call scenarios as overlap or end-to-end, which are routed to the terminator in the early stages of digit collection before CPC is received.

The FDCP platform allows "quick" request of CPC in the earliest stages of digit collection, after the 1st called digit or after the 1st digit report. It is very important that early CPC request does not include the request of the calling number that "eats" a lot of real time.

This feature adds CPC routing support for FDCP incoming trunks based on the quick CPC request. This feature is based on the possibility of the FDCP platform getting CPC not only as a result of the CPC / CLI request (in the SMP_EVENT_INFO message) but also after the first called digit (in the SMP_SETUP_REQUEST message). It is handled by the option QUICK_REQ in the R2PROT table.

The detailed description of '**CPC Screening support for FDCP Trunks**' requirements may be found in the Product Spec "New flow of signals and

restriction of incoming call in according calling party category (CPC)", (see **CPC_TRANSLATION.AA01** in the TLDOC library).

1.2.1 CPC screening - General

This feature should provide CPC screening for FDCP incoming calls. This category may be received, CPC is received either in SMP_EVENT_INFO message or in SMP_SETUP_REQUEST message. For more details see section 1.2.1.3.

The general view of the feature functionality is shown below. In Figure 2 the CPC is received in the SMP_EVENT_INFO message as result of CPC/CLI request. In Figure 3 the CPC is received in the SMP_SETUP_REQUEST message.

The CPC screening process is not described here, for more information please refer to the documents AJ5343, A59028780 or A59014287. The brief description of the tables used by the CPC screening is found below in section "1.2.1.1 CPC screening using CPCRTE option." on page 894. and in section "1.2.1.2 CPC screening using CALLCNTL table." on page 895.

Figure 2 CPC as result of CPC/CLI request (in SMP_EVENT_INFO).

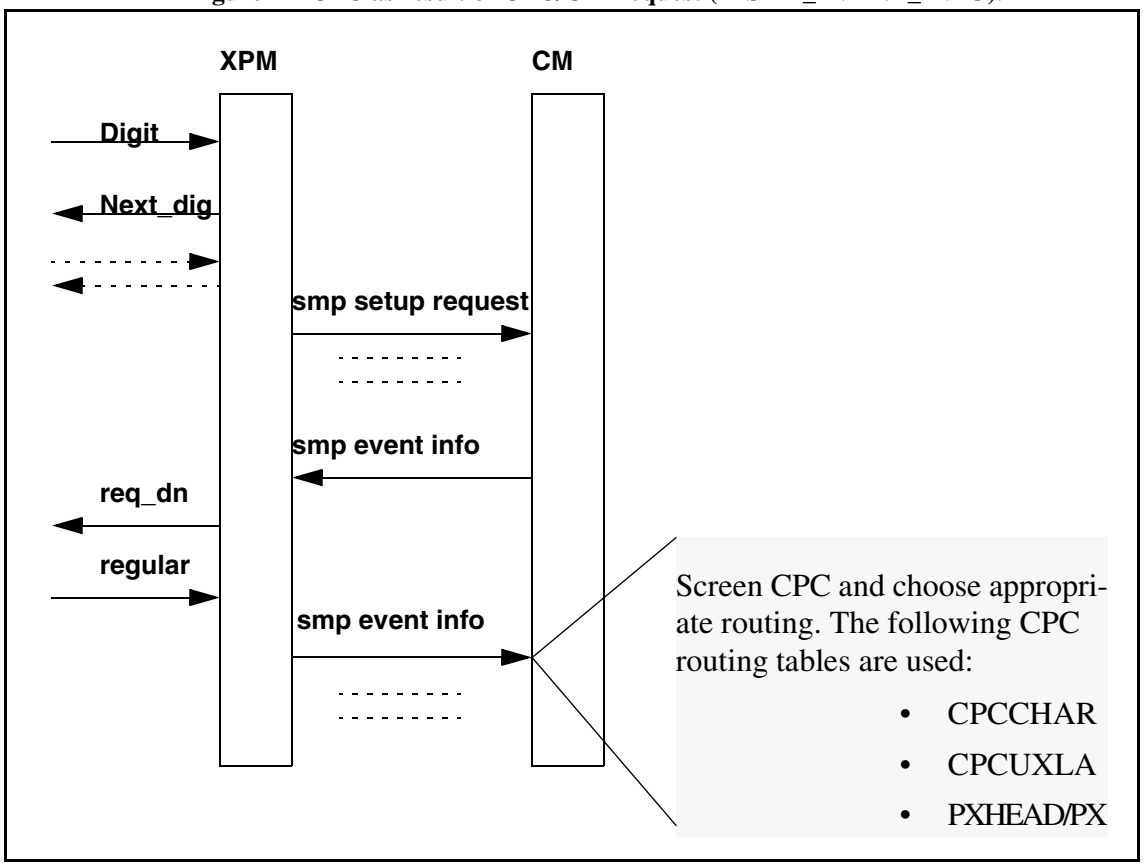
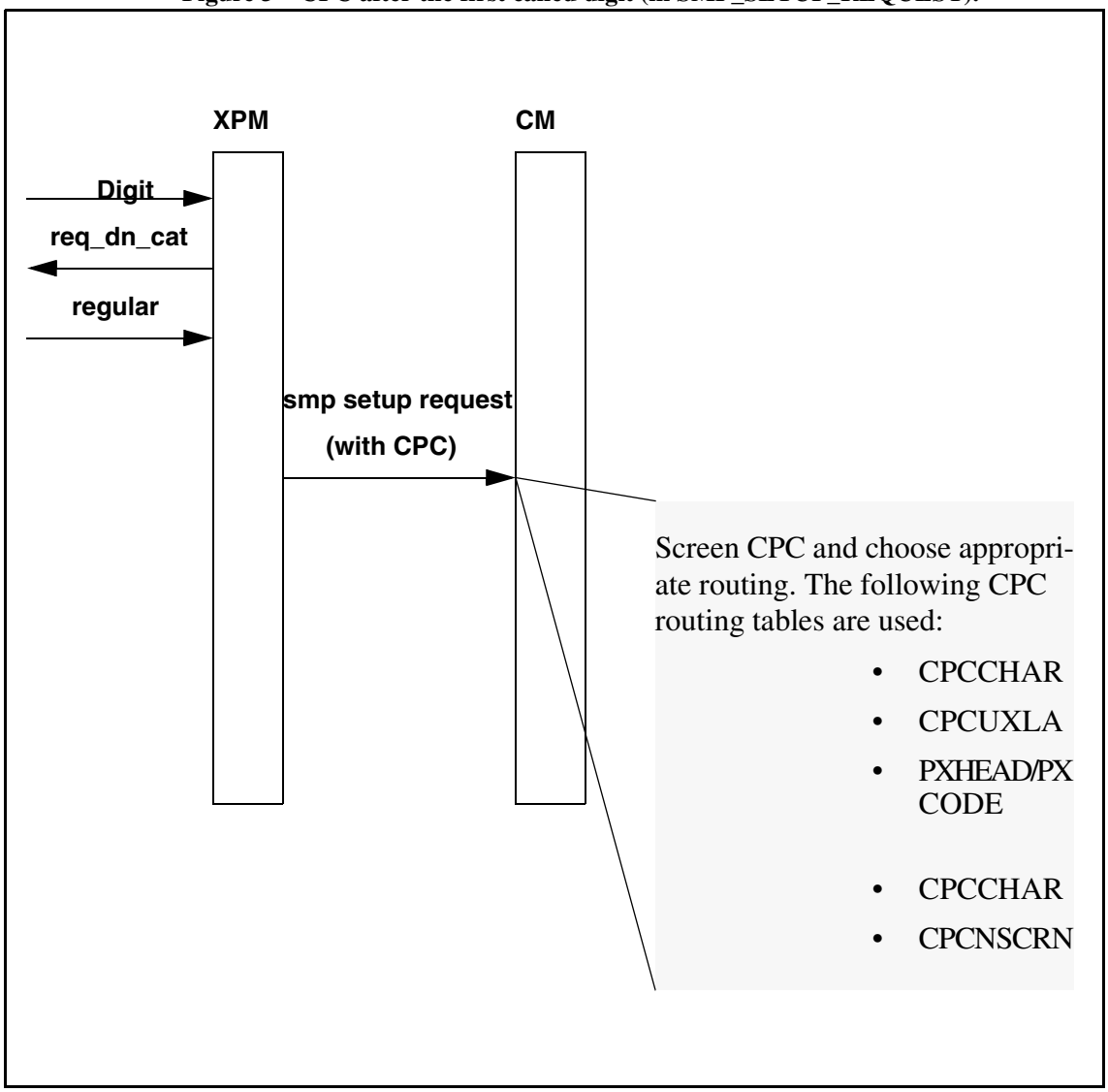


Figure 3 CPC after the first called digit (in SMP_SETUP_REQUEST).



1.2.1.1 CPC screening using CPCRTE option.

For CPC screening, for FDCP incoming calls, the QUICK_REQ option in table **R2PROT** should be defined with the value CAT_AFTER_1_DIG or ANI_AFTER_1_DIG. For more details see section “1.2.1.3 Quick Category Request in FDCP platform - background.” on page 895.

This is the usual method of CPC screening, which is described in detail in the documents AJ5343 and A59014287. We illustrate here a brief description of CPC routing for this case.

The CPC screening is based on use of the CPCRTE option in the xxHEAD/xxCODE tables. The following tables are used to control CPC screening.

- Table **CPCCHAR** - assigns a unique name to a set of one or more protocol specific CPC values. This name is the CPCNAME key, it is then used to route the call. The detailed description of changes in this table is found in section 1.2.2.
- Table **CPCUXLA** - performs routing based on CPCNAME for the Universal translation system. This table matches a CPCNAME and a current Universal translation name datafilled in xxHEAD/xxCODE tables. If a match is found, the alternative route is chosen.
- Option **CPCRTE** - triggers entry into the CPCUXLA table. This option is assigned in the **xxHEAD/xxCODE** translation tables. If the CPCRTE option is encountered, the table CPCUXLA is used to route the call based on CPCNAME.

1.2.1.2 CPC screening using CALLCNTL table.

For CPC screening, for FDCP incoming calls, the QUICK_REQ option in table **R2PROT** should be defined with the value CAT_AFTER_1_DIG or ANI_AFTER_1_DIG. For more details see section "1.2.1.3 Quick Category Request in FDCP platform - background." on page 895.

The method is controlled by the TRKOPTS and CALLCNTL tables (See feature A59028780). The following tables are used here:

- Table **TRKOPTS** - defines the CCNTLIDX option for the incoming trunk, which triggers entry into CALLCNTL table.
- Table **CALLCNTL** - refers to the appropriate index in table CPCNSCRN according to the SCRN_OPTION.
- Table **CPCNSCRN** - performs alternative route based on CPCNAME from the CPCCHAR table.
- Table **CPCCHAR** - assigns a unique name to a set of one or more protocol specific CPC values. This name is the CPCNAME key, it is then used to route the call. The detailed description of changes in this table is found in section 1.2.2.

1.2.1.3 Quick Category Request in FDCP platform - background.

In order to implement CPC screening for the FDCP protocol, category should be delivered early enough, before the translation process is completed. In MFC, calls CPC (and CLI) are usually requested after all the called digits are already collected in the switch. At this stage translation is already completed.

In order to provide category in the proper time, we use the QUICK_REQ option in the R2PROT table for FDCP incoming trunks with one of the

following values: ANI_AFTER_1_DIG or CAT_AFTER_1_DIG. See the datafill examples below.

Figure 4 Datafill of R2PROT table

```
TABLE R2PROT

GEOPROT (40 41 40 41) (42 43 42 43) (40 44 44 41) (42 44 44
43)
(42 43 42 46) $ GEORGOG GEORGIC FDCP GEORGCAT
(QUICK_REQ  ANI_AFTER_1_DIG)$

GEOPROT1 (40 41 40 41) (42 43 42 43) (40 44 44 41) (42 44
```

The option QUICK_REQ in the R2PROT table, introduced by the feature A59011824, allows request of CPC / CLI at the earliest stages of the call. The possible values of QUICK_REQ are:

- *CAT_AFTER_1_DIG* - CPC without CLI is requested after the 1st called digit
- *CAT_AFTER_LAST_DIG* - CPC without CLI is requested after all the called digits are collected
- *ANI_AFTER_1_DIG* - CPC and CLI are requested after the 1st called digit
- *ANI_AFTER_1ST_REP* - CPC and CLI are requested after the 1st report, SMP_SETUP_REQUEST message was received in CM.

As mentioned above, the values ***CAT_AFTER_1_DIG*** and ***ANI_AFTER_1_DIG*** should be used.

If the option ***QUICK_REQ ANI_AFTER_1_DIG*** is defined in the R2PROT table, the CPC that was received after the first called digit as a result of the CPC / CLI request is provided, as usual, in the *SMP_EVENT_INFO* message.

For option ***QUICK_REQ CAT_AFTER_1_DIG*** in the R2PROT table, the CPC, that was received after the first called digit as a result of the CPC request, is included in the *SMP_SETUP_REQUEST* message in field “Calling Party Category”.

In Figure 5 below, the MP_SETUP_REQUEST is received with 3 called digits and with the MTC_EQ category (decimal value 18).

Figure 5 After the first called digit (SMP_SETUP_REQUEST message) with CPC.

```
INCOMING 12:20:15.877 NODE TYPE= LTC_NODE SMP_SETUP_REQUEST_MSG
NN= 0064 TN= 0142 MSGTAG= 00 ROUTE= 4000 ERROR= 00
LENGTH= 21
AGENT= CKT ORIRM2 1
09 03 14 00 00 B8 00 01 12 81 1F 00 F0 DF FF FF 02 00 03 8F 00 3F A5
0A 00

   Message Type: SMP_SETUP_REQUEST_MESSAGE
   Fixed Part:

      Message Length: 20
      Format Discriminator: 00
      Map to SMP Bool: N
      Protocol Variant: FDCP_BASIC
      Protocol Class: CLASS_PTS

   Progress Indicator Location: NIL PI LOCATION
   Progress Indicator Description: NIL PI DESCRIPTION
   Bearer Capability Name: SPEECH
   Emergency Setup Message: N
  Calling Party Category: 18
   Calling Party Category Class: UNKNOWN
   Local Setup Ack bool: N
   Set Data : NOT REQUIRED
   User Rate: NIL
   ITC name: SPEECH
   Teleservice: TELEPHONY
   Transaction Id Value: 0
   Transaction Id Flag: THIS SIDE ORIG
   Setup Request Status Fields:

      Satellite: NONE
      Continuity: NIL
      Echo Suppressor: NIL
      National: NIL
      End to End Method: NIL
      Routing control indicator: RCI NOT ALLOWED
      Interworking: NIL
      End to End Information: NIL
      C7 Indication: NIL
      C7 Preferred: NIL
      ISDN Originator Access: NIL
```

1.2.2 Routing for Matched CPC using CPCRTE option.

Table CPCCHAR is used to convert the protocol's CPC value into a generic protocol independent CPCNAME. This CPCNAME is then used for routing the call.

Each tuple in CPCCHAR comprises of a CPCNAME followed by a list of protocols. Currently valid protocols are: BTUP, BZR2, ETSIISUP, FTUP, BZISUP, REDBKTUP and BZTUP.

This feature adds to this set the **FDCP** protocol for MFC trunks using the FDCP platform. The fields in the CPCCHAR table for the FDCP protocol are shown in the table below.

Table 6 Field entries to CPCCHAR table for FDCP protocol

Field	Entry	Range
CPCNAME (key)	Unique CPCNAME	Alphanumeric
PROTOCOL	Protocol selector	FDCP
FDCP refinement	List of 1 to 16 CPC values	CP_ACTIVITY type

Example of CPCCHAR datafill for the FDCP protocol can be seen below.

Figure 6 Example of CPCCHAR datafill for FDCP protocol

```
TABLE: CPCCHAR
CPCKEY                                          PROTLIST
-------------------------------------------------------------------
BLOCKCPC  (FDCP  (MTC_EQ)  (LOCAL_COIN)  $) $
```

When an incoming FDCP call CPC is received, the procedure CPCCHAR_PARAMETER_LOOKUP is used to pass a cpcchar protocol ID (in our case - FDCP) and the received CPC. It then searches table CPCCHAR for a match. If a match is found, it stores the CPCINDEX for the matching tuple in the extension block.

If one of the categories mentioned in the list above (see Figure 6) is received, the call is sent to the alternative route according to the table CPCUXLA.

Example of TRAVER for the CPC is found below, (see Figure 6). The table CPCCHAR is filled as shown above in Figure 5. The category received is LOCAL_COIN.

Figure 7 Traver for CPC as result of CPC / CLI request (in SMP_EVENT_INFO).

```
>traver tr orirm2 500002 b
TABLE TRKGRP
ORIRM2 IBNTI 0 LCO NCRT TRKPSTN 0 0 N ANSDISC 0 N N N N
N N N 0 0 N N N N N $
   NATL (ANIREC ALWAYS) (ANIFAIL CONT ) $
Originator is not an EIN agent, therefore EIN info is not processed.
TABLE NCOS
TRKPSTN 0 0 0 TRK ( XLAS PRTRK0 NXLA NDGT)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA,
FEATXLA, VACTRMT, AND DIGCOL
TRKPSTN NXLA CXTRK NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
Originator is not an EIN agent, therefore EIN info is not processed.
TABLE IBNXLA: XLANAME PRTRK0
TUPLE NOT FOUND
Default from table XLANAME:
PRTRK0
   (NET N N 0 N NDGT N Y GEN (LATTR 1000 TRKPLAN
NLCA_NILLA_0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
1000 NLCC NONE NT 0 0 NILSFC 7 PX TAND NIL 00 TRKPLAN
NLCA_NILLA_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
TRKPLAN NSCR 250 NPRT NONE N $ $
TABLE RATEAREA
NLCA_NILLA_0 NLCA NIL NILLATA $
TABLE PXHEAD
TAND DFLT CONT ( XLT PX TANDPXLA)$ NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
500002
TABLE PXCODE
TUPLE NOT FOUND
DEFAULT FROM HEAD TABLE USED
TABLE PXHEAD
TANDPXLA SDFLT NODFOP NOCON STD
THE DIGITS USED TO INDEX THE NEXT TABLE ARE:
500002
```

1.2.3 Routing for Matched CPC using CALLCNTL table.

In the same way as described in section “2.2.2 Routing for Matched CPC using CPCRTE option” on page 39, here we pass also the category using the procedure CPCCHAR_PARAMETER_LOOKUP.

An example of TRAVER for CPC screening, using CALLCNTL, is found below in Figure 7. The table CPCCHAR is filled as shown in Figure 5. The category received is MTC_EQ.

Figure 8 Traver for CPC after the first called digit (in SMP_SETUP_REQUEST message).

```
>traver tr orirm2 500002 b
TABLE TRKGRP
ORIRM2 IBNTI 0 LCO NCRT TRKPSTN 0 0 N ANSDISC 0 N N N N
N N N 0 0 N N N N N $
   NATL (ANIREC ALWAYS) (ANIFAIL CONT ) $
TABLE TRKOPTS
ORIRM2 CCNTLIDX CCNTLIDX TEST_CPC
 . TABLE CCNTLGRP
 . TUPLE NOT FOUND
 . TABLE CALLCNTL
 . TEST_CPC   (SCRN (CPCNAME ) $)$
PLEASE ENTER VALUE FOR CPCCHAR PROTOCOL:
>FDCP
PLEASE ENTER VALUE FOR CALLING PARTY CATEGORY:
>MTC_EQ
 .  . Matched in table CPCCHAR on BLOCKCPC
 .  . TABLE CPCNSCRN
 .  . TEST_CPC BLOCKCPC TEST_CPC (NCOS 1) $
TABLE NCOS
TRKPSTN 1 0 0 TRK ( XLAS PRTRK1 NXLA NDGT)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA,
FEATXLA, VACTRMT, AND DIGCOL
TRKPSTN NXLA CXTRK NXLA 0 NDGT
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE IBNXLA: XLANAME PRTRK1
TUPLE NOT FOUND
Default from table XLANAME:
PRTRK1
   (NET N N 0 N NDGT N Y GEN (LATTR 1100 TRKPLAN
NLCA_NILLA_0) $ $)$ 9
```

1.3 Hardware Requirements or Dependencies

N / A.

1.4 Software Requirements or Dependencies

N / A.

1.5 Limitations and restrictions

For both CPC screening methods, using the CPCRTE option and using the CALLCNTL table, the option QUICK_REQ in the R2PROT table (for incoming trunks) should be defined with one of the following values: ANI_AFTER_1_DIG or CAT_AFTER_1_DIG. For example, see Figure 3.

1.6 Interactions

N / A.

1.7 Glossary

Term	Description
CPC	Calling Party Category
CLI	Calling Line Identification
FDCP	Flexible Digital CAS Platform
NCOS	Network Class Of Service
MFC	Multi Frequency Compelled

2: Configuration for A00007349

2.1 Hardware and Software Requirements

There is no special Hardware / Software Requirements.

2.2 Initial Configuration

N / A.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

N / A.

2.4 Upgrade Considerations

N / A.

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 7 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
CPCCHAR	CHANGED	UNCHANGED

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Table Name: CPCCHAR.

2.5.2.1.1 Functional description

Table CPCCHAR is used to convert the protocol's CPC value into a generic protocol independent CPCNAME. This CPCNAME is then used for routing the call.

Each tuple in table CPCCHAR comprises of a CPCNAME, followed by between one and eight protocols, of which seven protocols are currently valid. Four of these protocols were introduced by feature AJ5343: BTUP, ETSIISUP, FTUP, and REDBKTUP. Three of these protocols, BZISUP, BZTUP and BZR2, are introduced by feature A59014287. Each protocol has a list of between one and sixteen CPC values to match. The CPC value is specified in decimal.

This feature adds to this set the ***FDCP*** protocol for MFC trunks using the FDCP platform. The fields in the CPCCHAR table for the FDCP protocol are shown in the table below.

Table 8 Field entries to CPCCHAR table for FDCP protocol

Field	Entry	Range
CPCNAME (key)	Unique CPCNAME	Alphanumeric
PROTOCOL	Protocol selector	FDCP
FDCP refinement	List of 1 to 16 CPC values	CP_ACTIVITY type

2.5.2.1.2 Usage sequence and implications (CM Only)

The current datafill order is unchanged.

2.5.2.1.3 Size

Table 9 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
CPCCHAR	0	1024	

2.5.2.1.4 Fields/OIDs

Table 10 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
PROTOCOL	Changed	refinement	FDCP	See 12.5.2.1.1

2.5.2.1.5 Datafill example

The following examples shows datafill for the FDCP protocol in table **CPCCHAR**.

```
TABLE: CPCCHAR
 >ran 2
  2 PROTLIST          CPCPROT_LIST
 TYPE IS CPCPROT_LIST VECTOR OF UP TO 8 MULTIPLES WITH
         PROTOCOL
{BTUP,BZR2,ETSIISUP,FTUP,BZISUP,REDBKTUP,BZTUP,FDCP} RE
                      FINEMENTS:
         {BTUP}       MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE BTUP_CPC_RANGE
         {FDCP}       MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE CP_ACTIVITY
         {BZTUP}      MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE BZTUP_CPC_RANGE
         {REDBKTUP}   MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE RED_BOOK_TUP_CPC_RANGE
         {BZISUP}     MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE BZISUP_CPC_RANGE
         {FTUP}       MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE FTUP_CPC_RANGE
         {ETSIISUP}   MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE ETSI_ISUP_CPC_RANGE
         {BZR2}       MULTIPLE WITH
              CPC     VECTOR OF UP TO 16 MULTIPLES WITH
                   CPCVALUE {0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15}
```

```
TABLE: CPCCHAR
CPCKEY                                  PROTLIST
-------------------------------------------------------------------
BLOCKCPC (FDCP (MTC_EQ) (LOCAL_COIN) $) $
```

2.5.2.1.6 Datafill example

The following examples shows datafill for the FDCP protocol in table **R2PROT**.

```
TABLE R2PROT
      IDX

PHASES
OGACTCTL ICACTCTL
                                                                    BASEDATA
------------------------------------------------------------------------------
GEOPROT1
     (162 163 162 163) (160 164 164 161) (162 164 164 163) (162 163 162 166)$
 GEORGOG  GEORGIC
FDCP GEORGCAT (QUICK_REQ CAT_AFTER_1_DIG) $
```

In MFC calls, CPC and CLI are usually requested after all the called digits are already collected in the switch, and the CPC is received as a result of the CPC / CLI request (in *SMP_EVENT_INFO* message).

The option ***QUICK_REQ*** in the R2PROT table, allows requesting of CPC / CLI on the earliest stages of the call. If the value is: ***CAT_AFTER_1_DIG***, the CPC without CLI will be included in the SMP_SETUP_REQUEST message in the field “Calling Party Category” after the 1st called digit.

2.5.2.1.7 Table release history update

2.5.2.1.8 Supplementary information

None.

2.5.2.1.9 Translation verification and other tools

- An example of TRAVER for CPC after the first called digit (in the SMP_SETUP_REQUEST message) may be found in the FN section.
- An example of TRAVER for CPC as a result of a CPC / CLI request (in the SMP_EVENT_INFO message) may be found in Figure 6.

2.6 Service Orders (SO) (CM & SESM)

N / A.

2.7 Software optionality control (SOC)

N / A.

2.8 Element Management

N / A.

2.9 User interface changes

N / A.

2.10 OSSGate Interface Changes

N / A.

2.11 Security

N / A.

2.12 Configuration Walkthrough

N / A.

Product = World Trade

A00007383--Directory Number Hunting (DNH) enhancements: pilot DN charge and display

Functional Description

1.1 Applicable Solution(s)

DMS

1.2 Description

1.2.1 General

This feature provides two new facilities for DNH groups. For any call originated from any DNH group member DN (MDN) or pilot DN (PDN), the group's **pilot DN** will be

- charged for the call,
- presented as the Calling Line Number nodally or to the network to be displayed at far end, if the call provides Calling Line Identification (CLI) by default or upon Automatic Number Identification (ANI) request.

These facilities are provided for all members of all the DNH groups on an office basis. It is possible to turn on or off each functionality separately. Thus, each functionality can be either applied or not applied officewide at once, i.e. all DNH groups follow the same behavior. These facilities are enabled by defining a new tuple in table **ISERVOPT**. Operating company personnel use table ISERVOPT to configure switch information for service-related features. Figure 1 that follows shows sample datafill for table ISERVOPT.

Figure 1 New ISERVOPT Tuple

```
SOPTSKEY SOPTSVAR
-----------------
DNH_OPTS DNH_OPTS Y Y
```

The tuple introduces a new entry *DNH_OPTS* in the field SOPTSKEY; new entry *DNH_OPTS* in the field SOPTSVAR/subfield OPTION, and two new boolean subfields *PILOT_CHARGE*, *PILOT_DISPLAY*. The subfields' values 'Y/N' serve to turn functionalities on/off in the office.

1.2.2 Pilot DN Charge

1.2.2.1 Overview

The DNH group PDN can be charged for all calls originated by its members including calls originated by the PDN itself.

This functionality is achieved when subfield *PILOT_CHARGE* value is set 'Y' in the new ISERVOPT tuple.

The pilot DN charge functionality uses the existing line option **SPB** (Special Billing). The SPB option allows a number other than the subscriber's DN to be used for billing.

Thus, to supply the desired functionality, every single member DN of a DNH group must have the SPB option assigned on it, with the field SPBDN (Special Billing Directory Number) filled with the pilot DN of that group. As the PDN is also charged for its own calls, it is not allowed to have the SPB option.

1.2.2.2 Service Order

Therefore, after the functionality is activated, a number of restrictions to SO commands take place:

- The field SPBDN of the SPB line option being assigned or changed on any DNH group member, accepts only the value of the PDN of that group.

  The supported SO commands are: ADO 'SPB', CHF 'SPB', ADD a new DNH member with the SPB option, and EST a new DNH group with the SPB option on a member.
- Addition of the SPB option to a pilot DN with the ADO and EST commands, is forbidden.
- Deletion of the SPB option from a DNH member with the command DEO, is forbidden.
- Definition of a new DNH member without the SPB option, is forbidden. It concerns commands ADO 'DNH', ADD, and EST.

Every restriction is accompanied by displaying an appropriate message.

Deletion of the DNH option from a member DN is allowed. A user gets a reminder message that the SPB option remains on this DN.

1.2.3 Pilot DN Display

For any call providing CLI, originated from a DNH group MDN, only the group's PDN is presented as the Calling Line Number nodally or to the network to be displayed at far end, by default or upon ANI request. The functionality must be set in the new tuple of table ISERVOPT as described above.

The **IBN** and **ISDNKSET** originators and local terminators are supported.

The PDN sending as a calling number is supported for calls outgoing via **ISUP** and **MFC** trunks as described below.

ISUP: When a call initiated by a DNH group member, goes out through an ISUP trunk, the Calling Party Number parameter in the ISUP Initial Address Message (**IAM**) contains the pilot DN of that group instead of the MDN.

As well, the PDN is also provided instead of the MDN in the INFormation message (**INF**) that is sent in response to the received INformation Request message (INR).

MFC: MFC (FDCP R2, Type-A) support: Similarly, instead of the DNH group MDN call originator, its PDN is presented as the DN of the calling party in the **setup** message and also in the **information** message sent in response to the information request message.

1.3 Hardware Requirements or Dependencies

Not applicable.

1.4 Software Requirements or Dependencies

Not applicable.

1.5 Limitations and restrictions

For both Pilot Charge and Pilot Display only homogeneous IBN/ISDN DNH groups are supported, i.e. those consisting from only IBN or only ISDN lines.

1.5.1 Pilot DN Charge.

All limitations and restrictions of the SPB feature take place.

After the functionality is activated in table ISERVOPT, this feature controls only **further** actions performed with **SO** commands. It is the responsibility of TELCO personnel to handle all SPB definitions on all DNH groups defined

before the activation of the functionality. Any changes carried out by any other means, e.g. Table Control, are beyond the scope of the feature.

SO support performs **no automatic** actions (such as addition of the SPB option to a newly added MDN). An appropriate **message** is displayed each time when any restriction to SO commands set by this feature is violated (see above), and the SO checking **rejects** the command. A user can then decide which further actions may be taken to achieve the goal, or may no action be taken at all to renounce.

1.5.2 Pilot DN Display.

For network calls, only **ISUP** and **MFC** trunk types are supported to send PDN as a calling number:

— **ISUP**: ETSI ISUP V2 Ethiopia (ETC) variant only;
To support other ISUP variants, additional development is required.

— **MFC**: FDCP R2 and Type A protocols.

Only **IBN** and **BRI** subscribers are supported as call originators, local terminators, and pilots.

1.6 Interactions

The key requirement of the Pilot Display is that the pilot DN must be seen on the terminator's telephone display as a calling number in every call originated by its member - if presentation of the CGN of the originator is not suppressed.

Therefore this feature, being in effect, takes precedence over all other features that modify the display of the CGN:

For local calls -

- all these features are ignored when the Pilot Display is active, and the pilot DN is displayed as it is datafilled in table DNINV etc without any modification;
- all the features that use CGN but do not change its displaying for a terminator, are not affected.

For line-to-trunk calls -

As an originating switch always sends a PDN instead of its MDN as a CGN, all the features that manipulate with the CGN in their way, are suppressed by the Pilot Display.

Definite interest may be presented in analysis of the interaction with the **Call Forward** feature:

Pilot Charge. When a call forward subscriber forwards a call, it pays for the second call leg, i.e. that between him and the terminator. The SPB feature covers this interaction, therefore no additional development is required to charge a pilot when its member forwards a call.

Pilot Display. In a call forward scenario, the real originator, and not the call forwarder, is displayed at the terminator's display. Hence, if a member forwards a call, its DN does not appear as the calling party DN and therefore must not be replaced by the PDN in this interaction, which means that no development is required.

In **Malicious Call Trace** (MCT) feature, when MDN originated a call:

— For a **nodal** terminator, an MCT153 / MCT154 log is generated without any changes, i.e. the real originator (MDN, not PDN) appears at the field CALLING_PARTY;

— For a **remote** terminator accessed via trunks, the PDN appears at the field CALLING_PARTY.

1.7 Applicable customer facing sections

Fault Management

Logs	_N/A_
Alarms	_N/A_

Configuration

Data Schema	__X__
User Interface	_N/A_
Element Management	_N/A_
Security	_N/A_
Service Order	__X__
Office Parameters	_N/A_

Accounting (includes AMA billing)	_N/A_
Performance (includes operational measurements)	_N/A_

1.8 Glossary

Term	Description
CLI	Calling Line Identification
CGN	CallinG Number
DN	Directory Number

Term	Description
DNH	Directory Number Hunting
PDN	Pilot DN
MDN	Member DN
ANI	Automatic Number Identification
SPB	SPecial Billing
SO	Service Order
TC	Table Control
ETSI	European Telecommunication Standards Institute
ISUP	ISDN User Part
ISDN	Integrated Services Digital Network
MFC	Multi Frequency Compelled
FDCP	Flexible Digital CAS Platform
CAS	Common Channel Signalling
IBN	Integrated Business Network

2: Configuration for A00007383

2.1 Hardware and Software Requirements

The feature is developed in ISN08 (MMP21) s/w release and patched back to ISN04 (MMP17).

2.2 Initial Configuration

In loads older than ISN08 (MMP21), the patches containing the development code, are to be applied using the Post Release Software Manager (PRSM).

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

Not applicable.

2.4 Upgrade Impact

2.4.1 Dump and Restore

Data of the only modified table ISERVOPT are transferred from the old s/w release to the new s/w release as usual within data transfer process during ONP. Table changes do not require a reformat, since area refinement is added only.

It is obviously that if table ISERVOPT being transferred, has the new tuple in the old release side, the patches must be applied in the new release side (unless the new release is ISN08 or higher).

2.4.2 Element Management Upgrade

Not applicable.

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
ISERVOPT	changed	unchanged

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: ISERVOPT

International SERVice OPTion

2.5.2.1.1 Functional description

Operating company personnel use table ISERVOPT to configure switch information for service-related features. This table groups multiple related pieces of data in a single entry.

Each service that uses this table provides a subfield related to that service. Each subfield asks for information in a format relevant to the service. This table accepts an entry if operating company personnel enter a service that is in the load.

2.5.2.1.2 Usage sequence and implications (CM Only)

Current datafill order unchanged.

2.5.2.1.3 Size

Table 2 Table size

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
ISERVOPT	Unchanged	Current maximum tuples + 1	Memory is automatically allocated for additional tuple.

2.5.2.1.4 Fields/OIDs

The following table lists fields for ISERVOPT.

Table 3 Table field descriptions

Field	New or Changed	Subfield or refinement	Entry	Explanation and action
SOPTSKEY	Changed		DNH_OPTS	Directory Number Hunting Options. New entry DNH_OPTS in field SOPTSKEY is the key in ISERVOPT.
SOPTSVAR	Changed	OPTION	DNH_OPTS	Directory Number Hunting Options. New entry DNH_OPTS in field OPTION is the option name.
		PILOT_CHARGE	Y or N	PILOT_CHARGE controls activation of the Pilot Charge functionality. When PILOT_CHARGE is set to N, the Pilot Charge functionality has no impact. When PILOT_CHARGE is set to Y, the Pilot Charge functionality is activated. The default value is N.
		PILOT_DISPLAY	Y or N	PILOT_DISPLAY controls activation of the Pilot Display functionality. When PILOT_DISPLAY is set to N, the Pilot Display functionality has no impact. When PILOT_DISPLAY is set to Y, the Pilot Display functionality is activated. The default value is N.

2.5.2.1.5 Datafill example

The following example shows sample datafill for table ISERVOPT.

Figure 1 Map display example for DNH_OPTS option in table ISERVOPT

```
SOPTSKEY SOPTSVAR
-----------------
DNH_OPTS DNH_OPTS Y Y
```

Note: The following list gives datafill examples for the DNH_OPTS service. They are based on the four possible values for the DNH_OPTS tuple, namely: KEY (SOPTSKEY), OPTION (SOPTSVAR), PILOT_CHARGE, and PILOT_DISPLAY.

- No enhancements are turned on:
  DNH_OPTS DNH_OPTS N N

  With this datafill neither functionality has impact. The tuple can be absent.
- Only the pilot charge enhancement is operational:
  DNH_OPTS DNH_OPTS Y N
- Only the pilot display enhancement is operational:
  DNH_OPTS DNH_OPTS N Y
- Both pilot charge and pilot display enhancements are operational;
  DNH_OPTS DNH_OPTS Y Y

2.5.2.1.6 Table release history update

The following information was added:

- Entry DNH_OPTS added to field SOPTSKEY
- Entry DNH_OPTS added to field SOPTSVAR/OPTION
- New subfields PILOT_CHARGE and PILOT_DISPLAY added to entry DNH_OPTS in field SOPTSVAR/OPTION.

Maximum table size increased in number of one tuple.

2.5.2.1.7 Supplementary information

This table does not contain initial datafill. The operating company using this table provides datafill that refers to indicated services.

The default values of parameters PILOT_CHARGE and PILOT_DISPLAY are N. Even if tuple does not exist in ISERVOPT, the state is considered to be N for both functionalities. If the state of either parameter is Y, the respective functionality of the feature is available officewide. If the state is N, the respective functionality is suppressed.

PILOT_CHARGE and PILOT_DISPLAY require no restarts.

Every change of PILOT_CHARGE and PILOT_DISPLAY values including tuple addition/deletion is accompanied by displaying an appropriate message. This message informs a user about which functionality is activated/deactivated (one or both), briefly describes it, and informs a user about what actions required from his side, if any. For more information please refer to “1.5.1 Pilot DN Charge.” on page 908.

2.5.2.1.8 Translation verification other tools

ISERVOPT does not use translation verification tools.

2.6 Service Orders (SO) (CM & SESM)

2.6.1 Service order change details

Only **pilot charge** functionality has impacts on Service Order.

The overall impact consists in **additional** servord **checking** carried out when the pilot charge functionality is in active state (subfield *PILOT_CHARGE* value is set 'Y' in the *DNH_OPTS* ISERVOPT tuple).

The brief background of this functionality explaining **why** additional SO checking is needed, is as follows.

The pilot DN charge functionality uses the existing line option **SPB** (SPecial Billing). The SPB option allows a number other than the subscriber's DN to be used for billing. To charge a pilot DN (PDN) for all the calls originated by its members DN (MDN), **every** single **MDN** of a DNH group **must have** the SPB option assigned on it, with the field **SPBDN** filled with the PDN of that group. The **PDN** is also charged for its own calls therefore it is **not allowed** to have the SPB option. Therefore any SO command that may **violate** this state, pass through additional checking to avoid this. Besides, in one special case the additional SO checking is done in order to only attract a user's **attention** to possible need in further actions. More detailed description is in "1.2.2.2 Service Order" on page 907.

SO support performs **no automatic** actions. That means:

— All the DNH groups that exist **by the moment** of activation of the pilot charge functionality, must be checked by the TELCO personnel for the correspondence to the state described above, and appropriate actions should be taken to bring them into this state. When setting this functionality 'Y', a user gets a message - see "2.5.2.1.7 Supplementary information" on page 914, and also "1.5.1 Pilot DN Charge." on page 908.

— If a performed SO command did not pass additional checking, only an appropriate **message** is displayed, and the command is **rejected** (except of the one special case mentioned above when the additional checking **allows** the command). A user can then decide which further actions may be taken to achieve the goal, or may no action be taken at all to renounce.

2.6.1.1 LCC and options

Neither new LCC nor option is introduced by this feature.

All the limiting conditions of the SPB option remain valid.

This feature supports only **IBN** and **ISDNKSET** LCC.

2.6.2 New commands

This feature does not provide any new command.

2.7 Software optionality control (SOC)

Table 4 SOC

SOC option name:	DNH Pilot Enh
SOC option title:	DNH Pilot Num for CLI and Billing
SOC option control type:	Tracked
New SOC option?	Yes
SOC option order code	SVBI0035
Option defined in DRU:	WT
Affected products:	DMS100

All tracked SOC are automatically created via PCA enforcement and no longer require design implementation.

2.8 Element Management

Not applicable.

2.9 Command interface changes

Not applicable.

2.10 Security

Not applicable.

2.11 Configuration Walkthrough

Not applicable.

Product = World Trade

A00007793--IN: SCF Id, Correlation Id and QoR Base LNP Support (DACOM)

Functional Description

1.1 Applicable Solution(s)

Int'l IAC

1.2 Description

The purpose of this activity is to meet the Dacom's requirements with the enhancement in the IN based Number Portability (NP) by the Query on Release (QoR) method, and with the ScfID & CorrelationID parameters handling in the ETC (Establish Temporary Connection) operation.

Also, Dacom specific extension is appended to the operations of InitalDP, CIRP (Call Information Report) and ERBCSM (Event Report BCSM).

The content of the activity are explained in seven parts in this document, as below:

- TDP4 QoR triggering for Dacom. Then extracting requested Extensions parameters (CDN, NPFI) from the INAP Connect Operation and storing them for the outgoing ETSI ISUP V2 IAM message.
- Handling the ScfID & CorrelationID Parameters in the INAP ETC (Establish Temporary Connection) Operation and storing them for the outgoing ETSI ISUP V2 IAM message.
- Datafilling the dacom_ext to the INITDP_EXTENSIONS in the table SERVINFO.
- Changing in the format of miscCallInfo field in the InitDP operation for Dacom.
- Appending the dacom specific extension to the operation of InitialDP.
- Appending the dacom specific extension to the operation of CIRP (Call Information Report).
- Appending the dacom specific extension to the operation of ERBCSM (Event Report BCSM)

Also, the EINTRACE tool is enhanced to capture the new Dacom extension parameters defined for Connect (CDN, NPFI), InitDP, ERBCSM and CIRP operations.

1.2.1 Dacom TDP4 QoR triggering and handling the requested Extensions parameters in Connect for outgoing IAM:

The TDP4 allows IN to be trigger on receipt of an ISUP REL message externally from the network. TDP4 QoR functionality is used in the IN based Number Portability service. QoR allows a call to be routed over ETSI ISUP trunks to the donor exchange. If the called directory number is ported, the donor exchange will release the call by sending ISUP REL cause 14 (QoR: PORTED NUMBER) to the QoR serving exchange. The QoR serving exchange (the originating, or in some case an intermediate exchange) upon receiving that REL 14 will trigger the IN service and a query will be sent to the

SCP. The SCP will reply with the new routing number and the QoR serving exchange will route the call to the recipient exchange based on the new routing number provided by the SCP. These are the existing functionalities that this feature is based on.

In this feature, in a call over ETSI ISUP V2 trunk, if the outgoing trunk is datafilled in table ISUPSVC as MARKET KOREA, then the DMS SSP triggers IN (TDP4) according to the following Dacom criteria:

First of all the cause value of the received ETSI ISUP V2 REL message has to be equal to the cause value datafilled in table TRIGGRP.

Then if this cause value is 0x0E (14), diagnostic field is checked. If there is 1 byte diagnostic with value less than 0x10 (16)) or there is no diagnostic, TDP4 is triggered. If the received cause value is different from 0x0E (14), TDP4 is triggered regardless of the diagnostic field.

If the outgoing trunk is not datafilled as MARKET KOREA in table ISUPSVC, TDP4 is triggered when the received cause value is the same as the datafilled cause value in table TRIGGRP (default criteria).

Table 1: Criteria required to trigger TDP4

ISUPSVC datafill for OG trunk	TRIGGRP datafill for REL cause	Received ISUP REL cause	Diagnostic field	TDP4 triggering (according to criteria)
MARKET KOREA	14	14	length: 1 byte, value: < 16	**Yes** (Dacom criteria)
MARKET KOREA	14	14	length: 1 byte, value: >= 16	**No** (Dacom criteria)
MARKET KOREA	14	14	length > 1 byte	**No** (Dacom criteria)
MARKET KOREA	14	14	no diagnostic field	**Yes** (Dacom criteria)
MARKET KOREA	X	X	regardless of diag-nostic	**Yes** (default criteria)
MARKET KOREA	Y	Z	regardless of diag-nostic	**No** (default criteria)
not datafilled	Y	Y	regardless of diag-nostic	**Yes** (default criteria)

Table 1: Criteria required to trigger TDP4

ISUPSVC datafill for OG trunk	TRIGGRP datafill for REL cause	Received ISUP REL cause	Diagnostic field	TDP4 triggering (according to criteria)
not datafilled	Y	Z	regardless of diagnostic	**No** (default criteria)

X: any valid cause value for TDP4, different from 14.
Y: any valid cause value for TDP4.
Z: any valid cause value for TDP4, different from Y.

Then, the SCP returns the Routing Number (RN) in Destination Routing Address (DRA) parameter. The Called Directory Number (CDN) and Number Portability Forward Information (NPFI) are extracted from the Connect operation as the Dacom Extension parameters. They are stored in the HDB so that they can be put into outgoing ETSI ISUP IAM message by the other activity A00007807 “Base ETSI ISUP V2 support for Dacom IN”.

After TDP4 triggering, the following requirements are ensured for the outgoing Dacom ETSI ISUP V2 IAM message:

- For CDN parameter of outgoing ETSI ISUP V2 IAM:
  - The Directory Number (DN) is extracted from the CDN Extension parameter of INAP Connect and stored in the HDB created by the activity A00007807 “Base ETSI ISUP V2 support for Dacom IN”. While storing this parameter as CDN parameter of IAM, the Nature of Address Indicator (NOA) field is always set to “0000011” (Domestic Number) and Internal Network Number (INN) field is always set to “0”.

- For NPFI parameter of outgoing ETSI ISUP V2 IAM:
  - The NPFI value is extracted from the NPFI extension parameter of INAP Connect operation and stored in the HDB created by the activity A00007807 “Base ETSI ISUP V2 support for Dacom IN”. NP Status Indicator (NPSI) field of NPFI is expected to be “0011” (NP query has been made, and the called subscriber has been ported) from SCP. However, the value received from SCP is stored as it is.

- For CdPN parameter of outgoing ETSI ISUP V2 IAM:

Receiving of both CDN and NPFI Extension parameters in the Connect operation from SCP means that the SCP returns Routing Number (RN) in the Destination Routing Address (DRA) parameter of Connect operation. In this

case, Called Party Number (CdPN) parameter of outgoing ETSI ISUP V2 IAM message functions as RN (Routing Number) received from the SCP.

— In this activity, if both CDN and NPFI extensions are received from connect and put in the outgoing ETSI ISUP V2 IAM successfully, and also this outgoing trunk has been datafilled as MARKET KOREA in table ISUPSVC then the following settings are done in the CdPN parameter of this OG IAM message:

- Nature of Address Indicator (NOA) field is set to “0000110” (RN of the domestic number format),

- Internal Network Number (INN) field is set to “0”.

Otherwise, the NOA and INN values are not modified by this activity*.

Please refer to Table 2 for the CdPN parameter fields NOA and INN in the outgoing ETSI ISUP V2 IAM.

Table 2: NOA and INN settings of CdPN in the outgoing ISUP IAM message

ISUPSVC datafill for Dacom ETSI ISUP V2 trunks	CDN received from SCP and put in the OG IAM	NPFI received from SCP and put in the OG IAM	SSP settings in NOA and INN fields of CdPN of OG IAM.
MARKET KOREA	Yes	Yes	NOA = 6, INN = 0
MARKET KOREA	Yes	No	no setting
MARKET KOREA	No	Yes	no setting
MARKET KOREA	No	No	no setting
not datafilled	regardless of CDN&NPFI	regardless of CDN&NPFI	no setting

* But, CS2K may set the NOA of CdPN according to call class. Please note that this is the already existing and normal behaviour. In other words, this activity is not responsible for this change.
An additional information: The NOA value 01 for CdPN is not supported for ETSI ISUP V2 BASE Variant on CS2K. According to this existing behavior (not related with this activity), CS2K will take down an incoming call with CdPN NOA=01 if there is no ALL_NOA option in Table TRKSGRP.

Datafill requirement:

— To trigger TDP4 for Dacom criteria (please refer to Table 1), the ISUPSVC table is datafilled as MARKET KOREA for Outgoing ETSI ISUP V2 trunk in that call (as example in the first tuples of Figures 1 and 2). Otherwise, TDP4 is triggered when the received cause value is the same as the datafilled cause value in table TRIGGRP.

— When both CDN and NPFI extension parameters are received from SCP and put in the HDB for outgoing ETSI ISUP V2 IAM message, the NOA field is set to "0000110" (RN of the domestic number format) and INN field is set to "0" in the CdPN parameter of that IAM. These settings are done only if the MARKET KOREA is datafilled for Outgoing and Incoming sides of that trunk. However, it is necessary to datafill the ADDRESSING_METHOD SEPERATE_DIRECTORY_NUMBER in table ISUPSVC (as example in the second and third tuples of Figures 1 and 2) to support the NOA value #06 in the IAM message by the activity A00007807 "Base ETSI ISUP V2 support for Dacom IN".

These ISUPSVC options for have been created by the activity A00007807 "Base ETSI ISUP V2 support for Dacom IN" for KOREA market. For detailed information, please refer to the FN and CN sections of that activity.

Figure 1 Example datafill in Table ISUPSVC for DACOM

```
TABLE: ISUPSVC

KEY SERVICE

-----------

REL14_RCV (MARKET KOREA) $

FOR_IAM (ADDRESSING_METHOD SEPERATE_DIRECTORY_NUMBER) (MARKET KOREA) $
```

Figure 2 Example datafill in Table TRKOPTS for DACOM

```
TABLE TRKOPTS

OPTKEY OPTINFO

--------------

OGISUPV2AB ISUPSVC ISUPSVC REL14_RCV

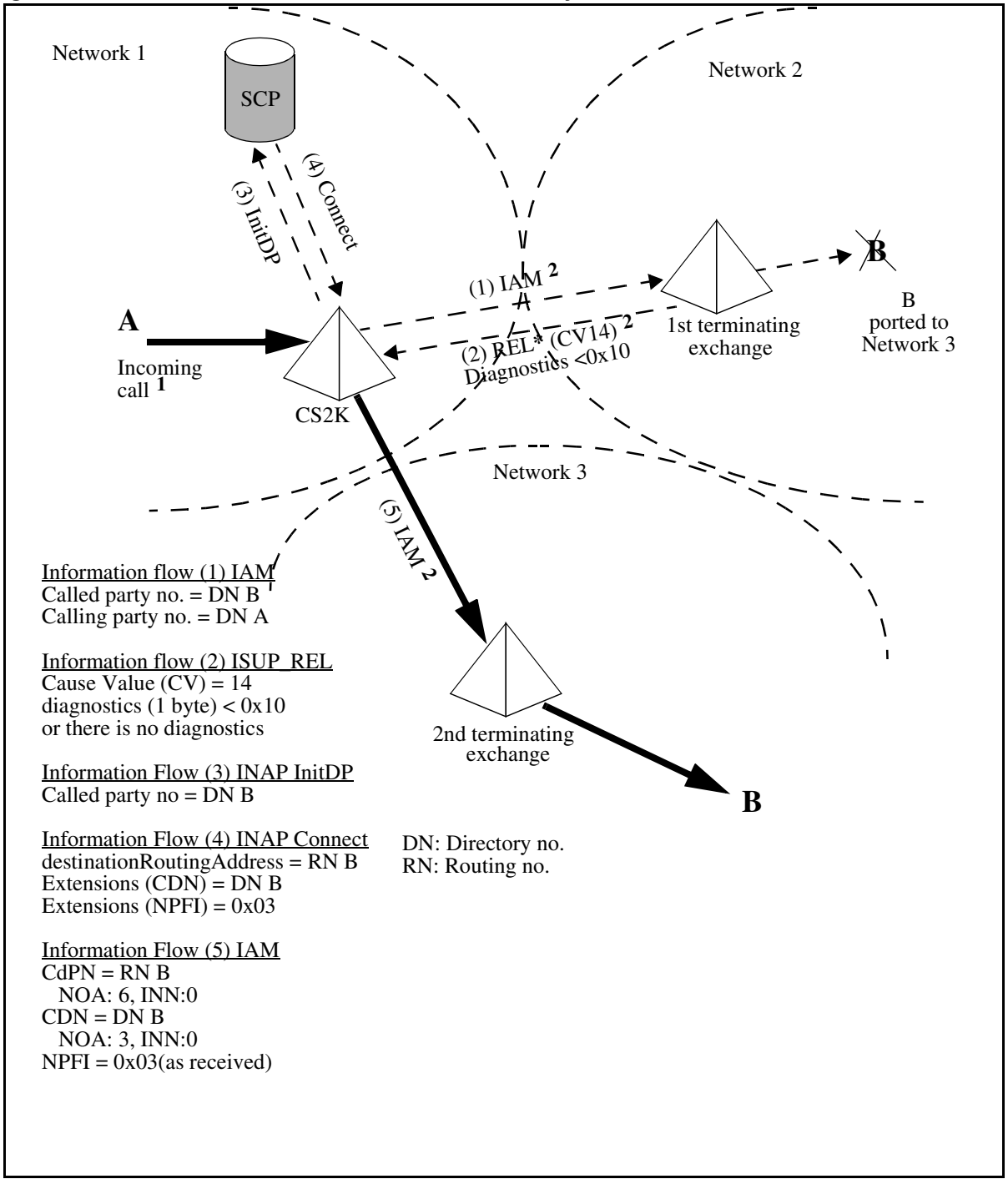
OGISP2AB ISUPSVC ISUPSVC FOR_IAM

ICISP2BA ISUPSVC ISUPSVC FOR_IAM
```

— Also the datafills for TDP4 triggering and IN based QoR Number Portability are necessary to work this feature. Those datafills have

already been present. Please refer to the Section 2.3. “Background Information”.

Figure 3 Functional behavior of IN Number Portability QoR Method



1 For the incoming call, supported interworkings are Line (V5.2, Cable MTA, IAD IBN line types), Base ETSI ISUP V2, ETSI PRI, Korea R2, H.323 “trunks” (defined as QSIG trunks in CS2000 table data-fill), SIP trunk connections to MCS5200 endpoints.

2 The all trunks on which REL 14 received and OG IAM is send after routing with the CDN and NPFI are Dacom BASE ETSI ISUP Version2 trunks.

***** REL message with CauseValue=14 and diagnostic<16 can never be received after answer in Dacom.

The ASN.1 encoding for Dacom Extensions in Connect for Number Portability can be seen in the Figure 4.

Figure 4 ASN.1 encoding for Dacom Extensions in Connect for NP (Number Portability)

```
ExtensionField ::= SEQUENCE {
        type            INTEGER,    --  shall identify the value of an EXTENSION type
        criticality     ENUMERATED {
                        ignore (0),
                        abort (1)
                        } DEFAULT ignore,
  value                 [1] ANY DEFINED BY type
  }

CalledDirectoryNumber ::= OCTET STRING (SIZE (minCalledDirectoryNumberLength..
                                              maxCalledDirectoryNumberLength))

        ,where minCalledDirectoryNumberLength is 2 and maxCalledDirectoryNumberLength is 17.

NumberPortabilityForwardIndicator ::= OCTET STRING (SIZE(1))
```

Figure 5 Definition of the Connect Extensions (CDN)

field name	field value	Description
type	202	Integer
criticality	ignore(0)	In case of an extension field type that has not defined in the SSP coming, ignore it.
value	CDN Value	Called Directory Number

Figure 6 Definition of the Connect Extensions (NPFI)

field name	field value	Description
type	201	Integer
criticality	ignore(0)	In case of an extension field type that has not defined in the SSP coming, ignore it.
value	NPFI Value	Number Portability Forward Indicator

According to the Dacom requirement, the length of the CDN and NPFI parameters are given in the following table:

Table 3: The length of the new additional optional parameters for Dacom

Parameter	length (octets)
Called Directory Number (CDN)	2-17
Number Portability Forward Information (NPFI)	1-1

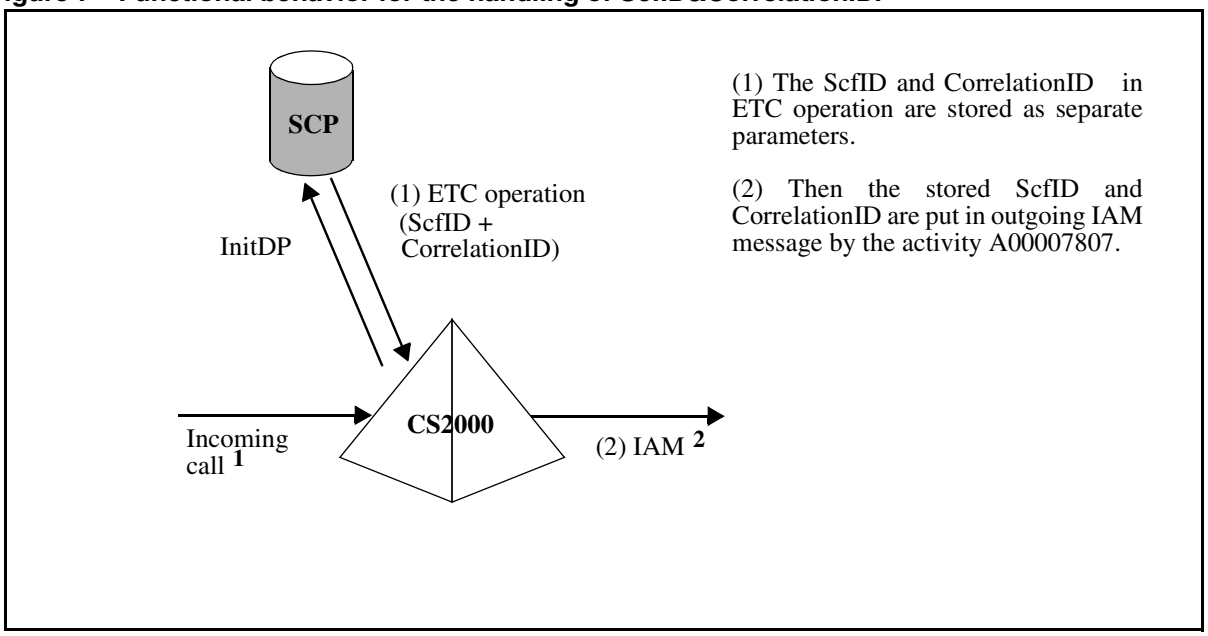
1.2.2 ScfID & CorrelationID Parameters handling in INAP ETC (Establish Temporary Connection) Operation:

This feature also handles the ScfID and CorrelationID parameters sent from SCP to CS2000 in the Establish Temporary Connection (ETC) operation to store them for using in the outgoing Dacom ETSI ISUP V2 IAM message.

The ETC operation is sent by the SCP to the SSP to set up a connection between an external IP and the SSP for the purposes of user interaction. It contains information which is used to correlate the SCP's request to the SSP for connection to an external IP with the responses received by the SCP from the external IP. This information is called the correlationID. ETC operation also contains the ScfID parameter that indicates the SCP to which service assisting procedure is delivered during this connection.

In this activity, the ScfID and CorrelationID are handled as the optional and separate parameters (i.e, not embedded in any other parameter) in the ETC operation and stored so that they can be used in the outgoing ETSI ISUP V2 IAM message by the other activity A00007807 "Base ETSI ISUP V2 support for Dacom IN". Please refer to the functional behavior diagram given in the Figure 7.

Figure 7 Functional behavior for the handling of ScfID&CorrelationID.



1 For the incoming call, supported interworkings are Line (V5.2, Cable MTA, IAD IBN line types), Base ETSI ISUP V2, ETSI PRI, Korea R2, H.323 “trunks” (defined as QSIG trunks in CS2000 table data-fill), SIP trunk connections to MCS5200 endpoints.

2 The trunk on which OG IAM is send with the ScfID and CorrelationID are BASE ETSI ISUP Version2 trunk.

According to Dacom requirement, CorrelationID should be a separate parameter. This is provided in this feature with a new datafill in the table SERVINFO.

So, a new suboption CORRELATIONID_TRANSPORT is added to the existing SRF_INFO option of table SERVINFO. This suboption is set to the IN_CRID value to handle the CorrelationID as a separate parameter for Dacom, as shown in Figure 8.

This datafill provides the Correlation_ID transport as a separate parameter only for outgoing ETSI ISUP V2 IAM message. Please refer to the CN section of this activity.

Figure 8 Example datafill for the new DACOM CorrelationID option in table SERVINFO

```
TABLE: SERVINFO

SERVIDX OPTION

--------------

99

(SRF_INFO $ (CORRELATIONID_TRANSPORT IN_CRID) $)$
```

The new SERVINFO optionality is required for only CorrelationID not for ScfID. Because for the ScfID from ETC, there is no an existing default mapping such as the CorrelationID. So, it can be mapped to the separate ETSI ScfID parameter without needing any table control for Dacom.

The ASN.1 encoding for Dacom ETC operation can be seen in the Figure 9:

Figure 9 ASN.1 encoding for Dacom ETC operation

```
A.1. Operation
EstablishTemporaryConnection ::= OPERATION {
    ARGUMENT   EstablishTemporaryConnectionArg
    ERRORS         { ETCFailed,
                    MissingParameter,
                    SystemFailure,
                    TaskRefused,
                    UnexpectedComponentSequence,
                       UnexpectedDataValue,
                    UnexpectedParameter }
}

A.2. Argument data type
EstablishTemporaryConnectionArg ::= SEQUENCE {
    assistingSSPIPRoutingAddress[0]   AssistingSSPIPRoutingAddress,
   correlationID[1]                   CorrelationID  OPTIONAL,
    legID    [2]                      LegID  OPTIONAL,
    scfID    [3]                      ScfID  OPTIONAL,
    extensions[4]                     SEQUENCE SIZE(1..numOfExtensions) OF
                                      ExtensionField   OPTIONAL,
    carrier   [5]                     Carrier  OPTIONAL,
    serviceInteractionIndicators[30]  ServiceInteractionIndicators  OPTIONAL
--  ...
    }

ScfID:= OCTET STRING (SIZE (minScfIDLength.. maxScfIDLength))

CorrelationID:= OCTET STRING (SIZE (minDigitsLength.. maxDigitsLength))

where the minScfIDLength is 1 byte,
          maxScfIDLength is 4 byte,
          minDigitsLength is 2 byte
          maxDigitsLength is 13 byte
```

According to the Dacom spec, the required length of the ScfID and CorrelationID optional parameters are given in the following tables, respectively.

Table 4:SCF ID parameter length required for Dacom

Minimum length	Maximum length
1 byte	4 bytes

Table 5:Correlation ID parameter length required for Dacom

Minimum length	Maximum length
2 bytes	13 bytes

In the SSP, according to the existing functionality, the acceptable limits of the both ScfID and CorrelationID lengths have already been defined as 1 to 16 bytes. So, the parameters received from SCP with the lengths greater than 16

bytes can not be accepted by SSP. Also, for CorrelationID parameter, only BCD defined values are supported.

However, in the activity A00007807 “Base ETSI ISUP V2 support for Dacom IN”, the lengths of the HDB that is created to store these parameters for outgoing IAM, are given in the following tables.

Table 6:HDB length for ScfID in the feature A00007807

Minimum length	Maximum length
1 byte	20 bytes

Table 7:HDB length for Correlation ID in the feature A00007807

Minimum length	Maximum length
2 bytes	13 bytes

Note: According to these definitions in the A00007807, the ScfID can be tandemed successfully with length of 1 to 20 bytes. But it will not be greater than 16 bytes because the max acceptable length of the received ScfID has already been restricted with 16 bytes in the SSP.

As a result, the real supported ScfID and CorrelationID lengths in this activity can be given as below:

Table 8:SCF ID parameter length supported in this feature

Minimum length	Maximum length
1 byte	16 bytes

Table 9:Correlation ID parameter length supported in this feature

Minimum length	Maximum length
2 bytes	13 bytes

Note: CorrelationID parameter value can not include non-BCD characters.

1.2.3 Datafilling the dacom_ext to the INITDP_EXTENSIONS in the table SERVINFO

To append the dacom specific extension to the operations of InitialDP, CIRP (Call Information Report) and ERBCSM (Event Report BCSM), the new sub option called DACOM_EXT is defined under the option of INITDP_EXTENSIONS in table SERVINFO. This sub-option must be

datafilled for DACOM (Korea market).This option is used to understand whether the market is Korea or not.

Figure 10 Example datafill for the new DACOM_EXT sub-option in table SERVINFO

```
TABLE: SERVINFO

SERVIDX OPTION

--------------

99

( INITDP_EXTENSIONS (DACOM_EXT) $)$
```

1.2.4 Changing in the format of miscCallInfo field in the InitDP operation for Dacom

When sending InitDP operation, if the dacom_ext was datafilled in the service key in the table SERVINFO which this call use, the format of the field of miscCallInfo in InitDP operation is changed. The information of SEQUENCE in miscCallInfo type is removed. Please look at Figure 11 on page 930 for detail information.

Note: MISC_CALL_INFO information is attached to the InitDP when MCI option is datafilled under the sub-option INIT_PARMS in table SERVINFO.

Figure 11 ASN.1 encoding for MiscCallInfo in InitDP operation

```
InitDPArg ::= SEQUENCE {
        .................
        misCallInfo       [11]   MiscCallInfo   OPTIONAL,
        ...................

   }

   When the dacom_ext was not datafilled in table SERVINFO, MiscCallInfo is shown as follow

  Symbolic:
   --------------
   MiscCallInfo  ::= SEQUENCE {
             MessageType   [0]  ENUMURATED {
                       request(0),
                       notification(1)
                       },
             }

   Hex:
  --------
  #AB
  #05
        #30
        #03
             #80  #01   The value of Message Type


   If the dacom_ext was datafilled in table SERVINFO, MiscCallInfo is changed as follow

  Symbolic:
   --------------
   MiscCallInfo  ::=  {
             MessageType   [0]  ENUMURATED {
                       request(0),
                       notification(1)
                       },
             }

   Hex:
  --------
  #AB
  #03
        #80  #01   The value of Message Type
```

1.2.5 Appending the dacom specific extension to the operation of InitialDP

When IN triggers in the call, it is checked that dacom_ext was datafilled in the service key in the table SERVINFO which this call use. If so, dacom specific extension is appended to the operation of InitialDP. Please look at the Figure 12 on page 931, Table 10 on page 931, Table 11 on page 931, Figure 13

on page 932 for detailed information about the fields under the dacom extension of InitDP operation.

Figure 12 Functional behavior for the handling of dacom extension in InitialDP operation.

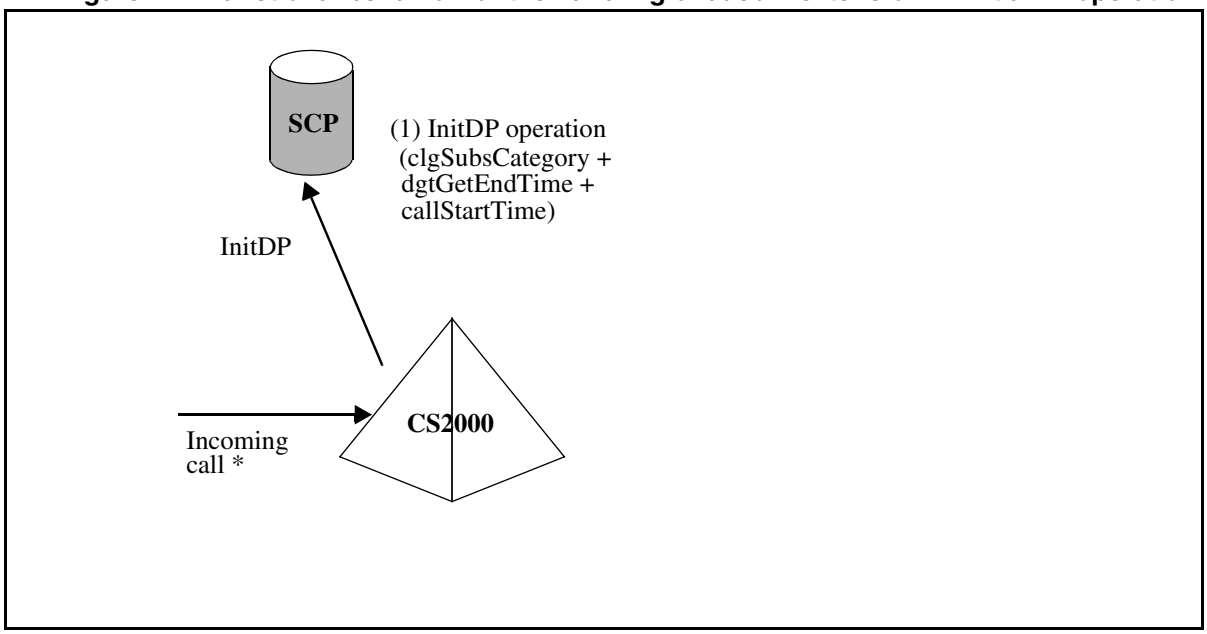


Table 10:Definition of the Dacom Extension in InitialDP operation (ExtIDPCdrType)

field name	field value	Description
type	61	Integer
criticality	ignore(0)	In case of an extension field type that has not defined in the SSP coming, ignore it.
value	clgSubsCategory	calling subscriber category value: 1 - payphone, 0 - others
	dgtGetEndTime	digit get end time YYMMDD hh:mm:ss.msc
	callStartTime	SSP trigger time YYMMDD hh:mm:ss.msc

Table 11:The length of the new additional optional parameters for Dacom

Parameter	length (octets)
Calling Subscriber Category (clgSubsCategory)	1
Digit Get End Time (dgtGetEndTime)	7
SSP trigger time (callStartTime)	7

Note:

- clgSubsCategory is set to 0, everytime.

- DigitGetEndTime and CallStartTime is set to the same value (IN triggering time).

Figure 13 ASN.1 encoding for Dacom Extensions in InitDP

```
ExtensionField ::= SEQUENCE {
        type            INTEGER,    --  shall identify the value of an EXTENSION type
        criticality     ENUMERATED {
                        ignore (0),
                        abort (1)
                        } DEFAULT ignore,
        value           [1] ANY DEFINED BY type
  }

 ExtIDPCdrType ::= SEQUENCE {

    clgSubsCategory       [1]  CallingSubsCategory
    dgGetEndTime          [8]  DateandTimewithMs
    callStartTime         [9]  DateandTimewithMs

    }

  CallingSubsCategory  ::=  OCTET STRING  ( SIZE (1))
  DateandTimewithMs  ::=  OCTET STRING ( SIZE (7))

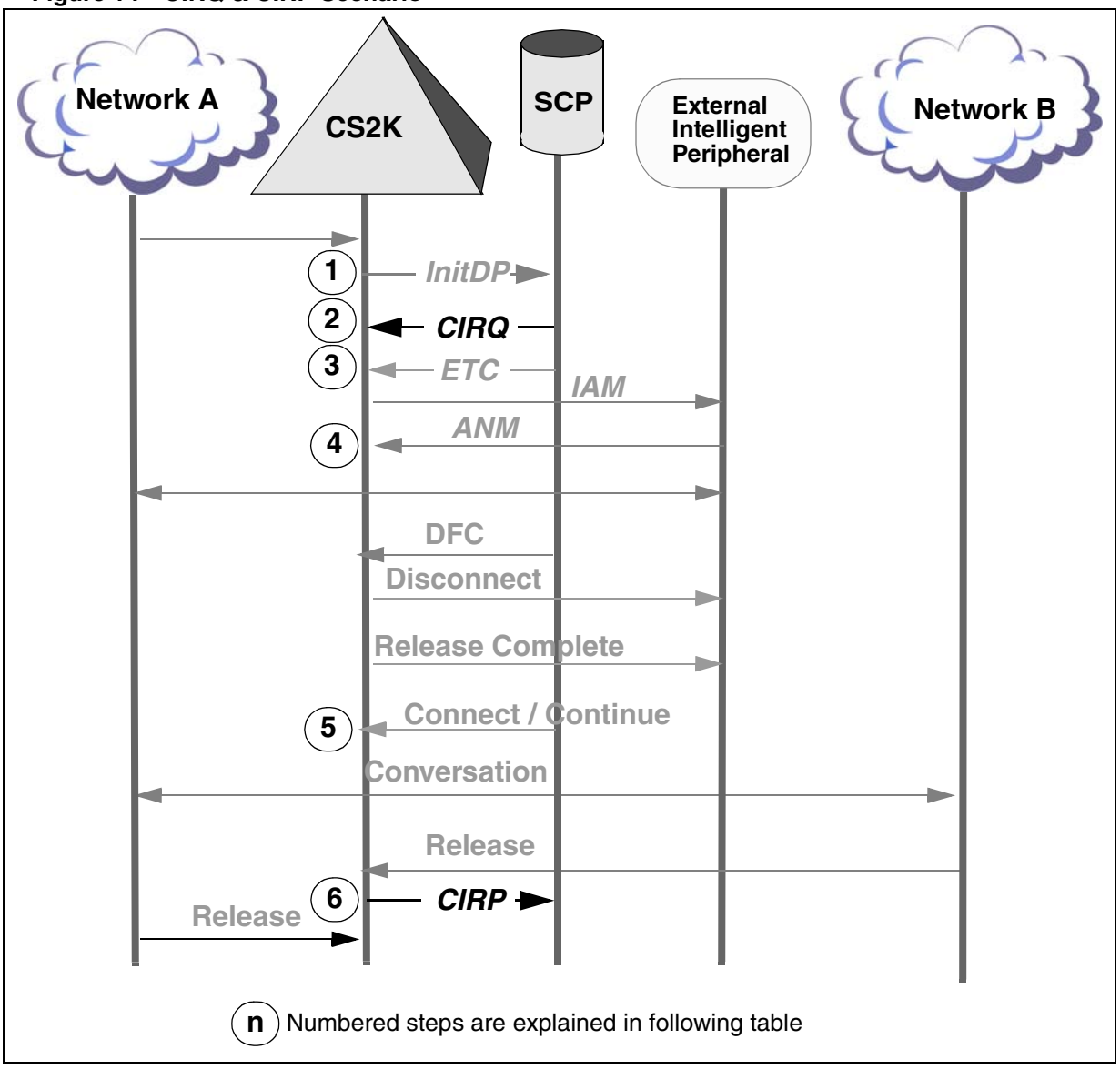
  DateandTimewithMs is coded as YYMMDDHHMMSS.MSS with each digit coded BCD. The first octet
contains YY and the remaining items are sequenced following.

   For Example,  2004 September 27th, 13:12:48.30 would be encoded as
                 #40 #90 #72 #31 #21 #84 #03
```

1.2.6 Appending the dacom specific extension to the operation of CIRP (Call Information Report)

When IN triggers in the call, if CIRQ (Call Information Request) operation is received from SCP, CIRP operation is sent to SCP when the call is released. If the dacom_ext was datafilled in the service key in this table SERVINFO which this call use, the dacom specific extension is appended to the operation of CIRP (Call Information Report). Please look at Figure 14 on page 933, Table 12 on page 934, Table 13 on page 934 and Figure 15 on page 935 for detail information.

Figure 14 CIRQ & CIRP Scenario



Step	Explanation
1	Incoming call triggers as an IN call. InitDP is sent to SCF.
2	The SCF sends a CIRQ operation to the SSF to request the some informations about the call.
3	The SCF sends a ETC operation to the SSF to connect to an external IP. After this operation, SSF and external IP talks to together.

Step	Explanation
4	external IP sends ANM to SSF and the originator of call is connected to the external IP. Then, SCF sends DFC(Disconnect Forward Connection) to SSF and the connection between SSF and external IP is disconnected. **The time which ANM is received from external IP is used as rscConnectTime in the dacom extension of CIRP operation.**
5	SCF sends a Connect or Continue operation to SSF to connect the terminating agent to the call. **The time which the operation of Connect/Continue is received is used as outgoing trunk seizure time in the dacom extension of CIRP operation.**
6	Once the call is released, the SSF sends a CIRP operation which contains the dacom specific informations to the SCF.

Table 12:Definition of the Dacom Extension in CIRP operation (ExtCIRpCdrType)

field name	field value	Description
type	62	Integer
criticality	ignore(0)	In case of an extension field type that has not defined in the SSP coming, ignore it.
value	outTrunkSeizureTime	Out-going trunk seizure time YYMMDD hh:mm:ss.msc
	rscConnectTime	resource connect time YYMMDD hh:mm:ss.msc This parameter defines the IP - Connection Time

Table 13:The length of the new additional optional parameters for Dacom

Parameter	length (octets)
outgoing Trunk Seizure Time (outTrunkSeizureTime)	7
Resource Connect Time (rscConnectTime)	7

Note:

The outTrunkSeizureTime and rscConnectTime are optional fields in the dacom extension. These fields are not put into the dacom extension in the following scenarios.

- If ETC operation is not received, the field of rscConnectTime is not put into the dacom extension in CIRP operation.

- ETC operation is received but If the connection is not established with external IP, the field of rscConnectTime is not put into the dacom extension in CIRP operation.
- If the terminator is a line subcsriber in the same exchange, outTrunkSeizureTime field is not put into the dacom extension in the CIRP.

If Outgoing trunk seizure time and resource connect time is not available in the call, the dacom extension is not appended to the CIRP operation.

Figure 15 ASN.1 encoding for Dacom Extensions in CIRP (Call Information Report)

```
ExtensionField ::= SEQUENCE {
        type            INTEGER,    -- shall identify the value of an EXTENSION type
        criticality     ENUMERATED {
                        ignore (0),
                        abort (1)
                        } DEFAULT ignore,
        value           [1] ANY DEFINED BY type
  }

 ExtCIRpCdrType ::= SEQUENCE {

    outTrunkSeizureTime     [1]   DateandTimewithMs  OPTIONAL,
    rscConnectTime          [2]   DateandTimewithMs  OPTIONAL

    }

  DateandTimewithMs   ::=   OCTET STRING ( SIZE (7))

  DateandTimewithMs is coded as YYMMDDHHMMSS.MSS with each digit coded BCD. The first octet
contains YY and the remaining items are sequenced following.

   For Example,  2004 September 27th, 13:12:48.30 would be encoded as
                 #40 #90 #72 #31 #21 #84 #03
```

1.2.7 Appending the dacom specific extension to the operation of ERBCSM (Event Report BCSM).

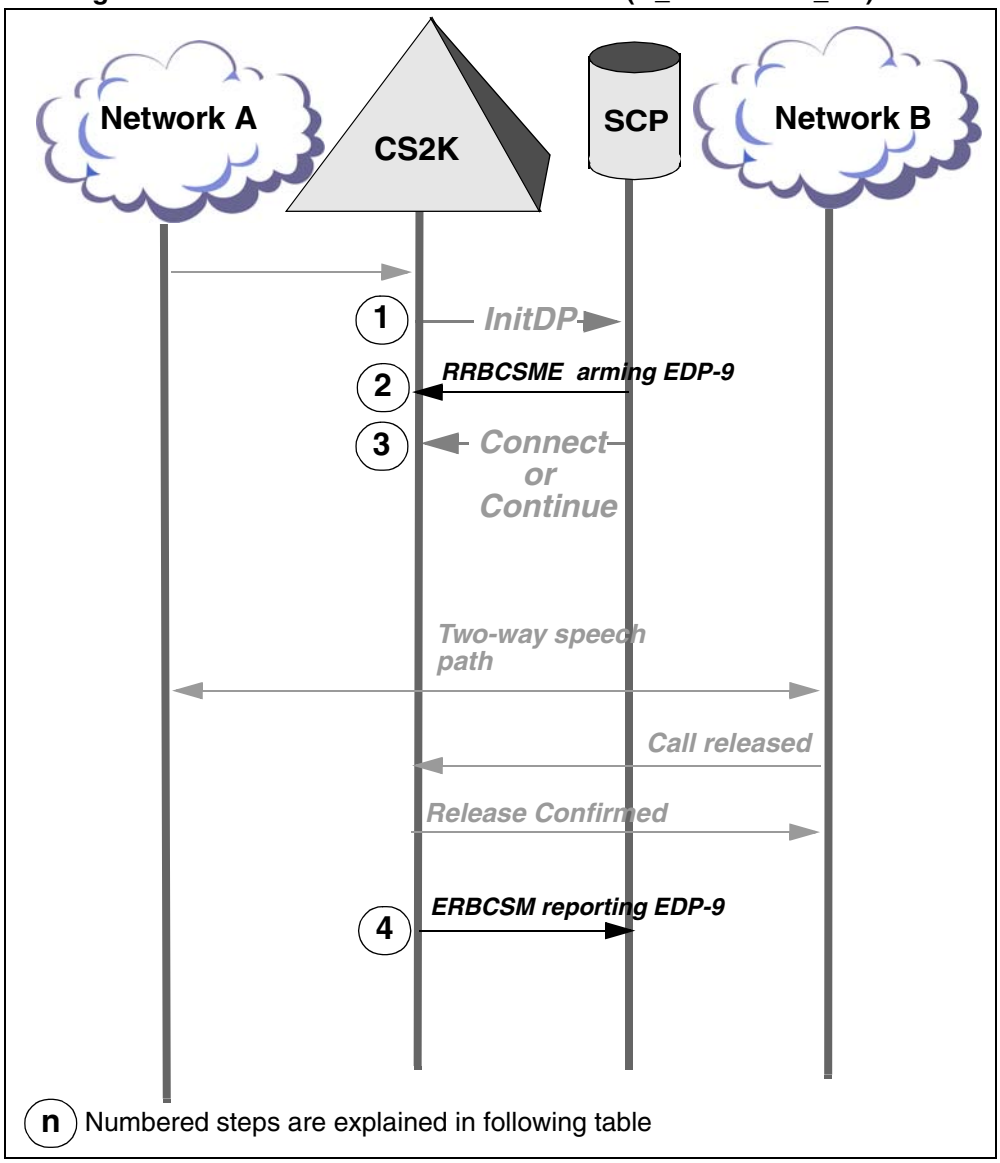
When IN triggers in the call, if RRBCSME arming EDP-9 is received from SCP, ERBCSM is sent to SCP to report that the call is released during the call disconnection. If the dacom_ext was datafilled in the service key in this table SERVINFO which this call use, the dacom specific extension is appended to the operation of ERBCSM (Event Report BCSM).

EDP-9 can be armed to detect when either the originating or terminating leg of a call is released. The default is to arm on the passive leg (leg 2). To arm the call on the controlling (leg 1), a leg id parameter of 1 must be provided in the RRBCSME operation.

If no leg id parameter is included, the option EDP9_OPT in table SERVINFO specifies which leg is armed. If the option specifies leg 1, leg 1 is armed; if the option is not specified, the lowest passive leg is armed.

The dacom specific extension is only appended when SSP send ERBCSM operation for O_Disconnect_DP (eventTypeBCSM 9). Please look at Figure 16 on page 936, Table 14 on page 937, Table 15 on page 937 and Figure on page 938 for detail information about the fields under the dacom extension of ERBCSM operation.

Figure 16 RRBCSME & ERBCSM Scenario (O_Disconnect_DP)



Step	Explanation
1	Incoming call triggers as an IN call. InitDP is sent to SCF.

Step	Explanation
2	The SCF sends a RRBCSME operation to the SSF to arm EDP-9 as an EDP-R on the passive call leg (to report the call disconnection with ERBCSM operation to SCF) and then another messages are done between SSF and Network B and the call is established between Network A and Network B.
3	The SCF sends Connect or Continue operation to SSF and then call setup continues.
4	Once the call is released, the SSF sends an ERBCSM operation. If the dacom_ext is datafilled for this call in the table SERVINFO, the dacom extension is appended to the operation of ERBCSM. **This dacom extension holds the two informations (the IN trigger time (time to send InitDP operation) as callStartTime and EDP-9 trigger time (time to send ERBCSM) as clgRecoveryTime).**

Table 14:Definition of the Dacom Extension in ERBCSM operation (ExtEvtCdrType)

field name	field value	Description
type	63	Integer
criticality	ignore(0)	In case of an extension field type that has not defined in the SSP coming, ignore it.
value	callStartTime	IN trigger time YYMMDD hh:mm:ss.msc
	clgRecoveryTime	The time of O_Disconnect_DP YYMMDD hh:mm:ss.msc

Table 15:The length of the new additional optional parameters for Dacom

Parameter	length (octets)
IN Trigger Time (callStartTime)	7
The time of O_Disconnect_DP	7

Note:

Also, the dacom extension is appended to the ERBCSM operation for O_Disconnect generated because originator releases the call.

ASN.1 encoding for Dacom E

```
ExtensionField ::= SEQUENCE {
        type            INTEGER,    --  shall identify the value of an EXTENSION type
        criticality     ENUMERATED {
                        ignore (0),
                        abort (1)
                        } DEFAULT ignore,
        value           [1] ANY DEFINED BY type
  }

 ExtEvtCdrType ::= SEQUENCE {

    callStartTime           [0]   DateandTimewithMs
    clgRecoveryTime         [1]   DateandTimewithMs

    }

  CallingSubsCategory   ::=  OCTET STRING  ( SIZE (1))
  DateandTimewithMs   ::=   OCTET STRING ( SIZE (7))

  DateandTimewithMs is coded as YYMMDDHHMMSS.MSS with each digit coded BCD. The first octet
contains YY and the remaining items are sequenced following.

   For Example,  2004 September 27th, 13:12:48.30 would be encoded as
                 #40 #90 #72 #31 #21 #84 #03
```

1.3 Background Information

1.3.1 Configuration for TDP4

The criteria for triggering TDP-4 is based on the cause value received in the ISUP message. The release cause value required to trigger TDP-4 is specified in the criteria type CAUSE in table TRIGGRP. The CAUSE criteria can only be datafilled against NETBUSY triggers. Criteria matching will not be performed on digits at TDP-4, therefore an INFONAME is datafilled in table TRIGINFO before using the CAUSE criteria.

Figure 17 Example datafill SERVINFO

```
SERVIDX OPTION
-------------------------------------------------------------------------------
1111
(INITDP_PARMS ( SERVKEY) (CDPA) (CPC) (EVENT_TYPE) (CAUSE) $)
(DIGIT_COLLECTION_INFO ( FULL_CDPA ) $)
(EDPS_INFO ( EXPLICIT ) $) (CS1R (CONTINUE) (CWA) $)$
```

Figure 18 Example datafill TRIGINFO

```
KEY ACTION OPTIONS
-------------------------------------------------------------------------------
MDCKEY1 EVENT TCAP INAPV8 TCPIP 1 (SERVKEY 1111) (SERVINFO_INDEX 1111) $
```

Figure 19 Example datafill TRIGGRP

```
KEY TRIGDATA
-------------------------------------------------------------------------------
         ETSIGRP NETBUSY
(GENTRIG ( CAUSE CSE_14) $ MDCKEY1)$
```

The following CAUSE values are supported (Note that unsupported values may still be datafilled however they may not trigger):

1-5, 8, 9, 14, 17-22, 27-29, 34, 38, 41-44, 46, 47, 50, 53, 55, 57, 58, 62, 63, 65, 69, 70, 79, 87, 88, 90, 91, 95, 97, 99, 102, 103, 110, 111, 126.

The criteria ASSIGNED is also valid at TDP4. In this case, all calls in which the originating trunk/line is subscribed to the TDP4 group will trigger at TDP4 when released.

If the CAUSE option is present within the INITDP_PARMS option in table SERVINFO, the cause value used to trigger at TDP-4 is sent to the SCP in the InitDP.

Figure 20 Example datafill SERVINFO

```
SERVIDX                                                              OPTION
-------------------------------------------------------------------------------

4441    (INITDP_PARMS ( SERVKEY) (CDPA) (CPC) (EVENT_TYPE) (CAUSE) $)
           (DIGIT_COLLECTION_INFO ( FULL_CDPA ) $)
           (EDPS_INFO ( EXPLICIT ) $) (CS1R (CONTINUE) (CWA) $)$
```

In addition to the criteria matching, TDP-4 triggering is controlled on a per switch basis via the office parm WTIN_TDP4_ACTIVE in table OFCENG. The default value for this parm is FALSE, but it must be set to TRUE for triggering.

Figure 21 Example datafill OFCENG

```
 PARMNAME              PARMVAL
-------------------------------------------------------------------------------
 WTIN_TDP4_ACTIVE      Y
```

For trunk originations the TDP-4 trigger criteria needs to be specified in table TRIGGRP and the incoming trunk(s) subscribed to the trigger group, either on a per trunk basis in table TRKAIN or on an office wide basis with the AIN_OFFICE_TRIGGRP office parameter in table OFCVAR.

Figure 22 Example datafill TRIGGRP

```
 KEY              TRIGDATA
-------------------------------------------------------------------------------
TDP4GRP NETBUSY   (GENTRIG ( CAUSE CSE_14) $ MDCKEY1)$
```

Figure 23 Example datafill TRKAIN

```
GRPKEY       AINGRP     AININFO
-------------------------------------------------------------------------------
K1S5020EI2B  TDP4GRP
```

Figure 24 Example datafill OFCVAR

```
 PARMNAME             PARMVAL
-------------------------------------------------------------------------------
AIN_OFFICE_TRIGGRP   ETSIGRP
```

For line originations the AIN line option needs to be added via SERVORD and WTIN_LINE_TRIGGERING_ACTIVE office parameter in table OFCENG should be set to Y.

Figure 25 Example Line datafill

```
>qdn 8226035
-------------------------------------------------------------------------------
DN:     8226035
TYPE: SINGLE PARTY LINE
SNPA: 141   SIG: DT    LNATTIDX: N/A
LINE EQUIPMENT NUMBER:     LG    01 2 00 35
LINE CLASS CODE:  IBN
IBN TYPE: STATION
CUSTGRP:         CSLINES     SUBGRP: 0  NCOS: 0
CARDCODE:  GWLPOT    GND: N  PADGRP: PKNIL  BNV: NL MNO: N
PM NODE NUMBER     :    72
PM TERMINAL NUMBER :    36
OPTIONS:
LNR DGT AIN TDP4GRP

-------------------------------------------------------------------------------
```

Figure 26 Example datafill OFCENG

```
 PARMNAME                     PARMVAL
-------------------------------------------------------------------------------
WTIN_LINE_TRIGGERING_ACTIVE   Y
```

1.3.2 TRAVER support for TDP4

The TRAVER tool can be used to verify TDP-4 functionality. If a TDP4 trigger is detected the user is prompted to input a cause value, this is then checked against the datafilled criteria.

Figure 27 Example TRAVER using CAUSE triggering at TDP-4

```
>traver 1 8226034 743012345 b
TABLE IBNLINES
LG 01 2 00 34 0 DT STN IBN 8226034 CSLINES 0 0 141 (LNR) $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
LG 01 2 00 34 0 AIN AIN TDP4GRP
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP ETSIGRP
INAP Origination Attempt TDP:  no subscribed trigger.
INAP Info Collected TDP:  no subscribed trigger.
TABLE NCOS
CSLINES 0 0 0 DFLT ( XLAS K1TYPE NXLA NDGT)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
CSLINES NXLA K1PSTN CSFETXLA 0 CSACCDIG
TABLE DIGCOL
TUPLE NOT FOUND
Default is RPT
TABLE IBNXLA: XLANAME K1TYPE
K1TYPE 7 NET N N 0 N CSDIG N Y DOD N K1TYPE CS_NPRT CS_NIL NONE $
TABLE DIGCOL
CSDIG 7 COL L 7
TABLE LINEATTR
K1TYPE IBN NONE NT 0 0 NILSFC 0 PX TYPEPX NIL 00 CS_NPRT CS_NIL $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
CS_NPRT NSCR 141 NPRT NONE N $ $
TABLE RATEAREA
CS_NIL NLCA NIL NILLATA $
TABLE PXHEAD
TYPEPX DFLT CONT(XLT PX PUBAPSTN)$ DFOP(CLASS NATL)$NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE:              743012345
TABLE PXCODE
TYPEPX 7 7 CONT ( PF 1) ( MM 6 18) ( XLT PX ATMEPX)$
TABLE PXHEAD
ATMEPX SDFLT NODFOP NOCON F
THE DIGITS USED TO INDEX THE NEXT TABLE ARE:              43012345
TABLE PXCODE
ATMEPX 430 430 RTE ( PF 3) ( DEST 430)$
TABLE: PXRTE
KEY:   ATMEPX  430
 . S K1197EISWBE
EXIT TABLE PXRTE
TABLE AMAXLAID
MANTEST DFLT (FLEXCTYP GENERIC 910 OVRDALL )$
TABLE TRIGGRP
ETSIGRP INFOANAL
 . GENTRIG ( CDPN K1197)$ NIL
Trigger INAPV8 GENTRIG is applicable to office.
 . GENTRIG ( CDPN SIMTOOL)$ NIL
Trigger INAPV8 GENTRIG is applicable to office.
INAP Info Analyzed TDP:  trigger criteria not met.
```

```
TABLE TRIGGRP
TDP4GRP NETBUSY
 . GENTRIG ( CAUSE CSE_14)$ MDCKEY1
Trigger INAPV8 GENTRIG is applicable to individual line.
PLEASE ENTER VALUE FOR RELEASE CAUSE (0..127)
>14
 .  . TABLE TRIGINFO
 .  . MDCKEY1 EVENT TCAP INAPV8 SS7 EIN_NATL_GTT DFLT (SERVKEY 1111)
 .  .     (SERVINFO_INDEX 1111) $
 .  .  . TABLE SERVINFO
 .  .  . 1111
 .  .  .     (INITDP_PARMS ( SERVKEY) (CDPA) (CLI) (CPC) (EVENT_TYPE) $)
 .  .  .     (BILL_INFO (FCI_OPT FREEFORM ) $)
 .  .  .     (EDPS_INFO ( EXPLICIT ) $) (CS1R (CONTINUE) (CWA) $)$
 .  .  . TABLE C7GTTYPE
 .  .  . EIN_NATL_GTT CCITT7 0 NATL E164 $
 .  .  . TABLE C7GTT
 .  .  . EIN_NATL_GTT 1111 1111 PCSSN (K1197RS1 EIN 50) $ SSN
INAP Route Select Failure TDP:  trigger criteria met, querying the database.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++


INAP Route Select Failure TDP:  trigger criteria met, querying the database.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

1.4 Hardware Requirements or Dependencies

None.

1.5 Software Requirements or Dependencies

Feature A00007807 “Base ETSI ISUP V2 support for Dacom IN”.

1.6 Limitations and restrictions

For the existing general limitations in the CS2K IN platform, please refer to the FN of the activity A00002678 ‘Telefonica IN Enhancements’

1.7 Interactions

None.

1.8 Glossary

Term	Description
ASN.1	Abstract Syntax Notation One
CDN	Called Directory Number
CIRQ	Call Information Request
CIRP	Call Information Report
CS2000	CallServer 2000

Term	Description
CS2K	CallServer 2000
DN	Directory Number
ERBCSM	Event Report BCSM
ETC	Establish Temporary Connection
ETSI	European Telecommunications Standards Institute
IAM	Initial Address Message
IN	Intelligent Network
INN	Internal Network Number
INAP	Intelligent Network Application Protocol
InitDP	InitialDP
IP	Intelligent Peripheral
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
LNP	Local Number Portability
NOA	Nature of Address
NP	Number Portability
NPFI	Number Portability Forward Information
NPI	Numbering Plan Indicator
NPSI	NP Status Indicator
PRI	Primary Rate Access
QoR	Query on Release
REL	RELease
RN	Routing Number
RRBCSME	Request Report BCSME
SCF	Service Control Function
SCFId	Service Control Function Id
SCP	Service Control Point
SSP	Service Switching Point
TDP	Trigger Detection Point

Term	Description
TRAVER	TRAnslations VERification

1.9 References

[1] ITU Intelligent Networks Systems Guide (INSYSGDE in PLS FMDOC)

[1] Specifications for Interface on Dacom Intelligent Network

[2] A59027497 LNP Query on Release - Non IN

[3] A00002678 Telefonica IN Enhancements

[4] ACT.A00002713 Spanish ISUP Enhancements for Telefonica

[5] Feature A00002900 “China INAP Compliance Enhancement part 2”.

[6] A00007807 “Base ETSI ISUP V2 support for Dacom IN”.

Configuration for A00007793

2.1 Hardware and Software Requirements

This activity is implemented in the ISN08 release.

2.2 Initial Configuration

None.

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

None.

2.4 Upgrade Considerations

None.

2.5 Data schema (DS)

2.5.1 New/modified tables, MIBs, or Database Schema

Table name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
SERVINFO	CHANGED	UNCHANGED

SERVINFO: Intelligent Network Service Information Table

Table SERVINFO contains information related to an international intelligent network (IN) service. Services are identified by the service index, which is the key to table SERVINFO. This gives the customer the ability to tailor and adapt IN services on a per-customer, per-service basis (Service Profiling).

2.5.1.1 New CORRELATIONID_TRANSPORT in the SRF_INFO option

2.5.1.1.1 Functional description

This activity introduces a new sub-option CORRELATIONID_TRANSPORT for the existing SRF_INFO option of the table SERVINFO. This is needed to meet the Dacom's requirement that the CorrelationID parameter from ETC operation should be handled as a separate parameter. For detailed information, please refer to the FN section of this activity.

The CORRELATIONID_TRANSPORT is set to the IN_CRID value to handle the CorrelationID as a separate parameter for Dacom, as shown in Figure 1 and 2.

2.5.1.1.2 Usage sequence and implications (CM Only)

None.

2.5.1.1.3 Size

The minimum and maximum number of tuples allowed in the table ISUPSVC is not changed by this activity.

2.5.1.1.4 Fields/OIDs

The following table lists fields/OIDs for the table SERVINFO:

Field	Subfield	New/ Changed/ Not changed	Required Entry for this feature	Explanation and action
SERVIDX	-	Not changed	0 to 9999	SERVINFO index. This field indicates an IN service on the DMS SSP switch. This field is the key from tables TRIGINFO and TRIGDIG. Enter a key number to uniquely identify the IN service.

Field	Subfield	New/ Changed/ Not changed	Required Entry for this feature	Explanation and action
OPTION	INITDP_PARMS, BILL_INFO, DIGIT_COLLECTION_INFO, SRF_INFO, RESPONSE_INFO, EDPS_INFO, MSG_INFO, TCAP_INFO, FI, CS1R, INITDP_EXTENSIONS	Not changed	SRF_INFO	These are the main categories from which various per-service options and controls reside. For this feature SRF_INFO is datafilled in the OPTION field.
	SRF_INFO	Changed	(See subfields INTERNAL_SRF_INFO_OPTION and **EXTERNAL_SRF_INFO_OPTION)**	INTERNAL_SRF_INFO is the existing suboption of the SRF_INFO. There is no change. **EXTERNAL_SRF_INFO is newly added in this activity.**
	INTERNAL_SRF_INFO_OPTION	Not changed	$	The existing subfield INTERNAL_SRF_INFO datafill is not needed in this feature.
	EXTERNAL_SRF_INFO_OPTION	**New**	**CORRELATIONID_TRANSPORT** **(See subfield CORRELATIONID_TRANSPORT_DATA)**	**This is the newly created option for CorrelationID in this feature. It can take the value: IN_CRID**
	CORRELATIONID_TRANSPORT_DATA	**New**	**IN_CRID**	**In this feature, for Dacom, the CORRELATIONID_TRANSPORT should be set to IN_CRID to handle the Correlation ID as a separate parameter.**

2.5.1.1.5 Datafill example

The following figures show sample SERVINFO datafills for this feature:

Figure 28 Example datafill for the new DACOM CorrelationID option in table SERVINFO

```
CI:
>table servinfo
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: SERVINFO
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
SERVIDX:
>99
OPTION:
>SRF_INFO
INTERNAL_SRF_INFO_OPTION:
>$
EXTERNAL_SRF_INFO_OPTION:
>CORRELATIONID_TRANSPORT
CORRELATIONID_TRANSPORT_DATA
>IN_CRID
EXTERNAL_SRF_INFO_OPTION:
>$
OPTION:
>$
TUPLE TO BE ADDED:
      99    (SRF_INFO $ (CORRELATIONID_TRANSPORT IN_CRID) $)$
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

Figure 29 Example view of the new DACOM CorrelationID option in table SERVINFO

```
TABLE: SERVINFO

SERVIDX OPTION

--------------

99

(SRF_INFO $ (CORRELATIONID_TRANSPORT IN_CRID) $)$
```

2.5.1.1.6 Table release history update

None.

2.5.1.1.7 Supplementary information

None.

2.5.1.1.8 Translation verification and other tools

None.

2.5.1.2 New DACOM_EXT in the INITDP_EXTENSIONS option

2.5.1.2.1 Functional description

The other sub-option introduced in this activity is DACOM_EXT for the existing INITDP_EXTENSIONS option of the table SERVINFO.

The INITDP_EXTENSIONS is set to the DACOM_EXT, as shown in Figures 3 and 4, to append the Dacom specific extension to the operations InitialDP, CIRP (Call Information Report) and ERBCSM (Event Report BCSM). For detailed information, please refer to the FN section of this activity.

2.5.1.2.2 Usage sequence and implications (CM Only)

None.

2.5.1.2.3 Size

The minimum and maximum number of tuples allowed in the table ISUPSVC is not changed by this activity.

2.5.1.2.4 Fields/OIDs

The following table lists fields/OIDs for the table SERVINFO:

Field	Subfield	New/ Changed/ Not changed	Required Entry for this feature	Explanation and action
SERVIDX	-	Not changed	0 to 9999	SERVINFO index. This field indicates an IN service on the DMS SSP switch. This field is the key from tables TRIGINFO and TRIGDIG. Enter a key number to uniquely identify the IN service.
OPTION	INITDP_PARMS, BILL_INFO, DIGIT_COLLECTION_INFO, SRF_INFO, RESPONSE_INFO, EDPS_INFO, MSG_INFO, TCAP_INFO, FI, CS1R, INITDP_EXTENSIONS	Not changed	(See subfield INITDP_EXTENSIONS)	These are the main categories from which various per-service options and controls reside. For this feature INITDP_EXTENSIONS is datafilled as option.
	INITDP_EXTENSIONS	Changed	(See subfield INITDP_EXT_INFO)	**DACOM_EXT is newly added to the existing INITDP_PARM_EXT_TYPE.**

Field	Subfield	New/ Changed/ Not changed	Required Entry for this feature	Explanation and action
	INITDP_EXT_INFO	New	**DACOM_EXT**	INITDP_PARM_EXT_TYPE {NATIONAL_FWD_CALL_IND, PRESENTATION_NO, LAST_DIV_LINE_ID,PARTIAL_CLI, CALLED_SUBS_BSM, CALLING_SUBS_BSM,CALLING_SUBS_OFM, CALLED_SUBS_TFM,CLI_NAME,SF_ENC,GAP_INT,NCPC, IN_CONT,**DACOM_EXT**}

2.5.1.2.5 Datafill example

The following figures show sample SERVINFO datafills for this feature:

Figure 30 Example datafill for the new DACOM_EXT option in table SERVINFO

```
CI:
>table servinfo
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: SERVINFO
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
SERVIDX:
>9
OPTION:
>INITDP_EXTENSIONS
INITDP_EXT_INFO:
>DACOM_EXT
INITDP_EXT_INFO:
>$
OPTION:
>$
TUPLE TO BE ADDED:
      9    (INITDP_EXTENSIONS ( DACOM_EXT) $)$
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
TUPLE ADDED
JOURNAL FILE INACTIVE
```

Figure 31 Example view of the new DACOM_EXT option in table SERVINFO

```
TABLE: SERVINFO

SERVIDX OPTION

--------------

9

( INITDP_EXTENSIONS (DACOM_EXT) $)$
```

2.5.1.2.6 Table release history update

None.

2.5.1.2.7 Supplementary information

None.

2.5.1.2.8 Translation verification and other tools

None.

2.6 Service Orders (SO) (CM & SESM)

N/A.

2.7 Software optionality control (SOC)

N/A.

2.8 Element Management

N/A.

2.9 User interface changes

N/A.

2.10 OSSGate Interface Changes

N/A.

2.11 Security

N/A.

2.12 Configuration Walkthrough

N/A.

Product = World Trade

A00007794--IN Collect Call Support (DACOM)

Functional Description

1.1 Applicable Solution(s)

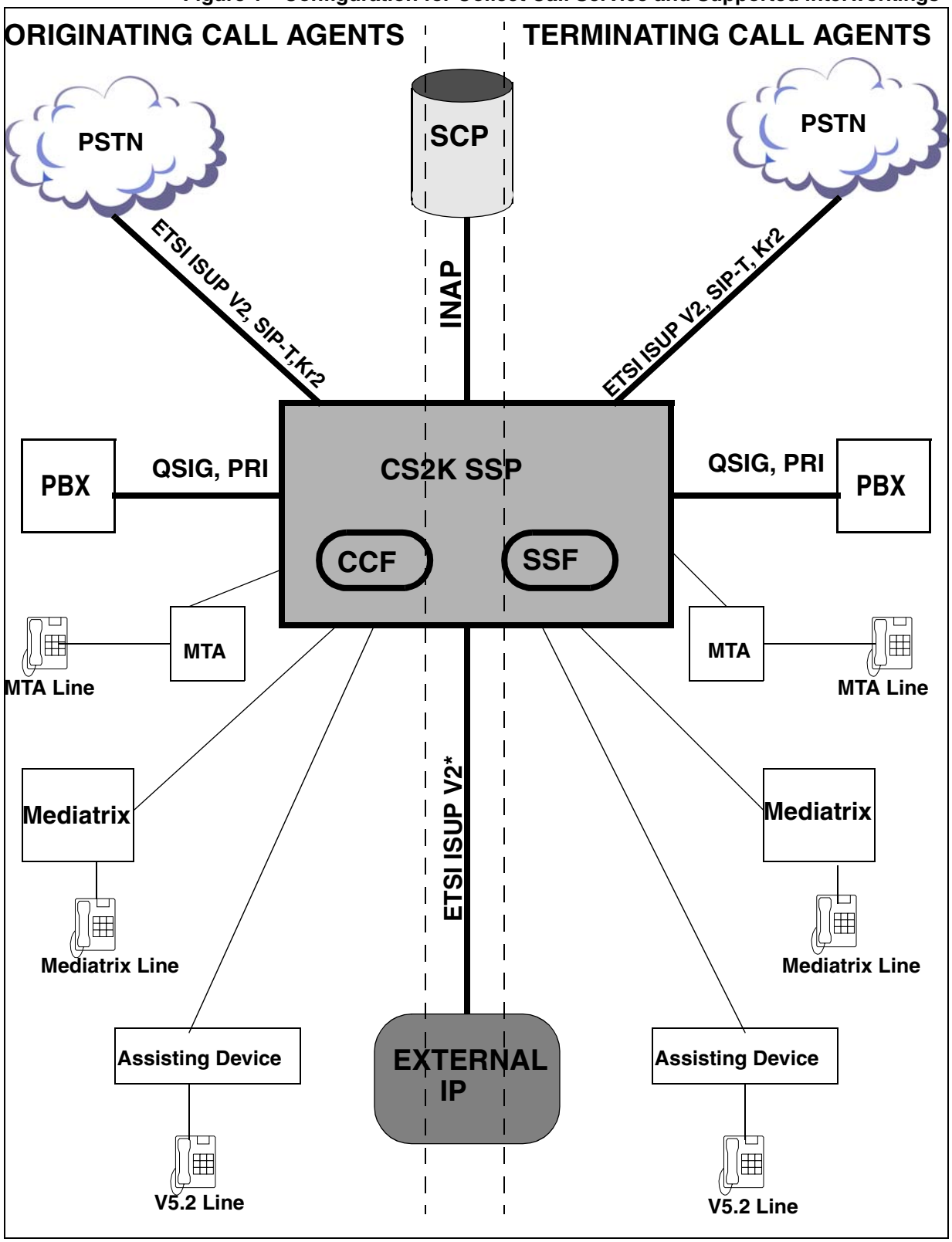
Int'l IAC

1.2 Description

Collect call is the service of charging the called party through announcement and called party identification which works as follows:

- When a call with collect call prefix digits is received by the SSP, the Intelligent Network service is triggered and an InitDP message is sent to the SCP
- The SCP instructs the SSP to monitor for the called party answer event, by arming the Answer EDP.
- Once the call is answered, ERBCSM(oAnswer) is sent to the SCP and SCP instructs SSP to connect both ends to the External IP device (through ETSI ISUP V2) to provide collect call announcements.
- Calling party will hear an announcement like "Please say your name after the signal" and the called party will hear an announcement like "<Name Surname> is calling, If you accept the charges for this call, please stay on line"
- If the called party accepts the call, SCP instructs SSP again to connect two parties after the announcement.

Figure 1 Configuration for Collect Call Service and Supported interworkings



*Please note that the parameters SCFid and CorrelationId required to connect to Assisting SSF, are supported by the activity A00007793.

This activity supports:

- CallSegmentID parameter in ETC operation,
- ETC (Leg2) and ETC (CallSegId 2) for connection to an external IP,
- DFCWA (leg2) and DFCWA (CallSegId 2)for disconnection from the external IP.

The supported originating and terminating agents for the IN Collect Call are shown in Figure:"Configuration for Collect Call Service and Supported interworkings" on page 952 and are listed in below table:

Table 1: Supported interwokings

Originating agents -> Terminating agents	lines	ETSI ISUP V2	ETSI PRI	QSIG (H.323)	SIP-T	Korean R2
lines[a]	*	*	*	*	*	*
ETSI ISUP V2	*	*	*	*	*	*
ETSI PRI	*	*	*	*	*	*
QSIG (H.323)	*	*	*	*	*	*
SIP-T	*	*	*	*	*	*
Korean R2	*	*	*	*	*	*

a. Supported line agents are Cable lines via MTA, IBN lines via Mediatrix and V5.2 (V5.2 BRI lines are not covered by this activity.)

Please note that Call Party Handling (CPH) is supported for IN calls and is developed by activity A00007797: "Line Interworking Support For CPH (DACOM)".

Also note that billing of collect calls are performed on the SCP so billing of DMS is not affected.

1.2.1 Functional Overview

1.2.1.1 Establish Temporary Connection Enhancement to support CallSegmentID Parameter

The ETC operation is enhanced to support CallSegmentID parameter. The LegID parameter and CallSegmentID parameters are defined as follows in the ETC operation in Q.1228 (INAP CS2) Specification:

EstablishTemporaryConnectionArg {PARAMETERS-BOUND : bound} ::=
SEQUENCE {
assistingSSPIPRoutingAddress [0] AssistingSSPIPRoutingAddress { bound},
correlationID [1] CorrelationID { bound} OPTIONAL,
partyToConnect CHOICE {
legID [2] LegID,
callSegmentID [7] CallSegmentID { bound}
} OPTIONAL,
scfID [3] ScfID { bound} OPTIONAL,
extensions [4] SEQUENCE SIZE(1..bound.&numOfExtensions)
OF ExtensionField {bound} OPTIONAL,
carrier [5] Carrier OPTIONAL,
serviceInteractionIndicators [30] ServiceInteractionIndicators { bound}
OPTIONAL,
serviceInteractionIndicatorsTwo [6] ServiceInteractionIndicatorsTwo
OPTIONAL,
...
}

With this enhancement it will be possible to connect the Called Party to the external IP using CallSegmentID parameter as well as the LegID parameter in the ETC operation.

Only one of these two parameters can be used in the ETC operation. If both of them are present in a received ETC, the operation will be rejected.

1.2.1.2 IN Collect Call Support

“Collect Call Flow Diagram” on page 955 illustrates the collect call flow.

Please note that IP to SCP operations which are independent of the SSP are not displayed in the message sequence and the incoming call and the connection to the external IP are assumed to be over ETSI ISUP V2 trunks.

Figure 2 Collect Call Flow Diagram

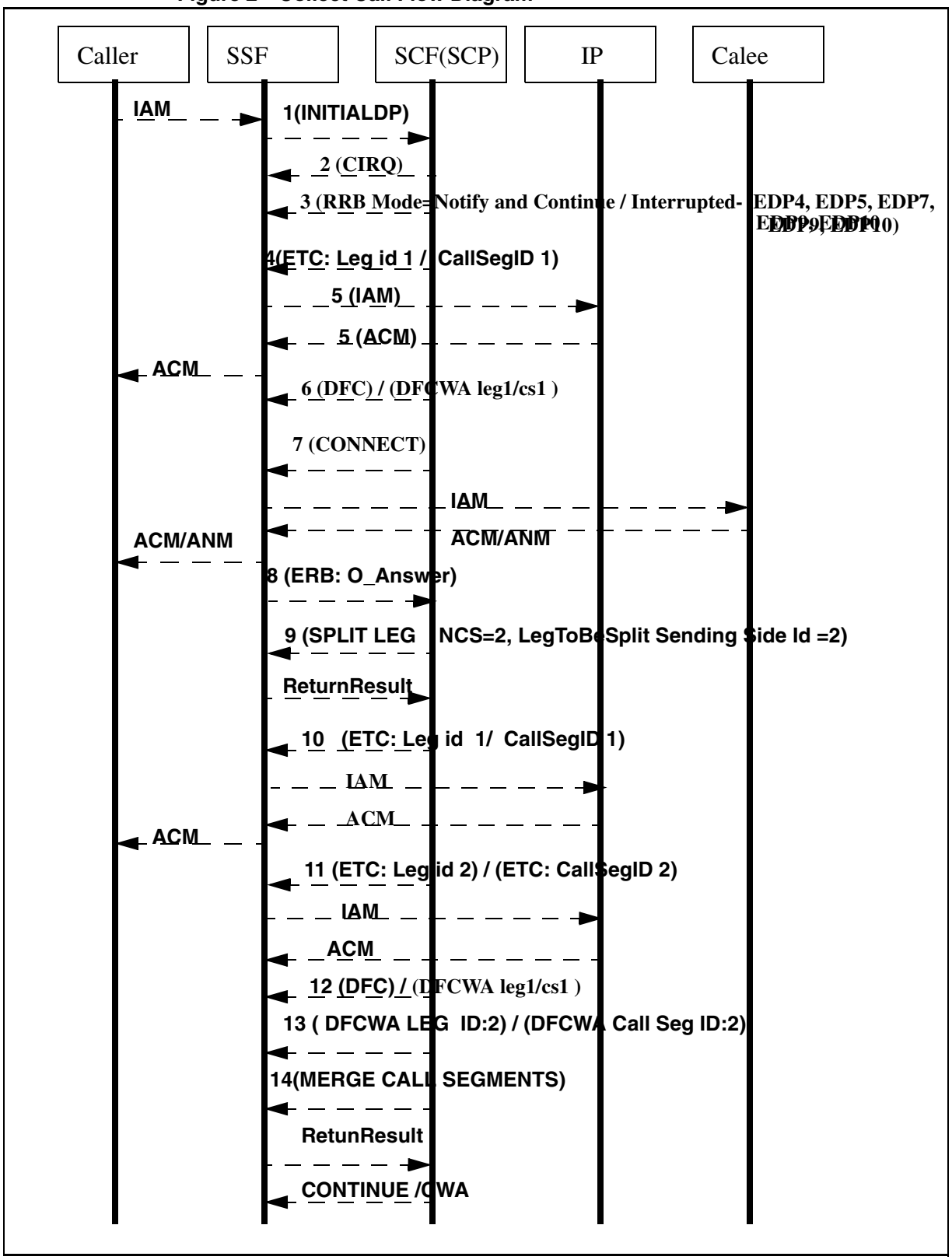
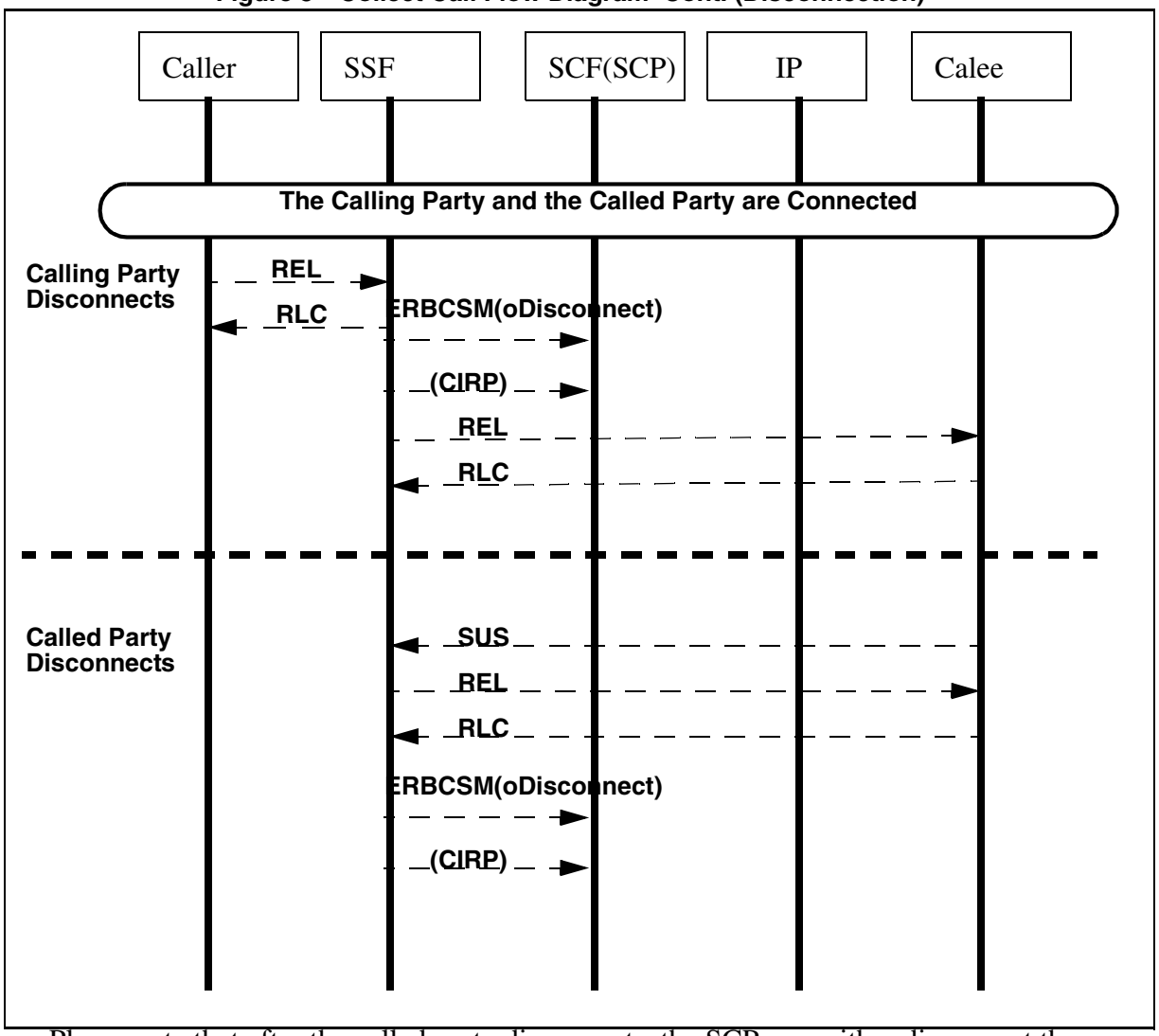


Figure 3 Collect Call Flow Diagram Cont. (Disconnection)



Please note that after the called party disconnects, the SCP may either disconnect the controlling (Leg 1) call or connect it to another announcement.

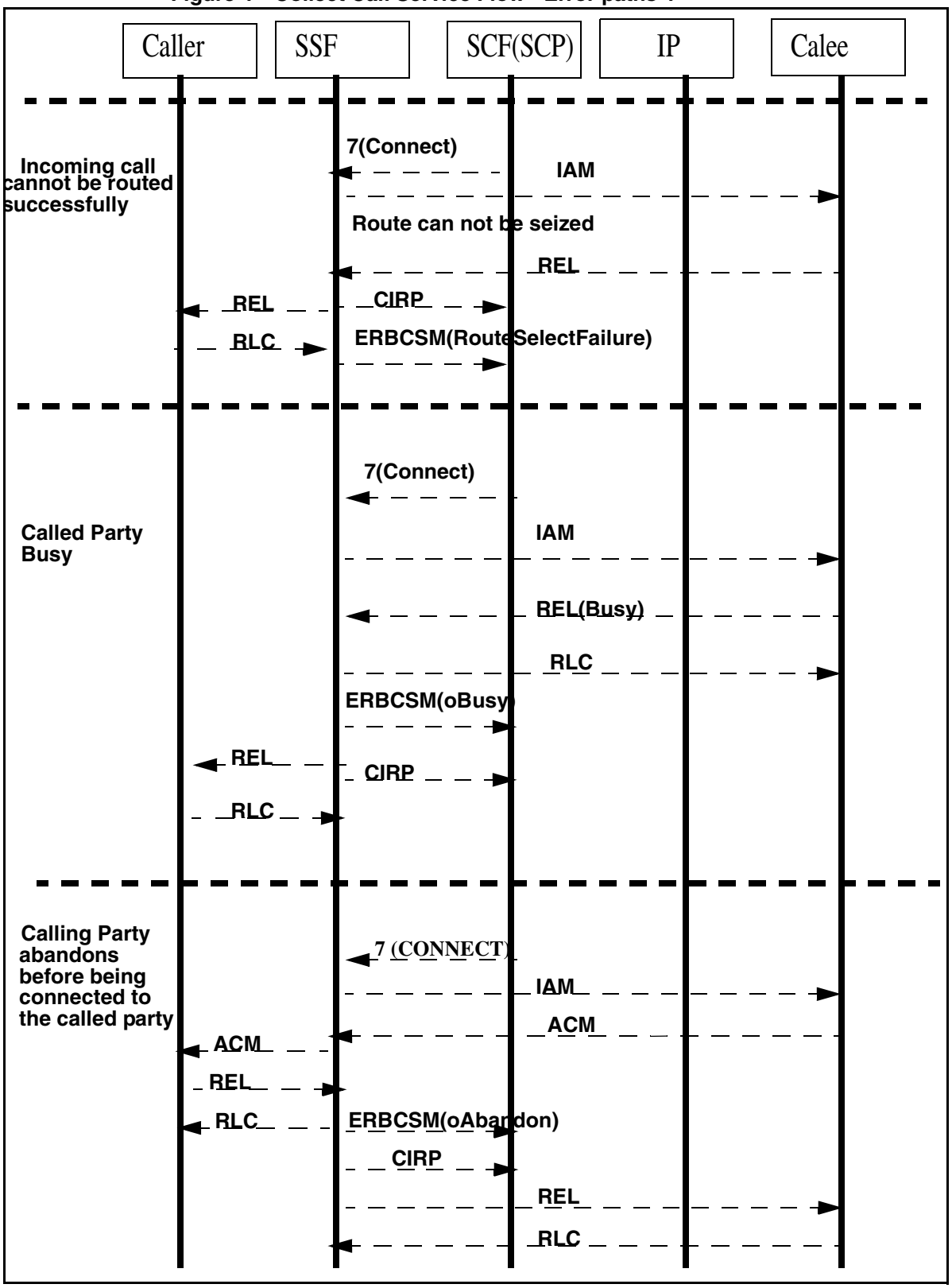
1. The switching system (SSP) recognizes Collect Call Prefix, and triggers intelligent call to SCP. The SCP is informed via InitialDP message.(Will be detected and triggered at TDP3)
2. The SCP sends CIRQ to SSP.
3. SCP arms EDP-7 (O_Answer Mode: N&C or Interrupted) so that when the terminating switch answers, the system will report the event to SCP. SCP also arms EDP4(Route_Select_Failure), EDP5(O_Called_Party_Busy), EDP9(O_Disconnect), EDP10(O_Abandon)
4. SCP requests the switching system (SSP) to set up a call to IP. (DMS/SSP is expecting ETC message from SCP)

5. SSP requests external IP to set up call, and external IP sends ACK to SSP.
6. SCP commands SSP to disconnect external IP connection. (DFC)
7. SCP commands the switching system to connect calls to the reported called party number. (CONNECT)
8. If there is an answer from terminating switch, the system reports the event to SCP. (ERB: O_Answer)
9. SCP commands Split Leg operation to be able to connect both the caller and the called party to the external IP. **The Split Leg operation has the parameters New Call Segment = 02 and LegTo BeSplit (Sending Side Id = 02).**
10. SCP commands SSP to make connection to the ext.IP to provide announcement for the calling party (ETC: Leg ID = 1).
11. SCP commands SSP to make connection to the ext. IP to provide announcement for the called party. **(ETC: Leg ID = 2 or ETC:CallSegmentID=2)**
12. SCP commands SSP to release ext.IP connections for Leg 1(DFC).
13. SCP commands SSP to release ext.IP connections for Leg 2 **(DFCWA Leg 2 or DFCWA CallSegmentID 2)**
14. SCP commands SSP to Merge Call Segments.After the MergeCallSegments operation a Continue or CWA operation is needed to change the state from WFI to MON.
15. After the calling or the called party goes on-hook the call is released between the caller and the callee, SSP sends a Call Information Report (CIRP) to the SCP since it is requested from the SCP via CIRQ message.

1.2.1.3 Collect Call Service Error Paths

Figures 4 to 9 show error paths that may occur during Collect Call Service Flow. “Collect Call Flow Diagram” on page 955 is taken as the reference successful call path for all figures.

Figure 4 Collect Call Service Flow - Error paths-1



In the first two scenarios of “Collect Call Service Flow - Error paths-1” on page 958 the SCP may connect the caller to an announcement to indicate the unsuccessful status of the call.

Figure 5 Collect Call Service- Error Paths-2

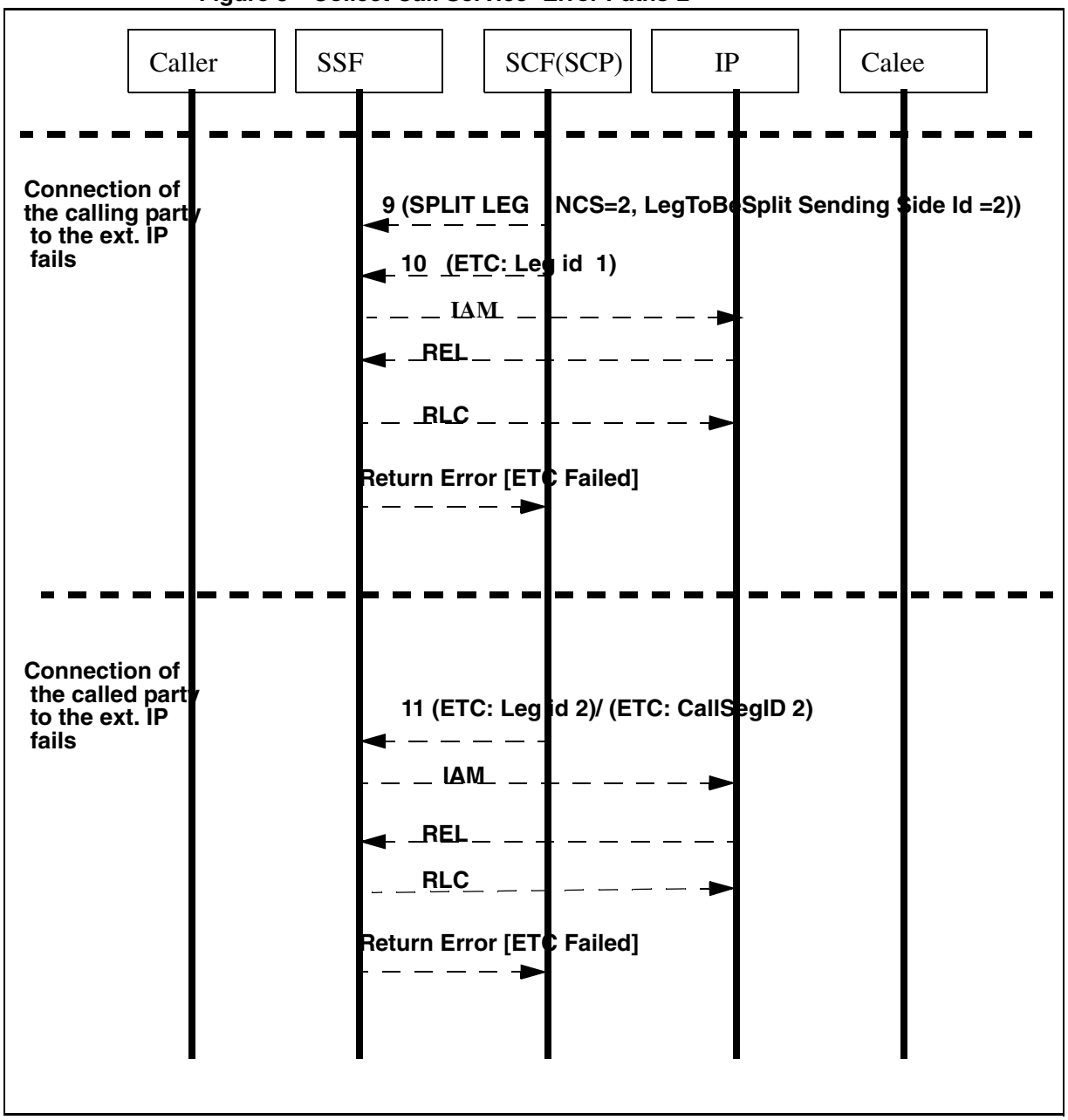


Figure 6 Collect Call Service- Error Paths- 3

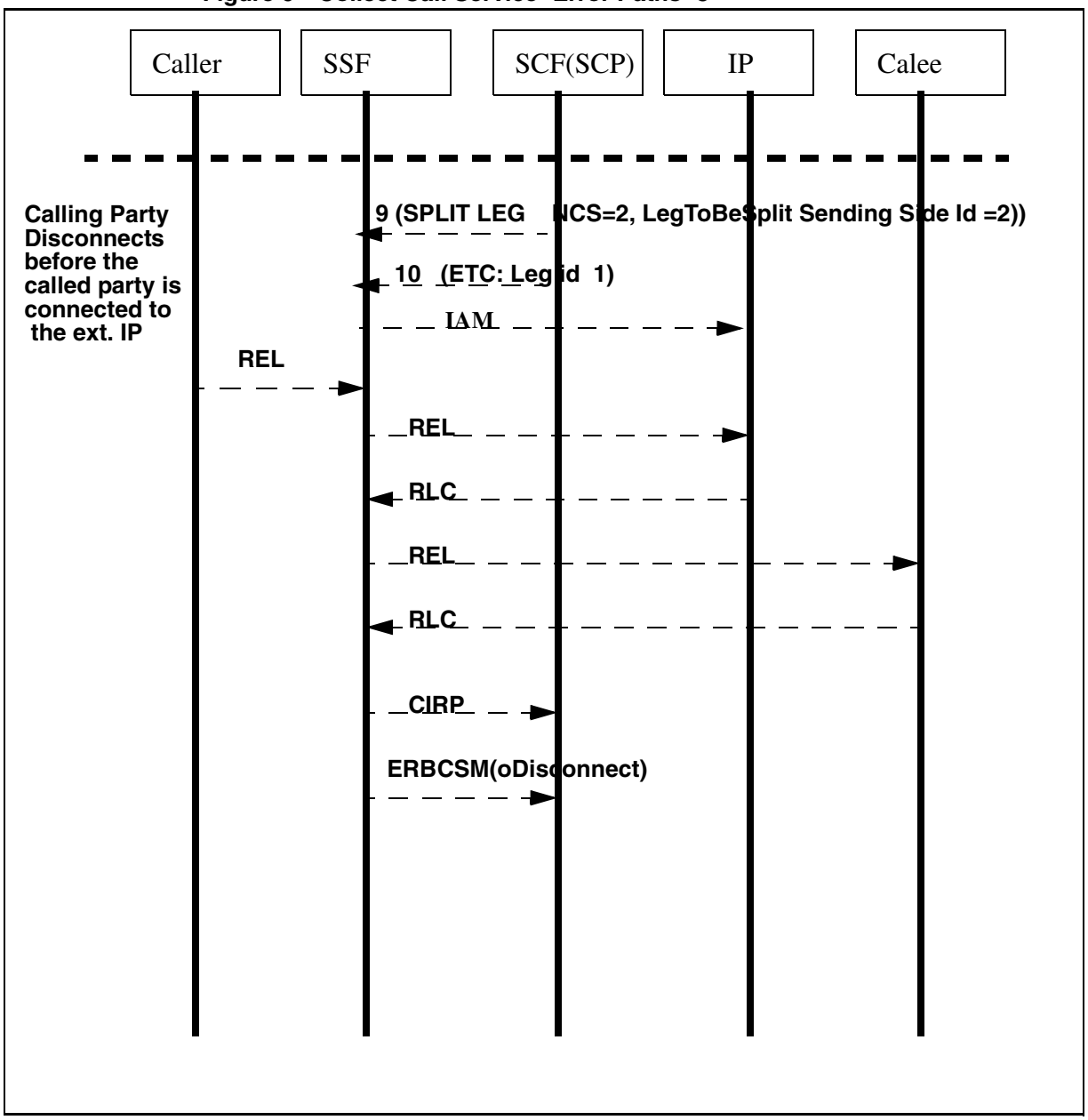


Figure 7 Collect Call Service- Error Paths -4

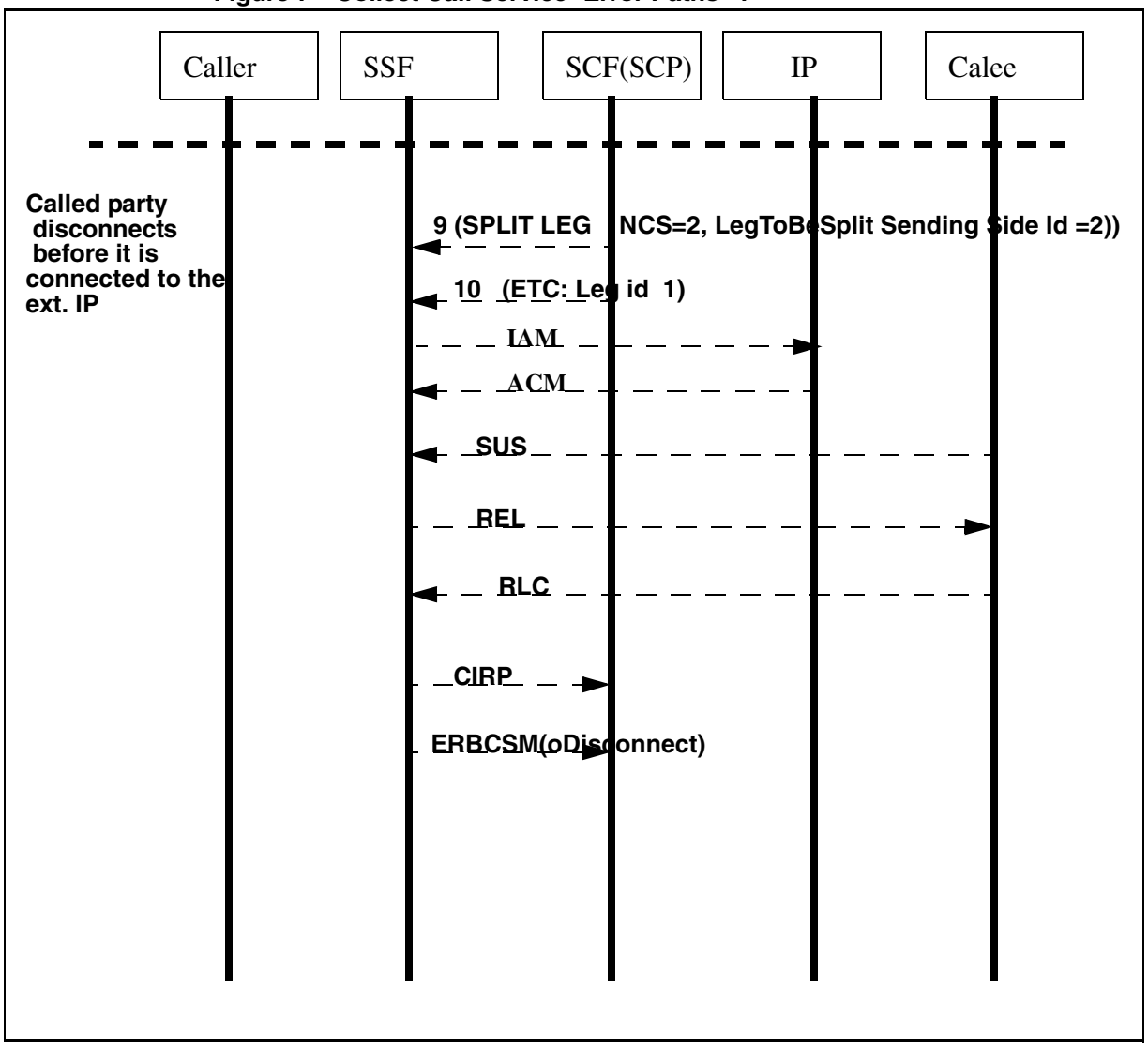


Figure 8 Collect Call Service- Error Paths -5

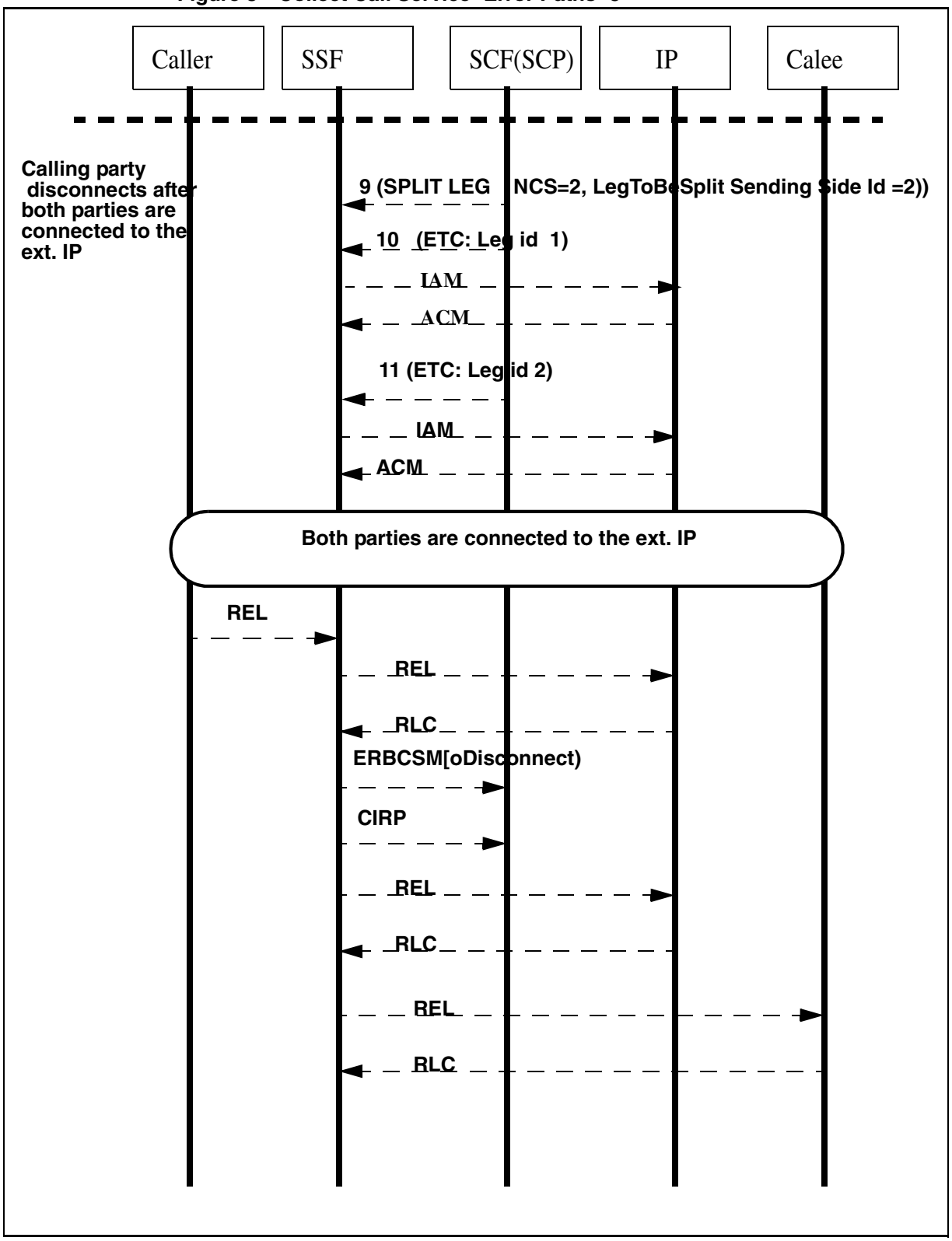
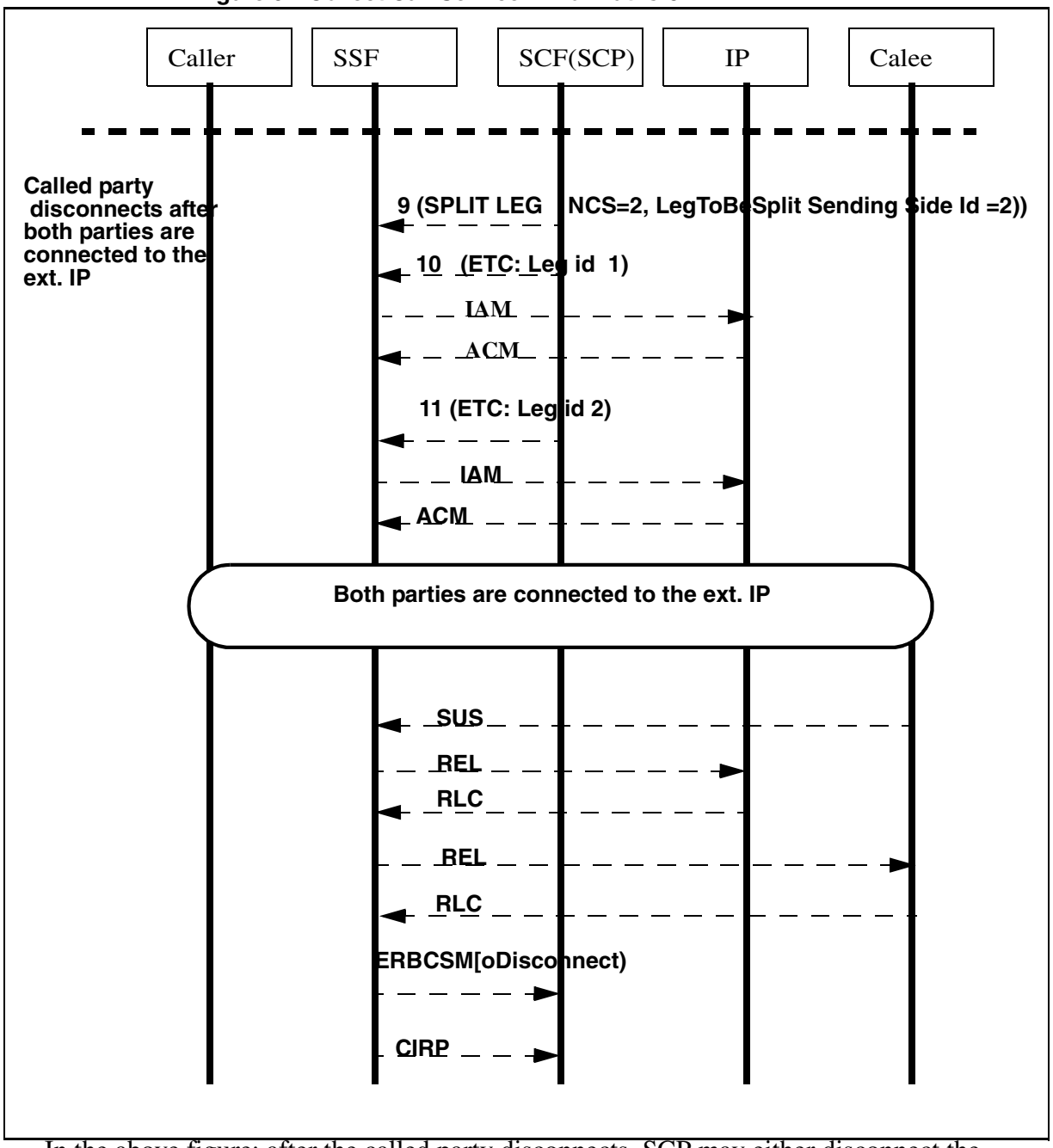


Figure 9 Collect Call Service- Error Paths-6



In the above figure; after the called party disconnects, SCP may either disconnect the controlling (Leg 1) call or connect this call to another announcement.

1.3 Hardware Requirements or Dependencies

IN Call Collect service is supported on Succession Offices.

1.4 Software Requirements or Dependencies

None.

1.5 Limitations and restrictions

- Call Party Handling (CPH) is supported for IN calls and is developed by activity A00007797: “Line Interworking Support For CPH (DACOM)”.
- V5.2 BRI lines are not covered by this activity.
- **Line Feature Interactions:**

1. The CPH functionality cannot co-exist with line features which involve multi-party call setup
2. The DMS SSP can keep only one INAP dialogue open per call.

Therefore the following line features will be disabled while Collect Call Service is active on the call:

Three way calling, Conference Call, Call waiting, Call Transfer, Call Hold.

Note: In a Collect Call Scenario, Malicious Call Trace Feature can only work before the Split Leg operation or after the called party accepts the charges and the call is merged.

Note: The Call forwarding features can only work at the start of the Collect call before the called party answers.

1.6 Interactions

None

1.7 Glossary

Term	Description
BCSM	Basic Call State Machine
CIRP	Call Information Report
CIRQ	Call Information Request
CPH	Call Party Handling
DFC	Disconnect Forward Connection
DFCWA	Disconnect Forward Connection With Argument

ERBCSM	Event Report BCSM
ETC	Establish Temporary Connection
IP	Intelligent Peripheral
RRBCSM	Request Report BCSM
SCF	Service Control Function
SCP	Service Control Point
SSF	Service Switching Function
SUS	Suspend

Product = World Trade

A00007796--Color Ring Feature (DACOM)

Functional Description

1.1 Applicable Solution(s)

Int'l IAC

1.2 Description

1.2.1 Functional Overview

Color-ring (also known as Dacom Ring Back Tone service) is a IN service provided to the called subscriber through which the caller can hear specific sounds (hot music, sound effects, voice, etc.) that are pre-assigned by the service subscriber instead of the existing monotonous ring-back tone until the phone is answered. To enable the color-ring service on the DMS SSP, a new Event Detection Point (EDP) needs to be created on the DMS SSP to inform SCP of the ring signal (alerting message) received from the terminating party.

This feature introduces the CallAccepted Event Detection Point (EDP27) on the Terminating BCSM. The CallAccepted event is hit when an alerting type of message is received from the terminating agent, for certain protocols this message may be an 'address complete message' (ACM), but can be a different message for other protocols.

This feature enables the DMS SSP to :

- successfully decode a RequestReportBCSMEvent operation including the arming of CallAccepted event in request mode,

- to report the CallAccepted event to SCP with EventReportBCSMEvent operation when alerting type of message is received from the terminating agent.

- to be able to accept SplitLeg and MergeCallSegment operations when CallAccepted event is hit and convert to multy-party processing (Call Party Handling).

The supported originating agents are:

- lines (Cable lines via MTA, IBN lines via Mediatrix and V5.2[8])
- ETSI ISUP V2
- ETSI PRI
- QSIG
- SIP-T

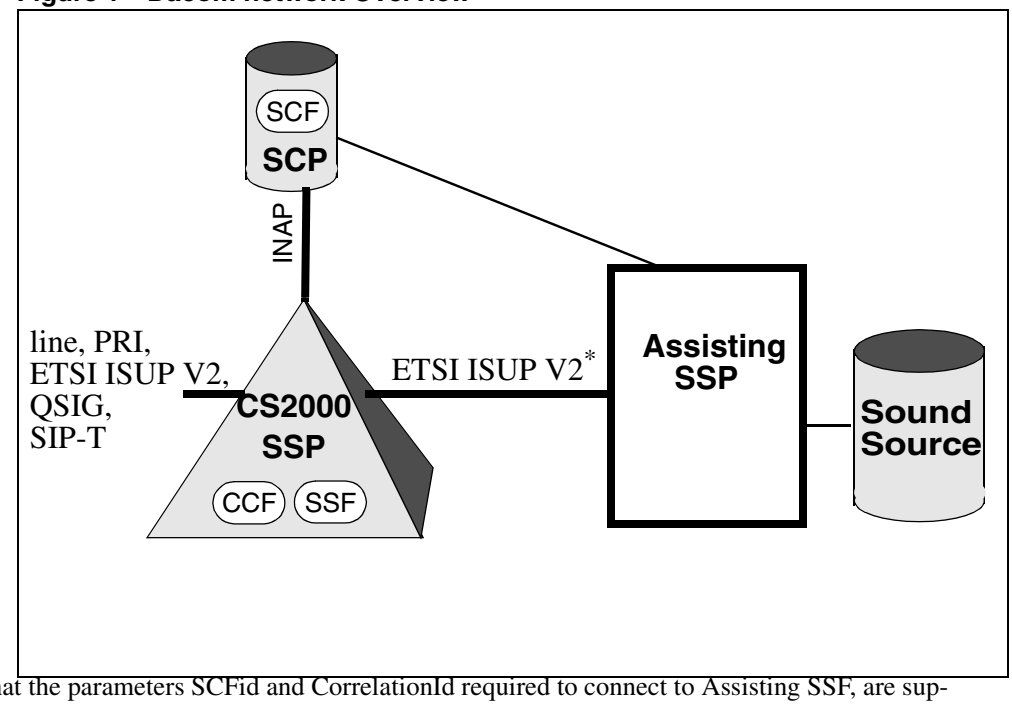
The TDP12 triggering is supported on terminating lines. The following line agents are supported:

- Cable lines via MTA
- IBN lines via Mediatrix
- V5.2[9]

Note that line interworking support for Call Party Handling operations such as SplitLeg and MergeCallSegments will be implemented by the activity A00007797 Line interworking support for CPH.

8. Note that V5.2 BRI lines are not covered by this activity.
9. Note that V5.2 BRI lines are not covered by this activity.

Figure 1 Dacom network Overview



*Please note that the parameters SCFid and CorrelationId required to connect to Assisting SSF, are supported by the activity A00007793.

1.2.1.1 Functional Requirements

The color-ring service implementation is as follows, please refer to Figure 2[10] for the service flow:

- The incoming call triggers IN if the terminating party is subscribed to TDP12 trigger. The SCP is informaed via InitialDp message.

- SCP recognizes that the corresponding intelligent network number is registered for the color-ring service and requests the exchange to connect to real destination number at first. (SCP sends RRBCSM message to arm CallAccepted, tAnswer, tDisconnect(leg1, leg2) and tAbandon events then sends Continue message to the DMS SSP)

- The DMS SSP routes the call to the terminating party, in accordance with the instruction from the SCP. The terminating agent sends alerting message (ring signal) notifying the subscriber B of the arrival of call and delivers ring-back tone to the called party. The ring-back tone sent from the terminating party is not forwarded to the calling subscriber A.

10. Note that the ISUP signaling messages are used on the message flow for consistency, however the calling party and called party on the DMS SSP can be any of the supported agents (line, ETSI PRI, ETSI ISUP, QSIG or SIP-T)

- The DMS SSP detects CallAccepted event when ringing tone is applied to the terminating line and reports the CallAccpeted event to the SCP via RRB message. The SCP instructs connection to the sound source delivery server for ring-back tone delivery. (SCP sends SplitLeg and ETC messages to connect A party to sound source)

- The DMS SSP connects the calling party to the sound source delivery server[11] the server responds to it. The DMS SSP receiving the response from the sound source delivery server connects a speech path between the incoming subscriber and the sound source delivery server.

- The sound source delivery server, which is requested to assign a call by the exchange, requests SCP to provide supplementary order, and the SCP instructs the sound source delivery server to connect to the resource. (The functionality between sound source delivery server and SCP are outside the scope of DMS functionality, they are included here to understand the complete scenario of the service)

- The sound source delivery server provides corresponding sound source (pre-assigned sound source by intelligent network service subscriber) instead of the ring-back tone to the calling subscriber.

- In case the called subscriber B answers, tAnswer EDP is detected by the DMS SSP.

- The DMS SSP reports answer event to the SCP. (DMS sends ERBCSM(tAnswer) to SCP.

- The SCP instructs the exchange to disconnect with the sound source delivery server via DFC message. The DMS SSP disconnects the calling party from the sound source server.

- The requested sound source delivery server for disconnection stops delivering sound source and releases the connection.

- SCP instructs the release of connection with the sound source delivery server, and at the same time instructs call connection between the calling subscriber (A) and the called subscriber (B). (SCP sends MergeCallSegments message to DMS)

- The DMS SSP, which is requested to connect the call, makes call between the caller A and the called party B.

11. The DMS SSP supports connection to sound source delivery server via ETSI ISUP V2.

- When the A party or B party releases the connection, the DMS SSP reports tDisconnect event to SCP via ERBCSM message and sends the call information report (via CIRP message) which is requested from SCP in the beginning of the call via CIRQ message.

Figure 4 Color ring Service flow - success path

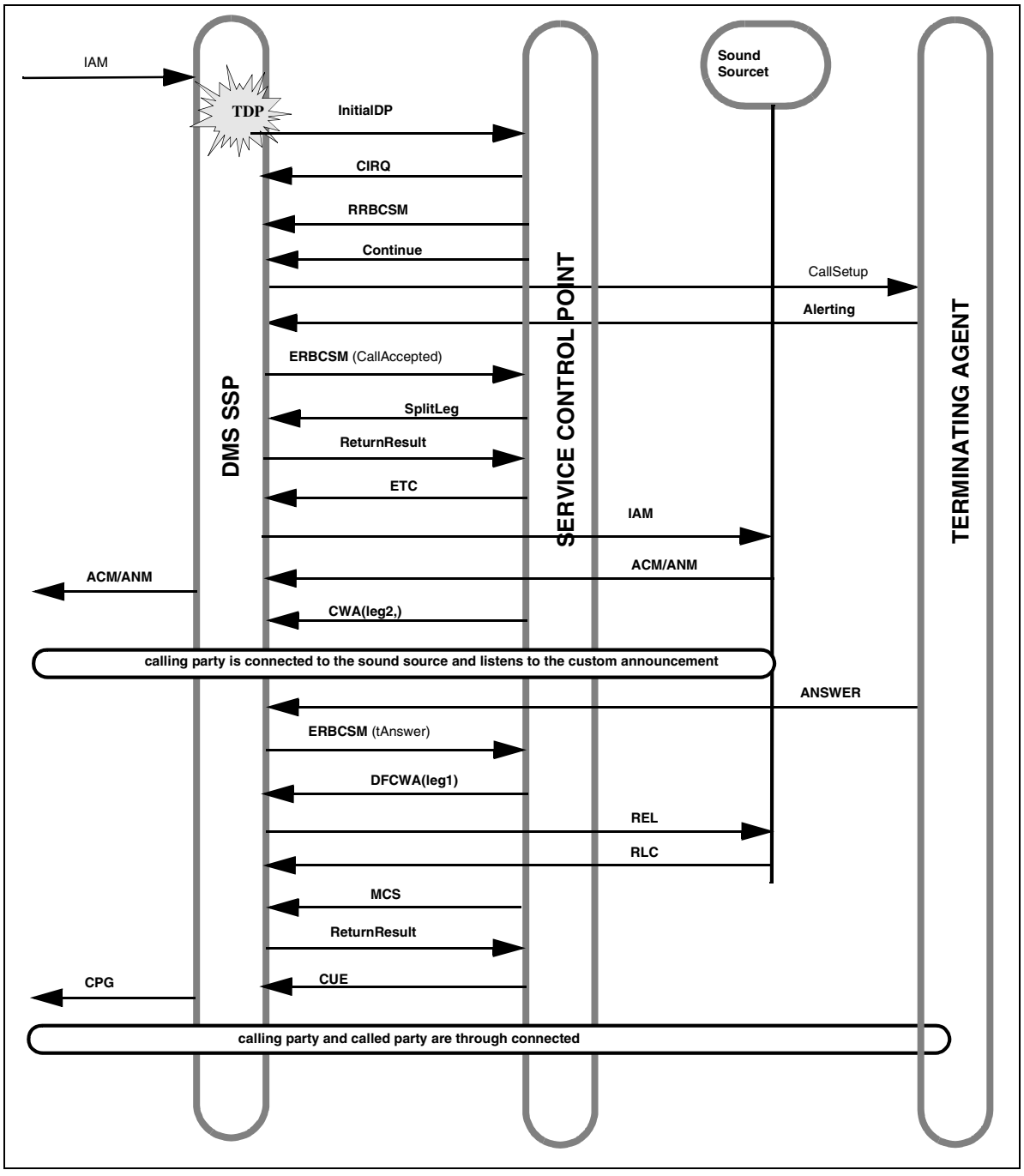
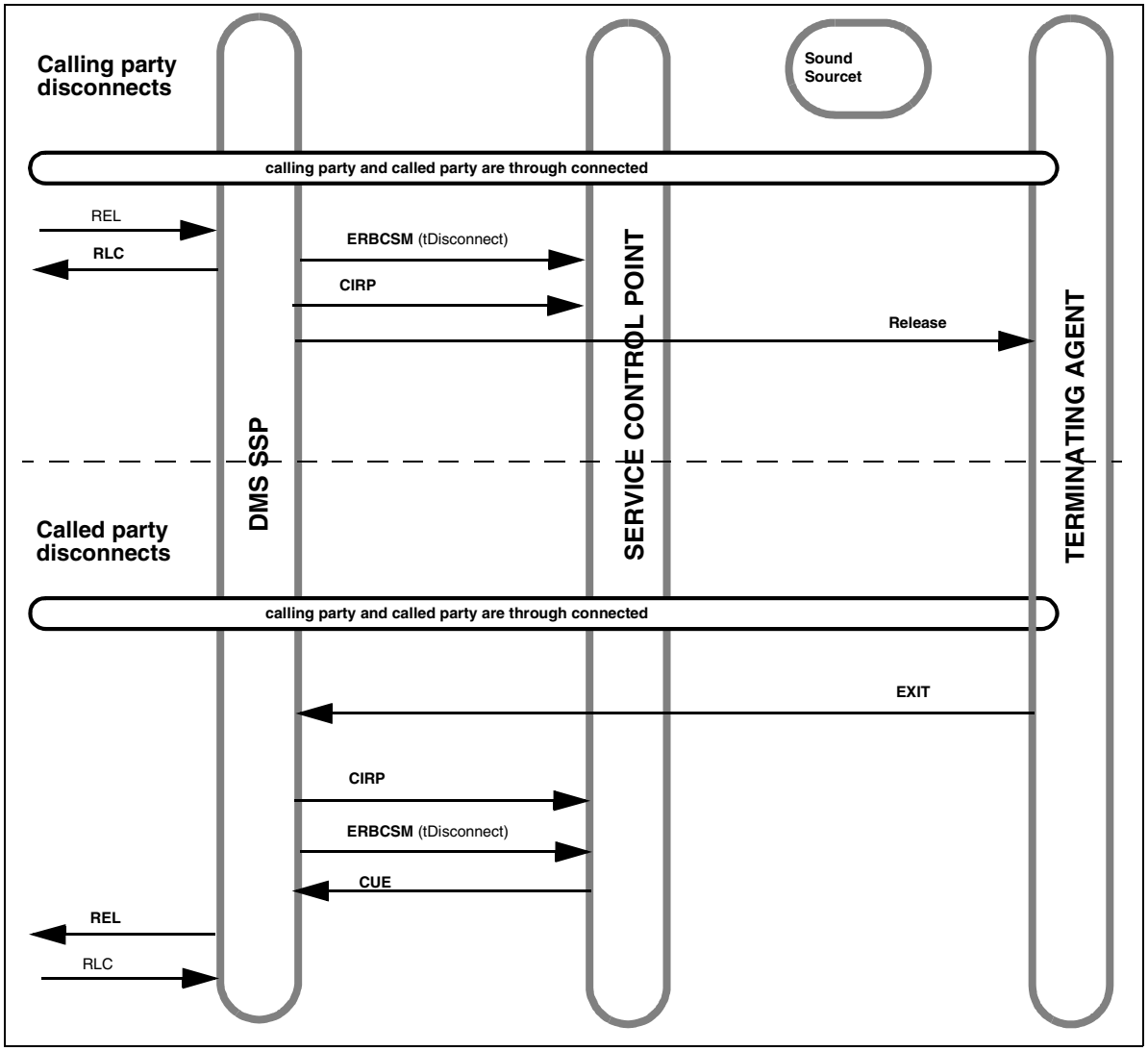


Figure 5 Color ring Service flow - success path cont. (disconnection)



Error paths:
The following event may occur before CallAccepted EDP event occurs:

- tAbandon :

  calling party abandons the call before being connected to sound source

  or

  calling party abandons before answer

The SCP may arm these EDPs and take appropriate actions when these events occur. Please refer to Figure 4, 5 and 6 for the error paths that may occur during the color-ring service execution.

Figure 6 Color ring Service flow - error path

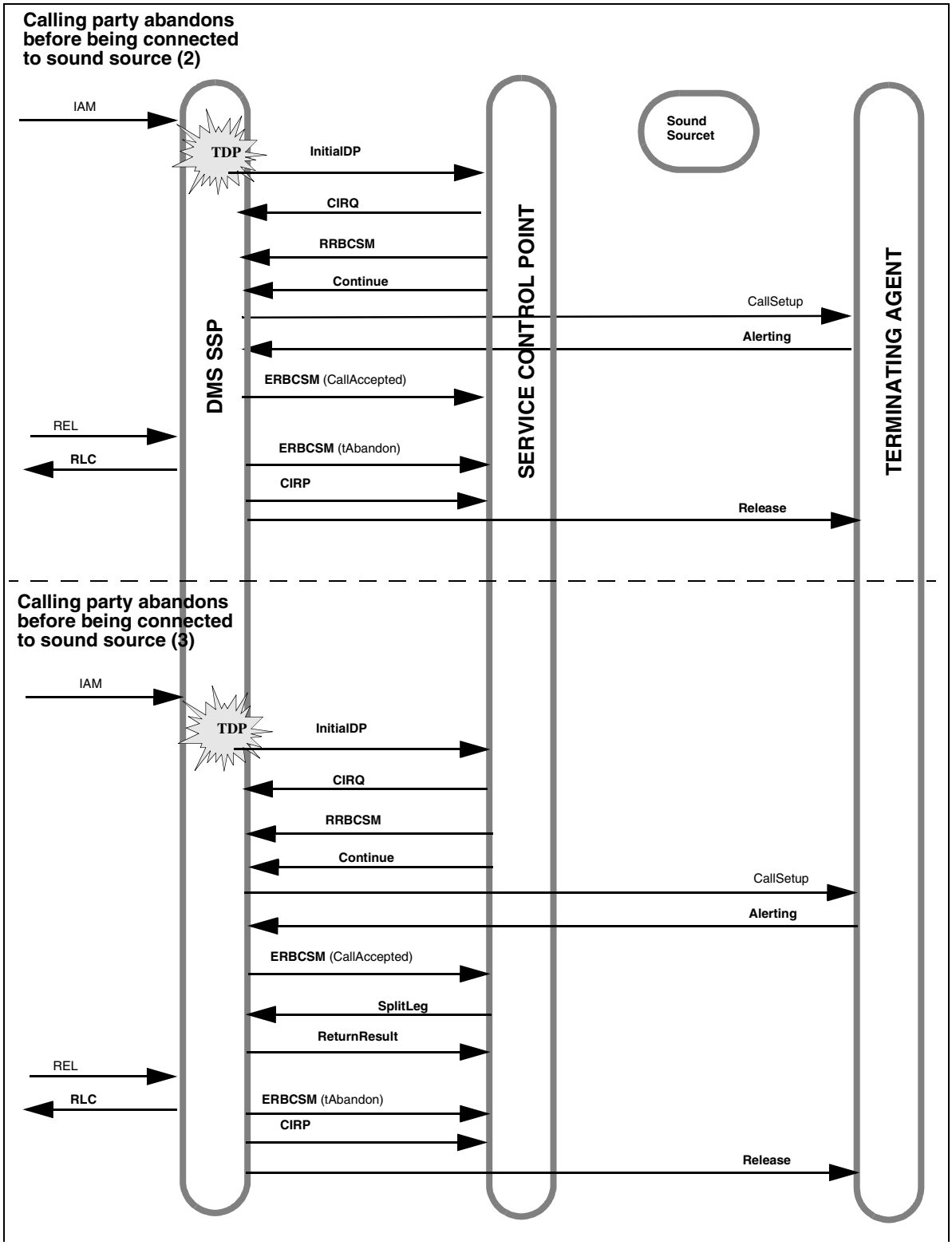


Figure 7 Color ring Service flow - error path cont.

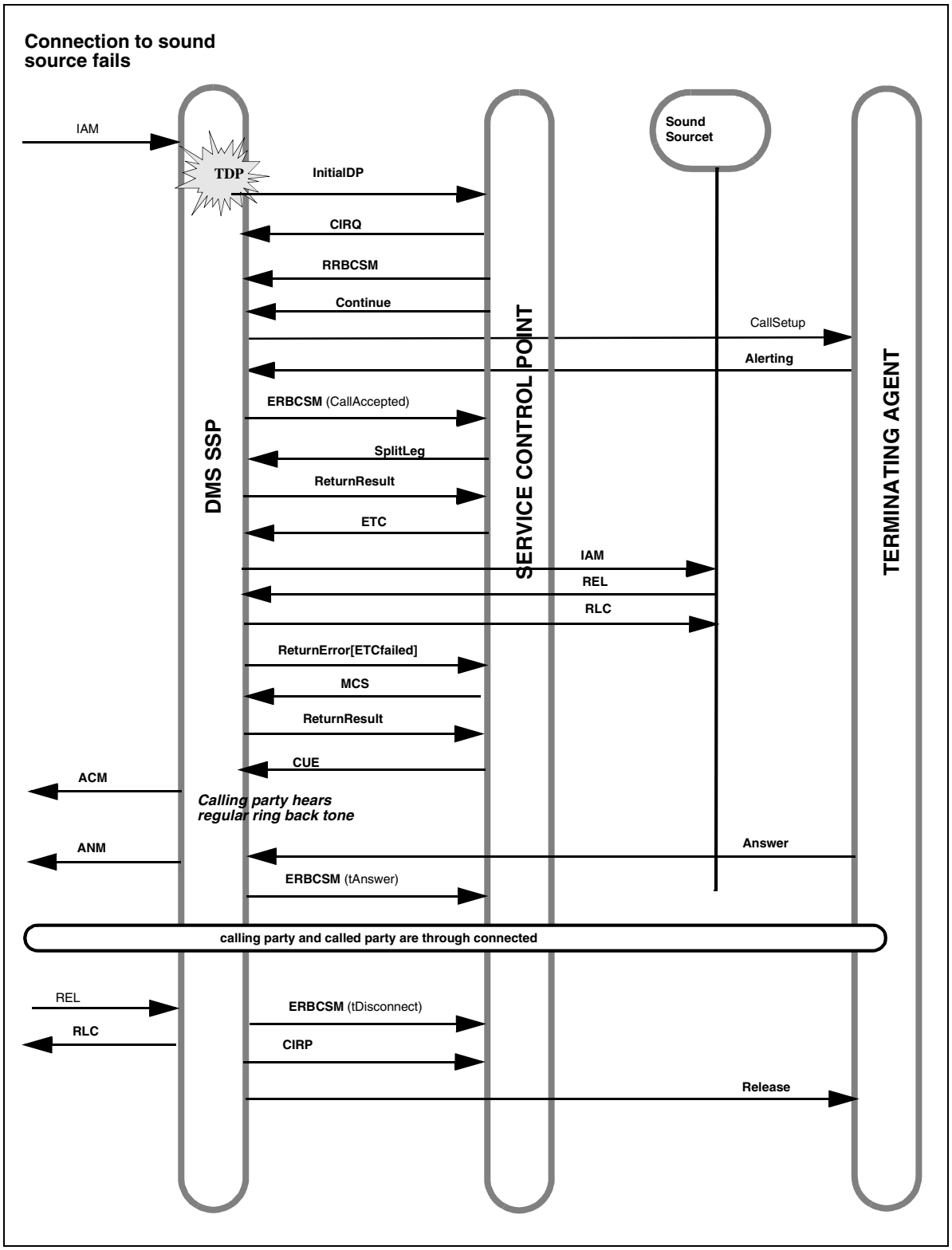
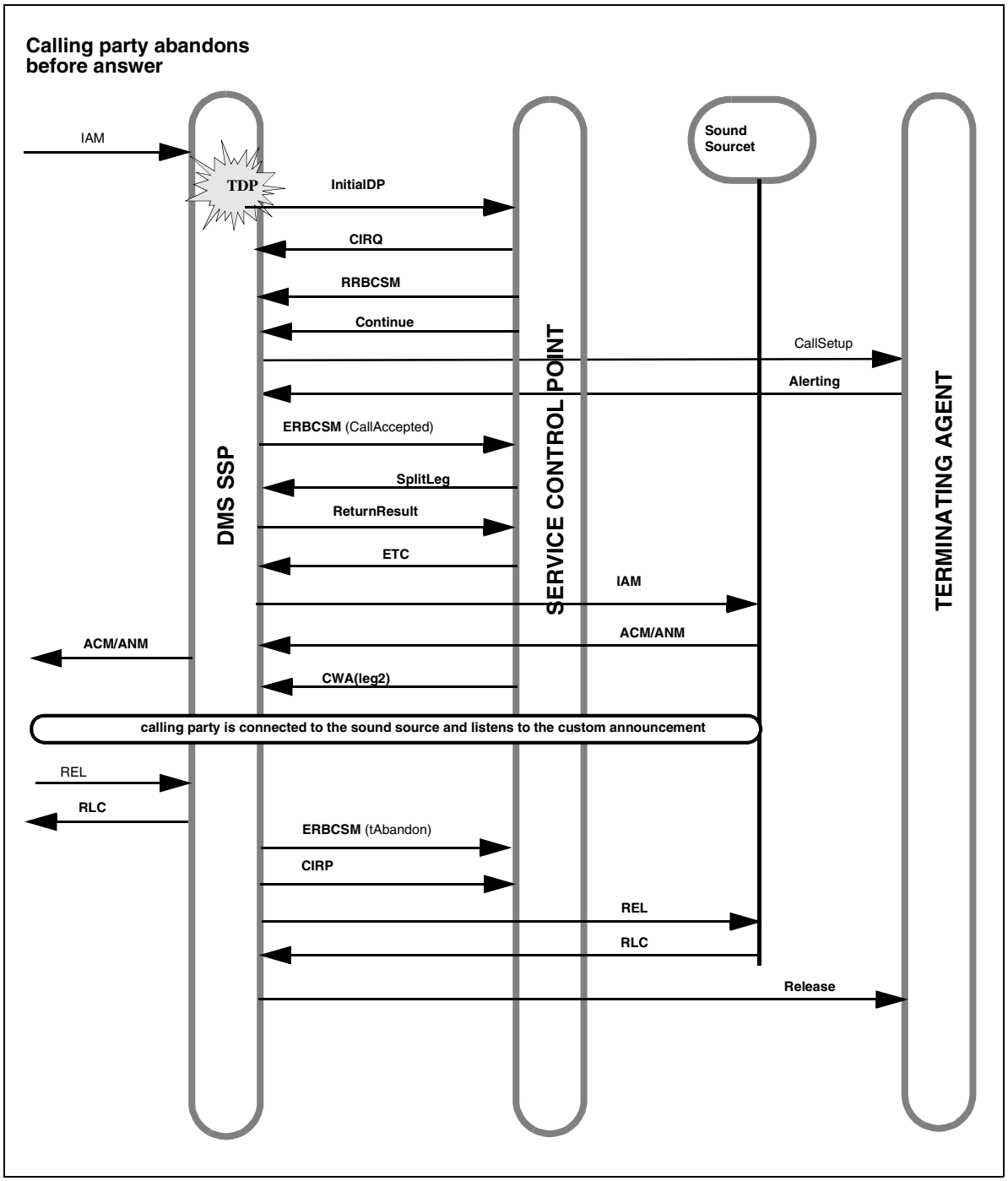


Figure 8 Color ring Service flow - error path cont.



1.2.1.2 Decoding & Encoding of CallAccepted in RRBCSM operation

The SCP sends the RRBCSM operation to arm CallAccepted EDP in request mode. The DMS SSP sends ERBCSM operation to notify SCP of the CallAccepted event. CallAccepted EDP will be represented by the value of decimal 27 in both operations.

CallAccepted event, like tAnswer can be armed for leg2 only.

EINTRACE tool is enhanced to display CallAccepted EDP in RRBCSM and ERBCSM operations.

RRBCSM & ERBCSM ASN.1 Encoding

```
RequestReportBCSMEventArg ::= SEQUENCE
{
 bcsmEvents [0] SEQUENCE SIZE(1..numOfBCSMEvents) OF BCSMEvent,
 extensions [2] SEQUENCE SIZE(1..numOfExtensions) OF ExtensionField OPTIONAL
 --
 ... }
 -- Indicates the BCSM related events for notification.

EventReportBCSMArg ::= SEQUENCE
 {
 eventTypeBCSM                [0] EventTypeBCSM,
 eventSpecificInformationBCSM [2] EventSpecificInformationBCSM OPTIONAL,
 legID                        [3] LegID OPTIONAL,
 miscCallInfo                 [4] MiscCallInfo DEFAULT {request},
 --
 ...
 }

BCSMEvent ::= SEQUENCE
 {
 eventTypeBCSM [0] EventTypeBCSM,
 monitorMode [1] MonitorMode,
 legID [2] LegID OPTIONAL,
 dPSpecificCriteria [30] DPSpecificCriteria OPTIONAL
 }

EventTypeBCSM ::= ENUMERATED
 {
 origAttemptAuthorized(1),
 collectInfo(2),
 analyzedInformation(3),
 routeSelectFailure(4),
 oCalledPartyBusy(5),
 oNoAnswer(6),
 oAnswer(7),
 oMidCall(8),
 oDisconnect(9),
 oAbandon(10),
 termAttemptAuthorized(12),
 tAnswer(15),
 tDisconnect(17),
 tAbandon(18),
 CallAccepted(27)
 }

MonitorMode ::= ENUMERATED
 {
 interrupted(0),
 notifyAndContinue(1),
 transparent(2)
 }

LegID ::= CHOICE
 sendingSideID   [0] LegType
         -- used in operations sent from SCF to SSF
 receivingSideID [1] LegType
        -- used in operations sent from SSF to SCF
 }
```

1.2.2 Arming and Detecting CallAccepted EDP

When CallAccepted event is detected by an EDP-R, the following events occur:

1) An ERBCSM operation is sent to the SCP reporting the EDP that was encountered.

2) The CallAccepted EDP is disarmed.

3) CSCV state performing Call Party Handling is updated. This item is explained in detail in the next section.

4) The SSF state machine changes to the Waiting for Instructions state.

5) T_{SSF} timer is started.

The SCP has been queried for further instructions on how to complete the call, and depending on how the SCP has been set up for the service, may send the following:

- SplitLeg operation to create multiple call segments.

- Continue to instruct SSF to continue with the call processing.

1.2.3 Effect of CallAccepted event on CPH

The Orig Setup CSCV represents a two-party call in the setup phase. There is a joined controlling leg and a pending passive leg attached to the connection point. The passive leg has an O-BCSM instance attached.

The CSCV state transits to Stable 2-party on detection of the CallAccepted DP for the passive leg.

The stable 2-party CSCV represents a stable or clearing 2-party call. There is a joined controlling leg and a joined passive leg attached to the connection point. The passive leg has an O_BCSM instance attached.

The SplitLeg INAP operation instructs the SSF to separate one party from its call segment and place it in a new associated call segment with a call segment ID specified in the operation s newCallSegment parameter.

The DMS SSP can accept SplitLeg operation during stable-2 party phase of the call. It is used by the ITU IN SSP for services to play announcements to the parties in the call or to collect digits from the parties of the call. Upon processing the SplitLeg operation, DMS SSP transits to multi-segment CSA.

The MergeCallSegments INAP operation is the inverse of SplitLeg, it instructs the SSF to merge two existing associated call segments into a single call

segment and establish or re-establish a through speech connection among all the call legs.

For the color-ring service, the SCP sends MergeCallSegments upon detecting tAnswer event. The DMS SSP will convert the call from multi-party to stable 2-party call upon receiving MergeCallSegments. A through speech connection will be established between all call legs.

1.3 Hardware Requirements or Dependencies

Not applicable.

1.4 Software Requirements or Dependencies

This Functionality is implemented in ISN08.

1.5 Limitations and restrictions

Handling of tNoAnswer EDP-R in multi-segment CSA is not supported, if tNoAnswer EDP-R is detected while the DMS SSP is in multi-segment CSA, an EIN301 log is generated and the tNoAnswer EDP-R is ignored. If tNoAnswer EDP-N is detected in multi-segment CSA, call is released as in single-segment CSA.

CallAccepted EDP is not supported on ACD/UCD calls.

Line feature interactions: There are 2 main limitations on the line feature interactions:

1. The CPH functionality cannot co-exist with the line features which involve multi-party call setup.

2. The DMS SSP can keep only one INAP dialogue open per call.

Therefore the following line features will be disabled while color-ring service is active on the call:

Call Waiting, Three Way Call, Conference Call, Call Transfer, Call Hold, Call Forward No Answer.

1.6 Interactions

A00007796 Line interworking support for CPH: CPH operations SplitLeg and MergeCallSegments will be supported on line agents by this activity.

Connection to sound source server requires that the SCFid and CorrelationId parameters received in ETC message are mapped to the outgoing IAM SCFid and CorrelationId parameters. The following activities will implement the SCFid and CorrelationId support of DMS SSP:

A00007807 - Base ETSI ISUP V2 support for Dacom

A00007793 - SCFid, CorrelationId and QoR Based LNP

A00008464 - Terminating EDPs support

1.7 Operational Measurements (OM)

1.7.1 New/modified OM groups

EINEDP27H is added to OM group EIN2 and it is incremented when CallAccepted EDP is encountered.

1.8 AMA/Billing information (AM)

1.8.1 New/changed AMA/billing information

AMA record generated for the connection to external IP (sound source) contains Calling Party Number for originating digits.

1.9 Glossary

Term	Description
ACM	Alerting Message
ANM	Answer Message
BCSM	Basic Call State Model
CIRP	Call Information Report
CIRQ	Call Information Request
CPH	Call Party Handling
CIRQ	Call Information Request
CUE	Continue
CSA	Call Segment Association
CSCV	Call Segment Connection View
CWA	Continue With Argument
DFC	Disconnect Forward Connection
DMS	Digital Multiplexing System
ERBCSM	Event Report BCSM
ETC	Establish Temporary Connection
IAM	Initial Attempt Message

Term	Description
IN	Intelligent Networks
InitDP	Initial Detection Point
OBCSM	Originating BCSM
REL	Release Message
RLC	Release Complete Message
RRBCSM	Request Report BCSM
SCP	Service Control Point
SSP	Service Switching Point
TDP	Trigger Detection Point

Product = World Trade

A00007807---Base ETSI ISUP V2 support for Dacom IN

Functional Description

1.1 Applicable Solution(s)

Int'l IAC

1.2 Description

The activity A00007807 handles adding of the new additional optional parameters

- SCF ID
- Correlation ID

to the outgoing IAM message if these parameters are sent by the SCP in the office where IN interaction exists.

This activity also tandems the incoming REL message with cause value 14 (ported number) and diagnostics in intermediate exchange for Base ETSI ISUP V2 to Base ETSI ISUP V2 interworking.

If IN is triggered by the incoming REL message with cause value 14 and diagnostics field and, if SCP sends CDN and NPFI extensions in connect

operation to the CS2000 SSP, these parameters are mapped to the outgoing IAM message as an additional optional parameters:

- Called Directory Number
- Number Portability Forward Information

Triggering IN is out of scope of this activity. It is handled in the activity A00007793.

If the REL message with cause value 14 and diagnostics field is received in the originating office and there is no IN interaction in this office, then the call is terminated according to the diagnostics field on REL message with cause value 14.

The lengths of the new optional parameters which are used by Dacom are given in Table 1 that follows. The lengths of the new optional parameters which are defined in ISUP signalling are also given in Table 2 that follows. These lengths do not include tag and length bytes of the parameters.

Table 1 The lengths of the new optional parameters used by Dacom

Parameter	Min Length	Max Length
SCF ID	**1 byte**	**4 bytes**
Correlation ID	**2 bytes**	**13 bytes**
Called Directory Number	**2 bytes**	**17 bytes**
Number portability forward information	**1 byte**	**1 byte**

Table 2 The lengths of the new optional parameters defined in ISUP

Parameter	Min Length	Max Length
SCF ID	**1 byte**	**20 bytes**
Correlation ID	**2 bytes**	**13 bytes**
Called Directory Number	**2 bytes**	**17 bytes**
Number portability forward information	**1 byte**	**16 bytes**

When these parameters are received from the SCP, SSP is going to receive and store these parameters (Please refer to FN section of the activity A00007793). The outgoing IAM is built by using these stored parameters. During the adding of these parameters to the IAM message, the parameters that are stored by SSP are used without doing any modification on the parameters. So the lengths of these parameters will be defined by the CS2000 SSP. It is SSP's responsibility to send the parameters in correct length.

Mapping of the new additional optional parameters is supported only for the switch where IN triggering is done. Supported incoming agents for the IN triggering are

- Line (V5.2, Cable MTA, IAD IBN line types)
- Base ETSI ISUP V2
- ETSI PRI
- H.323 trunks (defined as QSIG trunks in CS2000 table datafill)
- SIP-T trunk connections to MCS5200 endpoints
- Korean R2 trunks once developed in ISN08 (The Korean R2 and IN triggering from the Korean R2 are implemented with the activity A00007405 in ISN08)

Base ETSI ISUP V2 is going to be used for implementing the desired behavior. Tandeming of these additional optional parameters is supported only for Base ETSI ISUP V2 to Base ETSI ISUP V2 interworking.

When these additional optional parameters are added and sent in outgoing IAM message, only all the way ISUP routing is supported.

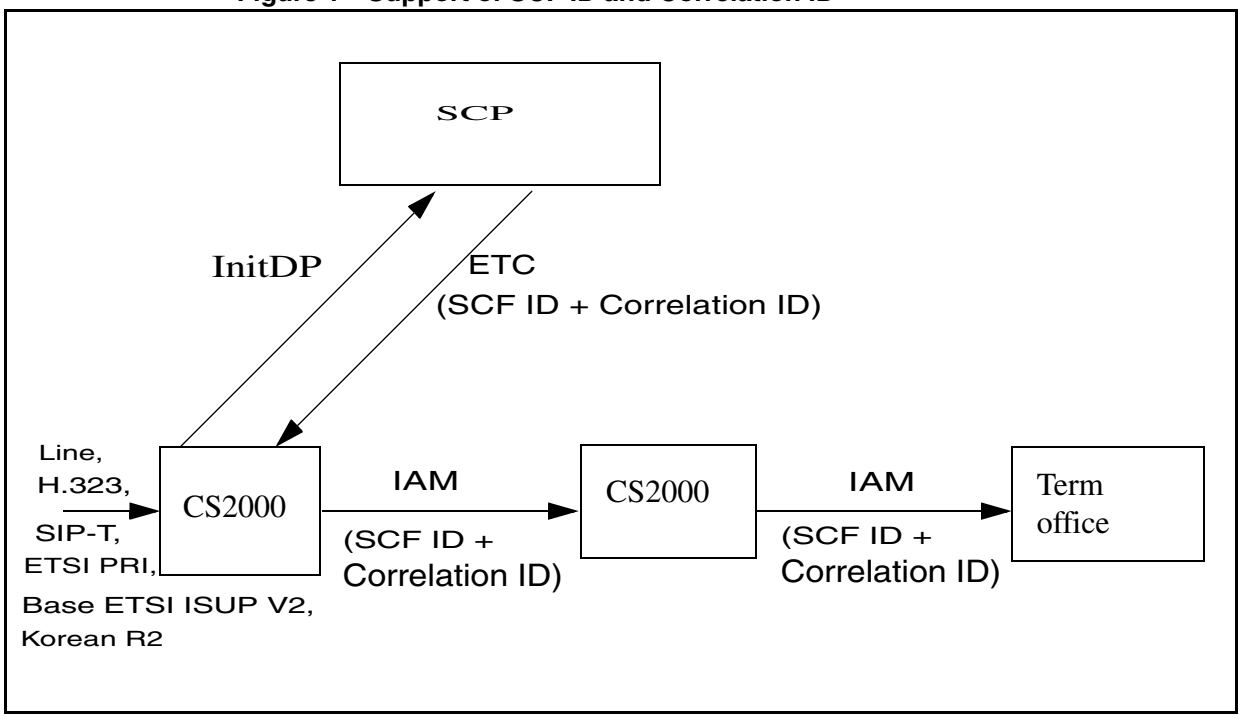
1.2.1 Support of SCF ID and Correlation ID parameters

SCF ID and Correlation ID parameters are sent from SCP to CS2000 in ETC operation. These parameters are mapped to the SCF ID (#66) and Correlation ID (#65) parameters in outgoing IAM message as an additional optional parameter (Please refer to Figure 1, "Support of SCF ID and Correlation ID").

Mapping of the SCF ID and Correlation ID is supported only for the switch where IN triggering is done.

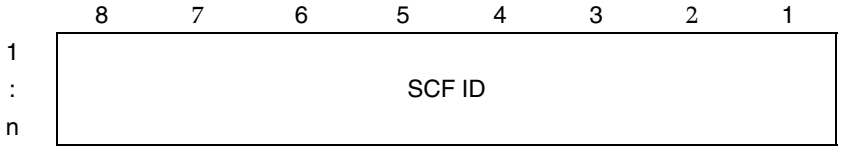
SCF ID and Correlation ID parameters in the IAM message are tandemed only for Base ETSI ISUP V2 to Base ETSI ISUP V2 interworking.

Figure 1 Support of SCF ID and Correlation ID



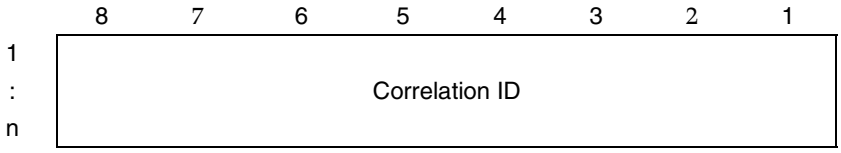
The format of the SCF ID parameter field is shown in Figure 2, "SCF ID parameter field".

Figure 2 SCF ID parameter field



The format of the Correlation ID parameter field is shown in Figure 3, "Correlation ID parameter field".

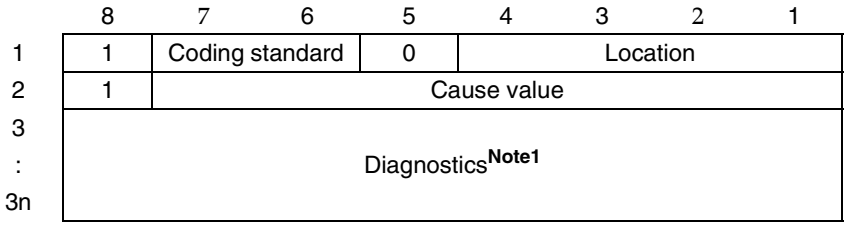
Figure 3 Correlation ID parameter field



1.2.2 Number Portability by QoR

In the number portability by QoR, if the called number is ported out, then a REL message with a specific cause value 14 (Ported Number) is received. The format of the cause indicator parameter field is shown in Figure 4, "Cause indicator parameter field".

Figure 4 Cause indicator parameter field



Note1 Diagnostics field may be omitted depending on the cause value. If the cause value is “ported number”, 1-octet diagnostics field is included.

The following codes are used in the cause indicators parameter field:

- *Cause Value:*

Following cause value is added to the codes defined in ITU-T Recommendation Q.850.

Description	7 6 5 4 3 2 1
Ported Number	0 0 0 1 1 1 0

- *Diagnostics:*

Description	8 7 6 5	4 3 2 1
No indication	0 0 0 0	0 0 0 0
Ported within the network (Location portability)	0 0 0 0	0 0 0 1
Ported between networks (Service provider portability)	0 0 0 0	0 0 1 0
Ported between networks (in the intelligent network)	0 0 0 0	0 0 1 1
Spare : by portability type	~~~~	~~~~
Unsubscribed after being ported	0 0 0 1	0 0 0 1
Ported number that has been routed in a wrong way Note1	0 0 0 1	0 0 1 0
Spare : Abnormal portability	~~~~	~~~~

Note: This is when the called party is found not to subscribe the service in the destination network after number portability query is made. This is because number portability database of the originating network and the data of the destination network provider are not matching each other; therefore the data needs to be corrected to solve this cause.

If the cause value is “ported number”, 1-octet diagnostics field can be included. However, if this diagnostics field is not included, the field is considered as “no indication”.

If the REL message with cause value 14 has more than 1 octet diagnostics fields, this REL message is handled as if diagnostics is >#10.

Processing of received REL message with cause value 14 is different in originating exchange and intermediate exchange.

Processing of REL message in intermediate exchange is given in Figure 5, "Processing of REL message in intermediate exchange" and Table 3, “Operation in intermediate exchange,” on page 985.

Figure 5 Processing of REL message in intermediate exchange

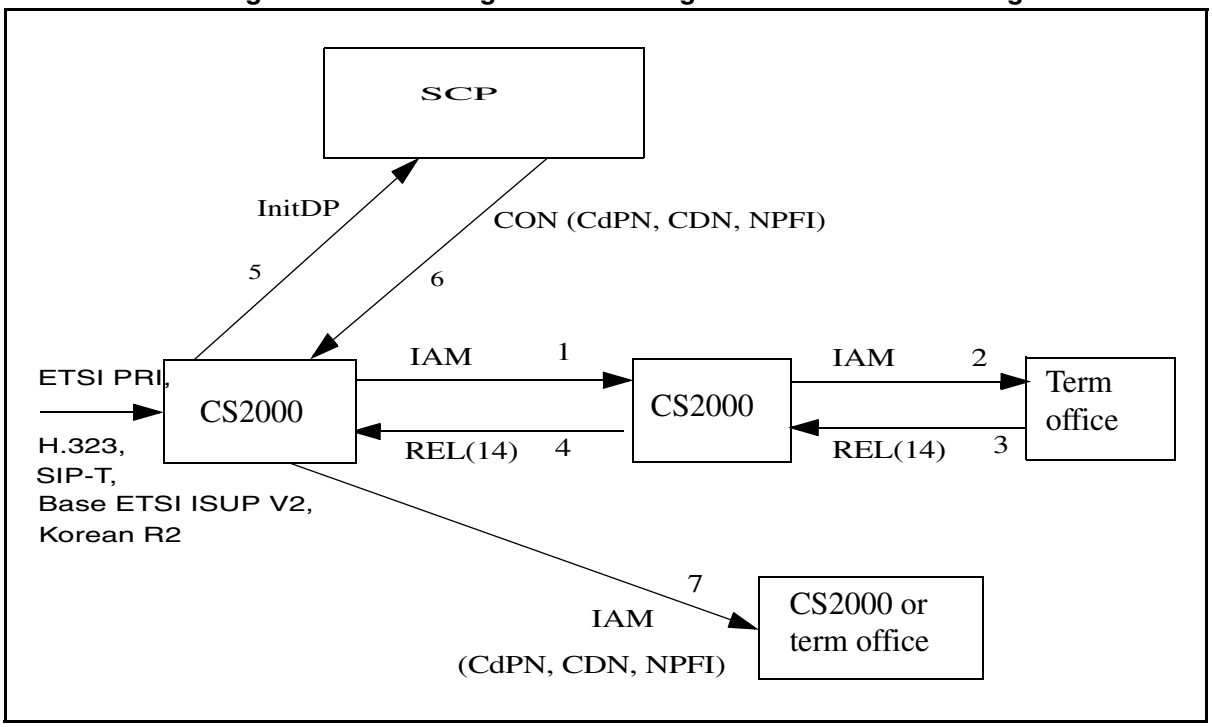


Table 3 Operation in intermediate exchange

Inputted REL		Functions of intermediate exchange	Outputted REL message		Outputted IAM message		
Cause value	Diagnostics	QoR	Cause value	Diagnostics	CdPN	CDN	NPFI
14	>= #10	*	(=)	(=)	n.a.	n.a.	n.a.

14	<#10	Not perform	(=)	(=)	n.a.	n.a.	n.a.
14	<#10	Perform/Succeeded	n.a.	n.a.	RN	DN	0x03

* : Any value. Or, don't care

(=) : Parameter pass

n.a. : Not applied

If the cause value of incoming REL message is ported number (14) and diagnostics is #10 or higher (abnormal number portability), REL message is directly passed to the preceding switching system.

If the cause value of inputted REL message is ported number (14) and diagnostics is lower than #10 (normal number portability):

- If the transit switch has not performed number portability query (i.e. transit switch has no IN interaction), REL message is directly passed to the preceding switching system.
- If the transit switch successfully sends the number portability query (i.e. transit switch has IN interaction), SCP returns the Called Party Number, CDN and NPFI in Connect operation. According to that received connect operation, IAM message is created and sent to the destination switch. CdPN, CDN and NPFI which are received from SCP are mapped to the Called Party Number (CdPN), Called Directory Number (CDN) and Number Portability Forward Information (NPFI) parameters respectively in outgoing IAM message.

Sending of number portability query to SCP by triggering IN, and receiving and storing the CdPN, CDN and NPFI parameters are handled by activity A00007793.

Processing of REL message in originating switch is given in Figure 6, "Processing of REL message in originating switch", Figure 7, "Processing of REL message in originating switch (no IN interaction)" and Table 4, “Operation in originating switch,” on page 987.

Figure 6 Processing of REL message in originating switch

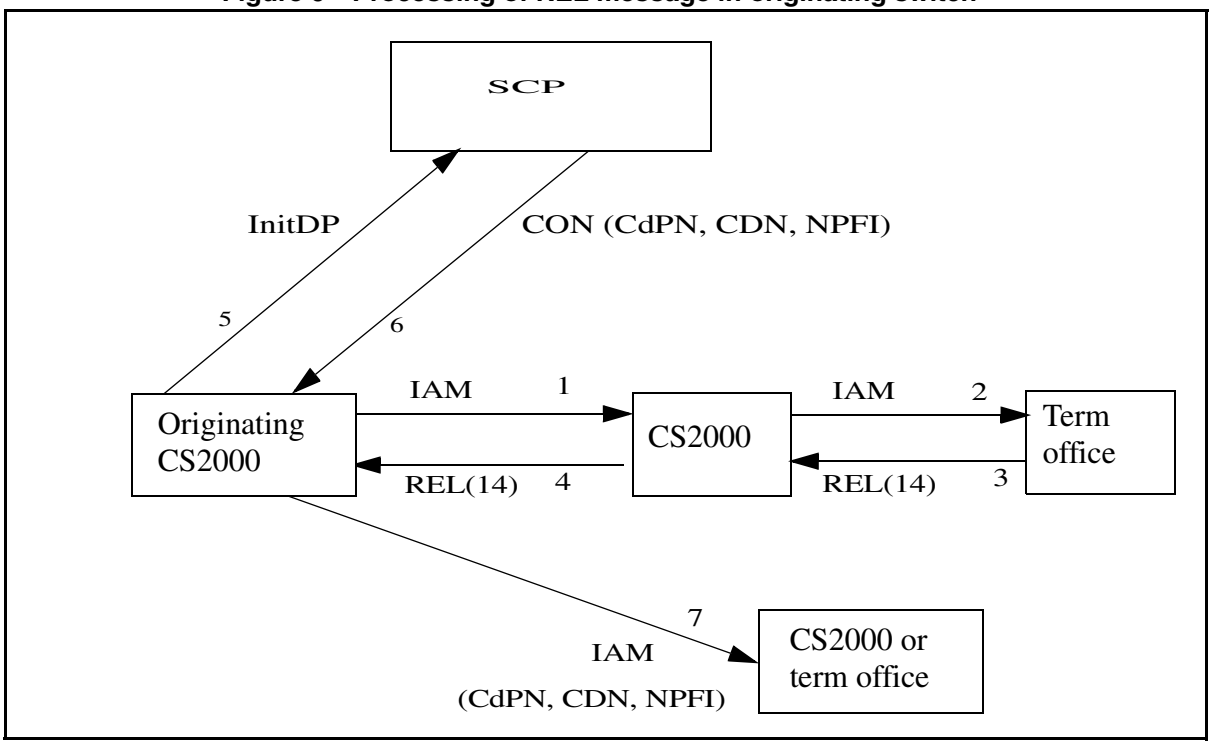


Figure 7 Processing of REL message in originating switch (no IN interaction)

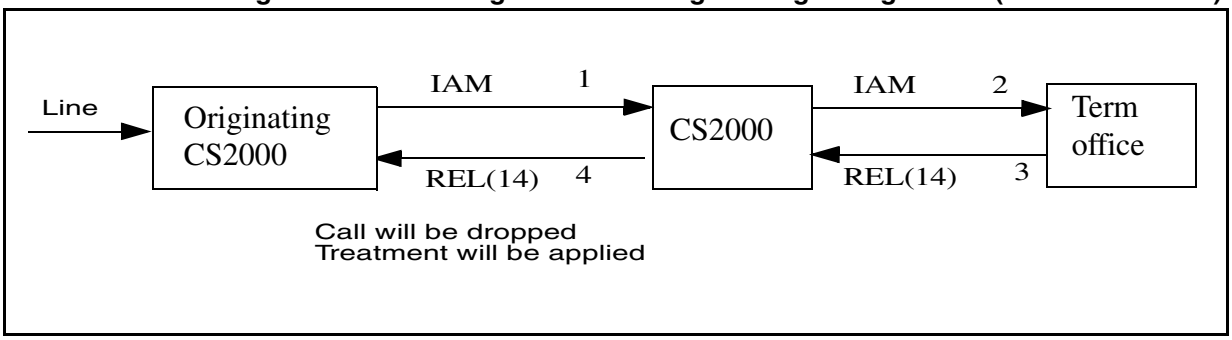


Table 4 Operation in originating switch

Inputted REL		Functions of originating exchange	Call termination	IAM message output		
Cause value	Diagnostics	QoR		CdPN	CDN	NPFI
14	>= #10	*	Process based on the inputted cause value	n.a.	n.a.	n.a.

14	<#10	Not perform	Process based on the cause value #1F	n.a.	n.a.	n.a.
14	<#10	Perform/Succeeded	n.a.	RN	DN	0x03

* : Any value. Or, don't care

n.a. : Not applied

If the cause value of inputted REL message is ported number (14) and diagnostics is #10 or higher (abnormal number portability), the existing call termination procedure is performed.

If the cause value of inputted REL message is ported number (14) and diagnostics is lower than #10 (normal number portability):

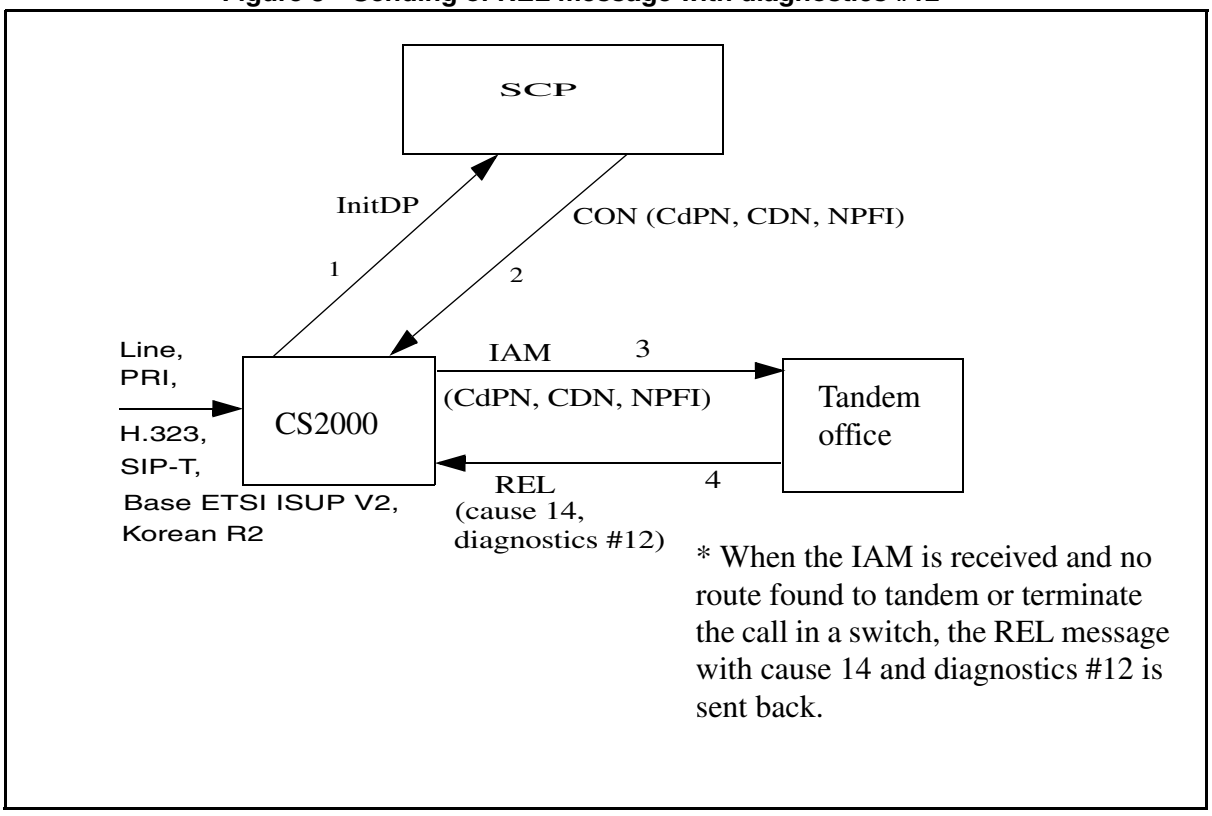
- If the originating switch does not include QoR capability (i.e. originating switch has no IN interaction), it terminates the call based on the cause value "normal - not defined (#1F)" (Please refer to Figure 7, "Processing of REL message in originating switch (no IN interaction)".
- If the originating switch successfully sends the number portability query (i.e. originating switch has IN interaction), SCP returns the Called Party Number, Called Directory Number and Number Portability Forward Information in Connect operation. IAM message is created and then sent to the destination switch. CdPN, CDN and NPFI which are received from SCP are mapped to the Called Party Number (CdPN), Called Directory Number (CDN) and Number Portability Forward Information (NPFI) parameters respectively in outgoing IAM message.

Sending of number portability query to SCP by triggering IN, and receiving and storing the CdPN, CDN and NPFI parameters are handled by activity A00007793.

Tandeming of CDN and NPFI parameters: The new IAM message with the additional optional parameters CDN and NPFI is tandemed only for Base ETSI ISUP V2 to Base ETSI ISUP V2 interworking.

When this new IAM with CDN and NPFI parameters is received by a switch and the call can not be routed in a tandem or terminating office (i.e. CdPN is a vacant code), the REL message with cause value 14 (ported number) and diagnostics #12 (ported number that has been routed in a wrong way) is sent to the preceding office. This behavior is specific only for Korean network. So, this is enabled by datafilling the new service 'MARKET' as 'KOREA' in table ISUPSVC. Please refer to Section 1.2.3 on page 992

Figure 8 Sending of REL message with diagnostics #12



Parameter format and codes of Called party number, Called directory number and Number portability forward information are given below sections.

1.2.2.1 Called Party Number (CdPN)

Called Party Number (#04) is an information to identify the called party to route the call to the terminating switch. In an environment where number portability is supported, the CdPN can function as the RN (routing number).

The format of the called party number parameter field is shown in Figure 9, "Called party number parameter field".

Figure 9 Called party number parameter field

	8	7	6	5	4	3	2	1
1	Odd/ even	Nature of address indicator						
2	INN	Numbering plan Ind.			Spare			
3	2nd address signal				1st address signal			
:	...				.....			
n	Filler (if necessary)				*n*th address signal			

The following codes are used in the subfields of the called party number parameter field:

- *Nature of address indicator:*

Description	7 6 5 4 3 2 1
Spare	0 0 0 0 0 0 0
Subscriber number (for national use)	0 0 0 0 0 0 1
Not confirmed (for national use)	0 0 0 0 0 1 0
Domestic (Particular) number	0 0 0 0 0 1 1
International number	0 0 0 0 1 0 0
Particular network number (for national use)	0 0 0 0 1 01
RN of the domestic (particular) number format (for national use)	0 0 0 0 1 1 0
Spare	0 0 0 0 1 1 1 to 1 1 0 1 1 1 1
Reserved for national use	1 1 1 0 0 0 0 to 1 1 1 1 1 1 0
Spare	1 1 1 1 1 1 1

If CdPN functions as RN, “0000110” is used for NOA. This NOA value is not supported in existing behavior of Base ETSI ISUP V2. By this activity, this value is going to be supported in Base ETSI ISUP V2, if the new service ‘ADDRESSING_METHOD’ in table ISUPSVC is datafilled as ‘SEPERATE_DIRECTORY_NUMBER’. Please refer to Section 1.2.4 on page 994. Please note that, when the routing number is received from the SCP, the SSP will change the NOA value of the called party number as #06 in activity A00007793.

- *Internal network number indicator (INN):*

Not used. Coded into “0” (This value is also set by the activity A00007793).

1.2.2.2 Called Directory Number (CDN)

Called Directory Number (#7D) is an information to identify the ported phone number. In other words, CDN sends the Directory Number (DN). The DN is allocated to the subscriber for the call service within the national telephone number system, and generally includes the area code.

The format of the called directory number parameter field is shown in Figure 10, "Called directory number parameter field".

Figure 10 Called directory number parameter field

	8	7	6	5	4	3	2	1
1	Odd/ even	Nature of address indicator						
2	INN	Numbering plan Ind.			Spare			
3	2nd address signal				1st address signal			
:	...				.....			
n	Filler (if necessary)				*n*th address signal			

The following codes are used in the subfields of the called directory number parameter field:

- *Nature of address indicator:*

Description	7 6 5 4 3 2 1
Spare	0 0 0 0 0 0 0
Subscriber number (for national use)	0 0 0 0 0 0 1
Not confirmed (for national use)	0 0 0 0 0 1 0
Domestic (Particular) number	0 0 0 0 0 1 1
Reserved	0 0 0 0 1 0 0
RN of the domestic (particular) number format (for national use)	0 0 0 0 1 1 0
Spare	0 0 0 0 1 1 1 to 1 1 0 1 1 1 1
Reserved for national use	1 1 1 0 0 0 0 to 1 1 1 1 1 1 0
Spare	1 1 1 1 1 1 1

"0000011" is used for NOA of CDN. This value is also set by activity A00007793.

- *Internal network number indicator (INN):*

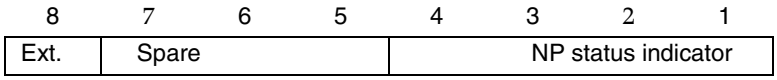
Not used. Coded into "0" (This value is also set by the activity A00007793).

1.2.2.3 Number Portability Forward Information (NPFI)

Number Portability Forward Information (#8D) is an information sent forward for number portability processing.

The format of the number portability forward information parameter field is shown in Figure 11, "Number Portability Forward Information parameter field".

Figure 11 Number Portability Forward Information parameter field



The following codes are used in the subfields of the number portability forward information parameter field:

- *Extension indicator*:

  0 information continues in the next octet
  1 last octet

- *NP Status Indicator (NPSI):*

Description	4 3 2 1
No indication	0 0 0 0
NP query has not been made for the called number	0 0 0 1
NP query has been made, and the called subscriber has not been ported	0 0 1 0
NP query has been made, and the called subscriber has been ported	0 0 1 1
Spare	~

In QoR of this standard, only “0011” is actually (normally) used while other codes are not used.

The NPFI parameter is added to the outgoing IAM message by using the stored NPFI octet by CS2000 SSP. It is SSP’s responsibility to send the parameter in correct length.

1.2.3 Controlling of the Korean specific message handlings

If the incoming IAM message contains CdPN, CDN and NPFI parameters and the call can not be routed to a tandem or terminating office (i.e. the called number is a vacant code), the REL message with cause value 14 and diagnostics #12 is sent to the preceding office. This behavior is specific to Korean network. Not to break existing behavior of Base ETSI ISUP V2, this functionality is handled only for Korean network specific by datafilling the new service ‘MARKET’ as ‘KOREA’ in table ISUPSVC. This new service controls what behavior will be in effect for the call.

The new service ‘MARKET’ in table ISUPSVC must be datafilled with the new option KOREA for all Base ETSI ISUP V2 trunks that support the number portability in the Korean network. The datafilled option specifies what market behavior is supported on that trunk.

KOREA - Handling of the incoming messages is done according to Korean specification.

Lack of the MARKET service or another option than KOREA indicates the existing handling of incoming messages is in effect.

ISUPSVC options can be assigned to ISUP trunk groups in 2 ways.

- in the “default” tuple for all trunks of a particular ISUP protocol variant type by entering the option in the default ISUPSVC tuple keyed by the protocol variant.
- On a per trunk group basis.
  - This is done by adding an option ISUPSVC containing the key field to an ISUPSVC tuple to be used by that trunk group in table TRKOPTS. The MARKET service is then added to the specified tuple in ISUPSVC. A TRKOPTS specified tuple overrides the “default” tuple keyed by the protocol variant of the trunk.

Please find the datafill of new service to enable the incoming message handling according to the Korean specification in Figure 12, "Example ‘MARKET’ service datafill in Table ISUPSVC". Also, Figure 8, "Example datafill for the new DACOM CorrelationID option in table SERVINFO" shows assigning ISUPSVC to the trunk.

Figure 12 Example ‘MARKET’ service datafill in Table ISUPSVC

```
TABLE: ISUPSVC
             KEY                                                    SERVICE
-------------------------------------------------------------------------
           TEST1      (   MARKET                          KOREA)$
      BASE_EIV2       (   MARKET                          KOREA)$
```

Figure 13 Example datafill in Table TRKOPTS

```
TABLE: TRKOPTS
>LIS
                  OPTKEY        OPTINFO
-----------------------------------------------------------------------
OGISUPAB          ISUPSVC       ISUPSVC           TEST1
OGISUPBC          ISUPSVC       ISUPSVC           BASE_EIV2
```

1.2.4 Supporting of the NOA value #06

If SCP sends the routing number in CdPN, the NOA value of the called party number is set as #06 by the CS2000 SSP in activity A00007793. During building of the outgoing IAM message, this NOA value is used. Also the called party number which includes the NOA value #06 is tandemed for Base ETSI ISUP V2 to Base ETSI ISUP V2 interworking.

In the existing behavior of Base ETSI ISUP V2, the NOA value #06 is not supported and the call is dropped when this value is received in the incoming IAM message. To support the NOA value #06, the new service ADDRESSING_METHOD must be datafilled in table ISUPSVC. This new service enables/disables the supporting of the NOA value #06.

The new service ‘ADDRESSING_METHOD’ must be datafilled with option SEPERATE_DIRECTORY_NUMBER for all Base ETSI ISUP V2 trunks that support the number portability in the Korean network. The datafilled option specifies what level of ADDRESSING_METHOD is supported on that trunk.

SEPERATE_DIRECTORY_NUMBER - Separate Directory Number Addressing method is used. In this method, routing number is transferred in Called Party Number parameter and directory number is transferred in the Called Directory Number parameter. The CdPN is coded with NOA value 0000110 (#06).

Lack of the ADDRESSING_METHOD service or another option than SEPERATE_DIRECTORY_NUMBER indicates that NOA value #06 is not supported.

ISUPSVC options can be assigned to ISUP trunk groups in 2 ways.

- in the “default” tuple for all trunks of a particular ISUP protocol variant type by entering the option in the default ISUPSVC tuple keyed by the protocol variant.
- On a per trunk group basis.
  - This is done by adding an option ISUPSVC containing the key field to an ISUPSVC tuple to be used by that trunk group in table TRKOPTS. The ADDRESSING_METHOD service is then added to the specified tuple in ISUPSVC. A TRKOPTS specified tuple overrides the “default” tuple keyed by the protocol variant of the trunk.

Please find the datafill of new service to support NOA value #06 in Figure 14, "Example ‘ADDRESSING_METHOD’ service datafill in Table ISUPSVC". Also, Figure 15, "Example datafill in Table TRKOPTS" shows assigning ISUPSVC to the trunk.

Figure 14 Example 'ADDRESSING_METHOD' service datafill in Table

```
TABLE: ISUPSVC
            KEY                                                    SERVICE
-------------------------------------------------------------------------
   TEST2       ( ADDRESSING_METHOD   SEPERATE_DIRECTORY_NUMBER)$
   BASE_EIV2   ( ADDRESSING_METHOD   SEPERATE_DIRECTORY_NUMBER)$
```

ISUPSVC

Figure 15 Example datafill in Table TRKOPTS

```
TABLE: TRKOPTS
>LIS
                  OPTKEY         OPTINFO
-------------------------------------------------------------------
OGISUPAB          ISUPSVC        ISUPSVC          TEST2
OGISUPBC          ISUPSVC        ISUPSVC          BASE_EIV2
```

1.3 Hardware Requirements or Dependencies

This activity is supported only on the Gateway Controller (GWC) in International trunks load (GI).

1.4 Software Requirements or Dependencies

None

1.5 Limitations and restrictions

None

1.6 Interactions

None

1.7 Applicable customer facing sections

Fault Management

Logs	N/A
Alarms	N/A

Configuration

Data Schema	X
User Interface	N/A
Element Management	N/A
Security	N/A
Service Order	N/A
Office Parameters	N/A
Accounting (includes AMA billing)	N/A
Performance (includes operational measurements)	N/A

1.8 Glossary

Term	Description
CS2000	Call Server 2000
CdPN	Called Party Number
CDN	Called Directory Number
ETC	Establish Temporary Connection
ETSI	European Telecommunications Standards Institute
GWC	Gateway Controller
IAM	Initial Address Message
IN	Intelligent Network
ISUP	ISDN User Part
NOA	Nature of Address
NPFI	Number Portability Forward Information
QoR	Query on Release
REL	RELease message
SCP	Service Control Point
SSP	Service Switching Point

1.9 Recommended Reading/References

a. ISUP Protocol Standard for 2G Mobile Number Portability by QoR

b. Dacom RFP Feature Support Analysis

c. Dacom INAP 350632-1204

d. A00007793: SCF ID, correlation ID and QoR Base LNP Support for Dacom IN

e. ITU-T Recommendation Q763: Signalling System No.7 - ISDN User Part Formats and Codes

f. ITU-T Recommendation Q769.1: Signalling System No.7 - ISDN User Part enhancements for the support of number portability

g. A59027497: LNP Query on Release - Non IN

h. A00007405: Korean R2 on the GWC

2: Configuration for A00007807

2.1 Hardware and Software Requirements

This activity is supported only on the Gateway Controller (GWC) in International trunks load (GI).

2.2 Initial Configuration

None

2.3 Office/Subnet parameters (OP/SP) (CM & SESM)

None

2.4 Upgrade Considerations

2.4.1 Dump and Restore (CM)

None

2.4.2 Element Management Upgrade

None

2.4.3 Downgrade impact

None

2.5 Data schema (DS) (CM, MIBS, RDB)

2.5.1 New/modified tables, MIBs, or Database Schema

Table 1 New or modified tables

Table/MIB name	NEW/CHANGED/ or DELETED/	Table Control (NEW/OLD/UNCHANGED)
ISUPSVC	CHANGED	UNCHANGED

2.5.2 Table/MIB/Remote Database Schema information

2.5.2.1 Name: ISUPSVC

ISUP SerViCes

Table ISUPSVC holds entries for specific ISUP service behaviors. The presence of a service in a tuple means that service is supported by trunks using that tuple. The datafilled option and suboption(s) specify the behavior of that service.

2.5.2.1.1 Functional description

This activity introduces the new services named ADDRESSING_METHOD and MARKET in table ISUPSVC.

2.5.2.1.2 Usage sequence and implications (CM Only)

It is necessary first of all to enter one or more tuples in table ISUPSVC. Afterwards, it is possible to add ISUPSVC options in table TRKOPTS. This allows the character string defined in table ISUPSVC to be seen by TRKOPTS.

2.5.2.1.3 Size

The minimum and maximum number of tuples allowed in the table ISUPSVC is not changed by this activity.

2.5.2.1.4 Fields/OIDs

The following table lists fields/OIDs for ISUPSVC.

Table 2 Table field descriptions

Field	Service	New or changed	Option	New or changed	Explanation and action
KEY					

Field	Service	New or changed	Option	New or changed	Explanation and action
SERVICE	MARKET Note1	NEW	KOREA	NEW	This is the market name
			SPARE1	NEW	For future use
			SPARE2	NEW	For future use
	ADDRESSING_METHOD Note2	NEW	SEPERATE_DIRECTORY_NUMBER	NEW	This is the addressing method
			SPARE1	NEW	For future use
			SPARE2	NEW	For future use

Note1 - Market option controls the handling of the behavior according to the market
Note2 - Addressing_method option controls the supporting of the NOA value #06

2.5.2.1.5 Datafill example

The following example shows sample datafill for table ISUPSVC.

Figure 1 Example of ISUPSVC datafill for MARKET and ADDRESSING_METHOD

```
>table isupsvc

KEY                 SERVICE
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TEST1       (   MARKET                    KOREA)$
TEST2       (   ADDRESSING_METHOD     SEPERATE_DIRECTORY_NUMBER)$
```

2.5.2.1.6 Table release history update

None

2.5.2.1.7 Supplementary information

None

2.5.2.1.8 Translation verification and other tools

None

2.6 Service Orders (SO) (CM & SESM)

N/A

2.7 Software optionality control (SOC)

N/A

2.8 Element Management

N/A

2.9 User interface changes

N/A

2.10 OSSGate Interface Changes

N/A

2.11 Security

N/A

2.12 Configuration Walkthrough

N/A

Appendix A: Ethernet Routing Switch Performance Metrics

Performance Metric Identifier	MIB Name	Description	Default Succession IEMS Collection Interval
RFC1213-MIB			
sysDescr	RFC1213-MIB	A textual description of the entity. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software. It is mandatory that this only contain printable ASCII characters.	Every 30 mins
sysObjectID	RFC1213-MIB	The vendor's authoritative identification of the network management subsystem contained in the entity. This value is allocated within the SMI enterprises subtree (1.3.6.1.4.1) and provides an easy and unambiguous means for determining `what kind of box' is being managed. For example, if vendor `Flintstones, Inc.' was assigned the subtree 1.3.6.1.4.1.4242, it could assign the identifier 1.3.6.1.4.1.4242.1.1 to its `Fred Router'.	Every 30 mins
sysUpTime	RFC1213-MIB	The time (in hundredths of a second) since the network management portion of the system was last re-initialized.	Every 30 mins
sysName	RFC1213-MIB	An administratively-assigned name for this managed node. By convention, this is the node's fully-qualified domain name.	Every 30 mins
sysLocation	RFC1213-MIB	The physical location of this node (e.g., `telephone closet, 3rd floor').	Every 30 mins
ifInOctets	RFC1213-MIB	The total number of octets received on the interface, including framing characters.	Every 5 and 30 mins
ifInDiscards	RFC1213-MIB	The number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.	Every 30 mins
ifInErrors	RFC1213-MIB	The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol.	Every 30 mins
ifOutOctets	RFC1213-MIB	The total number of octets transmitted out of the interface, including framing characters.	Every 5 and 30 mins
ifOutDiscards	RFC1213-MIB	The number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.	Every 30 mins
ifOutErrors	RFC1213-MIB	The number of outbound packets that could not be transmitted because of errors.	Every 30 mins
ipInReceives	RFC1213-MIB	The total number of input datagrams received from interfaces, including those received in error.	Every 5 and 30 mins
ipInDiscards	RFC1213-MIB	The number of input IP datagrams for which no problems were encountered to prevent their continued processing, but which were discarded (e.g., for lack of buffer space). Note that this counter does not include any datagrams discarded while awaiting re-assembly.	Every 30 mins
ipOutRequests	RFC1213-MIB	The total number of IP datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. Note that this counter does not include any datagrams counted in ipForwDatagrams.	Every 5 and 30 mins
ipOutDiscards	RFC1213-MIB	The number of output IP datagrams for which no problem was encountered to prevent their transmission to their destination, but which were discarded (e.g., for lack of buffer space). Note that this counter would include datagrams counted in ipForwDatagrams if any such packets met this (discretionary) discard criterion.	Every 30 mins
RFC1271-MIB			
etherStatsCRCAlignErrors	RFC1271-MIB	The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but were not an integral number of octets in length or had a bad Frame Check Sequence (FCS).	Every 30 mins

Performance Metric Identifier	MIB Name	Description	Default Succession IEMS Collection Interval
etherStatsUndersizePkts	RFC1271-MIB	The total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.	Every 30 mins
etherStatsOversizePkts	RFC1271-MIB	The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.	Every 30 mins
etherStatsFragments	RFC1271-MIB	The total number of packets received that were not an integral number of octets in length or that had a bad Frame Check Sequence (FCS), and were less than 64 octets in length (excluding framing bits but including FCS octets).	Every 30 mins
etherStatsJabbers	RFC1271-MIB	The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets), and were not an integral number of octets in length or had a bad Frame Check Sequence (FCS).	Every 30 mins
etherStatsCollisions	RFC1271-MIB	The best estimate of the total number of collisions on this Ethernet segment.	Every 30 mins
etherHistoryCRCAlignErrors	RFC1271-MIB	The number of packets received during this sampling interval that had a length (excluding framing bits but including FCS octets) between 64 and 1518 octets, inclusive, but were not an integral number of octets in length or had a bad Frame Check Sequence (FCS).	Every 30 mins
etherHistoryUndersizePkts	RFC1271-MIB	The number of packets received during this interval that were less than 64 octets long (excluding framing bits but including FCS octets) and were otherwise well formed.	Every 30 mins
etherHistoryOversizePkts	RFC1271-MIB	The number of packets received during this interval that were longer than 1518 octets (excluding framing bits but including FCS octets) but were otherwise well formed.	Every 30 mins
etherHistoryFragments	RFC1271-MIB	The total number of packets received during this sampling interval that were not an integral number of octets in length or that had a bad Frame Check Sequence (FCS), and were less than 64 octets in length (excluding framing bits but including FCS octets).	Every 30 mins
etherHistoryJabbers	RFC1271-MIB	The number of packets received during this interval that were longer than 1518 octets (excluding framing bits but including FCS octets), and were not an integral number of octets in length or had a bad Frame Check Sequence (FCS).	Every 30 mins
etherHistoryCollisions	RFC1271-MIB	The best estimate of the total number of collisions on this Ethernet segment during this interval.	Every 30 mins
OSPF-MIB			
ospfIfEvents	OSPF-MIB	The number of times this OSPF interface has changed its state, or an error has occurred.	Every 30 mins
OSPF-MIB			
ospfNbrIpAddr	OSPF-MIB	The IP address this neighbor is using in its IP Source Address. Note that, on addressless links, this will not be 0.0.0.0, but the address of another of the neighbor's interfaces.	Every 30 mins
ospfNbrEvents	OSPF-MIB	The number of times this neighbor relationship has changed state, or an error has occurred.	Every 30 mins
SNMP-FRAMEWORK-MIB			
snmpInvalidMsgs	SNMP-FRAMEWORK-MIB	The total number of packets received by the SNMP engine which were dropped because there were invalid or inconsistent components in the SNMP message.	Every 30 mins
SNMP-FRAMEWORK-MIB			
snmpInPkts	SNMP-FRAMEWORK-MIB	The total number of Messages delivered to the SNMP entity from the transport service.	Every 30 mins
snmpOutPkts	SNMP-FRAMEWORK-MIB	The total number of SNMP Messages which were passed from the SNMP protocol entity to the transport service.	Every 30 mins
snmpInBadVersions	SNMP-FRAMEWORK-MIB	The total number of SNMP Messages which were delivered to the SNMP protocol entity and were for an unsupported SNMP version.	Every 30 mins
snmpInBadCommunityUses	SNMP-FRAMEWORK-MIB	The total number of SNMP Messages delivered to the SNMP protocol entity which represented an SNMP operation which was not allowed by the SNMP community named in the Message.	Every 30 mins
snmpInASNParseErrs	SNMP-FRAMEWORK-MIB	The total number of ASN.1 or BER errors encountered by the SNMP protocol entity when decoding received SNMP Messages.	Every 30 mins

Performance Metric Identifier	MIB Name	Description	Default Succession IEMS Collection Interval
snmpInTotalReqVars	SNMP-FRAMEWORK-MIB	The total number of MIB objects which have been retrieved successfully by the SNMP protocol entity as the result of receiving valid SNMP Get-Request and Get-Next PDUs.	Every 30 mins
snmpInTotalSetVars	SNMP-FRAMEWORK-MIB	The total number of MIB objects which have been altered successfully by the SNMP protocol entity as the result of receiving valid SNMP Set-Request PDUs.	Every 30 mins
snmpOutTraps	SNMP-FRAMEWORK-MIB	The total number of SNMP Trap PDUs which have been generated by the SNMP protocol entity.	Every 30 mins
VRRP-MIB			
vrrpStatsBecomeMaster	VRRP-MIB	The total number of times that this virtual router's state has transitioned from BACKUP to MASTER.	Every 30 mins
RAPID-CITY			
rcSysBufferUtil	RAPID-CITY	Buffer utilization as a percentage of the total amount of buffer space in the system. A high value indicates congestion.	Every 30 mins
rcSysBufferUtilPeak	RAPID-CITY	The largest buffer utilization since sysUpTime.	Every 30 mins
rcSysBufferUtilPeakTime	RAPID-CITY	Timestamp for rcSysPeakBandwidth.	Every 30 mins
rcSysNVRamUsed	RAPID-CITY	Non-volatile RAM in use in Kbytes.	Every 30 mins
rcSysCpuUtil	RAPID-CITY	Percentage of CPU utilization.	Every 30 mins
rcSysSwitchFabricUtil	RAPID-CITY	Percentage of Switching Fabric utilization.	Every 30 mins
rcStatFrameTooShorts	RAPID-CITY	The total number of frames that are too short that were encountered on this interface.	Every 30 mins
rcStatBridgeInDiscards	RAPID-CITY	The total number of frames that were discarded by the bridging entity.	Every 30 mins
rcStatRouteInDiscards	RAPID-CITY	The total number of frames that were discarded by the routing entity.	Every 30 mins
rcStatStgForwardTransitions	RAPID-CITY	The number of times this port has transitioned from the Learning state to the Forwarding state.	Every 30 mins
rcStatGigLinkFailures	RAPID-CITY	The total number of link failures encountered on this interface.	Every 30 mins
rcStatGigPacketErrors	RAPID-CITY	The total number of packet errors encountered on this interface.	Every 30 mins
rcStatGigCarrierErrors	RAPID-CITY	The total number of carrier errors encountered on this interface.	Every 30 mins
rcStatGigLinkInactiveErrors	RAPID-CITY	The total number of link inactive errors encountered on this interface.	Every 30 mins
rcStatSmltIstDownCnt	RAPID-CITY	Counters that counts how the session between the two peering switches has done down since last boot.	Every 30 mins
rcStatSmltSmltDownTxMsgCnt	RAPID-CITY	Counters that counts the tx Smlt Down msg.	Every 30 mins
rcStatSmltSmltDownRxMsgCnt	RAPID-CITY	Counters that counts the rx Smlt Down msg.	Every 30 mins
rcStatSmltSmltUpTxMsgCnt	RAPID-CITY	Counters that counts the tx Smlt Up msg.	Every 30 mins
rcStatSmltSmltUpRxMsgCnt	RAPID-CITY	Counters that counts the rx Smlt Up msg.	Every 30 mins
rc2kAtmPortStatsInDroppedPkts	RAPID-CITY	Number of AAL5 CPCS PDUs dropped due to resource exhaustion.	Every 30 mins
rc2kAtmPortStatsOutDroppedPkts	RAPID-CITY	Number of AAL5 CPCS PDUs dropped because the transmitter closed the channel.	Every 30 mins
rc2kAtmVPortStatsInOctets	RAPID-CITY	AAL5 CPCS PDU octects received from ATM interface	Every 5 and 30 mins
rc2kAtmVPortStatsOutOctets	RAPID-CITY	AAL5 CPCS PDU octects transmitted out of ATM interface	Every 5 and 30 mins
rc2kAtmVPortStatsInErrors	RAPID-CITY	AAL5 CPCS PDUs received with errors from ATM interface. These errors include CRC-32 errors,SAR time-out errors and oversized SDU errors.	Every 30 mins
rc2kAtmVPortStatsOutErrors	RAPID-CITY	Number of AAL5 CPCS PDUs that couldn't be transmitted due to errors.	Every 30 mins
rc2kAtmVPortStatsInDiscards	RAPID-CITY	Number of received AAL5 CPCS PDUs discarded.	Every 30 mins
rc2kAtmVPortStatsOutDiscards	RAPID-CITY	Number of AAL5 CPCS PDUs which are to be transmitted but discarded.	Every 30 mins
rcStgPortForwardTransitions	RAPID-CITY	The number of times this port has transitioned from the Learning state to the Forwarding state.	Every 30 mins

OMs collected via CSV for OSS
Not supported at Performance Browser
New in SN08

Appendix B: MG 9000 MIB OMs/PMs

OM Name	Type	Duration	Description	EM PM Browser Section	Browser Tab	Browser Name	MIB Table Name	MIB Name	For OSS	Release	Test Procedures
NORTEL-UEMG-NODE-MIB											
norNodeAlarmsTable											
norNodeAlarmsCritical	Counter32	count goes up and down, does not rollover	Number of Critical Alarms currently on this Node	ITP, OC3, IMA, ITX, and DS1 Card	Card Alarm Statistics : Current data	Number of Critical alarms currently on this card	norNodeAlarmsTable	NORTEL-UEMG-NODE-MIB	No	SN04	Generate any Critical Alarm (See Fault test procedures) and see that the alarm counts match between the MG9K and the MG9K EM display for that MG9K
norNodeAlarmsMajor	Counter32	count goes up and down, does not rollover	Number of Major Alarms currently on this Node	ITP, OC3, IMA, ITX, and DS1 Card	Card Alarm Statistics : Current data	Number of Critical alarms currently on this card	norNodeAlarmsTable	NORTEL-UEMG-NODE-MIB	No	SN04	Generate any Major Alarm (See Fault test procedures) and see that the alarm counts match between the MG9K and the MG9K EM display for that MG9K
norNodeAlarmsMinor	Counter32	count goes up and down, does not rollover	Number of Minor Alarms currently on this Node	ITP, OC3, IMA, ITX, and DS1 Card	Card Alarm Statistics : Current data	Number of Critical alarms currently on this card	norNodeAlarmsTable	NORTEL-UEMG-NODE-MIB	No	SN04	Generate any Minor Alarm (See Fault test procedures) and see that the alarm counts match between the MG9K and the MG9K EM display for that MG9K
NORTEL-UEMG-CARRIER-MIB											
norCarrSonetMediumCurrentTable											
norCarrSonetMedCurrentOpt	Unsigned32	count goes up and down, does not rollover	Optical Power Transmitted. This is interpreted as a Percentage	OC3 Port	Sonet Medium Statistics : Current data	Optical Tx Power (%)	norCarrSonetMediumCurrentTable	NORTEL-UEMG-CARRIER-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM. For an operational OC3 interface the value will be non-zero.
norCarrSonetMedCurrentLBC	Unsigned32	count goes up and down, does not rollover	Laser Bias Current.	OC3 Port	Sonet Medium Statistics : Current data	Laser Bias Current (%)	norCarrSonetMediumCurrentTable	NORTEL-UEMG-CARRIER-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM. For an operational OC3 interface the value will be non-zero.
norCarrSonetMediumIntervalTable											
norCarrSonetMedCurrentOpt	Unsigned32	count goes up and down, does not rollover	Optical Power Transmitted. This is interpreted as a Percentage	OC3 Port	Sonet Medium Statistics : History data	Optical Tx Power (%)	norCarrSonetMediumIntervalTable	NORTEL-UEMG-CARRIER-MIB	Yes	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM. For an operational OC3 interface the values will be non-zero.
norCarrSonetMedIntervalLBC	Unsigned32	count goes up and down, does not rollover	Laser Bias Current.	OC3 Port	Sonet Medium Statistics : History data	Laser Bias Current (%)	norCarrSonetMediumIntervalTable	NORTEL-UEMG-CARRIER-MIB	Yes	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM. For an operational OC3 interface the values will be non-zero.
NORTEL-UEMG-MEGACO-MIB											
nnMegacoOMMedGwyIntervalTable											
nnMegacoOMMedGwyNumInMessages	Unsigned32	Counts only for last 15 min	Total number of messages received from the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Total number of messages received on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM under the following conditions. 1.) No traffic 2.) with traffic The counts for this OM will be higher during traffic. To ensure exact counts are collected a Packet Sniffer will have to used to collect the actual number of messages. Also wait for a little longer that 15 min, collect the 96 OM entries, and ensure the counts have moved to the proper time interval.
nnMegacoOMMedGwyNumInOctets	Unsigned32	Counts only for last 15 min	Total number of octets received from the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Total number of octets received on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyAvrgInMsgRate	Unsigned32	Counts only for last 15 min	Average message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Average message rate for received messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyMaxInMsgRate	Unsigned32	Counts only for last 15 min	Maximum message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Maximum received message rate per minute	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyNumOutMessages	Unsigned32	Counts only for last 15 min	Total number of messages sent to the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Total number of messages sent on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyNumOutOctets	Unsigned32	Counts only for last 15 min	Total number of octets sent to the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Total number of octets sent on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyAvrgOutMsgRate	Unsigned32	Counts only for last 15 min	Average message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Average message rate for sent messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyMaxOutMsgRate	Unsigned32	Counts only for last 15 min	Maximum message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Statistics : History data	Maximum sent message rate per minute	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyCurrentDayTotalTable											
nnMegacoOMMedGwyNumInMessagesTotCurDay	Unsigned32	Rolling 24 hour total	Total number of messages received from the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Total number of messages received on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with traffic The counts for this OM will be higher during traffic. To ensure exact counts are collected a Packet Sniffer will have to used to collect the actual number of messages. Also wait for a little longer that 15 min, collect the 96 OM entries, and ensure the counts have moved to the proper time interval.
nnMegacoOMMedGwyNumInOctetsTotCurDay	Unsigned32	Rolling 24 hour total	Total number of octets received from the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Total number of octets received on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyAvrgInMsgRateTotCurDay	Unsigned32	Rolling 24 hour total	Average message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Average message rate for received messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyMaxInMsgRateTotCurDay	Unsigned32	Rolling 24 hour total	Maximum message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Maximum received message rate per minute	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyNumOutMessagesTotCurDay	Unsigned32	Rolling 24 hour total	Total number of messages sent to the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Total number of messages sent on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyNumOutOctetsTotCurDay	Unsigned32	Rolling 24 hour total	Total number of octets sent to the Gateway Controller (GWC) during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Total number of octets sent on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyAvrgOutMsgRateTotCurDay	Unsigned32	Rolling 24 hour total	Average message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Average message rate for sent messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMMedGwyMaxOutMsgRateTotCurDay	Unsigned32	Rolling 24 hour total	Maximum message send rate (per minute) for messages sent to the GWC during this interval.	MG5K Virtual Media Gateway	VMG Day Total Statistics : Current data	Maximum sent message rate per minute	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRIntervalTable											
nnMegacoOMCMRmaxSimultCNDreq	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of CND requests during this interval.	ITP Card	Class Modem Statistics : History data	Maximum simultaneous number of CND requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display all 96 entries and ensure they are all zero. Then make a number of Caller ID calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls. Do this over a number of 15 min intervals, then display all 96 entries. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMCMRtotNumberCNDreq	Unsigned32	Counts only for last 15 min	The total number of CND requests during this interval.	ITP Card	Class Modem Statistics : History data	Total number of CND requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumCNDcompleted	Unsigned32	Counts only for last 15 min	The number of CND requests during this interval that completed.	ITP Card	Class Modem Statistics : History data	Number of CND requests that completed	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultADSIreq	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of ADSI requests during this interval.	ITP Card	Class Modem Statistics : History data	Maximum simultaneous number of ADSI requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display all 96 entries and ensure they are all zero. Then make a number of ADSI calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls. Do this over a number of 15 min intervals, then display all 96 entries.
nnMegacoOMCMRtotNumberADSIreq	Unsigned32	Counts only for last 15 min	The total number of ADSI requests during this interval.	ITP Card	Class Modem Statistics : History data	Total number of ADSI requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumADSIcompleted	Unsigned32	Counts only for last 15 min	The number of ADSI requests during this interval that completed.	ITP Card	Class Modem Statistics : History data	Number of ADSI requests that completed	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultBCLIDreq	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of BCLID requests during this interval.	ITP Card	Class Modem Statistics : History data	Maximum simultaneous number of BCLID requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display all 96 entries and ensure they are all zero. Then make a number of BCLID calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls. Do this over a number of 15 min intervals, then display all 96 entries. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMCMRtotNumberBCLIDreq	Unsigned32	Counts only for last 15 min	The total number of BCLID requests during this interval.	ITP Card	Class Modem Statistics : History data	Total number of BCLID requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumBCLIDcompleted	Unsigned32	Counts only for last 15 min	The number of BCLID requests during this interval that completed.	ITP Card	Class Modem Statistics : History data	Number of BCLID requests that completed	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultSCWIDreq	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of SCWID requests during this interval.	ITP Card	Class Modem Statistics : History data	Maximum simultaneous number of SCWID requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display all 96 entries and ensure they are all zero. Then make a number of SCWID calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls. Do this over a number of 15 min intervals, then display all 96 entries. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMCMRtotNumberSCWIDreq	Unsigned32	Counts only for last 15 min	The total number of SCWID requests during this interval.	ITP Card	Class Modem Statistics : History data	Total number of SCWID requests	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumSCWIDcompleted	Unsigned32	Counts only for last 15 min	The number of SCWID requests during this interval that completed.	ITP Card	Class Modem Statistics : History data	Number of SCWID requests that completed	nnMegacoOMCMRIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRCurrentDayTotalTable											
nnMegacoOMCMRmaxSimultCNDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of CND requests.	ITP Card	Class Modem Day Total Statistics : Current data	Maximum simultaneous number of CND requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display the OM and ensure it is zero. Then make a number of Caller ID calls (some at the same time) and then display this OM. The count will show appropriate results matching the number of calls.
nnMegacoOMCMRtotNumberCNDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of CND requests.	ITP Card	Class Modem Day Total Statistics : Current data	Total number of CND requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumCNDcompletedTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of CND requests that completed.	ITP Card	Class Modem Day Total Statistics : Current data	Number of CND requests that completed	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultADSIreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of ADSI requests.	ITP Card	Class Modem Day Total Statistics : Current data	Maximum simultaneous number of ADSI requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display the OM and ensure it is zero. Then make a number of ADSI calls (some at the same time) and then display this OM. The count will show appropriate results matching the number of calls.
nnMegacoOMCMRtotNumberADSIreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of ADSI requests.	ITP Card	Class Modem Day Total Statistics : Current data	Total number of ADSI requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumADSIcompletedTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of ADSI requests that completed.	ITP Card	Class Modem Day Total Statistics : Current data	Number of ADSI requests that completed	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultBCLIDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of BCLID requests.	ITP Card	Class Modem Day Total Statistics : Current data	Maximum simultaneous number of BCLID requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display the OM and ensure it is zero. Then make a number of BCLID calls (some at the same time) and then display this OM. The count will show appropriate results matching the number of calls.
nnMegacoOMCMRtotNumberBCLIDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of BCLID requests.	ITP Card	Class Modem Day Total Statistics : Current data	Total number of BCLID requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRnumBCLIDcompletedTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of BCLID requests that completed.	ITP Card	Class Modem Day Total Statistics : Current data	Number of BCLID requests that completed	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCMRmaxSimultSCWIDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of SCWID requests.	ITP Card	Class Modem Day Total Statistics : Current data	Maximum simultaneous number of SCWID requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display the OM and ensure it is zero. Then make a number of SCWID calls (some at the same time) and then display this OM. The count will show appropriate results matching the number of calls.
nnMegacoOMCMRtotNumberSCWIDreqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of SCWID requests.	ITP Card	Class Modem Day Total Statistics : Current data	Total number of SCWID requests	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above

nnMegacoOMCMRnumSCWIDcompletedTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of SCWID requests that completed.	ITP Card	Class Modem Day Total Statistics : Current data	Number of SCWID requests that completed	nnMegacoOMCMRCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPIntervalTable											
nnMegacoOMDSPmaxSimultToneRcvrInUse	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of tone receivers in use during this interval.	ITP Card	Digital Signal Statistics : History data	Maximum simultaneous number of tone receivers in use	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM under the following conditions. 1.) No traffic 2.) with traffic The counts for this OM will be higher during traffic. To ensure exact counts are collected keep track of the number of calls made. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMDSPnumToneRcvrReq	Unsigned32	Counts only for last 15 min	The number of tone receiver requests during this interval.	ITP Card	Digital Signal Statistics : History data	Number of tone receiver requests	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPnumToneRcvrReqFail	Unsigned32	Counts only for last 15 min	The number of tone receiver requests that failed during this interval.	ITP Card	Digital Signal Statistics : History data	Number of tone receiver requests which failed	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPmaxSimultToneGenInUse	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of tone generators in use during this interval.	ITP Card	Digital Signal Statistics : History data	Maximum simultaneous number of tone generators in use	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPnumToneGenReq	Unsigned32	Counts only for last 15 min	The number of tone generator requests during this interval.	ITP Card	Digital Signal Statistics : History data	Number of tone generator requests	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPnumToneGenReqFail	Unsigned32	Counts only for last 15 min	The number of tone generator requests that failed during this interval.	ITP Card	Digital Signal Statistics : History data	Number of tone generator requests which failed	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPmaxSimultCMRmodemInUse	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of CMR modems in use during this interval.	ITP Card	Digital Signal Statistics : History data	Maximum simultaneous number of CMR modems in use	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display all 96 entries and ensure they are all zero. Then make a number of Caller ID calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls. Do this over a number of 15 min intervals, then display all 96 entries. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMDSPnumCMRmodemReq	Unsigned32	Counts only for last 15 min	The number of CMR modem requests during this interval.	ITP Card	Digital Signal Statistics : History data	Number of CMR modem requests	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPnumCMRmodemReqFail	Unsigned32	Counts only for last 15 min	The number of CMR modem requests that failed during this interval.	ITP Card	Digital Signal Statistics : History data	Number of CMR modem requests which failed	nnMegacoOMDSPIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMDSPCurrentDayTotalTable											
nnMegacoOMDSPmaxSimultToneRcvrInUseTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of tone receivers in use.	ITP Card	Digital Signal Day Total Statistics : Current data	Maximum simultaneous number of tone receivers in use	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with traffic The count for this OM will be higher during traffic. To ensure exact count is collected keep track of the number of calls made.
nnMegacoOMDSPnumToneRcvrReqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number of tone receiver requests.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of tone receiver requests	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPnumToneRcvrReqFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number tone receiver requests that failed.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of tone receiver requests which failed	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPmaxSimultToneGenInUseTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of tone generators in use.	ITP Card	Digital Signal Day Total Statistics : Current data	Maximum simultaneous number of tone generators in use	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPnumToneGenReqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number of tone generator requests.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of tone generator requests	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPnumToneGenReqFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number tone generator requests that failed.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of tone generator requests which failed	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPmaxSimultCMRmodemInUseTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of CMR modems in use.	ITP Card	Digital Signal Day Total Statistics : Current data	Maximum simultaneous number of CMR modems in use	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Starting with no calls made display the OM and ensure it is zero. Then make a number of Caller ID calls (some at the same time) and then display this OM. The counts will show appropriate results matching the number of calls.
nnMegacoOMDSPnumCMRmodemReqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number of CMR modem requests.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of CMR modem requests	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMDSPnumCMRmodemReqFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total of the number CMR modem requests that failed.	ITP Card	Digital Signal Day Total Statistics : Current data	Number of CMR modem requests which failed	nnMegacoOMDSPCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCESIntervalTable											
nnMegacoOMCESmaxSimultIntraSwitch	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of channels in use for intra- switched calls during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Intra maximum simultaneous number of channels in use	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM under the following conditions. 1.) No traffic 2.) with traffic from/to lines within the same SMA or LGCI. The counts for this OM will be higher during traffic. To ensure exact counts are collected keep track of the number of calls made. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMCESnumChnlAllocIntra	Unsigned32	Counts only for last 15 min	The total number of channel allocation requests for intra-switched calls during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Intra total number of channel allocation requests	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMCESnumChnlAllocIntraFail	Unsigned32	Counts only for last 15 min	The total number of channel allocation requests for intra-switched calls that failed during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Intra total number of failed channel allocation request	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMCESmaxSimultInterSwitch	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of channels in use for inter- switched calls during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Inter maximum simultaneous number of channels in use	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM under the following conditions. 1.) No traffic 2.) with traffic from lines within a SMA or LGCI to lines not on that SAM or LGCI. The counts for this OM will be higher during traffic. To ensure exact counts are collected keep track of the number of calls made. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMCESnumChnlAllocInter	Unsigned32	Counts only for last 15 min	The total number of channel allocation requests for inter-switched calls during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Inter total number of channel allocation requests	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMCESnumChnlAllocInterFail	Unsigned32	Counts only for last 15 min	The total number of channel allocation requests for inter-switched calls that failed during this interval.	ITP, OC3, IMA & ABI Card	Circuit Emulation Statistics : History data	Inter total number of failed channel allocation requests	nnMegacoOMCESIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMCESCurrentDayTotalTable											
nnMegacoOMCESmaxSimultIntraSwitchTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of channels in use for intra-switched calls.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Intra maximum simultaneous number of channels in use	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with traffic from/to lines within the same SMA or LGCI. The count for this OM will be higher during traffic. To ensure exact count is collected keep track of the number of calls made.
nnMegacoOMCESnumChnlAllocIntraTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of channel allocation requests for intra-switched calls.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Intra total number of channel allocation requests	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCESnumChnlAllocIntraFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of channel allocation requests for intra-switched calls that failed.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Intra total number of failed channel allocation request	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCESmaxSimultInterSwitchTotCurDay	Unsigned32	Rolling 24 hour total	The current day's highest maximum simultaneous number of channels in use for inter-switched calls.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Inter maximum simultaneous number of channels in use	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with traffic from lines within a SMA or LGCI to lines not on that SAM or LGCI. The count for this OM will be higher during traffic. To ensure exact count is collected keep track of the number of calls made.
nnMegacoOMCESnumChnlAllocInterTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of channel allocation requests for inter-switched calls.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Inter total number of channel allocation requests	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMCESnumChnlAllocInterFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of channel allocation requests for inter-switched calls that failed.	ITP, OC3, IMA & ABI Card	Circuit Emulation Day Total Statistics : Current data	Inter total number of failed channel allocation requests	nnMegacoOMCESCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMECANIntervalTable											
nnMegacoOMECANmaxSimultResrceInUse	Unsigned32	Counts only for last 15 min	The maximum simultaneous number of ECAN resources in use during this interval.	ITP Card	Echo Cancellation Statistics : History data	Maximum simultaneous number of ECAN resources in use	nnMegacoOMECANIntervalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect all 96 intervals of this particular OM under the following conditions. 1.) No traffic 2.) with traffic The counts for this OM will be higher during traffic. To ensure exact counts are collected keep track of the exact number of calls made. There will be a count for each end of a call. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnMegacoOMECANnumResrceReq	Unsigned32	Counts only for last 15 min	The total number of ECAN resource request attempts during this interval.	ITP Card	Echo Cancellation Statistics : History data	Total number of ECAN resource request attempts	nnMegacoOMECANIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMECANnumResrceReqFail	Unsigned32	Counts only for last 15 min	The total number of ECAN resource request attempts that failed during this interval.	ITP Card	Echo Cancellation Statistics : History data	Total number of ECAN resource request attempts that failed	nnMegacoOMECANIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN04	Same as above
nnMegacoOMECANCurrentDayTotalTable											
nnMegacoOMECANmaxSimultResrceInUseTotCurDay	Unsigned32	Rolling 24 hour total	The current day's maximum simultaneous number of ECAN resources in use.	ITP Card	Echo Cancellation Day Total Statistics : Current data	Maximum simultaneous number of ECAN resources in use	nnMegacoOMECANCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with traffic The count for this OM will be higher during traffic. To ensure exact count is collected keep track of the exact number of calls made. There will be a count for each end of a call.
nnMegacoOMECANnumResrceReqTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of ECAN resource requests.	ITP Card	Echo Cancellation Day Total Statistics : Current data	Total number of ECAN resource request attempts	nnMegacoOMECANCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoOMECANnumResrceReqFailTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total number of ECAN resource requests that failed.	ITP Card	Echo Cancellation Day Total Statistics : Current data	Total number of ECAN resource request attempts that failed	nnMegacoOMECANCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN04	Same as above
nnMegacoQoSIntervalTable											
nnMegacoQoSIntervalCalls	Unsigned32	Counts only for this 15 min	total number of calls (in this 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Number of Calls	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalBadCalls	Unsigned32	Counts only for this 15 min	total number of bad calls (in this 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Number of bad calls	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalPktsSent	Unsigned32	Counts only for this 15 min	number of packets sent (in this 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Number of packets sent	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalPktsLost	Unsigned32	Counts only for this 15 min	number of packets lost (in this 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Number of packets lost	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalPktLossPct	Interger	Counts only for this 15 min	% of packets lost (in this 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Percentage of packets lost	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalJitter	Unsigned32	Counts only for this 15 min	average jitter (in a 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Average jitter	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSIntervalLatency	Unsigned32	Counts only for this 15 min	average latency (in a 15-min interval)."	VMG	VMG QoS Interval Statistics : Current Interval QoS data	Average Latency	nnMegacoQoSIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoQoSCurrDayTable											
nnMegacoQoSCurrDayCalls	Unsigned32	Rolling 24 hour total	total number of calls (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Number of Calls	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoQoSCurrDayBadCalls	Unsigned32	Rolling 24 hour total	total number of bad calls (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Number of bad calls	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoQoSCurrDayPktsSent	Unsigned32	Rolling 24 hour total	number of packets sent (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Number of packets sent	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	

nnMegacoQoSCurrDayPktsLost	Unsigned32	Rolling 24 hour total	number of packets lost (in this 15-min interval)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Number of packets lost	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoQoSCurrDayPktLossPct	Interger	Rolling 24 hour total	% of packets lost (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Percentage of packets lost	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoQoSCurrDayJitter	Unsigned32	Rolling 24 hour total	average jitter (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Average jitter	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoQoSCurrDayJitter	Unsigned32	Rolling 24 hour total	average latency (in current day)."	VMG	VMG Total Day QoS data : Current Day Total QoS data	Average Latency	nnMegacoQoSCurrDayTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nnMegacoOMMedGwyIntervalTable											
nnMegacoOMMedGwyNumInMessages	Unsigned32	Counts only for this 15 min	Number of messages received from the Gateway Controller (GWC) during this interval.	VMG	VMG Statistics : History data	Total number of messages received on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyNumInOctets	Unsigned32	Counts only for this 15 min	Number of octets received from the Gateway Controller (GWC) during this interval.	VMG	VMG Statistics : History data	Total number of octets received on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyAvrgInMsgRate	Unsigned32	Counts only for this 15 min	Average message rate (per minute) for messages received from the GWC during this interval.	VMG	VMG Statistics : History data	Average message rate for received messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyMaxInMsgRate	Unsigned32	Counts only for this 15 min	Maximum message rate (per minute) for messages received from the GWC during this interval.	VMG	VMG Statistics : History data	Maximum message rate for received messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyNumOutMessages	Unsigned32	Counts only for this 15 min	Number of messages sent to the Gateway Controller (GWC) during this interval.	VMG	VMG Statistics : History data	Total number of messages sent on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyNumOutOctets	Unsigned32	Counts only for this 15 min	Number of octets sent to the Gateway Controller (GWC) during this interval.	VMG	VMG Statistics : History data	Total number of octets sent on the link	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyAvrgOutMsgRate	Unsigned32	Counts only for this 15 min	Average message rate (per minute) for messages sent to the GWC during this interval.	VMG	VMG Statistics : History data	Average message rate for sent messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyMaxOutMsgRate	Unsigned32	Counts only for this 15 min	Maximum message rate (per minute) for messages sent to the GWC during this interval.	VMG	VMG Statistics : History data	Maximum message rate for sent messages	nnMegacoOMMedGwyIntervalTable	NORTEL-UEMG-MEGACO-MIB	Yes	SN06	
nnMegacoOMMedGwyCurrentDayTotalTable											
MegacoOMMedGwyNumInMessagesTotCurDa	Unsigned32	Rolling 24 hour total	The current day's total Number of messages received from the Gateway Controller (GWC).	VMG	VMG Day Total Statistics : Current data	Total number of messages received on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
MegacoOMMedGwyNumInOctetsTotCurDay	Unsigned32	Rolling 24 hour total	The current day's total Number of octets received from the Gateway Controller (GWC).	VMG	VMG Day Total Statistics : Current data	Total number of octets received on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nMegacoOMMedGwyAvrgInMsgRateTotCurDa	Unsigned32	Rolling 24 hour total	The current day's total Average message rate (per minute) for messages received from the GWC.	VMG	VMG Day Total Statistics : Current data	Average message rate for received messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nMegacoOMMedGwyMaxInMsgRateTotCurDa	Unsigned32	Rolling 24 hour total	The current day's total Maximun message rate (per minute) for messages received from the GWC.	VMG	VMG Day Total Statistics : Current data	Maximum message rate for received messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No		
MegacoOMMedGwyNumOutMessagesTotCurD	Unsigned32	Rolling 24 hour total	The current day's total Number of messages sent to the Gateway Controller (GWC).	VMG	VMG Day Total Statistics : Current data	Total number of messages sent on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
nMegacoOMMedGwyNumOutOctetsTotCurDa	Unsigned32	Rolling 24 hour total	The current day's total Number of octets sent to the Gateway Controller (GWC).	VMG	VMG Day Total Statistics : Current data	Total number of octets sent on the link	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
MegacoOMMedGwyAvrgOutMsgRateTotCurD	Unsigned32	Rolling 24 hour total	The current day's total Average message rate (per minute) for messages sent to the GWC.	VMG	VMG Day Total Statistics : Current data	Average message rate for sent messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No	SN06	
MegacoOMMedGwyMaxOutMsgRateTotCurD	Unsigned32	Rolling 24 hour total	The current day's total Maximum message rate (per minute) for messages sent to the GWC.	VMG	VMG Day Total Statistics : Current data	Maximum message rate for sent messages	nnMegacoOMMedGwyCurrentDayTotalTable	NORTEL-UEMG-MEGACO-MIB	No		
NORTEL-UEMG-BANDWIDTH-MIB											
nnBwShelfCurrentSloaBandwResrvdTable											
nnBwShelfCurrentSloaBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	Current amount of reserved bandwidth currently allocated for the aggregate of all Switched Lines over ATM VCs on This UEMG shelf.	MG9K Shelf	Bandwidth Reserved Statistics : Current data	Current bandwidth reserved	nnBwShelfCurrentSloaBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active calls (from a line on this shelf to a line not on this shelf). The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call).
nnBwShelfCapacitySloaBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	Current amount of reserved bandwidth Capacity for the aggregate of all Switched Lines over ATM VCs on This UEMG shelf.	MG9K Shelf	Bandwidth Reserved Statistics : Current data	Capacity bandwidth reserved	nnBwShelfCurrentSloaBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	This is just the opposite of the OM above. It starts at max (or close to max) and decreases per call. So collect this OM and add the OM above and the two should equal the max value.
nnBwNetIfBwResIntervalTable											
nnBwNetIfBwResIntervalTotal	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the amount of reserved bandwidth currently allocated to VCs on the network interface.	MG9K Network Element	Interval Bandwidth Reserved Statistics : History data	Total bandwidth reserved	nnBwNetIfBwResIntervalTable	NORTEL-UEMG-BANDWIDTH-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active calls (from a line on this MG9000 to a line not on this MG9000). The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call). Collect this for all 96 intervals. Repeat this for PLoA (single DSO) connections and DSL data services (sending data). Also ensure the counts have moved to the proper time interval after each 15 interval.
nnBwNetIfBwResIntervalSloa	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the amount of reserved bandwidth currently allocated for the aggregate of all Switched Lines over ATM VCs on the network interface.	MG9K Network Element	Interval Bandwidth Reserved Statistics : History data	Sloa bandwidth reserved	nnBwNetIfBwResIntervalTable	NORTEL-UEMG-BANDWIDTH-MIB	No	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active calls (from a line on this MG9000 to a line not on this MG9000. The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call).
nnBwShelfIntervalSloaBandwResrvdTable											
nnBwShelfIntervalSloaBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	ith 15-minute measure amount of reserved band width allocated for the aggregate of all Switched Lines over ATM VCs on This UEMG shelf."	MG9K Shelf	Interval Bandwidth Reserved Statistics : History data	Amount of bandwidth reserved	nnBwShelfIntervalSloaBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active calls (from a line on this shelf to a line not on this shelf). The counts should be close to 0 for no traffic and higher with active calls. To ensure exact counts are collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call). Collect this for all 96 intervals.
nnBwIntervalBandwUtilTable											
nnBwBandwUtilIntervalInCellRate	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the inbound bandwidth utilization.	MG9K Network Element	Interval Bandwidth Utilization Statistics : History data	Cell rate in	nnBwIntervalBandwUtilTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active calls (from a line on this MG9000 to a line not on this MG9000). The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call).
nnBwBandwUtilIntervalOutCellRate	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the outbound bandwidth utilization.	MG9K Network Element	Interval Bandwidth Utilization Statistics : History data	Cell rate out	nnBwIntervalBandwUtilTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Same as above
nnBwBandwUtilIntervalInDslCellRate	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the inbound dsl band width utilization.	MG9K Network Element	Interval Bandwidth Utilization Statistics : History data	Dsl cell rate in	nnBwIntervalBandwUtilTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No data traffic 2.) with active DSL data being sent (from a line on this MG9000 to a line not on this MG9000). The count should be close to 0 for no data and higher with data. To ensure exact count is collected keep track of the actual data rates (added together). Collect this for all 96 intervals. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnBwBandwUtilIntervalOutDslCellRate	NnBwCellsPerSec	count goes up and down, does not rollover	The ith 15min measure of the outbound dsl band width utilization.	MG9K Network Element	Interval Bandwidth Utilization Statistics : History data	Dsl cell rate out	nnBwIntervalBandwUtilTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Same as above
nnBwIntervalQueueFillTable											
nnBwQueueFillIntervalTotal	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input cell queue associated with the central switching fabric.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the input cell queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with a large number of active calls (from a line on this MG9000 to a line not on this MG9000). The count should be 0 for no traffic and higher with active calls (warning: % may not change). To ensure exact count is collected keep track of the exact number of calls made. Collect this for all 96 intervals. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnBwQueueFillIntervalCbr	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all CBR VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the CBR VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No PLoA traffic 2.) with very high number of active PLoA calls (from a line on this MG9000 to a line not on this MG9000). The counts should be 0 for no traffic and higher with active calls (warning: % may not change. To ensure exact counts are collected keep track of the exact number of calls made. Collect this for all 96 intervals.
nnBwQueueFillIntervalRtVbr	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all rt-VBR VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the rt-VBR VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No rt-VBR DSL Data 2.) with a very high rate of active rt-VBR DSL data (from a line on this MG9000 to a line not on this MG9000). The count should be 0 for no data and higher with data (warning: % may not change. To ensure exact count is collected keep track of the exact number data rate. Collect this for all 96 intervals. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnBwQueueFillIntervalNrtVbr	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all nrt-VBR VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the nrt-VBR VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Same as above but for nrt-VBR DSL data service
nnBwQueueFillIntervalUbr	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all UBR VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the UBR VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Same as above but for UBR DSL data service
nnBwQueueFillIntervalUbrPlus	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all UBR+ VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of the UBR+ VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Same as above but for UBR+ DSL data service
nnBwQueueFillIntervalControl	NnBwPercent	count goes up and down, does not rollover	ith 15-minute value % fill of the entire input queue associated with the aggregate of all Control VCs.	MG9K Network Element	Switch Fabric Congestion Statistics : History data	Fill percentage of all Control VCs input queue	nnBwIntervalQueueFillTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN04	Collect this OM with no traffic and no OAM&P activity. The % should be low or 0. Run very high traffic and very high OAM&P traffic and the number may rise. Collect this for all 96 intervals. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnBwAbiCurrentBandwResrvdTable											
nnBwAbiCurrentBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	Current amount of reserved bandwidth currently allocated for the aggregate of all VCs on this UEMG ABI interface.	ABI Card	ABI card Bandwidth Reserved Statistics: Current data	Current bandwidth reserved	nnBwAbiCurrentBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	No	SN06	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active ABI calls (from a line on ABI to a line not on this MG9000). The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call).
nnBwAbiCapacityBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	Current amount of reserved bandwidth Capacity for the aggregate of all ABI VCs on this ABI interface.	ABI Card	ABI card Bandwidth Reserved Statistics: Current data	Capacity bandwidth reserved	nnBwAbiCurrentBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN06	This is just the opposite of the OM above. It starts at max (or close to max) and decreases per call. So collect this OM and add the OM above and the two should equal the max value.
nnBwAbiIntervalBandwResrvdEntry											
nnBwAbiIntervalBandwReserved	NnBwCellsPerSec	count goes up and down, does not rollover	ith 15-minute measure amount of reserved bandwidth allocated for the aggregate of all VCs on this ABI interface."	ABI Card	ABI card Interval Bandwidth Reserved Statistics: History data	Amount of bandwidth reserved	nnBwAbiIntervalBandwResrvdTable	NORTEL-UEMG-BANDWIDTH-MIB	Yes	SN06	On the MG9K EM Performance Browser collect this particular OM under the following conditions. 1.) No traffic 2.) with active ABI calls (from a line on ABI to a line not on this MG9000). The count should be close to 0 for no traffic and higher with active calls. To ensure exact count is collected keep track of the exact number of calls made. There will be a set usage for each active call (171 cells/sec per active call). Collect for all 96 intervals
SNMP-MPD-MIB											
SNMP Table											

snmpInvalidMsgs	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The total number of packets received by the SNMP engine which were dropped because there were invalid or inconsistent components in the SNMP message.	Not supported			SNMP Table	SNMP-MPD-MIB	Yes	SN04	This is an error condition that cannot be tested under normal conditions. To test a special test tool or test box would be required to sent invalid SNMP messages.
SNMPv2-MIB											
snmpInBadCommunityNames	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The total number of community-based SNMP messages (for example, SNMPv1) delivered to the SNMP entity which used an SNMP community name not known to said entity. Also, implementations which authenticate community-based SNMP messages using check(s) in addition to matching the community name (for example, by also checking whether the message originated from a transport address allowed to use a specified community name) MAY include in this value the number of messages which failed the additional check(s). It is to authenticate community-based SNMP messages specify the precise conditions that contribute to this value.	Not supported				SNMPv2-MIB	Yes	SN05	
snmpInPkts	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The total number of messages delivered to the SNMP entity from the transport service.	Not supported				SNMPv2-MIB	Yes	SN05	
NORTEL-UEMG-CLKSYNC-MIB											
NnClkSyncRefTable			This table provides status information for each of the sync reference inputs associated with the ITP card. There are six references per ITP card, two ITP cards on each shelf.								
nnClkSyncRefId	interger	Fixed value	Reference Identification... Identifies the six possible clock synchronization references on the ITP card. This field along with entPhysicalIndex defines a unique row in the nnClkSyncRefTable. itx0 (1), -- reference coming from the left ITX (ITX 0) itx1 (2), -- reference coming from the right ITX (ITX 1) dcc0 (3), -- reference coming from the left DCC (DCC-0) dcc1 (4), -- reference coming from the right DCC (DCC-1) host0 (5), -- reference cabled into the ITP ATM25 phy0 host1 (6) -- reference cabled into the ITP ATM25 phy1 "	Not supported			NnClkSyncRefTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN04	See Below
nnClkSyncRefLossOfSignalCount	Unsigned32	Count From Last Init up to 255 then it rolls over to 0	Contains the count of the number of onsets of timing reference signal loss. Range is from 0 - 255	ITP Card	Clock Sync Left ITX Reference Statistics : Current data Clock Sync Right ITX Reference Statistics : Current data Clock Sync Left OC3 Reference Statistics : Current data Clock Sync Right OC3 Reference Statistics : Current data	Number of onsets of timing reference signal loss	NnClkSyncRefTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN05	Remove ITX cables to the ITP cards. This OM count will increase for each removal.
nnClkSyncRefLossOfFrameCount	Unsigned32	Count From Last Init up to 255 then it rolls over to 0	Contains the count of the number of loss of frames. Range is from 0 - 255.	ITP Card	Clock Sync Left ITX Reference Statistics : Current data Clock Sync Right ITX Reference Statistics : Current data Clock Sync Left OC3 Reference Statistics : Current data Clock Sync Right OC3 Reference Statistics : Current data	Number of loss of frames	NnClkSyncRefTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN05	Remove all BITS and Network timing signals, individually (remove cables). This OM count will increase each time the signal is removed
NnClkSyncSignalTable			This table provides status information on each of the six timing signals coming into the UE9KMG host shelf. There is one entry for each network timing signal (total of two), and one entry for each BITS signal (total of 4)								
nnClkSyncSignalId	interger	Fixed value	Signal Identification... Identifies the six possible timing source signals which eventually are seen as references into the ITP card. This field defines a unique row in the nnClkSyncSignalTable. bitsA-0 (1), -- BITS A signal coming into the left ITX of -- the BITS ITX connected pair. bitsB-0 (2), -- BITS B signal coming into the left ITX of -- the BITS ITX connected pair. bitsA-1 (3), -- BITS A signal coming into the right ITX of -- the BITS ITX connected pair. bitsB-1 (4), -- BITS B signal coming into the right ITX of -- the BITS ITX connected pair. dcc-0 (5), -- Network Traffic signal coming into DCC-0 dcc-1 (6) -- Network Traffic signal coming into DCC-1"	Not Supported			NnClkSyncSignalTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN05	See Below
nnClkSyncSignalLossOfFrameCount	Unsigned32	Count From Last Init up to 255 then it rolls over to 0	Contains the count of the number of loss of frames.	Not supported			NnClkSyncSignalTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN05	Remove all BITS and Network timing signals, individually (remove cables). This OM count will increase each time the signal is removed
nnClkSyncSibnalLossOfSignalCount	Unsigned32	Count From Last Init up to 255 then it rolls over to 0	Contains the count of the number of onsets of timing source signal loss.	Not supported			NnClkSyncSignalTable	NORTEL-UEMG-CLKSYNC-MIB	Yes	SN05	Remove all BITS and Network timing signals, individually (remove cables). This OM count will increase each time the signal is removed
DS1-MIB											
dsx1CurrentTable											
dsx1CurrentESs	PerfCurrentCount	Counts only for last 15 min	The number of Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of errored seconds	dsx1CurrentTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). Without injecting any errors collect the OM and it should be 0. Inject toward the near-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable.
dsx1CurrentSESs	PerfCurrentCount	Counts only for last 15 min	The number of Severely Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of severely errored seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentSEFSs	PerfCurrentCount	Counts only for last 15 min	The number of Severely Errored Framing Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of severely errored framing seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentUASs	PerfCurrentCount	Counts only for last 15 min	The number of Unavailable Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of unavailable seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentCSSs	PerfCurrentCount	Counts only for last 15 min	The number of Controlled Slip Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of controlled slip seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentPCVs	PerfCurrentCount	Counts only for last 15 min	The number of Path Coding Violations.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of path coding violations	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLESs	PerfCurrentCount	Counts only for last 15 min	The number of Line Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of line errored seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentBESs	PerfCurrentCount	Counts only for last 15 min	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of bursty errored seconds	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentDMs	PerfCurrentCount	Counts only for last 15 min	The number of Degraded Minutes	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of degraded minutes	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLCVs	PerfCurrentCount	Counts only for last 15 min	The number of Line Code Violations (LCVs).	DS1 Port, IMA Port	Near-end Statistics : Current data	Number of line code violations	dsx1CurrentTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalTable											
dsx1IntervalESs	PerfIntervalCount	Counts only for last 15 min	The number of Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of errored seconds	dsx1IntervalTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
dsx1IntervalSESs	PerfIntervalCount	Counts only for last 15 min	The number of Severely Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of severely errored seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalSEFSs	PerfIntervalCount	Counts only for last 15 min	The number of Severely Errored Framing Seconds.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of severely errored framing seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalUASs	PerfIntervalCount	Counts only for last 15 min	The number of Unavailable Seconds. This object may decrease if the occurrence of unavailable seconds occurs across an interval boundary.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of unavailable seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalCSSs	PerfIntervalCount	Counts only for last 15 min	The number of Controlled Slip Seconds.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of controlled slip seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalPCVs	PerfIntervalCount	Counts only for last 15 min	The number of Path Coding Violations.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of path coding violations	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalLESs	PerfIntervalCount	Counts only for last 15 min	The number of Line Errored Seconds.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of line errored seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalBESs	PerfIntervalCount	Counts only for last 15 min	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Near-end Statistics : History data	Number of bursty errored seconds	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalDMs	PerfIntervalCount	Counts only for last 15 min	The number of Degraded Minutes	DS1 Port, IMA Port	Near-end Statistics : History data	Number of degraded minutes	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1IntervalLCVs	PerfIntervalCount	Counts only for last 15 min	The number of Line Code Violations.	DS1 Port, IMA Port	Near-end Statistics : History data	Number of line code violations	dsx1IntervalTable	DS1-MIB	No	SN04	Same as above
dsx1TotalTable											
dsx1CurrentESs	PerfTotalCount	Rolling 24 hour total	The sum of Errored Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of errored seconds	dsx1TotalTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count across 24 hours. Many of the NearEnd counts will be pegged just by pulling the DS1 cable. This test can be done utilizing the current and interval tests.

dsx1CurrentSESs	PerfTotalCount	Rolling 24 hour total	The number of Severely Errored Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of severely errored seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentSEFSs	PerfTotalCount	Rolling 24 hour total	The number of Severely Errored Framing Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of severely errored framing seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentUASs	PerfTotalCount	Rolling 24 hour total	The number of Unavailable Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of unavailable seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentCSSs	PerfTotalCount	Rolling 24 hour total	The number of Controlled Slip Seconds encountered by a DS1 inter face in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of controlled slip seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentPCVs	PerfTotalCount	Rolling 24 hour total	The number of Path Coding Violations encountered by a DS1 inter face in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of path coding violations	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLESs	PerfTotalCount	Rolling 24 hour total	The number of Line Errored Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of line errored seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentBESs	PerfCurrentCount	Rolling 24 hour total	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of bursty errored seconds	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentDMs	PerfCurrentCount	Rolling 24 hour total	The number of Degraded Minutes	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of degraded minutes	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLCVs	PerfTotalCount	Rolling 24 hour total	The number of Line Code Violations (LCVs) encountered by a DS1 interface in the current 15 minute interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Near-end Statistics : 24-hour current data	Number of line code violations	dsx1TotalTable	DS1-MIB	No	SN04	Same as above
dsx1FarEndCurrentTable											
dsx1CurrentESs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of errored seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count
dsx1CurrentSESs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Severely Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of severely errored seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentSEFSs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Severely Errored Framing Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of severely errored framing seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentUASs	PerfCurrentCount	Counts only for last 15 min	The number of Unavailable Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of unavailable seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentCSSs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Controlled Slip Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of controlled slip seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLESs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Line Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of path coding violations	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentPCVs	PerfCurrentCount	Counts only for last 15 min	The number of Far End Path Coding Violations.	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of line errored seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentBESs	PerfCurrentCount	Counts only for last 15 min	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of bursty errored seconds	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentDMs	PerfCurrentCount	Counts only for last 15 min	The number of Degraded Minutes	DS1 Port, IMA Port	Far-end Statistics : Current data	Number of degraded minutes	dsx1FarEndCurrentTable	DS1-MIB	No	SN04	Same as above
dsx1FarEndIntervalTable											
dsx1CurrentESs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of errored seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
dsx1CurrentSESs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Severely Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of severely errored seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentSEFSs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Severely Errored Framing Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of severely errored framing seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentUASs	PerfIntervalCount	Counts only for last 15 min	The number of Unavailable Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of unavailable seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentCSSs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Controlled Slip Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of controlled slip seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLESs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Line Errored Seconds.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of path coding violations	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentPCVs	PerfIntervalCount	Counts only for last 15 min	The number of Far End Path Coding Violations.	DS1 Port, IMA Port	Far-end Statistics : History data	Number of line errored seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentBESs	PerfCurrentCount	Counts only for last 15 min	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Far-end Statistics : History data	Number of bursty errored seconds	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentDMs	PerfCurrentCount	Counts only for last 15 min	The number of Degraded Minutes	DS1 Port, IMA Port	Far-end Statistics : History data	Number of degraded minutes	dsx1FarEndIntervalTable	DS1-MIB	No	SN04	Same as above
dsx1FarEndTotalTable											
dsx1CurrentESs	PerfTotalCount	Rolling 24 hour total	The number of Far End Errored Seconds encountered by a DS1 inter face in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of errored seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	On a PLoA DS1 channel connect a test box that has the ability to inject errors (e.g. TBERD). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end DS1 (DS0) the error and collect the OM and it should reflect the correct error count across 24 hours. This test can be done utilizing the current and interval tests.
dsx1CurrentSESs	PerfTotalCount	Rolling 24 hour total	The number of Far End Severely Errored Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of severely errored seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentSEFSs	PerfTotalCount	Rolling 24 hour total	The number of Far End Severely Errored Framing Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of severely errored framing seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentUASs	PerfTotalCount	Rolling 24 hour total	The number of Unavailable Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of unavailable seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentCSSs	PerfTotalCount	Rolling 24 hour total	The number of Far End Controlled Slip Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of controlled slip seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentLESs	PerfTotalCount	Rolling 24 hour total	The number of Far End Line Errored Seconds encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of path coding violations	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentPCVs	PerfTotalCount	Rolling 24 hour total	The number of Far End Path Coding Violations reported via the far end block error count encountered by a DS1 interface in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of line errored seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentBESs	PerfCurrentCount	Rolling 24 hour total	The number of Bursty Errored Seconds	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of bursty errored seconds	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
dsx1CurrentDMs	PerfCurrentCount	Rolling 24 hour total	The number of Degraded Minutes	DS1 Port, IMA Port	Far-end Statistics : 24-hour current data	Number of degraded minutes	dsx1FarEndTotalTable	DS1-MIB	No	SN04	Same as above
SONET-MIB											
sonetSectionCurrentTable											
sonetSectionCurrentESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Section in the current 15 minute interval.	OC3 Port, STS1	Sonet Section Statistics : Current data	Number of errored seconds	sonetSectionCurrentTable	SONET-MIB	No	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable.
sonetSectionCurrentSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Section in the current 15 minute interval.	OC3 Port, STS1	Sonet Section Statistics : Current data	Number of severely errored seconds	sonetSectionCurrentTable	SONET-MIB	No	SN04	Same as above
sonetSectionCurrentSEFSs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Severely Errored Framing Seconds encountered by a SONET/SDH Section in the current 15 minute inter val.	OC3 Port, STS1	Sonet Section Statistics : Current data	Number of severely errored framing seconds	sonetSectionCurrentTable	SONET-MIB	No	SN04	Same as above
sonetSectionCurrentCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Coding Violations encountered by a SONET/SDH Section in the current 15 minute interval.	OC3 Port, STS1	Sonet Section Statistics : Current data	Number of coding violations	sonetSectionCurrentTable	SONET-MIB	No	SN04	Same as above
sonetSectionIntervalTable											
sonetSectionIntervalESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Section in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Section Statistics : History data	Number of errored seconds	sonetSectionIntervalTable	SONET-MIB	Yes	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
sonetSectionIntervalSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Section in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Section Statistics : History data	Number of severely errored seconds	sonetSectionIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetSectionIntervalSEFSs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Severely Errored Framing Seconds encountered by a SONET/SDH Section in a particular 15- minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Section Statistics : History data	Number of severely errored framing seconds	sonetSectionIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetSectionIntervalCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Coding Violations encountered by a SONET/SDH Section in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Section Statistics : History data	Number of coding violations	sonetSectionIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetLineCurrentTable											
sonetLineCurrentESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Line in the current 15 minute interval.	OC3 Port, STS1	Sonet Line Statistics : Current data	Number of errored seconds	sonetLineCurrentTable	SONET-MIB	No	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable.
sonetLineCurrentSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Line in the current 15 minute inter val.	OC3 Port, STS1	Sonet Line Statistics : Current data	Number of severely errored seconds	sonetLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetLineCurrentCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Coding Violations encountered by a SONET/SDH Line in the current 15 minute inter val.	OC3 Port, STS1	Sonet Line Statistics : Current data	Number of coding violations	sonetLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetLineCurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Unavailable Seconds encountered by a SONET/SDH Line in the current 15 minute inter val.	OC3 Port, STS1	Sonet Line Statistics : Current data	Number of unavailable seconds	sonetLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetLineIntervalTable											
sonetLineIntervalESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Line in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Line Statistics : History data	Number of errored seconds	sonetLineIntervalTable	SONET-MIB	Yes	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.

sonetLineIntervalSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Line in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Line Statistics : History data	Number of severely errored seconds	sonetLineIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetLineIntervalCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Coding Violations encountered by a SONET/SDH Line in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Line Statistics : History data	Number of coding violations	sonetLineIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetLineIntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Unavailable Seconds encountered by a SONET/SDH Line in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Line Statistics : History data	Number of unavailable seconds	sonetLineIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetFarEndLineCurrentTable											
sonetFarEndLineCurrentESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Errored Seconds encountered by a SONET/SDH interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Line Statistics : Current data	Number of errored seconds	sonetFarEndLineCurrentTable	SONET-MIB	No	SN04	On the OC3 channel connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end OC3 the error and collect the OM and it should reflect the correct error count
sonetFarEndLineCurrentSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET/SDH Medium/SectionLine inter face in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Line Statistics : Current data	Number of severely errored seconds	sonetFarEndLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndLineCurrentCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET/SDH Medium/Section/Line interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Line Statistics : Current data	Number of coding violations	sonetFarEndLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndLineCurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET/SDH Medium/Section/Line interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Line Statistics : Current data	Number of unavailable seconds	sonetFarEndLineCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndLineIntervalTable											
sonetFarEndLineIntervalESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Errored Seconds encountered by a SONET/SDH Line interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Line Statistics : History data	Number of errored seconds	sonetFarEndLineIntervalTable	SONET-MIB	No	SN04	On the OC3 channel connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end OC3 the error and collect the OM and it should reflect the correct error count. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
sonetFarEndLineIntervalSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET/SDH Line interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Line Statistics : History data	Number of severely errored seconds	sonetFarEndLineIntervalTable	SONET-MIB	No	SN04	Same as above
sonetFarEndLineIntervalCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET/SDH Line interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Line Statistics : History data	Number of coding violations	sonetFarEndLineIntervalTable	SONET-MIB	No	SN04	Same as above
sonetFarEndLineIntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET/SDH Line interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Line Statistics : History data	Number of unavailable seconds	sonetFarEndLineIntervalTable	SONET-MIB	No	SN04	Same as above
sonetPathCurrentTable											
sonetPathCurrentESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Path in the current 15 minute interval.	OC3 Port, STS1	Sonet Path Statistics : Current data	Number of errored seconds	sonetPathCurrentTable	SONET-MIB	No	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable.
sonetPathCurrentSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Path in the current 15 minute interval.	OC3 Port, STS1	Sonet Path Statistics : Current data	Number of severely errored seconds	sonetPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetPathCurrentCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Coding Violations encountered by a SONET/SDH Path in the current 15 minute inter val.	OC3 Port, STS1	Sonet Path Statistics : Current data	Number of coding violations	sonetPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetPathCurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Unavailable Seconds encountered by a Path in the current 15 minute interval.	OC3 Port, STS1	Sonet Path Statistics : Current data	Number of unavailable seconds	sonetPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetPathIntervalTable											
sonetPathIntervalESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Path in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Path Statistics : History data	Number of errored seconds	sonetPathIntervalTable	SONET-MIB	Yes	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
sonetPathIntervalSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Path in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Path Statistics : History data	Number of severely errored seconds	sonetPathIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetPathIntervalCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Coding Violations encountered by a SONET/SDH Path in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Path Statistics : History data	Number of coding violations	sonetPathIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetPathIntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Unavailable Seconds encountered by a Path in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Path Statistics : History data	Number of unavailable seconds	sonetPathIntervalTable	SONET-MIB	Yes	SN04	Same as above
sonetFarEndPathCurrentTable											
sonetFarEndPathCurrentESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Errored Seconds encountered by a SONET/SDH interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Path Statistics : Current data	Number of errored seconds	sonetFarEndPathCurrentTable	SONET-MIB	No	SN04	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end OC3 the error and collect the OM and it should reflect the correct error count. Many of the NearEnd counts will be pegged just by pulling the DS1 cable.
sonetFarEndPathCurrentSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET/SDH Path interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Path Statistics : Current data	Number of severely errored seconds	sonetFarEndPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndPathCurrentCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET/SDH Path interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Path Statistics : Current data	Number of coding violations	sonetFarEndPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndPathCurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET/SDH Path interface in the current 15 minute interval.	OC3 Port, STS1	Sonet Far End Path Statistics : Current data	Number of unavailable seconds	sonetFarEndPathCurrentTable	SONET-MIB	No	SN04	Same as above
sonetFarEndPathIntervalTable											
sonetFarEndPathIntervalESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Errored Seconds encountered by a SONET/SDH Path interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Path Statistics : History data	Number of errored seconds	sonetFarEndPathIntervalTable	SONET-MIB	No	SN04	On the OC3 channel connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end OC3 the error and collect the OM and it should reflect the correct error count. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
sonetFarEndPathIntervalSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET/SDH Path interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Path Statistics : History data	Number of severely errored seconds	sonetFarEndPathIntervalTable	SONET-MIB	No	SN04	Same as above
sonetFarEndPathIntervalCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET/SDH Path interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Path Statistics : History data	Number of coding violations	sonetFarEndPathIntervalTable	SONET-MIB	No	SN04	Same as above
sonetFarEndPathIntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET/SDH Path interface in a particular 15-minute interval in the past 24 hours.	OC3 Port, STS1	Sonet Far End Path Statistics : History data	Number of unavailable seconds	sonetFarEndPathIntervalTable	SONET-MIB	No	SN04	Same as above
APS-MIB											
apsStatusTable											
apsStatusModeMismatches	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	A count of Mode Mismatch conditions. Modes other than 1+1 unidirectional monitor protection line K2 bit 5, which indicates the architecture and K2 bits 6-8, which indicate if the mode is unidirectional or bidirectional. A conflict between the current local mode and the received K2 mode information constitutes a mode mismatch	OC3 Protection Switch	APS Status Statistics : Current data	Number of Mode Mismatch conditions	apsStatusTable	APS-MIB	No	SN04	Connect the OC3 (fiber) to an ATM switch that does not support UNI Directional Non-revertive signaling (like the Bay switch).
apsChanStatusTable											
apsChanSignalDegrades	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	A count of Signal Degrade conditions. This condition occurs when the line Bit Error Rate exceeds the currently configured threshold.	OC3 Protection Switch	Active APS Channel Status Statistics : Current data Inactive APS Channel Status Statistics : Current data	Number of Signal Degrade conditions	apsChanStatusTable	APS-MIB	Yes	SN04	Inject bit error rates up to !0-5 on the active OC3 fiber using a test set (WNG ANT20).
apsChanSignalFailures	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	A count of Signal Failure conditions that have been detected on the incoming signal. This condition occurs when a loss of signal, loss of frame, AIS-L or a Line bit error rate exceeding 10^-3 is detected on an incoming line.	OC3 Protection Switch	Active APS Channel Status Statistics : Current data Inactive APS Channel Status Statistics : Current data	Number of Signal Failure conditions	apsChanStatusTable	APS-MIB	Yes	SN04	Pull the active OC3 fiber or Inject bit error rates up to !0-3 on the active OC3 fiber using a test set (WNG ANT20).
apsChanSwitchovers	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The number of times this channel has switched to the protection line. When queried with index value apsChanNumber set to 0, which is the protection line, this object will return 0.	OC3 Protection Switch	Active APS Channel Status Statistics : Current data Inactive APS Channel Status Statistics : Current data	Number of times this channel was switched to the protection line	apsChanStatusTable	APS-MIB	Yes	SN04	Display this OM count, Cause a link (OC3) failure (remove cable) on the active fiber. Display this OM count again and it should be increased by one.
ATM-MIB											
atmInterfaceTCTable											
atmInterfaceOCDEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The number of times the Out of Cell Delineation (OCD) events occur. If seven consecutive ATM cells have Header Error Control (HEC) violations, an OCD event occurs. A high number of OCD events may indicate a problem with the TC Sublayer.	ATM Interface	Interface Statistics : Current data	Cumulative OCD anomalies	atmInterfaceTCTable	ATM-MIB	No	SN04	Display this OM, Using a test set on the OC3 interface, create HEC violations. Display this OM again, it should have increased by the number of injected faults.
ATM2-MIB											
atmSigStatTable											

atmSigSSCOPConEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	SSCOP Connection Events Counter.	ATM Interface	Signaling statistics : Current data	SSCOP connection errors	atmSigStatTable	ATM2-MIB	No	SN04	SWACT the MG9000 DCC card. Increment will appear on newly active DCC as result of receiving BGN pdu
atmSigSSCOPErrdPdus	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	SSCOP Errored PDUs Counter.	ATM Interface	Signaling statistics : Current data	SSCOP errored PDUs	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer to inject invalid sscop PDU. Verify counter increments.
atmSigDetectSetupAttempts	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Call Setup Attempts Counter. This counter counts the number of call setup attempts (both successful and unsuccessful) detected on this interface.	ATM Interface	Signaling statistics : Current data	Incoming call/connection attempts	atmSigStatTable	ATM2-MIB	No	SN04	Display this OM, make an call to a line on this MG9000 from another MG9000, display count again. It will increase by the number of calls made
atmSigEmitSetupAttempts	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Call Setup Attempts Counter. This counter counts the number of call setup attempts (both successful and unsuccessful) transmitted on this interface.	ATM Interface	Signaling statistics : Current data	Outgoing call/connection attempts	atmSigStatTable	ATM2-MIB	No	SN04	Display this OM, make an call from this MG9000 to another MG9000, display count again. It will increase by the number of calls made
atmSigDetectUnavailRoutes	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Route Unavailability detected on this interface.	ATM Interface	Signaling statistics : Current data	Unavailable outgoing routes	atmSigStatTable	ATM2-MIB	No	SN04	Display this OM. Setup a PLOA passive endpoint with an invalid destination AESA. Request a PLOA service to this endpoint. OM will increment.
atmSigEmitUnavailRoutes	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Route Unavailability transmitted from this interface.	ATM Interface	Signaling statistics : Current data	Unavailable incoming routes	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to send SETUP msg to the MG9K with invalid AESA. Counter will increment.
atmSigDetectUnavailResrcs	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Resource Unavailability detected on this interface.	ATM Interface	Signaling statistics : Current data	Resources unavailable messages received	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to respond to MG9K SETUP msg with unavail resource cause code. Counter will increment.
atmSigEmitUnavailResrcs	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Resource Unavailability transmitted from this interface.	ATM Interface	Signaling statistics : Current data	Resources unavailable messages transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to send SETUP msg to MG9K with invalid IE bearer capability. Counter will increment.
atmSigDetectCldPtyEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Called Party Responsible For Unsuccessful Call detected on this interface.	ATM Interface	Signaling statistics : Current data	Called Party Events received	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint. Make call from MG9K to virtual endpoint already in use. Counter will increment.
atmSigEmitCldPtyEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Called Party Responsible For Unsuccessful Call transmitted from this interface.	ATM Interface	Signaling statistics : Current data	Called Party Events transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to send SETUP msg to MG9K to endpoint already in use. Counter will increment.
atmSigDetectMsgErrors	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Incorrect Messages detected on this interface.	ATM Interface	Signaling statistics : Current data	Incorrect messages received	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigEmitMsgErrors	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Incorrect Messages transmitted on this interface.	ATM Interface	Signaling statistics : Current data	Incorrect messages transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to send SETUP msg to MG9K with missing IE. Counter will increment.
atmSigDetectClgPtyEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Calling Party Events detected on this interface.	ATM Interface	Signaling statistics : Current data	Calling Party Events received	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigEmitClgPtyEvents	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Calling Party Events transmitted from this interface.	ATM Interface	Signaling statistics : Current data	Calling Party Events transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Use Radcom protocol analyzer as a virtual endpoint to send SETUP msg to MG9K with invalid IE bearer capability. Counter will increment.
atmSigDetectTimerExpireds	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Timer Expiries detected on this interface.	ATM Interface	Signaling statistics : Current data	Timer Expiry events received	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigEmitTimerExpireds	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Timer Expiries transmitted from this interface.	ATM Interface	Signaling statistics : Current data	Timer Expiry events transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigDetectRestarts	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Restart Activity errors detected on this interface.	ATM Interface	Signaling statistics : Current data	DSS2 Restarts received	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigEmitRestarts	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of Restart Activity errors transmitted from this interface.	ATM Interface	Signaling statistics : Current data	DSS2 Restarts transmitted	atmSigStatTable	ATM2-MIB	No	SN04	Not possible to force condition without modifying software.
atmSigInEstabls	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of SVC VCCs established at this signaling entity for incoming connections.	ATM Interface	Signaling statistics : Current data	InEstabls	atmSigStatTable	ATM2-MIB	No	SN04	Display this OM, make an call from a line on this MG9000 to another MG9000, display count again. It will increase by the number of calls made
atmSigOutEstabls	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of SVC VCCs established at this signaling entity for outgoing connections.	ATM Interface	Signaling statistics : Current data	OutEstabls	atmSigStatTable	ATM2-MIB	No	SN04	Display this OM, make an call to a line on this MG9000 from another MG9000, display count again. It will increase by the number of calls made
ATMF-CES-MIB											
atmfCESStatsTable											
atmfCESHdrErrors	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	The count of the number of AAL1 header errors detected, including those corrected. Header errors include correctable and uncorrectable CRC, plus bad parity.	AAL1	AAL1 Statistics: Current data	Number of header errors	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	On a PLoA (SVC) VPI & VCI, using a test set (e.g. Adtech), Inject this error into AAL1 cell stream. The before and after counts should show a increase. For more accurate measurements keep track on the number (or duration) of the errors and check to see that they match.
atmfCESPointerReframes	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	This records the count of the number of events in which the AAL1 reassembler found that an SDT pointer is not where it is expected, and the pointer must be reacquired. This count is only meaningful for structured CES modes, as unstructured CES modes do not use pointers. For unstructured CES modes, this count, if present, should indicate zero.	AAL1	AAL1 Statistics: Current data	Number of SDT pointer errors	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
atmfCESPointerParityErrors	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	This records the count of the number of events in which the AAL1 reassembler detects a parity check failure at the point where a structured data pointer is expected. This count is only meaningful for structured CES modes, as unstructured CES modes do not use pointers. For unstructured CES modes, this count, if present, should indicate zero.	AAL1	AAL1 Statistics: Current data	Number of parity check failures	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
atmfCESLostCells	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of lost cells, as detected by the AAL1 sequence number processing, for example. This records the count of the number of cells detected as lost in the network prior to the destination CES IWF AAL1 layer processing.	AAL1	AAL1 Statistics: Current data	Number of lost cells	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
atmfCESMisinsertedCells	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of AAL1 sequence violations which the AAL Convergence sublayer interprets as a misinserted cell, as defined by ITU-T I.363.1.	AAL1	AAL1 Statistics: Current data	Number of misinserted cells	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
atmfCESBufUnderflows	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of buffer underflows. This records the count of the number of times the CES reassembly buffer underflows. In the case of a continuous underflow caused by a loss of ATM cell flow, a single buffer underflow should be counted. If the CES IWF is implemented with multiple buffers (such as a cell level buffer and a bit level buffer), then either buffer underflow will cause this count to be incremented.	AAL1	AAL1 Statistics: Current data	Number of reassembly buffer underflows	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
atmfCESBufOverflows	Counter32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Number of buffer overflows. This records the count of the number of times the CES reassembly buffer overflows. If the CES IWF is implemented with multiple buffers (such as a cell level buffer and a bit level buffer, then either buffer overflow will cause this count to be incremented	AAL1	AAL1 Statistics: Current data	Number of reassembly buffer overflows	atmfCESStatsTable	ATMF-CES-MIB	No	SN04	Same as above
NORTEL-UEMG-ATM-MIB											
nnAtmStatsIfDataTable											
nnAtmStatsIfInOctets	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total octets received on this interface	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	incoming total cells X 53	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Display the current and all 96 intervals entries. This counter should always be increasing (over time). Using a PLoA or DSL Data line send data down that connection. Display these counters, with data traffic on the line the counts will increase a greater pace.
nnAtmStatsIfInErrors	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total inbound errors	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	uncorrectable HEC Errors	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	On the OC3 interface, using a test set, Inject this error. The before and after counts should show a increase. For more accurate measurements keep track on the number (or duration) of the errors and check to see that they match.
nnAtmStatsIfInProtoError	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming unknown/unsupported Protocol discards	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	invalid cell headers	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmStatsIfInOam	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming OAM cells.	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	incoming OAM cells	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Activate Continuity Check on an active PLOA service. Display the current and all 96 intervals entries. This counter should always be increasing (over time)
nnAtmStatsIfOutOctets	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total octets sent on this interface	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	outgoing total cells X 53	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Display the current and all 96 intervals entries. This counter should always be increasing (over time). Using a PLoA or DSL Data line send data down that connection. Display these counters, with data traffic on the line the counts will increase a greater pace.
nnAtmStatsIfOutDiscards	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total outbound errors	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	outbound discarded	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Not possible to force condition without modifying software.
nnAtmStatsIfOutOam	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total outgoing OAM cells.	ATM Interface	Interface Statistics : Current data Interface Statistics : History data	outgoing OAM cells	nnAtmStatsIfDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Activate Continuity Check on an active PLOA service. Display the current and all 96 intervals entries. This counter should always be increasing (over time)
nnAtmStatsVcDataTable											
nnAtmStatsVcInTotal	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming cells (CLP = 0/1).	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	incoming total cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Display the current and all 96 intervals entries. This counter should always be increasing (over time). Using a PLoA or DSL Data line send data down that connection. Display these counters, with data traffic on the line the counts will increase a greater rate than without.
nnAtmStatsVcInTotalClp0	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming cells (CLP = 0)	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	incoming clp0 cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above

nnAtmStatsVclnDiscarded	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming cells discarded (CLP = 0/1).	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	incoming discard cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Not possible to force condition without modifying software.
nnAtmStatsVclnDiscardedClp0	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total incoming cells discarded (CLP = 0)	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	incoming clp0 discards	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Display the current and all 96 intervals entries. This counter should always be increasing (over time). Using a PLoA or DSL Data line send data down that connection. Display these counters, with data traffic on the line the counts will increase a greater rate than without.
nnAtmStatsVcOutTotal	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total outgoing cells (CLP = 0/1).	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	outgoing total cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmStatsVcOutTotalClp0	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total outgoing cells (CLP = 0)	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	outgoing clp0 cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmStatsVcOutTagged	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Total outgoing cells tagged (CLP = 0 -> CLP = 1).	AAL1	ATM VCL Statistics: Current Data ATM VCL Statistics: History Data	outgoing tagged cells	nnAtmStatsVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Not possible to force condition without modifying software.
nnAtmPmVcDataTable											
nnAtmPmVcFwImpBlk	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward impaired block.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW impaired blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	On a PLoA (SVC) activate Performance Monitoring. Using a test set (e.g. Adtech) , Inject this error. The before and after counts should show a increase. For more accurate measurements keep track on the number (or duration) of the errors and check to see that they match.
nnAtmPmVcFwSeCblkImp	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward lost/misinserted impaired block.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW lost or misinserted impaired blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwSeCblkLst	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward severely errored cell block (lost).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW lost severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwSeCblkMist	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward severely errored cell block (misinserted).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW misinserted severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwSeCblkBvlt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward severely errored cell block -(BIP-16violations).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW BIP-16 violation severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwSeCblkComb	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward severely errored cell block combined.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW combined severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcLFwstClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward lost CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW lost CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwLstClp0Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward lost CLP0 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW lost CLP0 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwMistClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward misinserted CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW misinserted CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwErrCnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward errored cell count.		End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwTotalLstClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward total lost CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW total lost CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcFwTotalLstClp0Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	forward total lost CLP0 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	FW total lost CLP0 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwImpBlk	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward impaired block.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW impaired blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwSeCblkImp	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward lost/misinserted impaired block.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW lost or misinserted impaired blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwSeCblkLst	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward severely errored cell block (lost).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW lost severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwSeCblkMist	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward severely errored cell block (misinserted).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW misinserted severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwSeCblkBvlt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward severely errored cell block - (BIP-16 violations).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW BIP-16 violation severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwSeCblkCombNsat	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward severely errored cell block combined(non-saturating).	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW non-saturating severely errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above

nnAtmPmVcBwLstClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward lost CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW lost CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwLstClp0Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward lost CLP0 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW lost CLP0 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwMistClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward misinserted CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW misinserted CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwErrCnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward errored cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW errored cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwTotalLstClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward total lost CLP01 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW total lost CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcBwTotalLstClp0Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	backward total lost CLP0 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	BW total lost CLP0 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcTotalTransClp01Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	total transmitted CLP0+1 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	Total transmitted CLP0 & 1 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
nnAtmPmVcTotalTransClp0Cnt	Unsigned32	Count From Last Init up to 4,294,967,296 then it rolls over to 0	total transmitted CLP0 cell count.	AAL1	End-to-end PM: Current data End-to-end PM: History data Segment PM: Current data Segment PM: History data	Total transmitted CLP0 cell blocks	nnAtmPmVcDataTable	NORTEL-UEMG-ATM-MIB	No	SN04	Same as above
ADSL-LINE-MIB											
adslAtucPerfDataTable											
adslAtucPerfCurr15MinLofs	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Framing.	XDSL Card	ATUC Performance: Current data	Number of seconds Lost of frame	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Display this OM, Using a test set on the DSL Data interface, inject this error. Display this OM again, it should have increased by the number of injected faults.
adslAtucPerfCurr15MinLoss	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Signal.	XDSL Card	ATUC Performance: Current data	Number of seconds Lost of signal	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucPerfCurr15MinLols	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Link.	XDSL Card	ATUC Performance: Current data	Number of seconds LOLs	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucPerfCurr15MinLprs	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Power.	XDSL Card	ATUC Performance: Current data	Number of seconds LPRs	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucPerfCurr15MinESs	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of Errored Seconds in the current 15 minute interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies or one or more los or sef defects.	XDSL Card	ATUC Performance: Current data	Number of seconds Ess	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucPerfCurr15MinInits	PerfCurrentCount	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of the line initialization attempts in the current 15 minute interval. Includes both successful and failed attempts.	XDSL Card	ATUC Performance: Current data	Number of seconds Inits	adslAtucPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturPerfDataTable											
adslAturPerfCurr15MinLofs	PerfCurrentCount,	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Framing.	XDSL Card	ATUR Performance: Current data	Number of seconds Lost of frame	adslAturPerfDataTable	ADSL-LINE-MIB	No	SN04	Display this OM, Using a test set on the DSL Data interface, inject this error. Display this OM again, it should have increased by the number of injected faults.
adslAturPerfCurr15MinLoss	PerfCurrentCount,	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Signal.	XDSL Card	ATUR Performance: Current data	Number of seconds Lost of signal	adslAturPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturPerfCurr15MinLprs	PerfCurrentCount,	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of seconds in the current 15 minute interval when there was Loss of Power.	XDSL Card	ATUR Performance: Current data	Number of seconds LPRs	adslAturPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturPerfCurr15MinESs	PerfCurrentCount,	Count From Last Init up to 4,294,967,296 then it rolls over to 0	Count of Errored Seconds in the current 15 minute interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies, or one or more los or sef defects.	XDSL Card	ATUR Performance: Current data	Number of seconds Ess	adslAturPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucIntervalTable											
adslAtucIntervalLofs	PerfIntervalCount	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Framing.	XDSL Card	ATUC Interval: History data	Number of seconds Lost of frame	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Display all 96 OM entries, Using a test set on the DSL Data interface, inject this error over each interval. Display this OMs again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.
adslAtucIntervalLoss	PerfIntervalCount	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Signal.	XDSL Card	ATUC Interval: History data	Number of seconds Lost of signal	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucIntervalLols	PerfIntervalCount	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Link.	XDSL Card	ATUC Interval: History data	Number of seconds LOLs	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucIntervalLprs	PerfIntervalCount	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Power.	XDSL Card	ATUC Interval: History data	Number of seconds LPRs	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucIntervalESs	PerfIntervalCount	Counts only for last 15 min	Count of Errored Seconds in the interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies or one or more los or sef defects.	XDSL Card	ATUC Interval: History data	Number of seconds Ess	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucIntervalInits	PerfIntervalCount	Counts only for last 15 min	Count of the line initialization attempts during the interval. Includes both successful and failed attempts	XDSL Card	ATUC Interval: History data	Number of seconds Inits	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturIntervalTable									No		Same as above
adslAturIntervalLofs	PerfIntervalCount,	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Framing.	XDSL Card	ATUR Interval: History data	Number of seconds Lost of frame	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturIntervalLoss	PerfIntervalCount,	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Signal.	XDSL Card	ATUR Interval: History data	Number of seconds Lost of signal	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturIntervalLprs	PerfIntervalCount,	Counts only for last 15 min	Count of seconds in the interval when there was Loss of Power.	XDSL Card	ATUR Interval: History data	Number of seconds LPRs	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturIntervalESs	PerfIntervalCount,	Counts only for last 15 min	Count of Errored Seconds in the interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies, or one or more los or sef defects.	XDSL Card	ATUR Interval: History data	Number of seconds Ess	adslAtucIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanPerfDataTable											
adslAtucChanPerfCurr15MinReceivedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all encoded blocks received on this channel within the current 15 minute interval.	XDSL Card	ATUC Channel Performance: Current Data	Number of encoded blocks received	adslAtucChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Display all 96 OM entries, Using a test set on the DSL Data interface, inject this error over each interval. Display this OMs again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.
adslAtucChanPerfCurr15MinTransmittedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all encoded blocks transmitted on this channel within the current 15 minute interval.	XDSL Card	ATUC Channel Performance: Current Data	Number of encoded blocks transmitted	adslAtucChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanPerfCurr15MinCorrectedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all blocks received with errors that were corrected on this channel within the current 15 minute interval.	XDSL Card	ATUC Channel Performance: Current Data	Number of corrected blocks	adslAtucChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanPerfCurr15MinUncorrectBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all blocks received with uncorrectable errors on this channel within the current 15 minute interval.	XDSL Card	ATUC Channel Performance: Current Data	Number of uncorrected blocks	adslAtucChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanPerfDataTable											
adslAturChanPerfCurr15MinReceivedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all encoded blocks received on this channel within the current 15 minute interval.	XDSL Card	ATUR Channel Performance: Current Data	Number of encoded blocks received	adslAturChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Display this OM, Using a test set on the DSL Data interface, inject an error that would cause this condition. Display this OM again, it should have increased by the number of injected faults.
adslAturChanPerfCurr15MinTransmittedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all encoded blocks transmitted on this channel within the current 15 minute interval.	XDSL Card	ATUR Channel Performance: Current Data	Number of encoded blocks transmitted	adslAturChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanPerfCurr15MinCorrectedBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all blocks received with errors that were corrected on this channel within the current 15 minute interval.	XDSL Card	ATUR Channel Performance: Current Data	Number of corrected blocks	adslAturChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanPerfCurr15MinUncorrectBlks	PerfCurrentCount	Counts since last 15 min interval	Count of all blocks received with uncorrectable errors on this channel within the current 15 minute interval.	XDSL Card	ATUR Channel Performance: Current Data	Number of uncorrected blocks	adslAturChanPerfDataTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanIntervalTable											
adslAtucChanIntervalReceivedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all encoded blocks received on this channel during this interval.	XDSL Card	ATUC Channel Interval: History Data	Number of encoded blocks received	adslAtucChanIntervalTable	ADSL-LINE-MIB	No	SN04	Display all 96 OM entries, , Using a test set on the DSL Data interface, inject an error that would cause this condition over all intervals. Display this OM again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.

adslAtucChanIntervalTransmittedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all encoded blocks transmitted on this channel during this interval.	XDSL Card	ATUC Channel Interval: History Data	Number of encoded blocks transmitted	adslAtucChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanIntervalCorrectedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all blocks received with errors that were corrected on this channel during this interval.	XDSL Card	ATUC Channel Interval: History Data	Number of corrected blocks	adslAtucChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAtucChanIntervalUncorrectBlks	PerfIntervalCount	Counts only for last 15 min	Count of all blocks received with uncorrectable errors on this channel during this interval.	XDSL Card	ATUC Channel Interval: History Data	Number of uncorrected blocks	adslAtucChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanIntervalTable											
adslAturChanIntervalReceivedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all encoded blocks received on this channel during this interval.	XDSL Card	ATUR Channel Interval: History Data	Number of encoded blocks received	adslAturChanIntervalTable	ADSL-LINE-MIB	No	SN04	Display all 96 OM entries, , Using a test set on the DSL Data interface, inject an error that would cause this condition over all intervals. Display this OM again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.
adslAturChanIntervalTransmittedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all encoded blocks transmitted on this channel during this interval.	XDSL Card	ATUR Channel Interval: History Data	Number of encoded blocks transmitted	adslAturChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanIntervalCorrectedBlks	PerfIntervalCount	Counts only for last 15 min	Count of all blocks received with errors that were corrected on this channel during this interval.	XDSL Card	ATUR Channel Interval: History Data	Number of corrected blocks	adslAturChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
adslAturChanIntervalUncorrectBlks	PerfIntervalCount	Counts only for last 15 min	Count of all blocks received with uncorrectable errors on this channel during this interval.	XDSL Card	ATUR Channel Interval: History Data	Number of uncorrected blocks	adslAturChanIntervalTable	ADSL-LINE-MIB	No	SN04	Same as above
NORTEL-UEMG-ADSL-MIB											
nnUemgDslAtucPerfTable											
nnUemgDslAtucPerfCurr15MinFec	Integer32	Counts since last 15 min interval	Number of Forward Error Correction anomalies on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of Forward Error Corrections	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Display this OM, Using a test set on the DSL Data interface, inject this error. Display this OM again, it should have increased by the number of injected faults.
nnUemgDslAtucPerfCurr15MinCrc	Integer32	Counts since last 15 min interval	Number of Cyclical Redundancy Check anomalies on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of cyclical Redundancy Check	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfCurr15MinNcd	Integer32	Counts since last 15 min interval	Number of No Cell Delineation anomalies on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of No Cell Delineation	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfCurr15MinOcd	Integer32	Counts since last 15 min interval	Number of Out of Cell Delineation anomalies on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of Out of Cell Delineation	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfCurr15MinHec	Integer32	Counts since last 15 min interval	Number of Header Error Check anomalies which on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of Header Error Check	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfCurr15MinLcd	Integer32	Counts since last 15 min interval	Number of Loss of Cell Delineation anomalies on the Atuc Channel in the current 15min interval.	XDSL Card	nnATUC Performance: Current data	Number of Loss of Cell Delineation	nnUemgDslAtucPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturPerfTable											
nnUemgDslAturPerfCurr15MinFec	Integer32	Counts since last 15 min interval	Number of Forward Error Correction anomalies on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of Forward Error Corrections	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Display this OM, Using a test set on the DSL Data interface, inject this error. Display this OM again, it should have increased by the number of injected faults.
nnUemgDslAturPerfCurr15MinBlockError	Integer32	Counts since last 15 min interval	Number of Block Error anomalies which occurred on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of Block Error	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturPerfCurr15MinNcd	Integer32	Counts since last 15 min interval	Number of No Cell Delineation anomalies on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of No Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturPerfCurr15MinOcd	Integer32	Counts since last 15 min interval	Number of Out of Cell Delineation anomalies on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of Out of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturPerfCurr15MinHec	Integer32	Counts since last 15 min interval	Number of Header Error Check anomalies which on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of Header Error Check	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturPerfCurr15MinLcd	Integer32	Counts since last 15 min interval	Number of Loss of Cell Delineation anomalies on the ATUR Channel in the current 15min interval.	XDSL Card	nnATUR Performance: Current data	Number of Loss of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucIntervalTable											
nnUemgDslAtucPerfFec	Integer32	Counts only for last 15 min	Number of Forward Error Correction anomalies on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of Forward Error Corrections	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Display all 96 OM entries, Using a test set on the DSL Data interface, inject this error over each interval. Display this OMs again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnUemgDslAtucPerfCrc	Integer32	Counts only for last 15 min	Number of Cyclical Redundancy Check anomalies on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of cyclical Redundancy Check	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfNcd	Integer32	Counts only for last 15 min	Number of No Cell Delineation anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of No Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfOcd	Integer32	Counts only for last 15 min	Number of Out of Cell Delineation anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of Out of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfHec	Integer32	Counts only for last 15 min	Number of Header Error Check anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of Header Error Check	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfLcd	Integer32	Counts only for last 15 min	Number of Loss of Cell Delineation anomalies on the ATUC channel during this interval.	XDSL Card	nnATUC Interval: History data	Number of Loss of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAturIntervalTable											
nnUemgDslAtucPerfFec	Integer32	Counts only for last 15 min	Number of Forward Error Correction anomalies on the ATUC channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of Forward Error Corrections	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Display all 96 OM entries, Using a test set on the DSL Data interface, inject this error over each interval. Display this OMs again, it should have increased by the number of injected faults. Also ensure the counts have moved to the proper time interval after each 15 interval.
nnUemgDslAturPerfBlockError	Integer32	Counts only for last 15 min	Number of Block Error anomalies which occurred on the ATUR channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of Block Error	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfNcd	Integer32	Counts only for last 15 min	Number of No Cell Delineation anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of No Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfOcd	Integer32	Counts only for last 15 min	Number of Out of Cell Delineation anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of Out of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfHec	Integer32	Counts only for last 15 min	Number of Header Error Check anomalies which on the ATUC channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of Header Error Check	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
nnUemgDslAtucPerfLcd	Integer32	Counts only for last 15 min	Number of Loss of Cell Delineation anomalies on the ATUC channel during this interval.	XDSL Card	nnATUR Interval: History data	Number of Loss of Cell Delineation	nnUemgDslAturPerfTable	NORTEL-UEMG-ADSL-MIB	No	SN04	Same as above
IMA-MIB (new in SN05)											
imaGroupCurrentTable											
imaGroupCurrentUnavailSecs	Gauge32	Counts since last 15 min interval	Count of one second intervals where the IMA Group Traffic State Machine is Down in current 15 minute interval	DS1IMAGroup	DS1 IMA Group Statistics: Current data	Group Unavailable Seconds	imaGroupCurrentTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaGroupCurrentNeNumFailures	Gauge32	Counts since last 15 min interval	The number of times a near-end group failure (Config-Aborted, Insufficient-Links) has been reported in current 15 minute interval	DS1IMAGroup	DS1 IMA Group Statistics: Current data	Group Near End Number of Failures	imaGroupCurrentTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaGroupCurrentFeNumFailures	Gauge32	Counts since last 15 min interval	The number of times a far-end group failure (Config-Aborted-FE, Insufficient-Links-FE, Blocked-FE) has been reported in current 15 minute interval. This is an optional attribute.	DS1IMAGroup	DS1 IMA Group Statistics: Current data	Group Far End Number of Failures	imaGroupCurrentTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaGroupIntervalTable											
imaGroupIntervalUnavailSecs	Gauge32	Counts since last 15 min interval	Count of one second intervals where the IMA Group Traffic State Machine is Down in one of the previous 96, individual 15 minute, intervals	DS1IMAGroup	DS1 IMA Group Statistics: History data	Group Unavailable Seconds	imaGroupIntervalTable	IMA-MIB	Yes	SN05	Display all 96 OM entries, on the IMA card pull and replace the DS1 cable, display these count again. The count will be higher for each interval the cable was pulled. Also ensure the counts have moved to the proper time interval after each 15 interval.
imaGroupIntervalNeNumFailures	Gauge32	Counts since last 15 min interval	The number of times a near-end group failure (Config-Aborted, Insufficient-Links) has been reported in one of the previous 96, individual 15 minute, intervals	DS1IMAGroup	DS1 IMA Group Statistics: History data	Group Near End Number of Failures	imaGroupIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaGroupIntervalFeNumFailures	Gauge32	Counts since last 15 min interval	The number of times a far-end group failure (Config-Aborted-FE, Insufficient-Links-FE, Blocked-FE) has been reported in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IMAGroup	DS1 IMA Group Statistics: History data	Group Far End Number of Failures	imaGroupIntervalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory. Display all 96 OM entries
imaGroupTotalTable											
imaGroupTotalUnavailSecs	Gauge32	Rolling 24 hour total	Count of one second intervals where the IMA Group Traffic State Machine is Down in the previous 24 hour interval. Invalid 15 minute intervals count as 0.	DS1IMAGroup	DS1 IMA Group Statistics: 24-hour current data	Group Unavailable Seconds	imaGroupTotalTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaGroupTotalNeNumFailures	Gauge32	Rolling 24 hour total	The number of times a near-end group failure (Config-Aborted, Insufficient-Links) has been reported in the previous 24 hour. interval. Invalid 15 minute intervals count as 0.	DS1IMAGroup	DS1 IMA Group Statistics: 24-hour current data	Group Near End Number of Failures	imaGroupTotalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaGroupTotalFeNumFailures	Gauge32	Rolling 24 hour total	The number of times a far-end group failure (Config-Aborted-FE, Insufficient-Links-FE, Blocked-FE) has been reported in the previous 24 hour interval. Invalid 15 minute intervals count as 0. This is an optional attribute.	DS1IMAGroup	DS1 IMA Group Statistics: 24-hour current data	Group Far End Number of Failures	imaGroupTotalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaLinkCurrentTable											
imaLinkCurrentImaViolations	Gauge32	Counts since last 15 min interval	ICP violations: count of errored, invalid or missing ICP cells, except during SES-IMA or UAS-IMA conditions, in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ima Violations	imaLinkCurrentTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkCurrentOifAnomalies	Gauge32	Counts since last 15 min interval	The number of OIF anomalies, except during SES-IMA or UAS-IMA conditions, at the near-end in the current 15 minute interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Oif Anomalies	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentNeSevErroredSecs	Gauge32	Counts since last 15 min interval	Count of one second intervals containing >= 30% of the ICP cells counted as IV-IMAs, or one or more link defects (e. g., LOS, OOF/ LOF, AIS, or LCD), LIF defects, or LODS defects, except during UAS-IMA condition, in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Sev Errored Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaLinkCurrentFeSevErroredSecs	Gauge32	Counts since last 15 min interval	Count of one second intervals containing one or more RDI-IMA defects, except during UAS-IMA-FE condition, in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Sev Errored Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkCurrentNeUnavailSecs	Gauge32	Counts since last 15 min interval	Count of unavailable seconds at near-end in the current 15 minute interval: unavailability begins at the onset of 10 contiguous SES-IMA and ends at the onset of 10 contiguous seconds with no SES-IMA	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Unavail Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above

imaLinkCurrentFeUnavailSecs	Gauge32	Counts since last 15 min interval	Count of unavailable seconds at far-end in the current 15 minute interval: unavailability begins at the onset of 10 contiguous SES-IMA-FE and ends at the onset of 10 contiguous seconds with no SES-IMA-FE	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Unavail Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaLinkCurrentNeTxUnusableSecs	Gauge32	Counts since last 15 min interval	Tx Unusable seconds: count of Unusable seconds at the near-end Tx LSM in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Tx Unusable Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkCurrentNeRxUnusableSecs	Gauge32	Counts since last 15 min interval	Rx Unusable seconds: count of Unusable seconds at the near-end Rx LSM in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Rx Unusable Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentFeTxUnusableSecs	Gauge32	Counts since last 15 min interval	Tx Unusable seconds at far-end: count of seconds with Tx Unusable indications from the far-end Tx LSM in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Tx Unusable Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentFeRxUnusableSecs	Gauge32	Counts since last 15 min interval	Rx Unusable seconds at far-end: count of seconds with Rx Unusable indications from the far-end Rx LSM in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Rx Unusable Secs	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentNeTxNumFailures	Gauge32	Counts since last 15 min interval	The number of times a near-end transmit failure alarm condition has been entered on this link (i.e., some form of implementation specific transmit fault) in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Tx Num Failures	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentNeRxNumFailures	Gauge32	Counts since last 15 min interval	The number of times a near-end receive failure alarm condition has been entered on this link (i.e., LIF, LODS, RFI-IMA, Mis-Connected, or some form of implementation specific receive fault) in the current 15 minute interval	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Rx Num Failures	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentFeTxNumFailures	Gauge32	Counts since last 15 min interval	The number of times a far-end transmit failure alarm condition has been entered on this link (i.e., Tx-Unusable-FE) in the current 15 minute interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Tx Num Failures	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentFeRxNumFailures	Gauge32	Counts since last 15 min interval	The number of times a far-end receive failure alarm condition has been entered on this link (i.e., Rx-Unusable-FE) in the current 15 minute interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Rx Num Failures	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkCurrentTxStuffs	Gauge32	Counts since last 15 min interval	Count of stuff events inserted in the transmit direction in the current 15 minute interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Tx Stuffs	imaLinkCurrentTable	IMA-MIB	No	SN05	Display this OM, it should be non-zero, wait a short time, display count again, This count will be higher. This will not increase if the link is offline and disabled.
imaLinkCurrentRxStuffs	Gauge32	Counts since last 15 min interval	Count of stuff events detected in the receive direction in the current 15 minute interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Rx Stuffs	imaLinkCurrentTable	IMA-MIB	No	SN05	Same as above
imaLinkIntervalTable											
imaLinkIntervalImaViolations	Gauge32	Counts only for last 15 min	ICP violations: count of errored, invalid or missing ICP cells, except during SES-IMA or UAS-IMA conditions, in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ima Violations	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Display all 96 OM entries, on the IMA card pull and replace the DS1 cable, display these count again. The count will be higher for each interval the cable was pulled. Also ensure the counts have moved to the proper time interval after each 15 interval.
imaLinkIntervalOifAnomalies	Gauge32	Counts only for last 15 min	The number of OIF anomalies, except during SES-IMA or UAS-IMA conditions, at the near-end in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link OIF Anomalies	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkIntervalNeSevErroredSecs	Gauge32	Counts only for last 15 min	Count of one second intervals containing >= 30% of the ICP cells counted as IV-IMAs, or one or more link defects (e. g., LOS, OOF/ LOF, AIS, or LCD), LIF defects, or LODS defects, except during UAS-IMA condition, in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Sev Errored Secs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory. Display all 96 OM entries
imaLinkIntervalFeSevErroredSecs	Gauge32	Counts only for last 15 min	Count of one second intervals containing one or more RDI-IMA defects, except during UAS-IMA-FE condition, in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Sev Errored Secs	imaLinkIntervalTable	IMA-MIB	No	SN05	Display all 96 OM entries, on the IMA card pull and replace the DS1 cable, display these count again. The count will be higher for each interval the cable was pulled. Also ensure the counts have moved to the proper time interval after each 15 interval.
imaLinkIntervalNeUnavailSecs	Gauge32	Counts only for last 15 min	Count of unavailable seconds at near-end in one of the previous 96, individual 15 minute, intervals: unavailability begins at the onset of 10 contiguous SES-IMA and ends at the onset of 10 contiguous seconds with no SES-IMA	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Unavail Secs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkIntervalFeUnavailSecs	Gauge32	Counts only for last 15 min	Count of unavailable seconds at far-end in one of the previous 96, individual 15 minute, intervals: unavailability begins at the onset of 10 contiguous SES-IMA-FE and ends at the onset of 10 contiguous seconds with no SES-IMA-FE	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Unavail Secs	imaLinkIntervalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory. Display all 96 OM entries
imaLinkIntervalNeTxUnusableSecs	Gauge32	Counts only for last 15 min	Tx Unusable seconds: count of Unusable seconds at the near-end Tx LSM in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Tx Unusable Secs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Display all 96 OM entries, on the IMA card pull and replace the DS1 cable, display these count again. The count will be higher for each interval the cable was pulled. Also ensure the counts have moved to the proper time interval after each 15 interval.
imaLinkIntervalNeRxUnusableSecs	Gauge32	Counts only for last 15 min	Rx Unusable seconds: count of Unusable seconds at the near-end Rx LSM in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Rx Unusable Secs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkIntervalFeTxUnusableSecs	Gauge32	Counts only for last 15 min	Tx Unusable seconds at far-end: count of seconds with Tx Unusable indications from the far-end Tx LSM in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Tx Unusable Secs	imaLinkIntervalTable	IMA-MIB	No	SN05	Same as above
imaLinkIntervalFeRxUnusableSecs	Gauge32	Counts only for last 15 min	Rx Unusable seconds at far-end: count of seconds with Rx Unusable indications from the far-end Rx LSM in one of the previous 96, individual 15 minute, intervals.	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Rx Unusable Secs	imaLinkIntervalTable	IMA-MIB	No	SN05	Same as above
imaLinkIntervalNeTxNumFailures	Gauge32	Counts only for last 15 min	The number of times a near-end transmit failure alarm condition has been entered on this link (i.e., some form of implementation specific transmit fault) in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Tx Num Failures	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkIntervalNeRxNumFailures	Gauge32	Counts only for last 15 min	The number of times a near-end receive failure alarm condition has been entered on this link (i.e., LIF, LODS, RFI-IMA, Mis-Connected, or some form of implementation specific receive fault) in one of the previous 96, individual 15 minute, intervals	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Ne Rx Num Failures	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkIntervalFeTxNumFailures	Gauge32	Counts only for last 15 min	The number of times a far-end transmit failure alarm condition has been entered on this link (i.e., Tx-Unusable-FE) in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Tx Num Failures	imaLinkIntervalTable	IMA-MIB	No	SN05	Same as above
imaLinkIntervalFeRxNumFailures	Gauge32	Counts only for last 15 min	The number of times a far-end receive failure alarm condition has been entered on this link (i.e., Rx-Unusable-FE) in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Fe Rx Num Failures	imaLinkIntervalTable	IMA-MIB	No	SN05	Same as above
imaLinkIntervalTxStuffs	Gauge32	Counts only for last 15 min	Count of stuff events inserted in the transmit direction in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Tx Stuffs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Display all 96 OM entries, it should be non-zero, wait 20 min, display counts again. These count will move up to next interval and current will replace first entry. This will not increase if the link is offline and disabled.
imaLinkIntervalRxStuffs	Gauge32	Counts only for last 15 min	Count of stuff events detected in the receive direction in one of the previous 96, individual 15 minute, intervals. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: Current Data	Link Rx Stuffs	imaLinkIntervalTable	IMA-MIB	Yes	SN05	Same as above
imaLinkTotalTable											
imaLinkTotalImaViolations	Gauge32	Rolling 24 hour total	ICP violations: count of errored, invalid or missing ICP cells, except during SES-IMA or UAS-IMA conditions, in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ima Violations	imaLinkTotalTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkTotalOifAnomalies	Gauge32	Rolling 24 hour total	The number of OIF anomalies, except during SES-IMA or UAS-IMA conditions, at the near-end in the previous 24 hour interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link OIF Anomalies	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalNeSevErroredSecs	Gauge32	Rolling 24 hour total	Count of one second intervals containing >= 30% of the ICP cells counted as IV-IMAs, or one or more link defects (e. g., LOS, OOF/ LOF, AIS, or LCD), LIF defects, or LODS defects, except during UAS-IMA condition, in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Sev Errored Secs	imaLinkTotalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaLinkTotalFeSevErroredSecs	Gauge32	Rolling 24 hour total	Count of one second intervals containing one or more RDI-IMA defects, except during UAS-IMA-FE condition, in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Sev Errored Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkTotalNeUnavailSecs	Gauge32	Rolling 24 hour total	Count of unavailable seconds at near-end in the previous 24 hour interval: unavailability begins at the onset of 10 contiguous SES-IMA and ends at the onset of 10 contiguous seconds with no SES-IMA	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Unavail Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalFeUnavailSecs	Gauge32	Rolling 24 hour total	Count of unavailable seconds at far-end in the previous 24 hour interval: unavailability begins at the onset of 10 contiguous SES-IMA-FE and ends at the onset of 10 contiguous seconds with no SES-IMA-FE	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Unavail Secs	imaLinkTotalTable	IMA-MIB	No	SN05	This OM cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakelgrppm" command in the /hal/ima MG9K Dshell directory.
imaLinkTotalNeTxUnusableSecs	Gauge32	Rolling 24 hour total	Tx Unusable seconds: count of Unusable seconds at the near-end Tx LSM in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Tx Unusable Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Display this OM, on the IMA card pull and replace the DS1 cable, display this count again. The count will be higher.
imaLinkTotalNeRxUnusableSecs	Gauge32	Rolling 24 hour total	Rx Unusable seconds: count of Unusable seconds at the near-end Rx LSM in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Rx Unusable Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalFeTxUnusableSecs	Gauge32	Rolling 24 hour total	Tx Unusable seconds at far-end: count of seconds with Tx Unusable indications from the far-end Tx LSM in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Tx Unusable Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalFeRxUnusableSecs	Gauge32	Rolling 24 hour total	Rx Unusable seconds at far-end: count of seconds with Rx Unusable indications from the far-end Rx LSM in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Rx Unusable Secs	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalNeTxNumFailures	Gauge32	Rolling 24 hour total	The number of times a near-end transmit failure alarm condition has been entered on this link (i.e., some form of implementation specific transmit fault) in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Tx Num Failures	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above

imaLinkTotalNeRxNumFailures	Gauge32	Rolling 24 hour total	The number of times a near-end receive failure alarm condition has been entered on this link (i.e., LIF, LODS, RFI-IMA, Mis-Connected, or some form of implementation specific receive fault) in the previous 24 hour interval	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Ne Rx Num Failures	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalFeTxNumFailures	Gauge32	Rolling 24 hour total	The number of times a far-end transmit failure alarm condition has been entered on this link (i.e., Tx-Unusable-FE) in the previous 24 hour interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Tx Num Failures	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalFeRxNumFailures	Gauge32	Rolling 24 hour total	The number of times a far-end receive failure alarm condition has been entered on this link (i.e., Rx-Unusable-FE) in the previous 24 hour interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Fe Rx Num Failures	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
imaLinkTotalTxStuffs	Gauge32	Rolling 24 hour total	Count of stuff events inserted in the transmit direction in the previous 24 hour interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Tx Stuffs	imaLinkTotalTable	IMA-MIB	No	SN05	Display this OM, it should be non-zero, wait a short time, display count again. This count will be higher. This will not increase if the link is offline and disabled.
imaLinkTotalRxStuffs	Gauge32	Rolling 24 hour total	Count of stuff events detected in the receive direction in the previous 24 hour interval. This is an optional attribute	DS1IAMLink	DS1 IMA Link Statistics: 24-hour Current Data	Link Rx Stuffs	imaLinkTotalTable	IMA-MIB	No	SN05	Same as above
UEMG-PERFMON-MIB											
nnPmUtilOmRecentTable			This table contains measurements of CPU, Ram, Flash and Channel Usage. Measurements in this table are rolling (peak and average values) on the most recent 15 minutes.								
nnPmUtilRecentCpuPeak	Integer	Counts only for current 15 min	Peak CPU Occupancy (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Peak CPU Occupancy	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Since these are usage measurements they will always change over time. Collect a measurement when the system is quite. Generate different levels of CallP traffic. Collect measurements on each card (every 15 min) and insure the values increase as usage increases.
nnPmUtilRecentCpuAvg	Integer	Counts only for current 15 min	Average CPU Occupancy (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Average CPU Occupancy	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentRamPeak	Integer	Counts only for current 15 min	Peak RAM Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Peak RAM Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentRamAvg	Integer	Counts only for current 15 min	Average RAM Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Average RAM Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentFlashPeak	Integer	Counts only for current 15 min	Peak Flash Memory Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Peak Flash Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentFlashAvg	Integer	Counts only for current 15 min	Average Flash Memory Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Average Flash Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentChanPeak	Integer	Counts only for current 15 min	Peak Channel Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Peak Channel Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilRecentChanAvg	Integer	Counts only for current 15 min	Average Channel Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: Current data	Average Channel Usage	nnPmUtilOmRecentTable	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmUtilOmIntervTable			This table contains history measurements of CPU, Ram, Flash and Channel Usage. Measurements in this table are rolling (peak and average values) of each 15 minute interval up to 24 hours old.								
nnPmUtilIntervCpuPeak	Integer	Counts only for last 15 min	Peak CPU Occupancy (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Peak CPU Occupancy	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Since these are usage measurements they will always change over time. Collect a measurement when the system is quite. Generate different levels of CallP traffic. Collect measurements on each card (every 15 min) and insure the values increase as usage increases. Also insure that the counts move to the next intreval every 15 min.
nnPmUtilIntervCpuAvg	Integer	Counts only for last 15 min	Average CPU Occupancy (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Average CPU Occupancy	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervRamPeak	Integer	Counts only for last 15 min	Peak RAM Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Peak RAM Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervRamAvg	Integer	Counts only for last 15 min	Average RAM Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Average RAM Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervFlashPeak	Integer	Counts only for last 15 min	Peak Flash Memory Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Peak Flash Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervFlashAvg	Integer	Counts only for last 15 min	Average Flash Memory Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Average Flash Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervChanPeak	Integer	Counts only for last 15 min	Peak Channel Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Peak Channel Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmUtilIntervChanAvg	Integer	Counts only for last 15 min	Average Channel Usage (as a percentage of usage)	ITP, OC3, IMA, ITX, DS1, and ABI Card	Performance Utilization Statistics: History data	Average Channel Usage	nnPmUtilOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmSnmpRecentRequestsPeak	Interger32	Counts only for current 15 min	The Peak number of SNMP Requests/PDUs in the most recent 15 minutes. These are accumulated on 1-minute cycles.	OC3 and IMA Card	SNMP Messaging Current Data	Peak number of SNMP Requests	N/A	UEMG-PERFMON-MIB	No	SN06	Since these are usage measurements they will always change over time. Collect a measurement when the system is quite. Generate different levels of OAM&P traffic. Collect measurements (every 15 min) and insure the values increase as usage increases.
nnPmSnmpRecentRequestsAvg	Interger32	Counts only for current 15 min	The average number of SNMP Requests/PDUs in the most recent 15 minutes. These are accumulated on 1-minute cycles. Thus, the average is the average of the last 15 x 1-minute cycles.	OC3 and IMA Card	SNMP Messaging Current Data	Average number of SNMP Requests	N/A	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmSnmpRecentNotifsPeak	Interger32	Counts only for current 15 min	The Peak number of SNMP Notifications sent in the most recent 15 minutes. These are accumulated on 1-minute cycles.	OC3 and IMA Card	SNMP Messaging Current Data	Peak number of SNMP Notifications	N/A	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmSnmpRecentNotifsAvg	Interger32	Counts only for current 15 min	The average number of SNMP Notifications sent in the most recent 15 minutes. These are accumulated on 1-minute cycles. Thus, the average is the average of the last 15 x 1-minute cycles.	OC3 and IMA Card	SNMP Messaging Current Data	Average number of SNMP Notifications	N/A	UEMG-PERFMON-MIB	No	SN06	Same as above
nnPmSnmpOmIntervTable			This table contains measurements of SNMP requests and events. Measurements in this table are rolling (peak and average values) of each 15 minute interval up to 24 hours old.								
nnPmSnmpIntervReqPeak	Interger32	Counts only for last 15 min	The Peak number of SNMP Requests/PDUs in the most Recent 15 mins. These are accumulated on 1-minute cycles.	OC3 and IMA Card	SNMP Messaging History Data	Peak number of SNMP Requests	nnPmSnmpOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Since these are usage measurements they will always change over time. Collect a measurement when the system is quite. Generate different levels of OAM&P traffic. Collect measurements (every 15 min) and insure the values increase as usage increases. Also insure that the counts move to the next intreval every 15 min.
nnPmSnmpIntervReqAvg	Interger32	Counts only for last 15 min	The Avg number of SNMP Requests/PDUs in the most Recent 15 mins. These are accumulated on 1-minute cycles. Thus, the avg is the avg of the last 15x 1-minute cycles. Precision is tenths, thus 816 is 81.6	OC3 and IMA Card	SNMP Messaging History Data	Average number of SNMP Requests	nnPmSnmpOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmSnmpIntervNotifPeak	Interger32	Counts only for last 15 min	The Peak number of SNMP Notifications in the most Recent 15 mins. These are accumulated on 1-minute cycles.	OC3 and IMA Card	SNMP Messaging History Data	Peak number of SNMP Notifications	nnPmSnmpOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmSnmpIntervNotifAvg	Interger32	Counts only for last 15 min	The Avg number of SNMP Notifications sent in the most Recent 15 mins. These are accumulated on 1-minute cycles. Thus, the avg is the avg of the last 15x 1-minute cycles. Precision is tenths, thus 816 is 81.6	OC3 and IMA Card	SNMP Messaging History Data	Average number of SNMP Notifications	nnPmSnmpOmIntervTable	UEMG-PERFMON-MIB	Yes	SN06	Same as above
nnPmOvldRscDccIntervTable								UEMG-PERFMON-MIB			
nnPmOvldRscDccIntervPduRatePeak	Interger32	Counts only for last 15 min	Peak # received AAl5 PDUs per sec for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Peak number of received AAL5 PDUs per second	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervPduRateAvg	Interger32	Counts only for last 15 min	Avg num recvd AAL5 PDUs per sec for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Average number of recvd AAL5 PDUs per second	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervCbvMsgRPeak	NnPerfMonHundredths	Counts only for last 15 min	Peak recvd conn request msgs per sec for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Peak received conn request msgs per second	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervCbvMsgRAvg	NnPerfMonHundredths	Counts only for last 15 min	Avg conn request msgs per sec for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Average connection request messages per second	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervConQDelPeak	NnPerfMonHundredths	Counts only for last 15 min	Milliseconds...peak time a connRequest is pending in its queue for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Peak time in milliseconds a connRequest is pending in its queue	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervConQDelAvg	NnPerfMonHundredths	Counts only for last 15 min	Milliseconds...Avg time a connRequest is pending in its queue for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Ave time in milliseconds a connRequest is pending in its queue	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervCpuUtilPeak	NnPerfMonPercent	Counts only for last 15 min	Peak cpu occupancy for this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Peak CPU Occupancy	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldRscDccIntervCpuUtilAvg	NnPerfMonPercent	Counts only for last 15 min	Avg cpu occupancy this 15 minute interval	OC3 and IMA Card	DCC Overload Interval Statistics: History Data	Average CPU Occupancy	nnPmOvldRscDccIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
nnPmOvldConnDenyIntervTable											
nnPmOvldConnDenyIntervCount	Interger32	Counts only for last 15 min	Count of the number of Connection requests Denied for this 15 minute interval	OC3 and IMA Card	DCC Overload Conn Deny Statistics: History Data	Number of Connection requests Denied	nnPmOvldConnDenyIntervTable	UEMG-PERFMON-MIB	Yes	SN06.2	
DS3-MIB											
dsx3CurrentTable											

dsx3CurrentPESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of P - bit Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	P -bit Number of errored seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count.
dsx3CurrentPSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of P - bit Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	P -bit Number of severely errored seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentSEFSs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Severely Errored Framing Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15	STS1	DS3 Path Statistics : Current Data	Number of severely errored seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the numb er of Unavailable Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	Number of unavailable seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentPCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of P - bit Coding Violations encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	P -bit Number of coding violations	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentCCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of C - bit Coding Violations encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	C -bit Number of coding violations	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentCESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of C - bit Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	C -bit Number of errored seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3CurrentCSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of C - bit Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : Current Data	C -bit Number of severely errored seconds	dsx3CurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalTable											
dsx3IntervalPESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of P - bit Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : History Data	P -bit Number of errored seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the near-end OC3 the error and collect the OM and it should reflect the correct error count. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
dsx3IntervalPSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of P - bit Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	P -bit Number of severely errored seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalSEFSs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Severely Errored Framing Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	Number of severely errored seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the numb er of Unavailable Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	Number of unavailable seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalPCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of P - bit Coding Violations encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	P -bit Number of coding violations	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalCCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of C - bit Coding Violations encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	C -bit Number of coding violations	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalCESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of C - bit Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval.	STS1	DS3 Path Statistics : History Data	C -bit Number of errored seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3IntervalCSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of C - bit Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Section in the current 15 minute interval in the past 24 hours.	STS1	DS3 Path Statistics : History Data	C -bit Number of severely errored seconds	dsx3IntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndCurrentTable											
dsx3FarEndCurrentCESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of FarEnd Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) interface in the current 15 minute interval.	STS1	DS3 FarEndPath Statistics : Current Data	Number of errored seconds	dsx3FarEndCurrentTable	DS3 - MIB	No	SN07	On the OC3 connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the far-end OC3 the error and collect the OM and it should reflect the correct error count.
dsx3FarEndCurrentCSESs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Path interface in the current 15 minute interval.	STS1	DS3 FarEndPath Statistics : Current Data	Number of severely errored seconds	dsx3FarEndCurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndCurrentCCVs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET (STS1 with DS3 payload selected)) Path interface in the current 15 minute interval.	STS1	DS3 FarEndPath Statistics : Current Data	Number of coding violations	dsx3FarEndCurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndCurrentUASs	PerfCurrentCount	Counts since last 15 min interval	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET (STS1 with DS3 payload selected) Path interface in the current 15 minute interval.	STS1	DS3 FarEndPath Statistics : Current Data	Number of unavailable seconds	dsx3FarEndCurrentTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndIntervalTable											
dsx3FarEndIntervalCESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Path interface in a particular 15- minute interval in the past 24 hours.	STS1	Sonet Far End Path Statistics : History data	Number of errored seconds	dsx3FarEndIntervalTable	DS3 - MIB	No	SN07	On the OC3 channel connect a test box that has the ability to inject errors (e.g. ADTECH). With out injecting any errors collect the OM and it should be 0. Inject toward the Far-end OC3 the error and collect the OM and it should reflect the correct error count. Collect all 96 intervals, waiting 15+ minutes between tests, the counts will move to a higher interval each 15 minutes.
dsx3FarEndIntervalCSESs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Severely Errored Seconds encountered by a SONET (STS1 with DS3 payload selected) Path interface in a particular 15-minute interval in the past 24 hours.	STS1	Sonet Far End Path Statistics : History data	Number of severely errored seconds	dsx3FarEndIntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndIntervalCCVs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Coding Violations reported via the far end block error count encountered by a SONET (STS1 with DS3 payload selected) Path interface in a particular 15-minute interval in the past 24 hours.	STS1	Sonet Far End Path Statistics : History data	Number of coding violations	dsx3FarEndIntervalTable	DS3 - MIB	No	SN07	Same as above
dsx3FarEndIntervalUASs	PerfIntervalCount	Counts only for last 15 min	The counter associated with the number of Far End Unavailable Seconds encountered by a SONET (STS1 with DS3 payload selected) Path interface in a particular 15-minute interval in the past 24 hours.	STS1	Sonet Far End Path Statistics : History data	Number of unavailable seconds	dsx3FarEndIntervalTable	DS3 - MIB	No	SN07	Same as above
NORTEL-UEMG-RELMSGING-MIB											
nnRelMsgSctpAssocOmCurrTable											
nnRelMsgSctpAscCurrClosed	Unsigned32	Counts only for last 15 min	number of times that this association closed (both aborts and shutdowns)	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscCurrAbort	Unsigned32	Counts only for last 15 min	number of times that this association aborted.	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscCurrOutPacks	Unsigned32	Counts only for last 15 min	number of packets transmitted	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrInPacks	Unsigned32	Counts only for last 15 min	number of packets received, this association	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrDiscPacks	Unsigned32	Counts only for last 15 min	number of packets discarded by this association.	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrRetranPacks	Unsigned32	Counts only for last 15 min	number of packets retransmitted by this association, this interval	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrT1expires	Unsigned32	Counts only for last 15 min	number of T1 Expires	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrT2expires	Unsigned32	Counts only for last 15 min	number of T2 expires.	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrT3expires	Unsigned32	Counts only for last 15 min	number of T3 expires	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrCongCount	Unsigned32	Counts only for last 15 min	number of times this assoc entered congestion.	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAscCurrCongCleared	Unsigned32	Counts only for last 15 min	number of times congestion cleared by audit.	Not supported			nnRelMsgSctpAssocOmCurrTable	NORTEL-UEMG-RELMSGING-MIB	No	SN07	
nnRelMsgSctpAssocOmIntervTable											
nnRelMsgSctpAscIntervClosed	Unsigned32	Counts only for last 15 min	number of times that this association closed (both aborts and shutdowns)	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervAbort	Unsigned32	Counts only for last 15 min	number of times that this association aborted.	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervOutPacks	Unsigned32	Counts only for last 15 min	number of packets transmitted	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervInPacks	Unsigned32	Counts only for last 15 min	number of packets received, this association	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervDiscPacks	Unsigned32	Counts only for last 15 min	number of packets discarded by this association.	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervRetranPacks	Unsigned32	Counts only for last 15 min	number of packets retransmitted by this association, this interval	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervT1expires	Unsigned32	Counts only for last 15 min	number of T1 Expires	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervT2expires	Unsigned32	Counts only for last 15 min	number of T2 expires.	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervT3expires	Unsigned32	Counts only for last 15 min	number of T3 expires	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervCongCount	Unsigned32	Counts only for last 15 min	number of times this assoc entered congestion.	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
nnRelMsgSctpAscIntervCongCleared	Unsigned32	Counts only for last 15 min	number of times congestion cleared by audit.	Not supported			nnRelMsgSctpAssocOmIntervTable	NORTEL-UEMG-RELMSGING-MIB	Yes	SN07	
NORTEL-UEMG-GIGE_mib											
nnGLinkOmCurrTable											
nnGLinkCurrESs	Unsigned32	Counts only for last 15 min	current Errored Seconds	GIGE - Port	OM Statistics: Current Data	Number of Errored Seconds	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrSESs	Unsigned32	Counts only for last 15 min	current Severely Errored Seconds	GIGE - Port	OM Statistics: Current Data	Number of Severely Errored Seconds	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrUASs	Unsigned32	Counts only for last 15 min	current Unavailable Seconds	GIGE - Port	OM Statistics: Current Data	Number of Unavailable Seconds	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	

nnGLinkCurrOPT	Unsigned32	Counts only for last 15 min	current Optical Transmit Current	GIGE - Port	OM Statistics: Current Data	Optical Power Transmitted	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrOPR	Unsigned32	Counts only for last 15 min	current Optical Power Receive	GIGE - Port	OM Statistics: Current Data	Optical Power Received	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTBC	Unsigned32	Counts only for last 15 min	current Transmit Bus Current	GIGE - Port	OM Statistics: Current Data	Transmit Bus Current	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrVCC	Unsigned32	Counts only for last 15 min	current Voltage	GIGE - Port	OM Statistics: Current Data	Voltage	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTEMP	Unsigned32	Counts only for last 15 min	current Temperature	GIGE - Port	OM Statistics: Current Data	Temperature	nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTxFifoOverruns	Counter64	Counts only for last 15 min	current Transmit Fifo Overruns	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTxFifoUnderruns	Counter64	Counts only for last 15 min	current Transmit Fifo Underruns	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTxBytesOverflow	Unsigned32	Counts only for last 15 min	current Transmit Bytes, Overflow	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrTxBytes	Counter64	Counts only for last 15 min	current Transmit Bytes	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxFcsFail	Counter64	Counts only for last 15 min	current Receive Fcs Failures	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxLenTypeFail	Counter64	Counts only for last 15 min	current Receive LEN Type Failures	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxGoodPause	Counter64	Counts only for last 15 min	current Receive Good Pause	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxBadOpCntlFrames	Counter64	Counts only for last 15 min	current Receive Bad Opcode Control Frames	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxControlFrames	Counter64	Counts only for last 15 min	current Receive Control Frames	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkCurrRxPauseFrames	Counter64	Counts only for last 15 min	current Receive Pause Frames	GIGE - Port	OM Statistics: Current Data		nnGLinkOmCurrTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkOmIntervTable											
nnGLinkIntervESs	Unsigned32	Counts only for last 15 min	history, nth interval Errored Seconds	GIGE - Port	OM Statistics: History Data	Number of Errored Seconds	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervSESs	Unsigned32	Counts only for last 15 min	history, nth interval Severely Errored Seconds	GIGE - Port	OM Statistics: History Data	Number of Severely Errored Seconds	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervUASs	Unsigned32	Counts only for last 15 min	history, nth interval Unavailable Seconds	GIGE - Port	OM Statistics: History Data	Number of Unavailable Seconds	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervOPT	Unsigned32	Counts only for last 15 min	history, nth interval Optical Transmit Current	GIGE - Port	OM Statistics: History Data	Optical Power Transmitted	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervOPR	Unsigned32	Counts only for last 15 min	history, nth interval Optical Power Receive	GIGE - Port	OM Statistics: History Data	Optical Power Received	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTBC	Unsigned32	Counts only for last 15 min	history, nth interval Transmit Bus Current	GIGE - Port	OM Statistics: History Data	Transmit Bus Current	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervVCC	Unsigned32	Counts only for last 15 min	history, nth interval Voltage	GIGE - Port	OM Statistics: History Data	Voltage	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTEMP	Unsigned32	Counts only for last 15 min	history, nth interval Temperature	GIGE - Port	OM Statistics: History Data	Temperature	nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTxFifoOverruns	Counter64	Counts only for last 15 min	history, nth interval Transmit Fifo Overruns	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTxFifoUnderruns	Counter64	Counts only for last 15 min	history, nth interval Transmit Fifo Underruns	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTxBytesOverflow	Unsigned32	Counts only for last 15 min	history, nth interval Transmit Bytes, Overflow	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervTxBytes	Counter64	Counts only for last 15 min	history, nth interval Transmit Bytes	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervRxFcsFail	Counter64	Counts only for last 15 min	history, nth interval Receive Fcs Failures	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervRxLenTypeFail	Counter64	Counts only for last 15 min	history, nth interval Receive LEN Type Failures	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervRxGoodPause	Counter64	Counts only for last 15 min	history, nth interval Receive Good Pause	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervRxBadOpCntlFrames	Counter64	Counts only for last 15 min	history, nth interval Receive Bad Opcode Control Frames	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkIntervRxControlFrames	Counter64	Counts only for last 15 min	history, nth interval Receive Control Frames	GIGE - Port	OM Statistics: History Data		nnGLinkOmIntervTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThresholdTable											
nnGLinkThreshType	gLinkES(1), gLinkSES(2), gLinkUAS(3)		Threshold Type...The Performance Measure, Counter to which the following thresholds apply	GIGE - Port	OM Threshold Statistics: Current data	Errored Seconds, Severely Errored Seconds, Unavailable Seconds	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThreshShortPeriod	Unsigned32		Interval for short period,	GIGE - Port	OM Threshold Statistics: Current data	Short Period	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThreshShortRatio	INTEGER (0..100)		Threshold to cross for a ShortPeriod performance measure. Ratio Expressed in %	GIGE - Port	OM Threshold Statistics: Current data	Short Ratio	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThreshLongPeriod	Unsigned32		Interval for long period,	GIGE - Port	OM Threshold Statistics: Current data	Long Period	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThreshLongRatio	INTEGER (0..100)		Threshold to cross for a LongPeriod performance measure. Ratio Expressed in %	GIGE - Port	OM Threshold Statistics: Current data	Long Ratio	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
nnGLinkThreshNotify	Interger		Indicates whether a notification should be generated if the thresholds (either) are breached for this performanceMeasure	GIGE - Port	OM Threshold Statistics: Current data	Notify	nnGLinkThresholdTable	NORTEL-UEMG-GIGE_mib		SN08	
Ethernet-Like MIB											
dot3StatsTable											
dot3StatsAlignmentErrors	Counter32		A count of frames received on a particular interface that are not an integral number of octets in length and do not pass the FCS check.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of Alignment Errors	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsFCSErrors	Counter32		A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. This count does not include frames received with frame-too-long or frame-too-short error.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of FCS Errors	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsInternalMac	Counter32		A count of frames for which transmission on a particular interface fails due to an internal MAC sublayer transmit error. A frame is only counted by an instance of this object if it is not counted by the corresponding instance of either the dot3StatsLateCollisions object, the dot3StatsExcessiveCollisions object, or the dot3StatsCarrierSenseErrors object.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of internal MAC Transmit Errors	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsCarrierSenseErrors	Counter32		The number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame on a particular interface.	GIGE - Port	Eithernet OM Statistics: Current Data		dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsFrameTooLongs	Counter32		A count of frames received on a particular interface that exceed the maximum permitted frame size.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of Frames Too Long	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsInternalMacReceiveErrors	Counter32		A count of frames for which reception on a particular interface fails due to an internal MAC sublayer receive error. A frame is only counted by an instance of this object if it is not counted by the corresponding instance of either the dot3StatsFrameTooLongs object, the dot3StatsAlignmentErrors object, or the dot3StatsFCSErrors object.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of internal MAC Reveive Errors	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3StatsSymbolErrors	Counter32		For an interface operating at 100 Mb/s, the number of times there was an invalid data symbol when a valid carrier was present.	GIGE - Port	Eithernet OM Statistics: Current Data	Number of Symbol Errors	dot3StatsTable	Ethernet-Like MIB		SN08	
dot3PauseTable											
dot3InPauseFrames	Counter32		A count of MAC Control frames received on this interface with an opcode indicating the PAUSE operation	GIGE - Port	Eithernet OM Statistics: Current Data	Number of In Pause Frames					
dot3OutPauseFrames	Counter32		A count of MAC Control frames transmitted on this interface with an opcode indicating the PAUSE operation	GIGE - Port	Eithernet OM Statistics: Current Data	Number of Out Pause Frames					
Remote Network Monitoring MIB											
etherStatsTable											
etherStatsDropEvents	Counter32		The total number of events in which packets were dropped by the probe due to lack of resources. Note that this number is not necessarily the number packets dropped; it is just the number of times this condition has been detected.	GIGE - Port	RMON Statistics: Current Data	Number of Dropped Events	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsBroadcastPkts	Counter32		The total number of good packets received that were directed to the broadcast address. Note that this does not include multicast packets.	GIGE - Port	RMON Statistics: Current Data	Number of Broadcast Packets	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsMulticastPkts	Counter32		The total number of good packets received that were directed to a multicast address. Note that this number does not include packets directed to the broadcast address.	GIGE - Port	RMON Statistics: Current Data	Number of Multicast Packets	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsCRCAlignErrors	Counter32		The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).	GIGE - Port	RMON Statistics: Current Data	Number of CRC Alignment Errors	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsUndersizePkts	Counter32		The total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.	GIGE - Port	RMON Statistics: Current Data	Number of Undersized Packets	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsOversizePkts	Counter32		The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.	GIGE - Port	RMON Statistics: Current Data	Number of Oversized Packets	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsFragments	Counter32		The total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)	GIGE - Port	RMON Statistics: Current Data	Number of Fragments	etherStatsTable	Remote Network Monitoring MIB		SN08	

etherStatsJabbers	Counter32		The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets), and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)	GIGE - Port	RMON Statistics: Current Data	Number of Jabbers	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherStatsCollisions	Counter32		The best estimate of the total number of collisions on this Ethernet segment.	GIGE - Port	RMON Statistics: Current Data	Number of Collisions	etherStatsTable	Remote Network Monitoring MIB		SN08	
etherHistoryTable											
etherHistoryDropEvents	Counter32		The total number of events in which packets were dropped by the probe due to lack of resources during this sampling interval. Note that this numbe is not necessarily the number of packets dropped, it is just the number of times this condition has been detected.	GIGE - Port	RMON Statistics: History Data	Number of Dropped Events	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryBroadcastPkts	Counter32		The number of good packets received during this sampling interval that were directed to the broadcast address.	GIGE - Port	RMON Statistics: History Data	Number of Broadcast Packets	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryMulticastPkts	Counter32		The number of good packets received during this sampling interval that were directed to a multicast address. Note that this number does not include packets addressed to the broadcast address.	GIGE - Port	RMON Statistics: History Data	Number of Multicast Packets	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryCRCAlignErrors	Counter32		The number of packets received during this sampling interval that had a length (excluding framing bits but including FCS octets) between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).	GIGE - Port	RMON Statistics: History Data	Number of CRC Alignment Errors	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryUndersizePkts	Counter32		The number of packets received during this sampling interval that were less than 64 octets long (excluding framing bits but including FCS octets) and were otherwise well formed.	GIGE - Port	RMON Statistics: History Data	Number of Undersized Packets	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryOversizePkts	Counter32		The number of packets received during this sampling interval that were longer than 1518 octets (excluding framing bits but including FCS octets) but were otherwise well formed.	GIGE - Port	RMON Statistics: History Data	Number of Oversized Packets	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryFragments	Counter32		The total number of packets received during this sampling interval that were less than 64 octets in length (excluding framing bits but including FCS octets) had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)	GIGE - Port	RMON Statistics: History Data	Number of Fragments	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryJabbers	Counter32		The number of packets received during this sampling interval that were longer than 1518 octets (excluding framing bits but including FCS octets), and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)	GIGE - Port	RMON Statistics: History Data	Number of Jabbers	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryCollisions	Counter32		The best estimate of the total number of collisions on this Ethernet segment during this sampling interval.	GIGE - Port	RMON Statistics: History Data	Number of Collisions	etherHistoryTable	Remote Network Monitoring MIB		SN08	
etherHistoryUtilization	Counter32		The best estimate of the mean physical layer network utilization on this interface during this sampling interval, in hundredths of a percent.	GIGE - Port	RMON Statistics: History Data		etherHistoryTable	Remote Network Monitoring MIB		SN08	
HC-RMON-MIB											
etherStatsHighCapacityTable											
etherStatsHighCapacityOverflowPkts	Counter32		The number of times the associated etherStatsPkts counter has overflowed.	GIGE - Port	RMON Statistics: Current Data	Number of HC Overflow Packets	etherStatsHighCapacityTable	HC-RMON-MIB		SN08	
etherStatsHighCapacityPkts	Counter64		The total number of packets (including bad packets, broadcast packets, and multicast packets) received.	GIGE - Port	RMON Statistics: Current Data	Number of Packets Received	etherStatsHighCapacityTable	HC-RMON-MIB		SN08	
etherStatsHighCapacityOverflowOctets	Counter32		The number of times the associated etherStatsOctets counter has overflowed.	GIGE - Port	RMON Statistics: Current Data	Number of Overflow Octets	etherStatsHighCapacityTable	HC-RMON-MIB		SN08	
etherStatsHighCapacityOctets	Counter64		The total number of octets of data (including those in bad packets) received on the network (excluding framing bits but including FCS octets)	GIGE - Port	RMON Statistics: Current Data	Number of Octets of Received Data	etherStatsHighCapacityTable	HC-RMON-MIB		SN08	
etherHistoryHighCapacityTable											
etherHistoryHighCapacityOverflowPkts	Gauge32		The number of times the associated etherHistoryPkts Gauge overflowed during this sampling interval.	GIGE - Port	HC RMON Statistics: History Data	Number of HC Overflow Packets	etherHistoryHighCapacityTable	HC-RMON-MIB		SN08	
etherHistoryHighCapacityPkts	CounterBased Gauge64		The total number of packets (including bad packets, broadcast packets, and multicast packets) received during this sampling interval.	GIGE - Port	HC RMON Statistics: History Data	Number of Packets Received	etherHistoryHighCapacityTable	HC-RMON-MIB		SN08	
etherHistoryHighCapacityOverflowOctets	Gauge32		The number of times the associated etherHistoryOctets counter has overflowed during this sampling interval.	GIGE - Port	HC RMON Statistics: History Data	Number of Overflow Octets	etherHistoryHighCapacityTable	HC-RMON-MIB		SN08	
etherHistoryHighCapacityOctets	CounterBased Gauge64		The total number of octets of data (including those in bad packets) received on the network (excluding framing bits but including FCS octets) during this sampling interval.	GIGE - Port	HC RMON Statistics: History Data	Number of Octets of Received Data	etherHistoryHighCapacityTable	HC-RMON-MIB		SN08	
SMON-MIB											
smonVlanIdStatsTable											
smonVlanIdStatsTotalPkts	Counter32		The total number of packets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Packets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsTotalHCPkts	Counter64		The total number of packets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of HC Packets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsTotalOctets	Counter32		The total number of octets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Octets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsTotalHCOctets	Counter64		The total number of octets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of HC Octets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsNUcastPkts	Counter32		The total number of non-unicast packets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Non-unicast Packets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsNUcastHCPkts	Counter64		The total number of non-unicast packets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Non-unicast HC Packets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsNUcastOctets	Counter32		The total number of non-unicast octets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Non-unicast Octets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsNUcastOverflowOctets	Counter32		The number of times the associated smonVlanIdStatsNUcastOctets counter has overflowed.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Non-unicast Overflow Octets	smonVlanIdStatsTable	SMON-MIB		SN08	
smonVlanIdStatsNUcastHCOctets	Counter64		The total number of Non-unicast octets counted on this VLAN.	VLAN	SMON VLAN Statistics: Current Data	Total Number of Non-unicast HC Octets	smonVlanIdStatsTable	SMON-MIB		SN08	
NORTEL-UEMG-IPSEC-MIB											
nnIpsecOmCurrentTable											
nnIpsecOmCurrentPacketsTx	Integer32		Number of Transmitted Packets this 15 min interv	Not Supported			nnIpsecOmCurrentTable	NORTEL-UEMG-IPSEC-MIB			
nnIpsecOmCurrentPacketsRx	Integer32		Number of Received Packets this 15 min Inte rva	Not Supported			nnIpsecOmCurrentTable	NORTEL-UEMG-IPSEC-MIB			
nnIpsecOmCurrentPacketsDiscardedOut	Integer32		Number of Dropped Outbound Packets this 15 min In	Not Supported			nnIpsecOmCurrentTable	NORTEL-UEMG-IPSEC-MIB			
nnIpsecOmCurrentPacketsDiscardedIn	Integer32		Number of Dropped Inbound Packets this 15 min Int	Not Supported			nnIpsecOmCurrentTable	NORTEL-UEMG-IPSEC-MIB			
nnIpsecOmIntervalTable										SN08	
nnIpsecOmIntervalPacketsTx	Integer32		Number of Transmitted Packets this 15 min interv	Not Supported			nnIpsecOmIntervalTable	NORTEL-UEMG-IPSEC-MIB		SN08	
nnIpsecOmIntervalPacketsRx	Integer32		Number of Received Packets this 15 min Inte rva	Not Supported			nnIpsecOmIntervalTable	NORTEL-UEMG-IPSEC-MIB		SN08	
nnIpsecOmIntervalPacketsDiscardedOut	Integer32		Number of Dropped Outbound Packets this 15 min In	Not Supported			nnIpsecOmIntervalTable	NORTEL-UEMG-IPSEC-MIB		SN08	
nnIpsecOmIntervalPacketsDiscardedIn	Integer32		Number of Dropped Inbound Packets this 15 min Int	Not Supported			nnIpsecOmIntervalTable	NORTEL-UEMG-IPSEC-MIB		SN08	

Appendix C: VOA/IP MSS15000, MG15000, and MDM Alarm Log Summary

1. Introduction

This document provides a list of Multiservice Switch 15000 (MSS15000), Media Gateway 15000 (MG15000) (formerly known as PVG) and Multiservice Data Manager (MDM) alarm logs applicable to up to SN08 for Voice over ATM (VOA) and Voice over IP (VOIP) solutions.

The purpose of this document includes:

- It provides a VOA/VOIP customer (and more specifically an OSS Fault application writer) a summarized subset of the possible alarms that can appear when MSS15000 and MDM are configured for the VOA/VOIP application. The descriptions of the alarms are found in [6] and [3].
- When configured to receive MSS15000/MDM Alarm logs in SCC2 format from the Supernode Data Manager (SDM), it also provides the mapping information needed to interpret the SCC2 format.
- It is also input to solution-level OSS Guide information which is in progress of being delivered to provide this information in the FCAPS-based solution documentation.

2. SCC2 Log Format

The SCC2 log report for MSS15000 and MDM alarms comprises a one line header, followed by seven lines of body text, as per the following example:

```
37 PPEM300 8169 TBL
    time: 2002 01 11 15 37 06
    event: clear
    compId: EM P15KF LP 7 SONET 3
    severity: cleared
    faultCode: 70115201
    alarmType: communications
    commentData: Loss of frame condition has been cleared.
```

The header is of format:

aabbcdddeeefgghhijjjj

Each field, as applicable for MSS15000 and MDM alarms, is described in Table 1.

Table 1 MSS15000 and MDM SCC2 Header Field Description

Field	Description	Applicable Log Values
aa	Alarm severity MSS15000/MDM alarm log severity	"*C" = critical alarm "**" = major alarm "* " = minor and warning and indeterminate alarm " " = clear alarm Two characters, left justified, padded with blanks.

Field	Description	Applicable Log Values
bb	Minute indicator Two numeric character indicator representing the minutes after the hour. Generated by SDM at time SDM receives the alarm log from MDM.	Ranges from 00 to 59, right justified, padded with zeros.
c	single space	" "
dddd	Log Name Assigned by SDM. Based upon the first four digits ("Index Group") of the eight-digit MSS15000 or MDM alarm identifier.	Four characters, left justified, padded with blanks. "CA " for index group 0000. "PPEM" for index groups beginning with 70xx and some fault codes in group 0999. "MDM " for index groups beginning with 30xx and some fault codes in group 0999.
eee	Log Number Three numeric characters representing the MSS15000 or MDM Alarm Type. Note that the Alarm Type "debug" is not translated as a fault, but rather as information log.	"300" = communications "301" = quality of service "302" = processing "303" = equipment "304" = environmental "305" = security "306" = operator "307" = unknown
f	A single space for all MSS15000 and MDM alarm logs.	" "
gg	Global Sequence Number Generated by SDM. Two numeric characters, incremented by SDM upon receipt of every alarm log.	Ranges from 00 to 99, right justified, padded with zeros.
hh	Device Sequence Number Generated by SDM. Two numeric characters, incremented by SDM upon receipt of every device specific alarm log from MDM (originated by MSS15000 or MDM).	Ranges from 00 to 99, right justified, padded with zeros.
i	single space	" "
jjjj	Event Type Assigned by SDM. String assigned for all MSS15000 and MDM alarm logs.	"TBL " Four characters, left justified, padded with blanks.
Lines 2, 3, 4, 5, 6, 7, 8	Body Text Seven textual lines, each of form <AlarmFieldName>: <AlarmFieldValue>	"time: " "event: " "compId: " "severity: " "faultCode: " "alarmType: " "commentData: " Comment data is truncated so that entire log does not exceed 900 bytes.

3. MSS15000 Alarm Logs

Table 2 presents the list of MSS15000 set/clear alarm logs that are applicable for Succession VOA/VOIP.

Table 2 does not explicitly state all MSS15000 clear alarm logs that correspond to each set. The SCC2 header for the clear differs from its corresponding set by only the first two characters. The characters “aa” are replaced by “ “ (two spaces). This format is presented in Table 1.

The MSS15000 alarm identifier consists of an eight-digit number identifying the alarm. The first four digits comprise the **Index Group**, which represents logical groupings of alarms. The last four digits are the **SubIndex**, which is an identifier within each index group.

Component Name indicates the managed object against which the alarm Log is generated. This table contains the CLI format of a component name. The “compId” field in SCC2 format contains this information (with the module’s <nodename> pre-pended). Also, “compId” follows the MDM API-style format (with component type and instance separated by a space instead of a slash, and ‘$’ appearing in place of a null instance value). Variables (usually instance value ranges) are denoted by <> and the reader should reference the Alarms NTP’s [3] and [6] for further information.

Table 2 MSS15000 Set/Clear Alarms Supported for Succession

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
0000	OSI administrative state changes, general engineering and memory alarms, internal software error detected, etc.				
	This alarm can apply to many MSS15000 components.		0000		bb CA eee gghh TBL where: eee = 302, 303, 306
	This alarm can apply to many MSS15000 components.		1000		aabb CA eee gghh TBL where: aa = “*C”, “**”, “* ” eee = 300, 306
	This alarm can apply to many MSS15000 components.		1001		aabb CA 303 gghh TBL where: aa = “*C”, “**”, “* ”
	This alarm can apply to many MSS15000 components.		3000		aabb CA eee gghh TBL where: aa = “*C”, “**”, “* ” eee = 300, 302
	This alarm can apply to many MSS15000 components.		3001		aabb CA 302 gghh TBL where: aa = “*C”, “**”, “* ”
			3002		
7000	Provisioning alarms. These alarms apply to failures resulting from provisioning attempts. e.g., loading a provisioning file has failed.				
	Prov		0007		aabb PPEM306 gghh TBL where: aa = “*C”, “**”, “* ”

MSS15000 Index Group	Component Name	MSS15000/MG15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	This alarm can apply to many MSS15000 components.		0010		* bb PPEM302 gghh TBL
	Prov Migration		0033		aabb PPEM306 gghh TBL where: aa = "*C", "* "
	Prov		0036		aabb PPEM301 gghh TBL where: aa = "**", "* "
	Prov		0037		*Cbb PPEM301 gghh TBL
	Prov		0038		* bb PPEM301 gghh TBL
	Prov		0040		**bb PPEM302 gghh TBL
	Provisioning Patch		0041		* bb PPEM306 gghh TBL or *Cbb PPEM306 gghh TBL
7002	Backplane control system alarms; e.g., communication failure between a card and the backplane. Note: FabricCard instance range (<i>): X, Y Card instance range (<n>): 0-15				
	Shelf FabricCard/<i>		0002		**bb PPEM303 gghh TBL
	Shelf FabricCard/<i>		0003		*Cbb PPEM304 gghh TBL
	Shelf FabricCard/<i>		0004		*Cbb PPEM304 gghh TBL
	Shelf FabricCard/<i>		0005		**bb PPEM302 gghh TBL
	Shelf FabricCard/<i>		0006		**bb PPEM302 gghh TBL
	Shelf FabricCard/<i>		0007		**bb PPEM302 gghh TBL
	Shelf Card/<n>		0008		* bb PPEM303 gghh TBL
	Shelf FabricCard/<i>		0009		* bb PPEM303 gghh TBL
7003	Data collection system alarms; e.g., an alarm or log queue size has exceeded a threshold. Collector instance range (<t>): accounting, alarm, log, debug, scn, trap, stats, rtStats, appl Agent instance range (<n>): 0-15 LP instance range (<n>): 0-15				
	Collector/<t> Agent/<n>		0001		**bb PPEM301 gghh TBL
	Collector/<t> Spooler		0002		**bb PPEM302 gghh TBL
	Collector/<t> Spooler		0003		* bb PPEM301 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	LP/<n> Eng AAList		0007		**bb PPEM301 gghh TBL
7006	Radius security alarms.				
	Ac Radius		0100		*Cbb PPEM305 gghh TBL
7008	File system alarms. Disk instance range (<n>): 0-1				
	FileSystem		1001		**bb PPEM302 gghh TBL
	FileSystem		1002		*Cbb PPEM302 gghh TBL
	FileSystem		1004		*Cbb PPEM303 gghh TBL
	FileSystem		1005		* bb PPEM303 gghh TBL
	FileSystem		1006		**bb PPEM302 gghh TBL
	FileSystem Disk/<n>		1008		**bb PPEM303 gghh TBL
			1009		
			1010		
			1011		
	FileSystem		1019		* bb PPEM303 gghh TBL
7011	Port management system and Automatic Protection Switching alarms. LP instance range (<n>): 0-15 Port types (<type>): Sonet, EDS1, DS3, BridgedSonet(Bso), Ethernet, Sdh Sonet instance range (<n2>): 0-15 (16-port); 0-3 (4-port) EDS1 instance range (<n2>): 0-1 IMA instance range (<n3>): 0-13 LK instance range (<n4>): 0-31 DS3 instance range (<n2>): 0-3 (4-port); 0-11 (12-port) DS1 instance range (<n3>): 1-28 Ethernet instance range (<n2>): 0-3 LAPS instance range (<n>): 0-15999 Chan instance range (<n4>): 0-23 Bso instance range (<n2>): 0-15 Pbg instance range (<n>): 0-15999 Sdh instance range (<n2>): 0-n, where n is 1 less than the number of ports Sts instance range (<n2>): 0-11 Lag instance range (<y>): 0-7 Lag link instance range (<z>): 0-31				
	LP/<n> DS3/<n2> IMA <n3>		1100		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2> IMA/<n3>… …LK/<n4>		1200		*Cbb PPEM300 gghh TBL
			1210		
			1211		
			1212		
			1213		
			1214		
			1215		

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
			1216		
	LP/<n> Lag/<y>		1500		*Cbb PPEM300 gghh TBL
	LP/<n> Lag/<y> Link/<z>		1501		*Cbb PPEM300 gghh TBL
	LP/<n> <type>/<n2>		2000		*Cbb PPEM303 gghh TBL
	LP/0 EDS1/<n2> LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/0 Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5000		*Cbb PPEM300 gghh TBL
	LP/0 EDS1/<n2> LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/0 Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5001		* bb PPEM300 gghh TBL
	LP/0 EDS1/<n2> Lp/<n> Sdh/0 Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5002		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5003		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5004		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5005		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} E1 Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1		5006		**bb PPEM300 gghh TBL
	LP/<n> DS3/<n2> DS1/<n3> Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} DS1 Lp/<n> Sdh/0 Vc4/0 Vc12/{1-3,1-7,1-3} E1		5010		* bb PPEM300 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	LP/<n> DS3/<n2> DS1/<n3>		5011		* bb PPEM300 gghh TBL
	LP/0 EDS1/<n2>		5050		aabb PPEM303 gghh TBL where: aa = "*C", "* "
	LP/<n> DS3/<n2>		5100		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2>		5101		*Cbb PPEM300 gghh TBL
			5102		
			5103		
			5104		
	LP/<n> DS3/<n2>		5105		* bb PPEM300 gghh TBL
	LP/<n> DS3/<n2>		5110		*Cbb PPEM300 gghh TBL
	LP/<n> DS3/<n2>		5111		* bb PPEM300 gghh TBL
			5120		
			5121		
			5122		
	LP/<n> Sonet/<n2> LP/<n> Sdh/<n2>		5200		*Cbb PPEM300 gghh TBL
			5201		
			5202		
	LP/<n> Sonet/<n2> LP/<n> Sdh/<n2>		5203		* bb PPEM300 gghh TBL
			5204		
			5210		
			5211		
	LP/<n> Sonet/<n2> Sts/<n2> Lp/<n> Sdh/<n2> Vc4/0 LAPS/<n> Sts/<n2> LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5250		*Cbb PPEM300 gghh TBL
			5251		
	LP/<n> Sonet/<n2> Sts/<n2> Lp/<n> sdh/<n2> Vc4/0 LAPS/<n> Sts/<n2> LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5252		* bb PPEM300 gghh TBL
	LP/<n> Sonet/<n2> Sts/<n2> Lp/<n> Sdh/<n2> Vc4/0 LAPS/<n> Sts/<n2> LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5253		*Cbb PPEM300 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	LP/<n> Sonet/<n2> Sts/0 Lp/<n> Sdh/<n2> Vc4/0 LAPS/<n> Sts/0 LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5254		*Cbb PPEM300 gghh TBL
	Lp/<n> Sonet/<n2> Path/<n2> Lp/<n> Sonet/<n2> Sts/<n2> Lp/<n> Sonet/<n2> Vc4/<n2> Lp/<n> Sdh/<n2> Path/0 Lp/<n> Sdh/<n2> Sts/0 Lp/<n> Sdh/<n2> Vc4/0 LAPS/<n> Path/0 LAPS/<n> Sts/0 LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5255		*Cbb PPEM300 gghh TBL
	Lp/<n> Sonet/<n2> Sts/<n2> Lp/<n> Sdh/<n2> Vc4/0 Lp/<num1> Sdh/<n2> Vc4/0 Vc12/{1-3, 1-7, 1-3} Laps/<n> Sts/<num3> Laps/<n> Sdh/<num2> Vc4/0 Laps/<n> Sdh/<n2> Vc4/0 Vc12/{1-3, 1-7, 1-3} Pbg/<n> Sts/{0-11}		5256		*Cbb PPEM300 gghh TBL
	LP/<n> Sonet/<n2> Sts/<n2> LP/<n> Sdh/<n2> Vc4/0 LAPS/<n> Sts/<n2> LAPS/<n> Vc4/0 Pbg/<n> Sts/0		5260 5261		* bb PPEM300 gghh TBL
	LAPS/<n>		5270		**bb PPEM300 gghh TBL
	LAPS/<n>		5271		* bb PPEM300 gghh TBL
	LAPS/<n>		5272		* bb PPEM300 gghh TBL
	LAPS/<n>		5273		* bb PPEM300 gghh TBL
	LAPS/n		5274		* bb PPEM300 gghh TBL
	LAPS/<n>		5275		*Cbb PPEM300 gghh TBL
	LP/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} LAPS/<n> Vc4/0 Vc12//{1-3,1-7,1-3} LAPS/<n> Sts/<n2> Vt1dot5/{1-7,1-4}		5290 5291 5292 5293 5294		* bb PPEM303 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	LP/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} LAPS/<n> Vc4/0 Vc12//{1-3,1-7,1-3} LAPS/<n> Sts/<n2> Vt1dot5/{1-7,1-4}		5295 5296		*Cbb PPEM303 gghh TBL
	LP/<n> Sdh/<n2> Vc4/0 Vc12/{1-3,1-7,1-3} Lp/<n> Sonet/<n2> Sts/<n2> Vt1dot5/{1-7,1-4} LAPS/<n> Vc4/0 Vc12//{1-3,1-7,1-3} LAPS/<n> Sts/<n2> Vt1dot5/{1-7,1-4}		5297		*Cbb PPEM303/6 gghh TBL
	LP/<n> Ethernet/<n2> LP/<n> Ethernet/<n2> LP/<n> Ethernet/<n2> LP/<n> Ethernet/<n2> LP/<n> Ethernet/<n2> OpticalModule		5400		*Cbb PPEM300 gghh TBL
			5401		*Cbb PPEM300 gghh TBL
			5402		*Cbb PPEM300 gghh TBL
			5403		*Cbb PPEM300 gghh TBL
			5480		**bb PPEM300 gghh TBL
	LP/<n> Sonet/<n2> LP/<n> Sonet/<n2> Sts/0 LAPS/<n> Sts/0 LP/<n> DS3/<n2> LP/<n> DS3/<n2> DS1/<n3> LP/<n> DS3/<n2> DS1/<n3> Chan/<n4> Pbg/<n> Sts/0		5501		**bb PPEM300 gghh TBL
	LP/<n> DS3/<n2>		5601		* bb PPEM300 gghh TBL
			5602		
	LP/<n> DS3/<n2>		5603		**bb PPEM300 gghh TBL
			5604		
7012	Processor control system alarms. LP instance range (<n>): 0-15 Card instance range (<n>): 0-15 FabricCard instance range (<i>): X, Y				
	Shelf		0050		**bb PPEM303 gghh TBL
	Shelf		0051		aabb PPEM303 gghh TBL where: aa = “*C”, “**”
	Shelf Shelf FabricCard/<i>		0052		**bb PPEM303 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	Shelf		0053		**bb PPEM303 gghh TBL
	Shelf		0055		aabb PPEM303 gghh TBL where: aa = “**”, “* ”
	Shelf		0056		* bb PPEM303 gghh TBL
	Shelf		0057		**bb PPEM303 gghh TBL
			0058		
	Shelf		0059		*Cbb PPEM304 gghh TBL
	Shelf Card/<n>		0100		aabb PPEM303 gghh TBL where: aa = “*C”, “* “
	Shelf Card/<n>		0103		**bb PPEM303 gghh TBL
			0104		
	Shelf Card/<n>		0105		* bb PPEM306 gghh TBL
	LP/<n>		0200		*Cbb PPEM302 gghh TBL
	LP/<n>		0202		* bb PPEM306 gghh TBL
	Shelf Card/<n> SpServ		0301		* bb PPEM302 gghh TBL
7013	Message block usage alarms. LP instance range (<n>): 0-15				
	LP/<n>		0000		* bb PPEM301 gghh TBL
	LP/<n>		0001		**bb PPEM301 gghh TBL
	LP/<n>		0002		* bb PPEM301 gghh TBL
			0003		
			0004		
			0005		
			0011		
	LP/<n>		0021		**bb PPEM301 gghh TBL
	LP/<n>		0022		* bb PPEM301 gghh TBL
7014	Memory management alarms				
	LP/<n>		0000		* bb PPEM301 gghh TBL
	LP/<n>		0001		**bb PPEM301 gghh TBL
7015	Network time-of-day (TOD) synchronization alarms. Server instance range (<n>): 1-10				
	Time		0000		**bb PPEM304 gghh

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
			0002		TBL
	Time Server/<n>		0010		* bb PPEM300 gghh TBL
			0011		
	Time Server/<n>		0012		* bb PPEM300 gghh TBL
7017	Network clock synchronization alarms				
	NS		1000		* bb PPEM300 gghh TBL
7021	Internet protocol alarms. For Succession VOA, the IP stack is used only for network management connectivity purposes. For VOIP VR is used to connect to IP network. More than 1 VR may be provisioned in this configuration. VR instance range (<i>): any string, but often specified simply as a digit (e.g., "0") Cache instance range (<n>): 0-15 Name of the vrf (<y>) LP number (<lpnum>): 0-15 IP address (<ipaddress>): address of the local IpLogicalInterface Protocol Port Id (<ppId>) VirtualIfEntry identifier (<virtIfId>)				
	Vr/<i> Ip Cache/<n>		0006		**bb PPEM302 gghh TBL
	Vr/<i> Ip Cpp IsolatedDa/<ipaddress>, <lpnum> Rtr/<i> Cpp IsolatedDa/<ipaddress>, <lpnum> Rtr/<i> Vrf/<y> Cpp IsolatedDa/<ipaddress>, <lpnum>		0013		* bb PPEM305 gghh TBL
			0014		**bb PPEM305 gghh TBL
	Vr/<i> Pp/<ppId> IpPort logicalIf/<ipaddress> OspfIf Rtr/<i> Interface/<ipaddress> OspfIf		1002		**bb PPEM305 gghh TBL
	Vr/<i> Ip Ospf VirtIfEntry/<virtIfId>		1003		**bb PPEM305 gghh TBL
	VR/<i> Ip OSPF		1017		* bb PPEM305 gghh TBL
7026	LAN port management system alarms. For Succession VOA, the LAN port management system is used only for network management connectivity purposes Same alarms are used for VOIP.				
	LP/0 OamEnet/0		3000		*Cbb PPEMeee gghh TBL where: eee = 300, 303

MSS15000 Index Group	Component Name	MSS15000/MG 15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	LP/0 OamEnet/0		3005		* bb PPEMeee gghh TBL where: eee = 300, 303
7039	ATM Core alarms. AtmIf instance range (<n>): 1-4095 Vcc instance range (<n2.n3>): n2 is VPI; n3 is VCI				
	Atmif/<n>		1000		* bb PPEM300 gghh TBL
	Atmif/<n> Vcc/<n2.n3>		2000 2003		* bb PPEM302 gghh TBL
	Atmif/<n> Vpt/<n2>		3000		* bb PPEM300 gghh TBL
	Atmif/<n>		4001		**bb PPEM300 gghh TBL
	Atmif/<n>		5000		*Cbb PPEM300 gghh TBL
7041	ATM Networking alarms. AtmIf instance range (<n>): 1-4095 Vpt instance range (<n2>): 0-4095 CfgNode instance range (<n>): 0-104				
	Atmif/<n> Uni Ilmi		0050		**bb PPEMeee gghh TBL where: eee = 300, 303
	AtmIf/<n> Uni Ilmi		0052		*Cbb PPEM300 gghh TBL
	Atmif/<n> Uni Sig Atmif/<n> Pnni Sig		0150		**bb PPEM300 gghh TBL
	Atmif/<n> Uni Sig Atmif/<n> Pnni Sig Atmif/<n> Uni Ilmi Atmif/<n> Pnni Rcc		0200		**bb PPEM300 gghh TBL
	Atmif/<n> Pnni Rcc		0250		**bb PPEM300 gghh TBL
	Atmif/<n> Pnni Rcc		0253		**bb PPEM300 gghh TBL
	Artg Pnni		0301		**bb PPEM300 gghh TBL
	Artg Pnni CfgNode<n> Rcc		0302		**bb PPEM300 gghh TBL
	Atmif/<n> Uni Atmif/<n> Pnni		0400		* bb PPEM300 gghh TBL
	Atmif/<n>		0401		**bb PPEM30? gghh TBL
	Atmif/<n> Uni Atmif/<n> Pnni		0500		* bb PPEM300 gghh TBL
	Atmif/<n> Uni Atmif/<n> Pnni		0600 0601		* bb PPEM302 gghh TBL

MSS15000 Index Group	Component Name	MSS15000/MG15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	Artg Pnni CfgNode /<n>		0700		**bb PPEM300 gghh TBL
	Atmif/<n> Pnni Rcc		0701		**bb PPEM300 gghh TBL
	Artg Pnni CfgNode /<n>		0703		* bb PPEM300 gghh TBL
7042	Circuit Emulation Service (CES) alarms. Aal1Ces instance range (<n>) : 1-16383				
	Aal1Ces/<n>		0001		**bb PPEM301 gghh TBL
	Aal1Ces/<n>		0002		**bb PPEM302 gghh TBL
	Aal1Ces/<n>		0003		**bb PPEM300 gghh TBL
7054	Sparing panel subsystem alarms. Card instance range (<n>): 0-15				
	Shelf Card/<n>		0100		**bb PPEM303 gghh TBL
			0101		
			0102		
			0103		
			0104		
			0105		
7056	Voice Services Processor (VSP) / Narrowband Service Trunk over ATM (Nsta) This group is specific to MG15000 application (e.g. severe failure of the VSP card) Lp instance range (<x>): 0-15 PModule instance range (<y>): 1-24 PBlock instance range (<z>): 1-2 NSTA instance range (<i>): 0-15999 GigE instance range (<m>): 0-1 Control instance range (<n>): mg or sg Conn instance range (<l>): 0-128 Brag instance range (<d>): 0-159999 Q921 instance range (<r>): 1-31 LapV5 instance value (<w>): 15, 16, 31 Tag instance range (<u>): 0-16777215 AtmTConn instance range (<h>): 1-2700 (max 4094) dBrag instance range (<t>): 0-127 BragS instance range (<k>): 0-15 CasDefn instance range (<z>): 0-24 Security policy database name (<spd_name>): string				
	Lp/<x> Vsp PModule/<y>		0002		** bb PPEM306 gghh TBL
	Lp/<x> Vsp PModule/<y> PBlock/<z>		0003		*Cbb PPEM303 gghh TBL
	Lp/<x> Vsp GigE/<m>		0500		** bb PPEM300 gghh TBL
			0501		
			0502		

MSS15000 Index Group	Component Name	MSS15000/MG15000 configuration (N/A)	MSS15000 SubIndex	Importance Category (N/A)	SCC2 Header
	Nsta/<i> Conn/<l> Nsta/<i> Vgs AtmTConn/<h>		1000		**bb PEM300 gghh TBL
	Nsta/<I> Vgs		1200		* bb PPEM300 gghh TBL
	Nsta/<i> Vgs IpMConn		1201		** bb PPEM300 gghh TBL
	Nsta/<i> Vgs Control/<n> Mediagateway Nsta/<i> Vgs Control/<n> Signalingateway		1202		** bb PPEM300 gghh TBL
	Nsta/<i> Vgs Control/<n> MediaGataway Aap Nsta/<i> Vgs Control/<n> Signalinggateway Aap Nsta/<i>Vgs Control/<n> SpvcAp Nsta/<i> Vgs IpMConn Aap Nsta/<i> Vgs IpMConn SpvcAp Nsta/<i> Vgs AtmTConn/<h> Aap Nsta/<I> Vgs AtmTConn/<h> Aap		1203		** bb PPEM300 gghh TBL
	Nsta/<i> Vgs		1204		* bb PPEM302 gghh TBL
	Nsta/<i> Vgs CasDefn/<z>		1208		* bb PPEM302 gghh TBL
	Lp/<x> Vsp PModule/<y>		1209		* bb PPEM303 gghh TBL
	Nsta/<x> Vgs Brag/<d> Q921/<r> Nsta/<i> Vgs BragS/<k> dBrag/<t> Q921		1210		** bb PPEM300 gghh TBL
	Nsta/<x> Vgs Iua		1211		** bb PPEM300 gghh TBL
	Nsta/<x> Vgs Brag/<d> V5Link LapV5/<w>		1213		** bb PPEM300 gghh TBL
	Nsta/<x> Vgs Tag/<u>		1217		*Cbb PPEM302 gghh TBL
	Nsta/<x> Vgs Ctrl/<n> Spd/<spd_name> IkePolicy/1		1219		** bb PPEM300 gghh TBL
7060	ATM and Frame Resource Control alarms. LP instance range (<n>): 0-15 Aqm instance range (<n2>): 0-3				
	LP/<n> Eng Fcrc		1000		**bb PPEM300 gghh TBL
	LP/<n> Eng Arc Aqm/<n2>		1100		* bb PPEM300 gghh TBL

The following table specifies the alarms where field “event” has the value “message”. There won’t be a “clear” for these, but some action may still be required (e.g., security issue).

Table 3 MSS15000 Message Alarms Supported for Succession VOA/VOIP

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
0000	OSI administrative state changes, general engineering and memory alarms, etc.				
	These alarms can apply to many MSS15000 components. Often, it is: EM/<nodename>		9000		* bb CA eee gghh TBL where: eee = 300, 302
			9001		
			9002		
			9003		
7000	Provisioning alarms. These alarms apply to failures resulting from provisioning attempts. e.g., loading a provisioning file has failed.				
	Prov		0001		*Cbb PPEM302 gghh TBL
	Prov		0002		* bb PPEM302 gghh TBL
	Prov		0003		*Cbb PPEM302 gghh TBL
	Prov		0004		*Cbb PPEM302 gghh TBL
	Prov		0005		* bb PPEM302 gghh TBL
	Prov		0006		*Cbb PPEM302 gghh TBL
	Prov		0008		**bb PPEM302 gghh TBL
	Prov		0009		**bb PPEM302 gghh TBL
	Prov		0012		* bb PPEM306 gghh TBL
	Prov		0013		* bb PPEM302 gghh TBL
	Prov		0015		* bb PPEM302 gghh TBL
	Prov		0016		* bb PPEM30? gghh TBL
	Prov		0029		* bb PPEM30? gghh TBL
	Prov		0030		* bb PPEM30? gghh TBL
	Prov		0031		* bb PPEM302 gghh TBL
	Prov		0032		* bb PPEM30? gghh TBL
	This alarm can apply to many MSS15000 components.		0035		* bb PPEM307 gghh TBL
	Prov		0039		* bb PPEM306 gghh TBL

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
7002	Backplane control system alarms; e.g., communication failure between a card and the backplane. Note: Card instance range (<n>): 0-15 FabricCard instance range (<i>): X,Y				
	Shelf FabricCard/<i>		0010		* bb PPEM303 gghh TBL
	Shelf FabricCard/<i>		0012		* bb PPEM303 gghh TBL
	Shelf FabricCard/<i>		0013		* bb PPEM303 gghh TBL
	Shelf FabricCard/<i>		0014		* bb PPEM303 gghh TBL
	Shelf Card/<n>		1000		*Cbb PPEM303 gghh TBL
7003	Data collection system alarms; e.g., an alarm or log queue size has exceeded a threshold. Collector instance range (<t>): accounting, alarm, log, debug, scn, trap, stats, rtstats, appl Agent instance range (<n>): 0-15				
	Collector/<t> Agent/<n>		0004		* bb PPEM301 gghh TBL
	Collector/log Spooler		0008		* bb PPEM306 gghh TBL
7006	Network Management Interface system alarms and Radius security alarms. Management Interface type (<type>): Fmip, Ftp, Local, Telnet Session instance range (<n>): 1-35 (Fmip); 1-16 (Ftp); 1-2 (Local); 1-16 (Telnet) Radius Server instance range (<m>): 0-1				
	Nmis <type>		0001		**bb PPEM305 gghh TBL
	Nmis <type> Session/<n>		0002		* bb PPEM305 gghh TBL
	Nmis <type> Session/<n>		0003		**bb PPEM300 gghh TBL
	Nmis Ftp		0005		**bb PPEM302 gghh TBL
	Nmis Fmip		0006		**bb PPEM305 gghh TBL
	Nmis <type> Session/<n>		0007		**bb PPEM300 gghh TBL
	Nmis Fmip		0008		**bb PPEM300 gghh TBL
	Ac		0009		* bb PPEM300 gghh TBL or * bb PPEM305 gghh TBL
	Ac Radius Server/<m>		0101		**bb PPEM305 gghh TBL
	Ac Radius Server/<m>		0102		**bb PPEM305 gghh TBL
	Ac Radius		0103		**bb PPEM305 gghh TBL
	Ac Radius		0104		**bb PPEM305 gghh TBL

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
	Ac Radius Server/<m>		0105		**bb PPEM305 gghh TBL
7008	File system alarms. Disk instance range (<n>): 0-1 Card instance range (<x>): 0-1				
	FileSystem		1003		**bb PPEM302 gghh TBL
	FileSystem Disk/<n>		1012		* bb PPEM303 gghh TBL
	FileSystem Disk/<n>		1013		**bb PPEM303 gghh TBL
	FileSystem Disk/<n>		1014		**bb PPEM307 gghh TBL
	FileSystem Disk/<n>		1015		* bb PPEM307 gghh TBL
	FileSystem Disk/<n>		1016		* bb PPEM307 gghh TBL
	FileSystem Disk/<n>		1018		* bb PPEM303 gghh TBL
	FileSystem		1020		* bb PPEM303 gghh TBL
	Shelf Card/<x>		1021		**bb PPEM303 gghh TBL
7011	Port management system and Automatic Protection Switching alarms. LP instance range (<n>): 0-15 Port types (<type>): Sonet, DS3 Sonet instance range (<n2>): 0-15 (16-port); 0-3 (4-port) DS3 instance range (<n2>): 0-11 (12-port); 0-3 (4-port)				
	LP/<n> <type>/<n2>		2002		**bb PPEM303 gghh TBL
	LP/<n> DS3/<n2>		5112		* bb PPEM300 gghh TBL
	LP/<n> <type>/<n2>		8000		* bb PPEM300 gghh TBL
7012	Processor control system alarms. LP instance range (<n>): 0-15 Card instance range (<n>): 0-15				
	Shelf		0054		**bb PPEM303 gghh TBL
	Shelf Card/<n>		0101		* bb PPEM303 gghh TBL
	Shelf Card/<n>		0102		* bb PPEM301 gghh TBL
	Shelf Card/<n>		0151		**bb PPEM302 gghh TBL
			0152		
			0153		
	Shelf Card/<n>		0154		**bb PPEM303 gghh TBL
			0155		
			0156		

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
	LP/<n>		0201		* bb PPEM306 gghh TBL
	LP/0		0203		* bb PPEM303 gghh TBL
	LP/<n>		0204		* bb PPEM306 gghh TBL
	Shelf Card/<n> SpServ		0300		aabb PPEMeee gghh TBL where: aa = "*C", "* " eee=any
7015	Network time-of-day (TOD) synchronization alarms.				
	Time		0001		* bb PPEMeee gghh TBL eee=304, 306, 307
7017	Network clock synchronization alarms.				
	Ns		1001		* bb PPEM301 gghh TBL
7021	Internet protocol alarms. For Succession VOA, the IP stack is used only for network management connectivity purposes. For VOIP VR is used to connect to IP network. OSPF and IP static Routes can be used. More than 1 VR can be provisioned. VR instance range (<i>): any string, but often specified simply as a digit (e.g., "0")				
	VR/<i> Ip		0000		* bb PPEM302 gghh TBL
	VR/<i> Ip OSPF		1000		
	VR/<i> Ip OSPF		1001		
	VR/<i> Ip OSPF		1011		
	VR/<i> Ip OSPF		1016		**bb PPEM302 gghh TBL
	VR/<i> Ip OSPF		1100		* bb PPEM300 gghh TBL
	Vr/<i>		1021		**bb PPEM302 gghh TBL
	Vr/<i> Ip Ospf		1101		* bb PPEM302 gghh TBL
7026	LAN port management system alarms. For Succession VOA, the LAN port management system is used only for network management connectivity purposes. For VOIP same alarms are used.				
	LP/0 OamEnet/0		3002		* bb PPEM30? gghh TBL
	LP/0 OamEnet/0		3003		* bb PPEM303 gghh TBL
	LP/0 OamEnet/0		3006		* bb PPEM302 gghh TBL

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
7039	ATM Core alarms. AtmIf instance range (<n>): 1-4095 Vcc instance range (<n2.n3>): n2 is VPI; n3 is VCI				
	Atmif/<n> Vcc/<n2.n3>		2001		* bb PPEM302 gghh TBL
	Atmif/<n>		4000		* bb PPEM300 gghh TBL
7041	ATM Networking alarms. AtmIf instance range (<n>): 1-4095 CfgNode instance range (<n>): 0-104 Top instance range (<n>): 0-104 Node instance range (<id>): 44-hex digit id Vpt instance range (<n2>): 0-4095				
	Atmif/<n> Uni		0000		* bb PPEM306 gghh TBL
	Atmif/<n> Uni		0001		* bb PPEM303 gghh TBL
	Atmif/<n> Uni Ilmi		0051		**bb PPEM300 gghh TBL
	Atmif/<n> Uni Atmif/<n> Pnni Atmif/<n> Vpt/<n2> Uni Atmif/<n> Vpt/<n2> Pnni		0151		*Cbb PPEM300 gghh TBL
	Atmif/<n> Pnni Rcc		0251		**bb PPEM300 gghh TBL
	Atmif/<n> Pnni Rcc		0252		**bb PPEM300 gghh TBL
	Artg Pnni Top/<n> Node/<id>		0602		**bb PPEM301 gghh TBL
	Artg		0603		**bb PPEM303 gghh TBL
7056	Voice Services Processor (VSP) / Narrowband Service Trunk over ATM (Nsta) This group is specific to MG15000 application (e.g. severe failure of the VSP card) Lp instance range (<x>): 0-15 PModule instance range (<y>): 1-24 PBlock instance range (<z>): 1-2 NSTA instance range (<i>): 0-15999 Conn instance range (<l>): 0-128 Brag instance range (<d>): 0-159999 BragS instance range (<p>): 0-15				
	Lp/<x> Vsp PModule/<y>		0006		* bb PPEM303 gghh TBL
	Nsta/<i> Conn/<l> Brag/<d> Ccst		1101		* bb PPEM300 gghh TBL
	Nsta/<i> Vgs lua		1212		* bb PPEM300 gghh TBL
	Lp/<x> Vsp PModule/<y>		1214		**bb PPEM302 gghh TBL
	Nsta/<i> Vgs BragS/<p>		1215		** bb PPEM302 gghh TBL

MSS15000 Index Group	Component Name	Solution Notes	MSS15000 Subindex	Importance Category	SCC2 Header
7060	ATM and Frame Resource Control alarms. LP instance range (<n>): 0-15				
	LP/<n> Eng Arc Ov		1200		* bb PPEM301 gghh TBL
	LP/<n> Eng		1300		
	LP/<n> Eng		1400		
	LP/<n> Eng		1500		
	LP/<n> Eng		1600		
7061	Security policy violation alarms. VR instance range (<i>): any string, but often specified simply as a digit. <spd_name>: name of the security policy database <pol_id>: instance number of the Policy component <ip_addr,esp,spi>: IP address of the peer with which this SecurityAssociation component is established, the security protocol (ESP), and the Security Parameter Index (SPI) value				
	Vr/<i> Ip Spd/<spd_name> Pol/<pol_id> Sa/<ip_addr,esp,spi>		0001		**bb PPEM305 gghh TBL
7071	LAN ApplicationLAN application instance (<n>): 0-255				
	LA/<n>		1000		*Cbb PPEM302 gghh TBL
7080	Software file system. <name> = name of the software application				
	Sw Av/<name>		0100		**bb PPEM302 gghh TBL

Reference [6] provides detailed descriptions of MSS15000 alarm logs, of which only a portion are applicable for Succession VOA/VOIP.

4. MDM Alarm Logs

Table 4 presents the list of MDM and MDM proxy set/clear alarm logs that are applicable for Succession VOA/VOIP. Table 5 presents the list of MDM and MDM proxy message alarm logs that are applicable for Succession VOA/VOIP.

Applicable MDM set/clear alarms logs include those due to MDM software failure, and alarms related to the monitoring of the platform on which MDM is operating. MDM proxy alarm logs are alarms that MDM initiates on behalf of MSS15000 (for a number of reasons) and injects into the MSS15000 alarm log stream.

The table does not explicitly state all MDM clear alarm logs that correspond to each set. The clear differs from its corresponding set by only the first two characters. The characters “aa” are replaced by “ “ (two spaces). This format is presented in Table 1.

The MDM alarm identifier consists of an eight-digit number identifying the alarm. The first four digits comprise the **Index Group**, which represents logical groupings of alarms. The last four digits are the **SubIndex**, which is an identifier within each index group.

Component Name indicates the managed object against which the alarm Log is generated. This table contains the CLI format of a component name. The “compId” field in SCC2 format contains this information (with the module’s <nodename> pre-pended). Also, “compId” follows the MDM API-style format (with component type and instance separated by a space instead of a slash, and ‘$’ appearing in place of a null instance value). Variables (usually instance value ranges) are denoted by <> and the reader should reference the Alarms NTP’s [3] and [4] for further information.

Table 4 MDM Set/Clear Alarms Supported for Succession VOA/VOIP

MDM Index Group	Component Name	N/A	MDM SubIndex	Importance category (N/A)	SCC2 Header
0999	Loss of access to a MSS15000 shelf from MDM. MDM tries to reconnect and when it succeeds in doing so, will do a “state walk” of major components on the shelf and issue alarms for those components that are out-of-service. EM instance range (<nodename>): a string, typically the CLLI identifier for the MSS15000				
	EM/<nodename>		0001		*Cbb MDM 303 gghh TBL
0999	MDM Proxy-alarm. MDM-originated alarm sent on behalf of the MSS15000, either due to a state walk or a state-change notification.				
	This alarm can apply to many MSS15000 components.		0012		**bb PPEMeee gghh TBL where: eee = 300, 301, 302, 303, 304, 305, 306, 307

MDM Index Group	Component Name	N/A	MDM SubIndex	Importance category (N/A)	SCC2 Header
3010	Indicates faults on MDM server processes, which are needed by the MDM tools/applications. The MDM Log Display GUI or corresponding Unix Utility (nmslog) may also be used to find the information for the cause of the problem. NMS instance range (<x>): a string, typically the hostname of the MDM server platform APP instance range (<a>): a string, denoting the name of an MDM software application Autopatch nodes (<nodes parameter>): typically, this is the name of an HGDS group or a node name or file name containing a list of node names. EM node name (<node name>): the name of the MSS15000 or MG15000 shelf				
	NMS/<x> APP/<a>		0000		**bb MDM 302 gghh TBL
	NMS/<x> APP/PPAUTOPATCH		0801		*bb MDM 306 gghh TBL
	NMS/<x> APP/PPAUTOPATCH NODES/<nodes parameter>		0802		*bb MDM 302 gghh TBL
	NMS/<x> APP/PPAUTOPATCH NODES/<nodes parameter>		0803		**bb MDM 302 gghh TBL
	NMS/<x> APP/PPAUTOPATCH EM/<node name>		0820		**bb MDM 302 gghh TBL
	NMS/<x> APP/PPAUTOPATCH EM/<node name>		0821		**bb MDM 302 gghh TBL
3011	MDM Platform monitoring; e.g. Solaris and Sun monitoring, including: CPU, disk space, memory, local ports and connectivity to adjacent neighbors. The severity of resource problems are determined via thresholds. Connectivity problems are determined using ping command. The alarms 3011 xxFF (where xx can be 01,02,03,04,05,06, or 07) are clear alarms only. A single 3011xxFF alarm clears all outstanding alarms from 3011xx00 through 3011xx99. NMS instance range (<x>): a string, typically the hostname of the MDM server platform APP instance range (<a>): a string, denoting the name of an MDM software application DISK instance range (<v>): a string, denoting disk volume name CPU instance range (<c>): a string, denoting the CPU id PORT and CONNECTION instance range (<ip>): an IP address or host name SDS instance range (<d>): logical disk name				
	NMS/<x> APP/<a>		0001		*Cbb MDM 303 gghh TBL
	NMS/<x> DISK/<v>		0100		aabb MDM 303 gghh TBL where: aa = “*C”, “**”, “* ”
	NMS/<x> CPU/<c>		0200		aabb MDM 303 gghh TBL where: aa = “*C”, “**”, “* ”
	NMS/<x> MEMORY		0300		aabb MDM 303 gghh TBL where: aa = “*C”, “**”, “* ”
	NMS/<x> PORT/<ip>		0401		**bb MDM 303 gghh TBL
	NMS/<x> CONNECTION/<ip>		0501		*Cbb MDM 303 gghh TBL

MDM Index Group	Component Name	N/A	MDM SubIndex	Importance category (N/A)	SCC2 Header
	NMS/<x> SDS/<d>		0600		*Cbb MDM 303 gghh TBL
	NMS/<x>		0700		aabb MDM 303 gghh TBL where: aa = “*C”, “**”
	NMS/<x>		01FF		bb MDM 303 gghh TBL
			02FF		bb MDM 303 gghh TBL
			03FF		bb MDM 303 gghh TBL
			04FF		bb MDM 303 gghh TBL
			05FF		bb MDM 303 gghh TBL
			06FF		bb MDM 303 gghh TBL
			07FF		bb MDM 303 gghh TBL

Reference [4] provides detailed descriptions of MDM and MDM proxy alarm logs, of which only a portion are applicable for Succession VOA/VOIP.

Table 5 MDM Message Alarms Supported for Succession VOA/VOIP

MDM Index Group	Component Name	N/A	MDM SubIndex	Importance category (N/A)	SCC2 Header
0999	MDM proxy-alarm. Issued when a loss of redundancy of alarm feed occurs. The MDM has lost its direct network alarm feed, but is still collecting them from its mate MDM. Note that this message alarm will not be issued for all conditions that could lead to a loss of redundancy, nor is it “cleared” when the problem is resolved. Thus, we do not recommend that this alarm be keyed upon, but include it here because it is likely to be seen. <deviceType> is any IP-enabled device, such as “EM” or “PP8600”. <nodeName> is the name of the device or shelf.				
	<deviceType>/<nodeName>		0100		* bb MDM 303 gghh TBL
3010	Indicates faults on MDM server processes, which are needed by the MDM tools/applications. The MDM Log Display GUI or corresponding Unix Utility (nmslog) may also be used to find the information for the cause of the problem. NMS instance range (<x>): a string, typically the hostname of the MDM server platform GROUP instance range (<g>): a string, which is the HGDS group name for a set of MSS15000s PP instance range (<nodename>): a string, typically the CLLI identifier for the MSS15000				
	NMS/<x> GROUP/<g>		0700		* bb MDM 305 gghh TBL
	NMS/<x> PP/<nodename>		0701		* bb MDM 300 gghh TBL

MDM Index Group	Component Name	N/A	MDM SubIndex	Importance category (N/A)	SCC2 Header
	NMS/<x> PP/<nodename>		0702		* bb MDM 300 gghh TBL
	NMS/<x> APPL/TODCHANGEOVER		0703		* bb MDM 304 gghh TBL
600x	MDP application alarms. NMS instance range (<x>): a string, typically the hostname of the MDM server platform MDP instance range (<a>): a string, denoting the name of an MDP software application				
	NMS/<x> MDP/<a>		00001-40000		aabb MDM 307 gghh TBL where: aa = “*C”, “**”, “* “

5. SN06(VOA)-to-SN06.2(VOA/VOIP) Delta Summary

The following table captures the SN06.2 (VOA/VOIP) alarm log delta that includes MG15000 application as compared with SN06 (VOA) documentation that did not include any MG15000 application specifics

Table 6 SN06 (non MG15000 content) -to-SN06.2 (including MG15000 content) Change Summary Description

Fault Code	Description of Change
SET ALARMS	
70115400	New
70115401	New
70115402	New
70115403	New
70115480	New
7026 3000	New
7056 0002	New
7056 0003	New
7056 0500	New
7056 0501	New
7056 0502	New
7056 1000	New
7056 1200	New
7056 1201	New
7056 1202	New
7056 1203	New
7056 1204	New
7056 1209	New
7056 1210	New
7056 1211	New
7056 1213	New
MESSAGE Alarms	
7000 0039	New
7021 1000	New
7021 1002	New
7021 1003	New
7021 1004	New
7021 1005	New
7021 1006	New
7021 100B	New
7021 1100	New
7056 1101	New
7056 1212	New
70561214	New
7056 1215	New

7060 1300	New
7060 1400	New
7060 1500	New
7060 1600	New
7071 1200	New

6. SN06.2-to-SN07(VOA/VOIP) Delta Summary

The following table captures the SN07 (VOA/VOIP) alarm log delta as compared with SN06.2 (VOA/VOIP) documentation.

Table 7 SN06.2-to-SN07 Change Summary Description

Fault Code	Description of Change
SET ALARMS	
7000 0041	New
7011 1500	New
7011 1501	New
7011 5254	New
7011 5255	New
7011 5256	New
7012 0059	New
7021 0013	New
7021 0014	New
7041 0700	New
7041 0701	New
7041 0703	New
7056 1208	New
7056 1217	New
0999 0004	New
3011 01FF	New
3011 02FF	New
3011 03FF	New
3011 04FF	New
3011 05FF	New
3011 06FF	New
3011 07FF	New
MESSAGE Alarms	
7003 0008	New
7008 1021	New
7021 1021	New
7021 1101	New

7041 0151	New
7056 0006	New
7080 0100	New

7. SN07-to-SN08 (VOA/VOIP) Delta Summary

The following table captures the SN08 (VOA/VOIP) alarm log delta as compared with SN07 (VOA/VOIP) documentation.

Table 8 SN07-to-SN08 Change Summary Description

Fault Code	Description of Change
SET ALARMS	
7000 0041	Changed
7002 0003	Changed
7002 0004	New
7006 0100	New
7021 1002	Changed
7021 1003	Changed
7041 0052	New
7056 1219	New
0999 0004	Removed (applies only to PP8600 and other DCD managed devices)
3010 0801	New
3010 0802	New
3010 0803	New
3010 0820	New
3010 0821	New
MESSAGE Alarms	
0999 0100	New
7006 0009	New
7006 0101	New
7006 0102	New
7006 0103	New
7006 0104	New
7006 0105	New
7061 0001	New

8. References

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2. Passport 15000 for Universal Access – AAL1 (SN06) Integrated Solution Specification, Issue 3.04, Oct 22, 2002
3. NTP 241-6001-501 Nortel Networks Multiservice Data Manager Alarms Reference, 15.2D1, Oct 2004.
4. NTP 241-6001-309 Preside MDM Management Data Provider User Guide, 14.3RSUP, 2003.
5. Supernode Data Manager - Log Applications Enhancement Design Summary (DSUM), 2002.
6. NTP NN10600-500 Multiservice Switch 7400/15000/20000 Alarms Reference, 6.1S2, Nov 2004
7. NTP NN10092-911 Nortel Networks Multiservice Switch 15000 Media Gateway 15000 and Preside MDM in Succession Networks Fault Management Overview PT-AAL1/UA-AAL1/UA-IP, SN07S1, Dec 2004

Appendix D: USP Operational Measurements

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ATM Driver Messaging, Plane 1 CRC Error Count	This OM measures the number of Plane 1 CRC errors.
Accumulation OM	AS Master, BICC Discard Count	This OM measures the number of BICC origination messages that were discarded due to Core Overload Control.
Accumulation OM	AS Master, BSSAP Discard Count	This OM measures the number of SCCP connection request messages for the BSSAP subsystem that were discarded due to Core Overload Control.
Accumulation OM	AS Master, Core Overload Duration	This OM measures the total time, in seconds, that the Core was in Overload.
Accumulation OM	AS Master, ISUP Discard Count	This OM measures the number of ISUP origination messages that were discarded due to Core Overload Control.
Accumulation OM	AS Master, RANAP Discard Count	This OM measures the number of SCCP connection request messages for the RANAP subsystem that were discarded due to Core Overload Control.
Accumulation OM	AS Master, TUP Discard Count	This OM measures the number of TUP origination messages that were discarded due to Core Overload Control.
Accumulation OM	ASP Path Management, Path Down Time	This OM measures the total time that a Path was in the Down state.
Accumulation OM	ASP Path Management, Path entered Down state	This OM measures the total number of times per measurement period that a Path entered the Down state.
Accumulation OM	ASP Path Management, Path entered Restoring state	This OM measures the total number of times per measurement period that a Path entered the Restoring state.
Accumulation OM	ASP Path Management, Path entered Up state	This OM measures the total number of times per measurement period that a Path entered the Up state.
Accumulation OM	ASP Path Management, Path Restore Time	This OM measures the total time that a Path was in the Restoring state.
Accumulation OM	ASP Path Management, Path Up Time	This OM measures the total time that a Path was in the Up state.
Accumulation OM	ASP Path Traffic, Discarded MSUs Count	This OM measures the total number of received MSUs on an ASP Path which were discarded because the Network Appearance (or System Identity) associated with the incoming message was not found on the USP
Accumulation OM	ASP Path Traffic, Discarded MTP3b MSUs Count	This OM measures the total number of received MTP3B MSUs (> 272 octets) on an ASP Path which were discarded because the outgoing link is not MTP3B capable. This doesn't apply to SCCP/LUDT messages since on IPS7 Paths, these messages will be segmented and then sent out. For non-SCCP messages such as BICC messages > 272 octets, this will apply.
Accumulation OM	ASP Path Traffic, Originated MSUs Count	This OM measures the number of originated MSUs (MSUs that contain the PC or capability code for the USP in the OPC field) that are successfully passed to the ASP Path for transmission (for example, network management messages).
Accumulation OM	ASP Path Traffic, Received MSUs Count	This OM measures the total number of received MSUs on an ASP Path

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ASP Path Traffic, Sent MSUs Count	This OM measures the number of through-switched MSUs (MSUs that do not contain the PC or capability code for the USP in either the OPC or DPC) that are acknowledged, translated, and successfully passed to the ASP Path for transmission.
Accumulation OM	ASP Path Traffic, Terminated MSUs Count	This OM measures the number of terminated MSUs (acknowledged, incoming MSUs that contain the PC or capability code of the USP in the DPC field) received.
Accumulation OM	ASP Path Utilization, DAUD Received Count	This OM measures the number of destination audit (DAUD) messages transmitted.
Accumulation OM	ASP Path Utilization, DAVA Transmitted Count	This OM measures the number of destination available (DAVA) messages transmitted.
Accumulation OM	ASP Path Utilization, DUNA Transmitted Count	This OM measures the number of destination unavailable messages transmitted.
Accumulation OM	ASP Path Utilization, DUPU Transmitted Count	This OM measures the number of destination user part unavailable messages transmitted.
Accumulation OM	ASP Path Utilization, SCON Transmitted Count	This OM measures the number of Signaling Congestion (SCON) messages transmitted.
Accumulation OM	ATM Driver Messaging, Duplicate Messages Count	This OM measures the number of duplicate messages.
Accumulation OM	ATM Driver Messaging, IP Message Count	This OM measures the number of incoming IP messages.
Accumulation OM	ATM Driver Messaging, Plane 1 Messages Count	This OM measures the number of incoming Plane 1 messages.
Accumulation OM	ATM Driver Messaging, Plane 2 CRC Error Count	This OM measures the number of Plane 2 CRC errors.
Accumulation OM	ATM Driver Messaging, Plane 2 Messages Count	This OM measures the number of incoming Plane 2 messages.
Accumulation OM	ATM Driver Messaging, Raw Cell Count	This OM measures the number of raw cells. Raw cells are typically bad cells or OAM cells.
Accumulation OM	ATM Driver Messaging, Raw Message Count	This OM measures the number of ATM raw messages. Raw messages are messages not assigned to a protocol.
Accumulation OM	ATM Driver Messaging, Sequence Number Reset Count	This OM measures the number of times the sequence numbers are reset due to the receipt of five consecutive duplicate cells.
Accumulation OM	ATM Driver Messaging, SSCOP Message Count	This OM measures the number of incoming SSCOP messages.
Accumulation OM	ATM Link Traffic, Discarded cells with HEC Viol.	This OM measures the number of ATM cells discarded due to Header Error Control (HEC) violations.
Accumulation OM	ATM Link Traffic, Discarded cells with Prot. Errs	This OM measures the number of cells discarded due to Protocol (ATM-Layer Header) Errors.
Accumulation OM	ATM Link Traffic, In NDC-valid cells on HSL VCL	This OM measures the number of incoming Network Data Collection (NDC) valid cells on the High Speed Links (HSL) VCL.
Accumulation OM	ATM Link Traffic, Incoming ATM UI cells	This OM measures the number of incoming ATM User Information (UI) cells.
Accumulation OM	ATM Link Traffic, OCD Anomalies	This OM measures the number of Out of Cell Delineation (OCD) anomalies.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ATM Link Traffic, Out NDC-valid cells on HSL VCL	This OM measures the number of outgoing Network Data Collection (NDC) valid cells on the High Speed Links (HSL) VCL.
Accumulation OM	ATM Link Traffic, Outgoing ATM UI cells	This OM measures the number of outgoing ATM User Information (UI) cells.
Accumulation OM	BICC Received Message Counts, BICC Call P Received Count	This OM measures the number of BICC call processing messages received from the SS7 Network.
Accumulation OM	BICC Received Message Counts, BICC Error No OPC Route	This OM measures the number of BICC messages discarded as a result of not being able to find the associated OPC route for the received BICC message
Accumulation OM	BICC Received Message Counts, BICC Error No Path	This OM measures the number of BICC messages discarded as a result of not being able to find an inservice path to a given AS.
Accumulation OM	BICC Received Message Counts, BICC Error No Route	This OM measures the number of BICC messages discarded as a result of not being able to find a route to a given AS.
Accumulation OM	BICC Received Message Counts, BICC Maint Received Count	This OM measures the number of BICC maintenance messages received from the SS7 Network.
Accumulation OM	BICC Received Message Counts, Wrong NE Received Count	This OM measures the number of BICC messages discarded as a result of not receiving the message for a SG Network Element
Accumulation OM	Carrier, Far End Line - Errored Seconds	This OM measures the Far End Performance data: Far End Errored Seconds - Line.
Accumulation OM	Carrier, Far End P - Sev Err Frm/AIS Sec	This OM measures the Far End Performance data: Far End Severely Errored Frame/AIS Seconds - Path.
Accumulation OM	Carrier, Far End P - Severely Err Secs	This OM measures the Far End Performance data: Far End Severely Errored Seconds - Path.
Accumulation OM	Carrier, Far End P - Unavailable Seconds	This OM measures the Far End Performance data: Far End Unavailable Seconds - Path.
Accumulation OM	Carrier, Far End Path - Code Violations	This OM measures the Far End Performance data: Far End Code Violations - Path.
Accumulation OM	Carrier, Far End Path - Controlled Slips	This OM measures the Far End Performance data: Far End Controlled Slips - Path
Accumulation OM	Carrier, Far End Path - Errored Seconds	This OM measures the Far End Performance data: Far End Errored Seconds - Path.
Accumulation OM	Carrier, Far End Path - Failure Count	This OM measures the Far End Performance data: Far End Failure Count - Path.
Accumulation OM	Carrier, Line - Code Violations	This OM measures the Near End Performance data: Code Violations - Line.
Accumulation OM	Carrier, Line - Errored Seconds	This OM measures the Near End Performance data: Errored Seconds - Line.
Accumulation OM	Carrier, Line - Loss of Signal Seconds	This OM measures the Near End Performance data: Loss of Signal Seconds - Line. All performance parameters including this parameter are defined in ANSI T1.231-1997 'Digital Hierarchy - Layer 1 in-Service Digital Transmission Performance Monitoring'.
Accumulation OM	Carrier, Line - Severely Errored Seconds	This OM measures the Near End Performance data: Severely Errored Seconds - Line.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Carrier, P - Severely Err Frame/AIS Secs	This OM measures the Near End Performance data: Severely Errored Frame/AIS Seconds - Path.
Accumulation OM	Carrier, Path - AIS Seconds	This OM measures the Near End Performance data: AIS Seconds - Path.
Accumulation OM	Carrier, Path - Code Violations	This OM measures the Near End Performance data: Code Violations - Path.
Accumulation OM	Carrier, Path - Errored Seconds	This OM measures the Near End Performance data: Errored Seconds - Path.
Accumulation OM	Carrier, Path - Failure Count	This OM measures the Near End Performance data: Failure Count - Path.
Accumulation OM	Carrier, Path - Severely Errored Seconds	This OM measures the Near End Performance data: Severely Errored Seconds - Path.
Accumulation OM	Carrier, Path - Unavailable Seconds	This OM measures the Near End Performance data: Unavailable Seconds - Path.
Accumulation OM	Gateway Screening Results, Disallowed Cld Party Addr Count	This OM measures the number of MSUs rejected on a particular link, because of disallowed SCCP Called Party Addresses.
Accumulation OM	Gateway Screening Results, Disallowed ISUP Count	This OM measures the number of MSUs rejected on a particular link, because of a disallowed ISDN User Part message type.
Accumulation OM	Gateway Screening Results, Disallowed Trans Type Count	This OM measures the number of MSUs rejected on a particular link, because of a disallowed SCCP GTT type.
Accumulation OM	Gateway Screening Results, Invalid Affct Destination Count	This OM measures the number of MSUs rejected on a particular link, because the destination fields in signaling-routeset-test, TFx/TCx, or TFC messages from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	Gateway Screening Results, Invalid Affct PC-SSN Count	This OM measures the number of MSUs rejected on a particular link, because the affected PCs in SCCP subsystem-prohibited (SSP) and subsystem-allowed (SSA) messages and an invalid PC or SSN in SCCP subsystem-status-test (SST) messages from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	Gateway Screening Results, Invalid Cng Party Addr Count	This OM measures the number of MSUs rejected on a particular link, because the Calling Party Addresses (PC or SSN) from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	Gateway Screening Results, Invalid DPC Count	This OM measures the number of MSUs rejected on a particular link, because the DPCs from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	Gateway Screening Results, Invalid OPC Count	This OM measures the number of MSUs rejected on a particular link, because the OPCs from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	Gateway Screening Results, Invalid SIO Count	This OM measures the number of MSUs rejected on a particular link, because the SIOs from the MSUs did not pass GWS checking based on the provisioned criteria.
Accumulation OM	GTT Type, GTTs Not Performed Count	This OM measures the total number of GTTs that could not be performed for a particular translation type (all reasons).
Accumulation OM	GTT Type, GTTs Performed Count	This OM measures the total number of MSUs that successfully completed GTT (that is, a match was found for the global title) for a particular translation type.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	GTT Type, No Translation for Addr Count	This OM measures the number of times the Address Not Found error was encountered for a particular translation type (that is, there was no match found for the global title in the GTT table).
Accumulation OM	ISUP Received Message Counts, ACM Received Count	This OM measures the number of ISUP Address Complete Messages (ACM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ALT Received Count	This OM measures the number of ISUP Altering Messages (ALT) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ANM Received Count	This OM measures the number of ISUP Answer Messages (ANM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, BLA Received Count	This OM measures the number of ISUP Blocking Acknowledgement (BLA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, BLO Received Count	This OM measures the number of ISUP Blocking Messages (BLO) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CCR Received Count	This OM measures the number of ISUP Continuity Check Request Messages (CCR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CFN Received Count	This OM measures the number of ISUP Confusion Messages (CFN) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CGB Received Count	This OM measures the number of ISUP Circuit Group Blocking Messages (CGB) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CGBA Received Count	This OM measures the number of ISUP Circuit Group Blocking Acknowledgement Messages (CGBA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CGU Received Count	This OM measures the number of ISUP Circuit Group Unblocking Messages (CGU) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CGUA Received Count	This OM measures the number of ISUP Circuit Group Unblocking Acknowledgement Messages (CGUA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CMC Received Count	This OM measures the number of ISUP Call Modification Completed Messages (CMC) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CMR Received Count	This OM measures the number of ISUP Call Modification Request Messages (CMR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CMRJ Received Count	This OM measures the number of ISUP Call Modification Rejected Messages (CMRJ) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CON Received Count	This OM measures the number of ISUP Connect Messages (CON) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, COT Received Count	This OM measures the number of ISUP Continuity Test Messages (COT) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CPG Received Count	This OM measures the number of ISUP Call Progress Messages (CPG) received from the SS7 Network. (Only for SG Identities)

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ISUP Received Message Counts, CQM Received Count	This OM measures the number of ISUP Circuit Query Messages (CQM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CQR Received Count	This OM measures the number of ISUP Circuit Query Response Messages (CQR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CRA Received Count	This OM measures the number of ISUP Circuit Reservation Acknowledgement Messages (CRA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CRG Received Count	This OM measures the number of ISUP Charge Information Messages (CRG) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CRM Received Count	This OM measures the number of ISUP Circuit Reservation Messages (CRM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CSVR Received Count	This OM measures the number of ISUP Closed User Group Selection and Validation Request Messages (CSVR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CSVS Received Count	This OM measures the number of ISUP Closed User Group Selection and Validation Response Messages (CSVS) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CVR Received Count	This OM measures the number of ISUP Circuit Validation Response Messages (CVR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, CVT Received Count	This OM measures the number of ISUP Circuit Validation Test Messages (CVT) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, DRS Received Count	This OM measures the number of ISUP Delayed Release Messages (DRS) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, EXM Received Count	This OM measures the number of ISUP Exit Messages (EXM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FAA Received Count	This OM measures the number of ISUP Facility Accepted Messages (FAA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FAC Received Count	This OM measures the number of ISUP Facility Messages (FAC) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FAD Received Count	This OM measures the number of ISUP Facility Deactivated Messages (FAD) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FAI Received Count	This OM measures the number of ISUP Facility Information Messages (FAM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FAR Received Count	This OM measures the number of ISUP Facility Request Messages (FAR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, FOT Received Count	This OM measures the number of ISUP Forward Transfer Messages (FOT) received from the SS7 Network. (Only for SG Identities)

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ISUP Received Message Counts, FRJ Received Count	This OM measures the number of ISUP Facility Rejected Messages (FRJ) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, GRA Received Count	This OM measures the number of ISUP Circuit Group Reset Acknowledgement Messages (GRA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, GRS Received Count	This OM measures the number of ISUP Circuit Group Reset Messages (GRS) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, IAM Received Count	This OM measures the number of ISUP Initial Address Message Messages (IAM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, IAMN1 Received Count	This OM measures the number of ISUP Initial Address Message Not Priority One Messages (IAMN1) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, IDR Received Count	This OM measures the number of ISUP Identification Request Messages (IDR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, INF Received Count	This OM measures the number of ISUP Information Messages (INF) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, INR Received Count	This OM measures the number of ISUP Information Request Messages (INR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, IRS Received Count	This OM measures the number of ISUP Identification Response Messages (IRS) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ISUP Error No AS for OPC/CIC	This OM measures the number of ISUP messages discarded as a result of not being able to find a valid AS for a given OPC/CIC. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ISUP Error No OPC/CIC Data	This OM measures the number of ISUP messages discarded as a result of missing database entry for a given OPC/CIC. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ISUP Error No Path	This OM measures the number of ISUP messages discarded as a result of not being able to find a path to a given AS. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ISUP Error No Route	This OM measures the number of ISUP messages discarded as a result of not being able to find a route to a given AS. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, ISUP Error Unknown Message	This OM measures the number of unrecognized ISUP Messages received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, LOP Received Count	This OM measures the number of ISUP Loop Prevention Messages (LOP) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, LPA Received Count	This OM measures the number of ISUP Loop Back Acknowledgement Messages (LPA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, NRM Received Count	This OM measures the number of ISUP Network Resource Management Messages (NRM) received from the SS7 Network. (Only for SG Identities)

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	ISUP Received Message Counts, PAM Received Count	This OM measures the number of ISUP Pass Along Message Messages (PAM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, PRG Received Count	This OM measures the number of ISUP Progress Messages (PRG) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, REL Received Count	This OM measures the number of ISUP Release Messages (REL) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, RES Received Count	This OM measures the number of ISUP Resume Messages (RES) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, RLC Received Count	This OM measures the number of ISUP Release Complete Messages (RLC) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, RPM Received Count	This OM measures the number of ISUP Reconfiguration Progress Message Messages (ACM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, RSC Received Count	This OM measures the number of ISUP Reset Circuit Messages (RSC) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, SAM Received Count	This OM measures the number of ISUP Subsequent Address Message Messages (SAM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, SGM Received Count	This OM measures the number of ISUP Segmentation Messages (SGM) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, SUS Received Count	This OM measures the number of ISUP Suspend Messages (SUS) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, UBA Received Count	This OM measures the number of ISUP Unblocking Acknowledgement Messages (UBA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, UBL Received Count	This OM measures the number of ISUP Unblocking Messages (UBL) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, UCIC Received Count	This OM measures the number of ISUP Unequipped Circuit Identification Code Messages (UCIC) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, UPA Received Count	This OM measures the number of ISUP User Part Available Messages (UPA) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, UPT Received Count	This OM measures the number of ISUP User Part Test Messages (UPT) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, USR Received Count	This OM measures the number of ISUP User-to-User Information Messages (USR) received from the SS7 Network. (Only for SG Identities)
Accumulation OM	ISUP Received Message Counts, Wrong NE Received Count	This OM measures the number of ISUP messages discarded as a result of not receiving the message from a SG Network Element.
Accumulation OM	Link Faults and Performance, Number of negative ack.received	1.9 of Q.752 This OM measures number of negative acknowledgements received on the link indicating that the far end did not receive the message correctly.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Link Faults and Performance, Number of SUs received in error	1.8 of Q.752 This OM measures signaling units on a link, received in error.
Accumulation OM	Link Faults and Performance, Octets Retransmitted	3.2 of Q.752 This OM counts number of bytes that are retransmitted. This count includes SIO, SIF, opening flags and check bits.
Accumulation OM	Link Faults and Performance, SL alignment or proving failure	1.7 of Q.752 This OM measures link synchronization failures during alignment or proving and indicates a signaling data link fault which prevents the SdL moving into service.
Accumulation OM	Link Faults and Performance, SL failure-Abnormal FIBR/BSNR	1.3 of Q.752 This OM measures link synchronization failures and indicates complex failures in transmission or an intermittent hardware fault or even designer error.
Accumulation OM	Link Faults and Performance, SL failure-All reasons	1.2 of Q.752 This OM measures in_service link failures due to any reason. It does not count link activation failures.
Accumulation OM	Link Faults and Performance, SL failure-Exc. delay of ack	1.4 of Q.752 This OM measures link synchronization failures and indicates serious disturbances or an interruption of signaling data link.
Accumulation OM	Link Faults and Performance, SL failure-Exc. duration of cong.	1.6 of Q.752 This OM measures link synchronization failures caused by prolonged congestion on the link.
Accumulation OM	Link Faults and Performance, SL failure-Excessive error rate	1.5 of Q.752 This OM measures link synchronization failures and indicates noisy link.
Accumulation OM	Link Faults and Performance, SL failure-Other reasons	This OM measures link synchronization failures due to reasons other than Abnormal FIBR/BSNR, Excessive delay of ack, Excessive error rate or Excessive duration of congestion .
Accumulation OM	Link Management, Changeover Procedure Count	This OM measures the number of times the changeover procedure is used to move traffic from a link taken out of service to one or more alternate in-service links.
Accumulation OM	Link Management, Far End Mgmt Inhibit Count	This OM measures the number of times a link was successfully inhibited from the far end.
Accumulation OM	Link Management, Level 1 Congestion Count	This OM measures the number of times a link entered Level 1 congestion from no congestion.
Accumulation OM	Link Management, Level 1 Congestion Duration	This OM measures the total time, in seconds, a link was in Level 1 congestion.
Accumulation OM	Link Management, Level 2 Congestion Count	This OM measures the number of times a link entered Level 2 congestion from Level 1 or no congestion.
Accumulation OM	Link Management, Level 2 Congestion Duration	This OM measures the total time, in seconds, a link was in Level 2 congestion.
Accumulation OM	Link Management, Level 3 Congestion Count	This OM measures the number of times a link entered Level 3 congestion from Level 1, Level 2, or no congestion.
Accumulation OM	Link Management, Level 3 Congestion Duration	This OM measures the total time, in seconds, a link was in Level 3 congestion.
Accumulation OM	Link Management, Link Available Duration	This OM measures the total time, in seconds, a link was available to MTP Level 3.
Accumulation OM	Link Management, Link Deactivated Duration	This OM measures the total time, in seconds, a link was manually made unavailable to MTP Level 3 by deactivation.
Accumulation OM	Link Management, Link Local Inhibit Duration	This OM measures the total time, in seconds, a link was manually made unavailable to MTP Level 3 by local inhibition.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Link Management, Link Remote Inhibit Duration	This OM measures the total time, in seconds, a link was manually made unavailable to MTP Level 3 by remote inhibition.
Accumulation OM	Link Management, Near End Forced Unavailable Count	This OM measures the number of times a link was manually made unavailable to MTP Level 3.
Accumulation OM	Link Management, RPO Count	This OM measures the number of times a link became unavailable to MTP Level 3 after the system received SIPO from the far end. This OM is not applicable for SAAL-based High Speed Links.
Accumulation OM	Link Management, RPO Cumulative Duration	This OM measures the total time, in seconds, that a link was unavailable to MTP Level 3 after the system received SIPO from the far end. This OM is not applicable for SAAL-based High Speed Links.
Accumulation OM	Link Management, Unavailable Duration	This OM measures the total time, in seconds, a link was unavailable (automatically or manually made unavailable) to MTP Level 3.
Accumulation OM	Link Traffic, MSUs Received Count	This OM measures the number of MSUs received on a link, including those MSUs for which retransmission was requested in the SS7 network. For the SAAL-based High Speed Links, the above description applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, MSUs Requiring GTT Count	This OM measures the number of incoming MSUs that require GTT, regardless of the outcome of any GWS operation. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, MSUs Transmitted Count	This OM measures the number of MSUs transmitted to the far end, including those MSUs that were retransmitted in the SS7 network. For the SAAL-based High Speed Links, the above description applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, MTP3b Discard Count	This OM measures the number of received MTP3B MSUs (> 272 octets) which were discarded because the outgoing link is not MTP3b capable. This OM only applies to MTP3B links since non-MTP3B links are not capable of receiving message > 272 octets.
Accumulation OM	Link Traffic, Network Indicator Discard Count	This OM measures the number of received MSUs which were discarded due to a mismatch between the MSU's network indicator (NI) and the NI provisioned in this system. The NI may be provisioned on a network appearance basis. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Octets Received Count	This OM measures the total number of octets actually received for all MSUs counted in the MSUs Received Count OM, before the octets are removed in MTP Level 2 processing for the SS7 network. For the MTP2-based links, this count accounts for MTP User Data + MTP L3 Data + MTP L2 Data octets. For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Link Traffic, Octets Requiring GTT Count	This OM measures the total number of MSU octets received for MSUs requiring GTT, including octets removed in MTP Level 2 processing. For the MTP2-based links, this count applies to MSU octets (MTP User Data + MTP L3 Data + MTP L2 Data octets). For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).
Accumulation OM	Link Traffic, Octets Transmitted Count	This OM measures the total number of octets actually transmitted for all MSUs counted in the MSUs Transmitted Count OM, including octets added in MTP Level 2 processing for the SS7 network. For the MTP2-based links, this count accounts for MTP User Data + MTP L3 Data + MTP L2 Data octets. For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).
Accumulation OM	Link Traffic, OPC Screening Discard Count	This OM measures the number of received MSUs which were discarded because the OPC in the MSU matches the pointcode of this system ID or the OPC in the MSU matches the mate's pointcode but the MSU is not received from the C-link. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Originated MSU Octets Count	This OM measures the total number of originated MSU octets (MSU that contains the PC or capability code of this system in the OPC field) transmitted, including those octets that were added in MTP Level 2 processing for the SS7 network. For the MTP2-based links, this count accounts for MTP User Data + MTP L3 Data + MTP L2 Data octets. For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).
Accumulation OM	Link Traffic, Originated MSUs Count	This OM measures the number of originated MSUs (MSUs that contain the PC or capability code of this system in the OPC field) that are successfully passed to Level 2 for transmission (for example, network management messages and MSUs completing GTT) in the SS7 network. For the MTP2-based links, this count applies to MSU octets (MTP User Data + MTP L3 Data + MTP L2 Data octets). For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).
Accumulation OM	Link Traffic, Pri 0 MSU Inbd Discard Count	This OM measures the number of priority 0 MSUs discarded by the inbound link due to congestion at levels 1, 2, or 3 in the transmit buffers for the outbound link in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 0 MSU Outbd Discard Count	This OM measures the number of priority 0 MSUs discarded due to congestion at levels 1, 2, or 3 in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 1 MSU Inbd Discard Count	This OM measures the number of priority 1 MSUs discarded by the inbound link due to congestion at levels 2 or 3 in the transmit buffers in the outbound link in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Link Traffic, Pri 1 MSU Outbd Discard Count	This OM measures the number of priority 1 MSUs discarded due to congestion at levels 2 or 3 in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 2 MSU Inbd Discard Count	This OM measures the number of priority 2 MSUs discarded by the inbound link due to congestion at level 3 in the transmit buffers for the outbound link in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 2 MSU Outbd Discard Count	This OM measures the number of priority 2 MSUs discarded due to level 3 congestion in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 3 MSU Inbd Discard Count	This OM measures the number of priority 3 MSUs discarded by the inbound link due to full transmit buffers for the outbound link in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Pri 3 MSU Outbd Discard Count	This OM measures the number of priority 3 MSUs discarded due to a full transmit buffer in the SS7 network. For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data) instead of MSUs (MTP User Data + MTP L3 Data + MTP L2 Data).
Accumulation OM	Link Traffic, Terminated MSU Octets Count	This OM measures the total number of terminated MSU octets (acknowledged, incoming MSU that contains the PC or capability code of this system in the DPC field) received, including octets removed in MTP Level 2 processing for the SS7 network. For the MTP2-based links, this count accounts for MTP User Data + MTP L3 Data + MTP L2 Data octets. For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).
Accumulation OM	Link Traffic, Terminated MSUs Count	This OM measures the number of terminated MSUs (acknowledged, incoming MSUs that contain the PC or capability code of this system in the DPC field) received from the SS7 network. For the MTP2-based links, this count applies to MSUs (MTP User Data + MTP L3 Data + MTP L2 Data). For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data).
Accumulation OM	Link Traffic, Through-Switched MSUs Count	This OM measures the number of through-switched MSUs (MSUs that do not contain the PC or capability code of this system in either the OPC or DPC) that are acknowledged, translated, and successfully passed to MTP Level 2 for transmission in the SS7 network. For the MTP2-based links, this count applies to MSUs (MTP User Data + MTP L3 Data + MTP L2 Data). For the SAAL-based High Speed Links, this count applies to Messages (MTP User Data + MTP L3 Data).
Accumulation OM	Link Traffic, Thru-Switched MSU Octets Count	This OM measures the total number of through-switched MSU octets (MSU that does not contain the PC or capability code of this system in either the OPC or DPC) received, including those octets that were added in MTP Level 2 processing for the SS7 network. For the MTP2-based links, this count accounts for MTP User Data + MTP L3 Data + MTP L2 Data octets. For the SAAL-based High Speed Links, this count applies to Message octets (MTP User Data + MTP L3 Data octets).

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Linkset Utilization, Linkset Inactivity Duration	This OM measures the total time, in seconds, that all links in the linkset were unavailable (automatically or manually made unavailable) to MTP Level 3.
Accumulation OM	Linkset Utilization, RST Received Count	This OM measures the number of restart (RST) messages received.
Accumulation OM	Linkset Utilization, RST Transmitted Count	This OM measures the number of restart (RST) messages transmitted.
Accumulation OM	Linkset Utilization, TFA and TCA Received Count	This OM measures the number of transfer-allowed (TFA) and transfer-cluster-allowed (TCA) messages received.
Accumulation OM	Linkset Utilization, TFA and TCA Transmitted Count	This OM measures the number of transfer-allowed (TFA) and transfer-cluster-allowed (TCA) messages transmitted.
Accumulation OM	Linkset Utilization, TFC Received Count	This OM measures the number of transfer-controlled (TFC) messages received by the gateway, listed by the originating network.
Accumulation OM	Linkset Utilization, TFC Transmitted Count	This OM measures the number of transfer-controlled (TFC) messages transmitted by the gateway, listed by the destination network.
Accumulation OM	Linkset Utilization, TFP and TCP Received Count	This OM measures the number of transfer-prohibited (TFP) and transfer-cluster-prohibited (TCP) messages received.
Accumulation OM	Linkset Utilization, TFP and TCP Transmitted Count	This OM measures the number of transfer-prohibited (TFP) and transfer-cluster-prohibited (TCP) messages transmitted.
Accumulation OM	Linkset Utilization, TFR and TCR Received Count	This OM measures the number of transfer-restricted (TFR) and transfer-cluster-restricted (TCR) messages received.
Accumulation OM	Linkset Utilization, TFR and TCR Transmitted Count	This OM measures the number of transfer-restricted (TFR) and transfer-cluster-restricted (TCR) messages transmitted.
Accumulation OM	Linkset Utilization, UPU Received Count	This OM measures the number of user part unavailable messages received.
Accumulation OM	Log Server, Critical Alarms Ack Count	This OM measures the number of critical alarms acknowledged by the Log server.
Accumulation OM	Log Server, Critical Alarms Cleared Count	This OM measures the number of critical alarms cleared by the Log server.
Accumulation OM	Log Server, Critical Alarms Received Count	This OM measures the number of critical alarms received by the Log server.
Accumulation OM	Log Server, Major Alarms Ack Count	This OM measures the number of major alarms acknowledged by the Log server.
Accumulation OM	Log Server, Major Alarms Cleared Count	This OM measures the number of major alarms cleared by the Log server.
Accumulation OM	Log Server, Major Alarms Received Count	This OM measures the number of major alarms received by the Log server.
Accumulation OM	Log Server, Minor Alarms Ack Count	This OM measures the number of minor alarms acknowledged by the Log server.
Accumulation OM	Log Server, Minor Alarms Cleared Count	This OM measures the number of minor alarms cleared by the Log server.
Accumulation OM	Log Server, Minor Alarms Received Count	This OM measures the number of minor alarms received by the Log server.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	NP Database Totals, Add/Change Updates	This OM measures the total number of add/change updates received from the LSMS.
Accumulation OM	NP Database Totals, Delete Updates	This OM measures the total number of delete updates received from the LSMS.
Accumulation OM	NP Database Totals, Emergency Updates	This OM measures the total number of application database updates received from the USP debug facility and can only be displayed from the debug facility Note: Debug is only accessible by Nortel Networks Support Personnel.
Accumulation OM	NP Database Totals, Operational Time	This OM measures the total time within the OM interval that the NPDB was operational.
Accumulation OM	NP Database Totals, Retransmitted Updates	This OM measures the total number of updates retransmitted within the system.
Accumulation OM	NP INAP Totals, INAP CdPN Normalize Failures	This OM measures the number of called party number normalization failures.
Accumulation OM	NP INAP Totals, INAP Indeterminate Queries	This OM measures the number of INAP indeterminate queries.
Accumulation OM	NP INAP Totals, INAP Invalid Context	This OM measures the number of INAP queries with invalid application context.
Accumulation OM	NP INAP Totals, INAP Queries Non-Ported	This OM measures the number of INAP non ported number queries received.
Accumulation OM	NP INAP Totals, INAP Queries Ported	This OM measures the number of INAP ported number queries received.
Accumulation OM	NP INAP Totals, INAP Queries Ported Across	This OM measures the number of INAP ported across number queries received.
Accumulation OM	NP INAP Totals, INAP Queries Ported In	This OM measures the number of INAP ported in number queries received.
Accumulation OM	NP INAP Totals, INAP Queries Ported Out	This OM measures the number of INAP ported out number queries received.
Accumulation OM	NP INAP Totals, INAP Queries Unknown	This OM measures the number of INAP queries received for numbers with unknown ported status.
Accumulation OM	NP INAP Totals, INAP Query Failures	This OM measures the number of INAP query failures.
Accumulation OM	NP INAP Totals, INAP Query Time Outs	This OM measures the total number of INAP query time outs.
Accumulation OM	NP INAP Totals, INAP Total Queries	This OM measures the total number of INAP queries received.
Accumulation OM	NP LSSI Totals, MR Query Received	This OM measures the total number of MR queries received by an application database system node.
Accumulation OM	NP LSSI Totals, NP Query Received	This OM measures the total number of NP queries received by an application database system node.
Accumulation OM	NP NETID Totals, MR Failures	This OM measures the total number of MR query failures identified. The MR Failures value is based upon the Network ID of a received SCCP message.
Accumulation OM	NP NETID Totals, MR GTT Overrides	This OM measures the total number of MR queries receiving GTT override. The MR GTT Overrides value is based upon the Network ID of a received SCCP message.
Accumulation OM	NP NETID Totals, MR Loop Detection	This OM measures the total number of potential looping detections. The MR Loop Detection value is based upon the Network ID of a received SCCP message.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	NP NETID Totals, MR Non-Ported	This OM measures the total number of MR queries received for non-ported numbers. The MR Non-Ported value is based upon the Network ID of a received SCCP message.
Accumulation OM	NP NETID Totals, MR Ported	This OM measures the total number of MR queries received for ported numbers. The MR Ported value is based upon the Network ID of a received SCCP message.
Accumulation OM	NP NETID Totals, MR Total	This OM measures the total number of MR queries received. The MR Total value is based upon the Network ID of a received SCCP message.
Accumulation OM	NP NETID Totals, NP Failures	This OM measures the total number of NP query failures. The NP Failures value is based upon the Network ID of a received TCAP message.
Accumulation OM	NP NETID Totals, NP Non-Ported	This OM measures the total number of NP queries received for non-ported numbers. The NP Non-Ported value is based upon the Network ID in the TCAP message.
Accumulation OM	NP NETID Totals, NP Ported	This OM measures the total number of NP queries received for ported numbers. The NP Ported value is based upon the Network ID contained in the NETID of a received TCAP message.
Accumulation OM	NP NETID Totals, NP Total	This OM measures the total number of NP queries received. The NP Total value is based upon the Network ID of a received TCAP message.
Accumulation OM	NP Service Rule Totals, Service Rule Match	This OM measures the total number of matches for the Service Rule.
Accumulation OM	NP Service Rule Totals, Service Rule Mismatch	This OM measures the total number of mismatches for all the Service Rules.
Accumulation OM	NP Service Totals, Database Mismatches	This OM measures the total number of Database mismatches. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, GTA Normalization Failures	This OM measures the total number of GTA number normalization failures. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, GTA Replacement	This OM measures the total number of service queries receiving GTA replacement. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, GTT Overrides	This OM measures the total number of service queries receiving GTT override. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, RN Check Failures	This OM measures the total number of RN check failures on incoming messages using the NoA/RN table. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, Service Failures	This OM measures the total number of Service query failures identified. Service query failures occur when the query logic is unable to process the Service query. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, Service Non-Ported	This OM measures the total number of Service queries received for non-ported numbers. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, Service Ported	This OM measures the total number of Service queries received for ported numbers. The Service Ported value is the total of OMR_SERVICE_PORTED_IN, OMR_SERVICE_PORTED_OUT, and OMR_SERVICE_PORTED_ACROSS This OM is collected by Service ID.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	NP Service Totals, Service Total	This OM measures the total number of Service queries received. This OM is collected by Service ID.
Accumulation OM	NP Service Totals, TT Replacement	This OM measures the total number of service queries receiving TT replacement. This OM is collected by Service ID.
Accumulation OM	NP SMI Totals, High Congestion	This OM measures the total number of times that the high level congestion state was entered.
Accumulation OM	NP SMI Totals, Login Failures	This OM measures the total number of failed LSMS login attempts.
Accumulation OM	NP SMI Totals, Low Congestion	This OM measures the total number of times that the low level congestion state was entered.
Accumulation OM	NP SMI Totals, Medium Congestion	This OM measures the total number of times that the medium level congestion state was entered.
Accumulation OM	NP SMI Totals, Messages Invalid	This OM measures the total number of invalid messages received from the LSMS.
Accumulation OM	NP SMI Totals, Messages Received	This OM measures the total number of messages received from the LSMS.
Accumulation OM	NP SMI Totals, Messages Rejected	This OM measures the total number of received messages from the LSMS that were rejected.
Accumulation OM	NP SRF Totals, SRF Ind. Routing with Ref. Sub.	This OM measures the number of SRF messages relayed to the subscription network via indirect routing with reference to the subscription network.
Accumulation OM	NP SRF Totals, SRF No NP DB Record Found	This OM measures the number of SRF queries received when no record is found in the NP DB.
Accumulation OM	NP SRF Totals, SRF Queries Non-Ported	This OM measures the number of SRF non ported number queries received.
Accumulation OM	NP SRF Totals, SRF Queries Ported Across	This OM measures the number of SRF ported across number queries received.
Accumulation OM	NP SRF Totals, SRF Queries Ported In	This OM measures the number of SRF ported in number queries received.
Accumulation OM	NP SRF Totals, SRF Queries Ported Out	This OM measures the number of SRF ported out number queries received.
Accumulation OM	NP SRF Totals, SRF Queries Unknown	This OM measures the number of SRF queries received for numbers with unknown ported status.
Accumulation OM	NP SRF Totals, SRF Query Failures	This OM measures the number of SRF query failures.
Accumulation OM	NP SRF Totals, SRF Relayed to HLR	This OM measures the number of SRF messages relayed to the HLR.
Accumulation OM	NP SRF Totals, SRF Successful Messages to MSC	This OM measures the number of SRF successful messages sent back to the MSC.
Accumulation OM	NP SRF Totals, SRF Total Queries	This OM measures the total number of SRF queries received.
Accumulation OM	NP SRF Totals, SRF Total Queries Ported	This OM measures the total number of SRF ported number queries received.
Accumulation OM	NP SRF Totals, SRF Transaction Errors Sent Out	This OM measures the number of SRF transaction error messages sent out.
Accumulation OM	NP TnT Totals, TNT Acks Sent	This OM measures the number of Tariff non Transparency acknowledgement messages transmitted.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	NP TnT Totals, TNT Decode Errors	This OM measures the number of Tariff non Transparency MAP decode failures due to incorrect parameters that could not be decoded.
Accumulation OM	NP TnT Totals, TNT Decode Invalid Params	This OM measures the number of Tariff non Transparency MAP decode failures due to invalid parameters. (i.e. IMSI instead of MSISDN included)
Accumulation OM	NP TnT Totals, TNT No NP DB Rec Found	This OM measures the number of Tariff non Transparency queries received for numbers not found in the NP DB.
Accumulation OM	NP TnT Totals, TNT Queries Non-Ported	This OM measures the number of Tariff non Transparency non ported number queries received.
Accumulation OM	NP TnT Totals, TNT Queries Ported Across	This OM measures the number of Tariff non Transparency ported across number queries received.
Accumulation OM	NP TnT Totals, TNT Queries Ported In	This OM measures the number of Tariff non Transparency ported in number queries received.
Accumulation OM	NP TnT Totals, TNT Queries Ported Out	This OM measures the number of Tariff non Transparency ported out number queries received.
Accumulation OM	NP TnT Totals, TNT Queries Unknown	This OM measures the number of Tariff non Transparency queries received for numbers with unknown ported status.
Accumulation OM	NP TnT Totals, TNT Query Failures	This OM measures the number of Tariff non Transparency query failures during processing.
Accumulation OM	NP TnT Totals, TNT Total Messages Received	This OM measures the total number of Tariff non Transparency queries received.
Accumulation OM	NP TnT Totals, TNT Total Queries Ported	This OM measures the total number of Tariff non Transparency ported number queries received.
Accumulation OM	NP TnT Totals, TNT Transmission Failures	This OM measures the number of Tariff non Transparency failures during transmission of Ack.
Accumulation OM	Route Set Management, RouteSet Congested Count	This OM measures the number of times, a routeset went into network congestion.
Accumulation OM	Route Set Management, Routeset Man-busied Count	This OM measures the number of times a routeset was manually made unavailable.
Accumulation OM	Route Set Management, Routeset Unavailability Count	This OM measures the number of times a routeset was unavailable.
Accumulation OM	Route Set Management, Routeset Unavailability Dur.	This OM measures the total time, in seconds, a routeset was unavailable.
Accumulation OM	RTC Sanity, RTC12 Passive Audit Count	This OM hooks into the node maintenance audit, and is pegged on the control shelf CCs, when it does not receive audit request from RTC12 even once.Thus this is a passive audit of RTC
Accumulation OM	RTC Sanity, RTC15 Passive Audit Count	This OM hooks into the node maintenance audit, and is pegged on both the control shelf CCs, when it does not receive audit request from RTC15 even once. Thus this is a passive audit of RTC.
Accumulation OM	SAAL Link Management, Cum. Dur. of FE Processor Out.	This OM measures the cumulative duration in seconds during which the use of the link was precluded due to a remote (far-end) processor outage condition, summed across all far-end processor outage events.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SAAL Link Management, Cum. Dur. of Lack-of-Credit	This OM measures the cumulative duration of time in seconds during which SSCOP had PDUs to send to its peer but could not do so because it was not given credit by the far end, summed over all the Lack-of-Credit events occurring during the measurement interval.
Accumulation OM	SAAL Link Management, Duration of Link in Service	This OM measures the number of seconds the link is regarded in service.
Accumulation OM	SAAL Link Management, Invalid SSCOP PDUs Rx	This OM measures the number of Invalid SSCOP PDUs Received.
Accumulation OM	SAAL Link Management, Lack of Credit Events	This OM measures the number of Lack-of-Credit Events.
Accumulation OM	SAAL Link Management, PDUs Tx Requiring RTx	This OM measures the number of SSCOP PDUs transmitted that required retransmission because they were not acknowledged by the far-end's SSCOP peer.
Accumulation OM	SAAL Link Management, Signaling Link Alig. Failures	This OM measures the number of Signaling Link Alignment Failures.
Accumulation OM	SAAL Link Management, SSCOP Connection Disconnects	This OM measures the number of SSCOP Connection Disconnects which are characterized by the expiry of Timer_NO_RESPONSE.
Accumulation OM	SAAL Link Management, SSCOP Connection Init. Fails	This OM measures the number of SSCOP Initiation Failures, i.e. the inability to establish an SSCOP Connection.
Accumulation OM	SAAL Link Management, SSCOP Connection Re-est/Resync	This OM measures the number of SSCOP Re-establishments/Resynchronizations.
Accumulation OM	SAAL Link Management, SSCOP Connection Sum-of-Errors	This OM measures the total number of SSCOP Connection Disconnects, Connection Initiation Failures and Connection Re-establishment/Resynchronization.
Accumulation OM	SAAL Link Management, SSCOP PDUs Sum-of-Errors	This OM measures the total number of Unexpected SSCOP PDUs, Invalid SSCOP PDUs and SSCOP PDUs with Other/List Element Errors.
Accumulation OM	SAAL Link Management, SSCOP PDUs with List Elem. Errs	This OM measures the number of SSCOP PDUs Received with List Element Errors.
Accumulation OM	SAAL Link Management, Unexpected SSCOP PDUs Rx	This OM measures the number of Unexpected SSCOP PDUs Received.
Accumulation OM	SAAL Link Traffic, PDU Octets RTx	This OM measures the number of octets associated with retransmitted SSCOP Sequenced Data PDUs.
Accumulation OM	SAAL Link Traffic, PDU Octets Rx	This OM measures the number of octets associated with SSCOP Sequenced Data PDUs received.
Accumulation OM	SAAL Link Traffic, PDU Octets Tx	This OM measures the number of octets associated with SSCOP Sequenced Data PDUs transmitted, including retransmissions.
Accumulation OM	SAAL Link Traffic, PDUs RTx	This OM measures the number of SSCOP Sequenced Data PDUs retransmitted.
Accumulation OM	SAAL Link Traffic, PDUs Rx	This OM measures the number of SSCOP Sequenced Data PDUs received.
Accumulation OM	SAAL Link Traffic, PDUs Tx	This OM measures the number of SSCOP Sequenced Data PDUs transmitted including retransmissions.
Accumulation OM	SAAL Link Traffic, Total PDU Octets Rx	This OM measures the number of octets associated with received SSCOP PDUs of all types.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SAAL Link Traffic, Total PDU Octets Tx	This OM measures the number of octets associated with transmitted SSCOP PDUs of all types which may include Sequenced Data PDU retransmissions.
Accumulation OM	SAAL Link Traffic, Total PDUs Rx	This OM measures the number of SSCOP PDUs of all types received.
Accumulation OM	SAAL Link Traffic, Total PDUs Tx	This OM measures the number of transmitted SSCOP PDUs of all types including Sequenced Data PDU retransmissions.
Accumulation OM	SCCP GTT, Alt Routing on Cong Count	This OM measures the number of times a message is routed to the backup system because the routeset to the primary system is congested.
Accumulation OM	SCCP GTT, GTT Performed Count	This OM measures the total number of MSUs that successfully completed GTT (that is, a match was found for the global title). The count is kept across all translation types.
Accumulation OM	SCCP GTT, Hop Counter Violation Count	This OM measures the number of times that a SCCP hop counter violation has occurred.
Accumulation OM	SCCP GTT, No Translation for Addr Count	This OM measures the number of times a match could not be found for the GTA in the translation table. The count is kept across all translation types.
Accumulation OM	SCCP GTT, Trans Type Not Found Count	This OM measures the number of times the translation type specified in the MSU was not supported by the USP.
Accumulation OM	SCCP Local Subsystem, # Msgs for Local SS discarded	This OM measures the number of messages destined to local subsystems that were discarded.
Accumulation OM	SCCP Local Subsystem, # Msgs for Local SS UDTSed	This OM measures the number of messages destined to local subsystems that receive an error response (UDTS).
Accumulation OM	SCCP Local Subsystem, Subsystem Activated	This OM measures the number of times a subsystem has been manually activated.
Accumulation OM	SCCP Local Subsystem, Subsystem Allowed	This OM measures the number of times a subsystem has gone in service (allowed).
Accumulation OM	SCCP Local Subsystem, Subsystem Allowed Duration	This OM measures the total duration that the subsystem was in service (allowed).
Accumulation OM	SCCP Local Subsystem, Subsystem Deactivated	This OM measures the number of times a subsystem has been manually deactivated.
Accumulation OM	SCCP Local Subsystem, Subsystem Prohibited	This OM measures the number of times a subsystem has gone out of service (prohibited). Unit of measure is a 10 second period.
Accumulation OM	SCCP Local Subsystem, Subsystem Prohibited Duration	This OM measures the total duration that a subsystem was out of service (prohibited). Unit of measure is a 10 second period.
Accumulation OM	SCCP LSS Instance, SSI Activated	This OM measures the number of times a subsystem instance has been manually activated.
Accumulation OM	SCCP LSS Instance, SSI Allowed	This OM measures the number of times a subsystem instance has gone in service (allowed).
Accumulation OM	SCCP LSS Instance, SSI Allowed Duration	This OM measures the duration that the subsystem instance was in service (allowed). Unit of measure is a 10 second period.
Accumulation OM	SCCP LSS Instance, SSI Application Failure	This OM measures the number of times a subsystem instance has gone out of service (application failure).

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SCCP LSS Instance, SSI Congested	This OM measures the number of times a subsystem instance has gone into congestion.
Accumulation OM	SCCP LSS Instance, SSI Deactivated	This OM measures the number of times a subsystem instance has gone out of service (manually deactivated).
Accumulation OM	SCCP LSS Instance, SSI Platform Failure	This OM measures the number of times a subsystem instance has gone out of service (platform failure).
Accumulation OM	SCCP LSS Instance, SSI Prohibited Duration	This OM measures the duration a local subsystem instance has been out of service (prohibited). Unit of measure is a 10 second period.
Accumulation OM	SCCP System Totals, Conn-Orient IP Dist Viol Count	This OM measures the number of IP originated connection-oriented messages that were discarded because they requested SCCP distribution
Accumulation OM	SCCP System Totals, Conn-Orient Msg Handled Count	This OM measures the number of connection- oriented messages that were successfully routed
Accumulation OM	SCCP System Totals, Conn-Orient Msg Rtg Fail Count	This OM measures the number of connection- oriented messages that the USP was unable to route
Accumulation OM	SCCP System Totals, LUDT Msg Rcvd Count	This OM measures the number of LUDT messages that the SCCP level received.
Accumulation OM	SCCP System Totals, LUDT Msg Sent Count	This OM measures the number of LUDT messages that the SCCP level sent.
Accumulation OM	SCCP System Totals, LUDTS Msg Rcvd Count	This OM measures the number of LUDTS messages that the SCCP level received.
Accumulation OM	SCCP System Totals, LUDTS Msg Sent Count	This OM measures the number of LUDTS messages that the SCCP level sent.
Accumulation OM	SCCP System Totals, Msg Incompatibility	This OM measures the number of times XUDT to UDT conversion fails.
Accumulation OM	SCCP System Totals, Msg too large for segmentation	This OM measures the number of times segmentation fails due to an over-long message.
Accumulation OM	SCCP System Totals, MSUs Disc-Unrec SCCP Msg Count	This OM measures the number of MSUs discarded because of an unrecognized SCCP message type.
Accumulation OM	SCCP System Totals, Out of sequence SCCP msg count	This OM measures the number of times Segments are received out of sequence
Accumulation OM	SCCP System Totals, Reassembly buffer unavailable	This OM measures the number of times Reassembly resources unavailable occurred
Accumulation OM	SCCP System Totals, Reassembly failed	This OM measures the number of times Reassembly fails for any non-specified reason.
Accumulation OM	SCCP System Totals, Reassembly Timer Expired	This OM measures the number of times Reassembly Timer expired
Accumulation OM	SCCP System Totals, Routing Failure - Unequip.User	This OM measures the number of times SCCP Routing control fails to find a subsystem to route the message.
Accumulation OM	SCCP System Totals, SCCP Routing Failure Count	This OM measures the number of messages that SCCP was unable to route.
Accumulation OM	SCCP System Totals, Segmentation failed	This OM measures the number of times segmentation fails for any non-specified reason.
Accumulation OM	SCCP System Totals, Segmentation not supported	This OM measures the number of messages dumped because segmentation is not supported

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SCCP System Totals, SSA Received Count	This OM measures the number of subsystem-allowed (SSA) messages received.
Accumulation OM	SCCP System Totals, SSA Transmitted Count	This OM measures the number of subsystem-allowed (SSA) messages transmitted.
Accumulation OM	SCCP System Totals, SSP Received Count	This OM measures the number of subsystem-prohibited (SSP) messages received.
Accumulation OM	SCCP System Totals, SSP Transmitted Count	This OM measures the number of subsystem-prohibited (SSP) messages transmitted.
Accumulation OM	SCCP System Totals, SST Received Count	This OM measures the number of subsystem-status-test (SST) messages received.
Accumulation OM	SCCP System Totals, SST Transmitted Count	This OM measures the number of subsystem-status-test (SST) messages transmitted.
Accumulation OM	SCCP System Totals, Total messages handled	This OM measures all messages processed by SCCP routing control in both incoming and outgoing directions, whether or not the message is processed or delivered successfully. It includes Class 2 and Class 3 connection oriented messages. It does not include Subsystem Status messages such as SSP, SSA, or SST.
Accumulation OM	SCCP System Totals, UDT Msg Rcvd Count	This OM measures the number of UDT messages that the SCCP level received.
Accumulation OM	SCCP System Totals, UDT Msg Sent Count	This OM measures the number of UDT messages sent from the SCCP level.
Accumulation OM	SCCP System Totals, UDTS Msg Rcvd Count	This OM measures the number of UDTS messages that the SCCP level received.
Accumulation OM	SCCP System Totals, UDTS Msg Sent Count	This OM measures the number of UDTS messages sent from the SCCP level.
Accumulation OM	SCCP System Totals, XUDT Msg Rcvd Count	This OM measures the number of XUDT messages that the SCCP level received.
Accumulation OM	SCCP System Totals, XUDT Msg Sent Count	This OM measures the number of XUDT messages sent from the SCCP level.
Accumulation OM	SCCP System Totals, XUDTS Hopcounter violation	This OM measures the number of MSUs discarded because of Hopcounter violations.
Accumulation OM	SCCP System Totals, XUDTS Msg Rcvd Count	This OM measures the number of XUDTS messages that the SCCP level received.
Accumulation OM	SCCP System Totals, XUDTS Msg Sent Count	This OM measures the number of XUDTS messages sent from the SCCP level.
Accumulation OM	SCTP Management/Traffic Counts, Association Aborted Count	This OM measures the number of associations that are aborted by the application, the peer connection or a failure in the network.
Accumulation OM	SCTP Management/Traffic Counts, Association Establish Attempts	This OM measures the number of associations which the user or peer SCTP tried to established.
Accumulation OM	SCTP Management/Traffic Counts, Association Terminated Count	This OM measures the number of associations that are terminated by the application or the peer connection.
Accumulation OM	SCTP Management/Traffic Counts, Chunk Retransmitted Count	This OM measures the number of SCTP chunks retransmitted due to SCTP Packets or SCTP Sacks lost in the network. Note: A SCTP packet may contain more than one chunk.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SCTP Management/Traffic Counts, Chunks Received Count	This OM measures the number of SCTP chunks received. Note: A SCTP packet may contain more than one chunk.
Accumulation OM	SCTP Management/Traffic Counts, Chunks Transmitted Count	This OM measures the number of SCTP chunks transmitted. Note: A SCTP packet may contain more than one chunk.
Accumulation OM	SCTP Management/Traffic Counts, Established Association Count	This OM measures the number of associations which are in a established state.
Accumulation OM	SCTP Management/Traffic Counts, Out of Blue SCTP Packet	This OM measures the number of SCTP packets that are received but are not able to identify the association to which they belong.
Accumulation OM	SIP Application Service Totals, SIP Call Timeout	This OM measures the total number of SIP call timeout. This value will be pegged when the SIP transaction stay alive for too long and get cleaned up by the Transaction audit.
Accumulation OM	SIP Application Service Totals, SIP message Received	This OM measures the total number of SIP message received from the Application Server (including all SIP Response msgs)
Accumulation OM	SIP Application Service Totals, SIP message Transmitted	This OM measures the total number of SIP message transmitted to the Application Server (including all Invite/Notify msgs)
Accumulation OM	SIP Application Service Totals, SIP TCAP Application Timeout	This OM measures the total number of SIP TCAP application timeout
Accumulation OM	SIP Application Service Totals, TCAP message received	This OM measures the total number of TCAP orig Or UNI MSUs received for the SIP application on this IP LINK Node.
Accumulation OM	SIP Application Service Totals, TCAP message transmitted	This OM measures the total number of TCAP Response MSUs received for the SIP application on this IP LINK Node
Accumulation OM	SLR Database Totals, Add/Change Updates	This OM measures the total number of add/change updates received from the HLR provisioning system.
Accumulation OM	SLR Database Totals, Delete Updates	This OM measures the total number of delete updates received from the HLR provisioning system.
Accumulation OM	SLR Database Totals, Emergency Updates	This OM measures the total number of application database updates received from the USP debug facility and can only be displayed from the debug facility Note: Debug is only accessible by Nortel Networks Support Personnel.
Accumulation OM	SLR Database Totals, Operational Time	This OM measures the total time within the OM interval that the SLRDB was operational.
Accumulation OM	SLR Database Totals, Retransmitted Updates	This OM measures the total number of updates retransmitted within the BroadBand STP.
Accumulation OM	SLR LSSI Totals, Total Failed Queries	This OM measures the total number of SLR queries received by an SLR application database system node that failed for any reason across all services and message types.
Accumulation OM	SLR LSSI Totals, Total Queries Received	This OM measures the total number of SLR queries received by an SLR application database system node across all services and message types.
Accumulation OM	SLR Message Type Totals, IMSI Failed Queries	This OM measures the total number of IMSI queries received by an SLR application database system node that failed for any reason.
Accumulation OM	SLR Message Type Totals, IMSI Failed SLRDB Lookup	This OM measures the total number of IMSI queries received by an SLR application database system node that failed in their SLRDB lookup.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	SLR Message Type Totals, IMSI Query Received	This OM measures the total number of IMSI queries received by an SLR application database system node.
Accumulation OM	SLR Message Type Totals, IMSI Successful SLRDB Lookup	This OM measures the total number of IMSI queries received by an SLR application database system node that succeeded in their SLRDB lookup.
Accumulation OM	SLR Message Type Totals, MSISDN Failed Queries	This OM measures the total number of MSISDN queries received by an SLR application database system node that failed for any reason.
Accumulation OM	SLR Message Type Totals, MSISDN Failed SLRDB Lookup	This OM measures the total number of MSISDN queries received by an SLR application database system node that failed in their SLRDB lookup.
Accumulation OM	SLR Message Type Totals, MSISDN Query Received	This OM measures the total number of MSISDN queries received by an SLR application database system node.
Accumulation OM	SLR Message Type Totals, MSISDN Successful SLRDB Lookup	This OM measures the total number of MSISDN queries received by an SLR application database system node that succeeded in their SLRDB lookup.
Accumulation OM	SLR SMI Totals, High Congestion	This OM measures the total number of times that the high level congestion state was entered.
Accumulation OM	SLR SMI Totals, Login Failures	This OM measures the total number of failed HLR provisioning system login attempts.
Accumulation OM	SLR SMI Totals, Low Congestion	This OM measures the total number of times that the low level congestion state was entered.
Accumulation OM	SLR SMI Totals, Medium Congestion	This OM measures the total number of times that the medium level congestion state was entered.
Accumulation OM	SLR SMI Totals, Messages Failed Authentication	This OM measures the total number of received messages from the HLR provisioning system that failed authentication of the retrieved RN against an associated GTT entry with an RN matching the retrieved value.
Accumulation OM	SLR SMI Totals, Messages Invalid	This OM measures the total number of invalid messages received from the HLR provisioning system.
Accumulation OM	SLR SMI Totals, Messages Passed Authentication	This OM measures the total number of received messages from the HLR provisioning system that successfully authenticated the retrieved RN against an associated GTT entry with an RN matching the retrieved value.
Accumulation OM	SLR SMI Totals, Messages Received	This OM measures the total number of messages received from the HLR provisioning system.
Accumulation OM	SLR SMI Totals, Messages Rejected	This OM measures the total number of received messages from the HLR provisioning system that were rejected.
Accumulation OM	Special Study Totals, MSUs Received Count	This OM measures the number of incoming MSUs acknowledged on the specified linkset with the specified OPC/DPC/SIO combination.
Accumulation OM	Special Study Totals, MSUs Transmitted Count	This OM measures the number of outgoing MSUs successfully transmitted to the far end on the specified linkset with the specified OPC/DPC/SIO combination.
Accumulation OM	Special Study Totals, Octets Received Count	This OM measures the total number of MSU octets received on a specified linkset with the specified OPC/DPC/SIO combination, including the octets removed in MTP Level 2 processing.

OM TYPE	OM TITLE	OM DESCRIPTION
Accumulation OM	Special Study Totals, Octets Transmitted Count	This OM measures the total number of MSU octets transmitted on the specified linkset with the specified OPC/DPC/SIO combination, including those octets that were added in MTP Level 2 processing.
Accumulation OM	System Node State, Disabled, Locked Duration	This OM measures the number of seconds that a specific RTC, CC, or application system node is disabled and locked.
Accumulation OM	System Node State, Disabled, Unlocked Duration	This OM measures the number of seconds that a specific RTC, CC, or application system node is disabled and unlocked.
Accumulation OM	System Node State, Enabled, Locked Duration	This OM measures the number of seconds that a specific RTC, CC, or application system node is enabled and locked.
Accumulation OM	System Node State, Enabled, Unlocked Duration	This OM measures the number of seconds that a specific RTC, CC, or application system node is enabled and unlocked.
Accumulation OM	System Node State, Locked, Off-line Duration	This OM measures the number of seconds that a specific RTC, CC, or application system node is locked and off-line.
Accumulation OM	System Totals, No Route MSU Discard Count	This OM measures the number of MSUs discarded due to routing failure of various causes (for example, an inaccessible DPC).
Accumulation OM	Task Management, Idle Task Duration	This OM measures the number of milliseconds spent in idle time.
Accumulation OM	TUP Received Message Counts, B/TUP Error No AS for OPC/CIC	This OM measures the number of TUP messages discarded as a result of not being able to find a valid AS for a given OPC/CIC.
Accumulation OM	TUP Received Message Counts, B/TUP Error No OPC/CIC Data	This OM measures the number of TUP and BTUP messages discarded as a result of missing database entry for a given OPC or OPC/CIC.
Accumulation OM	TUP Received Message Counts, B/TUP Error No Path	This OM measures the number of TUP and BTUP messages discarded as a result of not being able to find an inservice path to a given AS.
Accumulation OM	TUP Received Message Counts, B/TUP Error No Route	This OM measures the number of TUP messages discarded as a result of not being able to find a route to a given AS.
Accumulation OM	TUP Received Message Counts, BTUP Call P Received Count	This OM measures the number of BTUP call processing messages received from the SS7 Network.
Accumulation OM	TUP Received Message Counts, BTUP Maint Received Count	This OM measures the number of BTUP maintenance messages received from the SS7 Network.
Accumulation OM	TUP Received Message Counts, TUP Call P Received Count	This OM measures the number of TUP call processing messages received from the SS7 Network.
Accumulation OM	TUP Received Message Counts, TUP Maint Received Count	This OM measures the number of TUP maintenance messages received from the SS7 Network.
Accumulation OM	TUP Received Message Counts, Wrong NE Received Count	This OM measures the number of TUP messages discarded as a result of not receiving the message for a SG Network Element
Accumulation OM	UDP, Full Socket Count	This OM measures the number of counts that the udpstat full_socket variable has changed in the om period.
Maximum OM	Link Traffic, Link utilization	This OM provides percentage of link utilization. For LSL it is calculated in erlangs while for HSL it is calculated as percentage of processor utilization.

OM TYPE	OM TITLE	OM DESCRIPTION
Maximum OM	NP Database Totals, Max Average Update Rate	This OM measures the highest update rate (in updates per second) averaged over a 60 second period. ie total updates over the 60 second window divided by 60. If the number of updates received in the 60 second window is less than 60 , the OM will be 0.
Maximum OM	NP Transaction Mgmt Totals, TxMgr Percent Used	This OM measures the maximum percentage of used transactions in the Transaction Management application.
Maximum OM	SLR Database Totals, Max. Update Rate	This OM measures the highest update rate (in updates per second) during any 60 second period
No Action	System Node State, Percentage Enabled	This OM measures the percentage of time that a specific RTC, CC, or application system node is enabled, or busy (for the Processor Utilization OM, GR-82-CORE section 6.4.5, item 10). The value for this OM ranges from 0 to 100 percent.
No Action	Task Management, Collection Period Duration	This OM measures the total number of milliseconds for an OM collection period. This OM can be used to calculate the percentage of use for all the other Task Management OMs.
No action	Task Management, Level 0 Priority Task Duration	This OM measures the number of milliseconds spent in Level 0 priority task(s).
No Action	Task Management, Level 1 Priority Task Duration	This OM measures the number of milliseconds spent in Level 1 priority task(s).
No Action	Task Management, Level 2 Priority Task Duration	This OM measures the number of milliseconds spent in Level 2 priority task(s).
No Action	Task Management, Level 3 Priority Task Duration	This OM measures the number of milliseconds spent in Level 3 priority task(s).
No Action	Task Management, Level 4 Priority Task Duration	This OM measures the number of milliseconds spent in Level 4 priority task(s).
No Action	Task Management, Level 5 Priority Task Duration	This OM measures the number of milliseconds spent in Level 5 priority task(s).
No Action	Task Management, Level 6 Priority Task Duration	This OM measures the number of milliseconds spent in Level 6 priority task(s).
No Action	Task Management, Level 7 Priority Task Duration	This OM measures the number of milliseconds spent in Level 7 priority task(s).
No Action	Task Management, Level 8 Priority Task Duration	This OM measures the number of milliseconds spent in Level 8 priority task(s).
No Action	Task Management, Level 9 Priority Task Duration	This OM measures the number of milliseconds spent in Level 9 priority task(s).
No Action	Task Management, OS System Tasks Duration	This OM measures the number of milliseconds spent in VxWorks OS tasks.

New or changed in SN08

Appendix E: MG9000 Reported Alarms and Logs

Fault Subsystem (MIB)	Alarm Id	Fault Type	Severity	Description	SN06 VoA Telcordia Coverage?	Supported	Procedure To Generate Alarm	Alarm Recovery Procedure	EM Supported	SCC2 LOG Output Example	NTSTD LOG Output Example
	CES305	cesLossOfCell	Major	Loss of Cells	Y	Yes	This alarm is raised when CES IWF stops recieving cells for the ATM network. To introduce this condition SVC between the local endpoint and the remote endpoint must be broken. This can be done 2 different ways: 1. At **Dshell** prompt, type /cesnv/disconn ffindex. 2. From EM, this can only be done for 'half services'. Disconnect the remote endpoint to observe Loss of Cells at the local.	This condition is observed in the field when there is an issue with ATM connectivity. The alarm will be cleared when ATM connection is restored. So, any issue with the ATM connection needs to be investigated.	SN04		
norCarrFault (NORTEL-UEMG-CARRIER-MIB)	MGCA301	los	DS1 - Minor OC3 - Critical	lossOfSignal	Y	yes	On DS1 Link, pull Rx fiber to set LOS		SN04	*C01 MGCAS30 0746 TBL MG9K NorCarrFault Location: 1-RM9K-Frame000.Shelf1.Slot06.Port00 Notification Id: 824 State: not acknowledged Category: Communication Alarm Cause: Loss Of Signal Time: Apr 24 14:01:11 2003 Component Id: Port.frame0.shelf1.slot6.ABI.abi Specific Problem: NorCarrFault - ABI loss of signal Description: Loss Of Signal (i.e., Low Light Level) on DS512 Optical Link Site Flr RPos Bay_id FFFF FF FFF FFFF FFF	MSH10_I06BE *** MGCAS30 APR24 14:01:11 0746 TBL MG9K NorCarrFault Location: 1-RM9K-Frame000.Shelf1.Slot06.Port00 Notification Id: 824 State: not acknowledged Category: Communication Alarm Cause: Loss Of Signal Time: Apr 24 14:01:11 2003 Component Id: Port.frame0.shelf1.slot6.ABI.abi Specific Problem: NorCarrFault - ABI loss of signal Description: Loss Of Signal (i.e., Low Light Level) on DS512 Optical Link Site Flr RPos Bay_id FFFF FF FFF FFFF FFF
	MGCA302	ais	DS1 - Minor OC3 - Critical	alarm indication signal	Y	yes	On DS1 Link, use test set (TBERD) to inject line AIS		SN04		
	MGCA303	lof	DS1 - Minor OC3 - Critical	lossOfFrame	Y	yes	On DS1 Link, Use test (TBERD) set to inject LOF		SN04		
	MGCA304	rai	DS1 - Minor	remote alarm indication	N	yes			SN04		
	MGCA305	bersf	OC3 - Critical	bitErrorRate S F...	Y	yes	On DS1 Link, Use test set (TBERD) to inject line B2, Bit Error Rate of 10e-3		SN04		
	MGCA306	bersd	OC3 - Major	bitErrorRate SigDegrade	Y	yes	On DS1 Link, Use test set (TBERD) to inject line B2, Bit Error Rate of 10e-5		SN04		
	MGCA307	rdi	OC3 - Minor	remote defect indication	Y	yes	On DS1 Link, Use test set (TBERD) to inject line RDI		SN04		
	MGCA308	plm	OC3 - Minor	path label mismatch	Y	yes	On DS1 Link, Use test set (TBERD) to change C2 label from 0x13 to 0x00		SN04		
	MGCA309	lop	OC3 - Minor	loss of Pointer	Y	yes	On DS1 Link, Use test set (TBERD) to inject path LOP error		SN04		
	MGCA310	uneq	OC3 - Minor	unequipped	Y	yes	On DS1 Link, Use test set (TBERD) to set C2 to 0x00 (unequipped)		SN04		
	MGCA312	ImaLinkLif		IMA link Loss of IMA Frame	N	yes	At the IMA card pull the DS1 cable **(Can't report Alarm if link is down)**		SN05		
	MGCA313	ImaLinkLods	Minor	IMA link Loss of delayed synchronization	Y	yes	This alarm cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakeInItm" command in the /hal/ima MG9K Dshell directory.		SN05		
	MGCA314	ImaLink Rfi	Minor	IMA link Remote failure indication	Y	yes	At the Edgelink (or other MUX) manually send AIS to the PP15000		SN05		
	MGCA315	ImaLinkTxMisConnect	Minor	IMA link Transmit misconnect	Y	yes	This alarm cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakeInItm" command in the /hal/ima MG9K Dshell directory.		SN05		
	MGCA316	ImaLinkRxMisConnect	Minor	IMA link receive misconnect	Y	yes	Same as above		SN05		
	MGCA317	ImaLinkTxFault	Minor	IMA link transmit fault	Y	yes	Change the "transmit Clock Mode" to ITC on the IMA link at the PP15000		SN05		
	MGCA318	ImaLink RxFault	Minor	IMA link receive fault	Y	yes	This alarm cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakeInItm" command in the /hal/ima MG9K Dshell directory.		SN05		
	MGCA319	ImaLinkTxUnusable Fe	Minor	IMA link transmit unusable far end	Y	yes	Change the "transmit Clock Mode" to ITC on the IMA link at the PP15000		SN05		
	MGCA320	ImaLinkRxUnusable Fe	Minor	IMA link receive unusable far end	Y	yes	Same as above		SN05		
	MGCA321	ImaGroupStartup Fe	Major	IMA group startup far end	Y	yes	This alarm cannot be externally invoked by a manual action. It will only occur if there is some HW or SW errors. The easiest way to generate is using the "fakegrpfm" command in the /hal/ima MG9K Dshell directory.		SN05		
	MGCA322	ImaGroupCfgAbort	Critical	IMA group configuration abort	Y	yes	Same as above		SN05		
	MGCA323	ImaGroupCfgAbort Fe	Major	IMA group configuration abort far end	Y	yes	Same as above		SN05		
	MGCA324	ImaGroupInsuffLinks	Critical	IMA group insufficient links	N	yes	At the IMA card pull the DS1 cable **(Can't report Alarm if link is down)**		SN05		
	MGCA325	ImaGroupInsuffLinks Fe	Major	IMA group insufficient links far end	Y	yes	Same as above		SN05		
	MGCA326	ImaGroupBlocked Fe	Minor	IMA group blocked far end	Y	yes	Block the IMA group at the PP15000		SN05		
	MGCA327	ImaGroupTimingSynch	Major	IMA group timing synchronization	Y	yes	Change the "transmit Clock Mode" to ITC on the IMA link at the PP15000		SN05		
	MGCA328	abiLossOfClock	Critical	ABI Loss of Clock on DS512 optical link	Y	yes	On the DS512 link, Use test set (TBERD) to set LOC		SN05		
	MGCA329	abiLossOfFrame	Critical	ABI Loss of Frame on DS512 optical link	Y	yes	On the DS512 link, Use test set (TBERD) to set LOF		SN05		
	MGCA330	abiLowLightLevel	Critical	ABI Loss of Signal (low light level) on DS512 optical link	Y	yes	On the DS512 link, Use test set (TBERD) to set LOS		SN05		
	MGCA331	abiChannelParityError	Minor	ABI Channel parity error on DS512 optical link	Y	yes	On the DS512 link, Use test set (TBERD) to set C2 to 0x00 (unequipped)		SN05		
	MGCA332	tim	Minor	SDH Path Trace Identifier Mismatch Alarm (only applies to SDH and not SONET). The Path Trace Identifier being seen by the OC3 and at the carrier Path level does not match what has been provisioned for that carrier.	Y	yes		1) Ensure that the host carrier is generating the correct Trace Identifier. 2) Ensure that the correct fiber is connected to the OC3 card. 3) Update the Path Trace Identifier at the LCI. 4) Using the STM-1 EM GUI screen button check the transmitted Path Trace Identifier to ensure it is the "provisioned" Path Trace Identifier.	SN06		
	MGCA333	ds3Ais		DS3 - Alarm Indication Signal - Check far-end carrier fault.		yes			SN07		
	MGCA334	ds3Lof		DS3 - Loss Of Frame		yes			SN07		
	MGCA335	ds3Rai		DS3 - Remote Indication Signal - Check far-end carrier fault.		yes			SN07		
nnAtmFaultType (NORTEL-UEMG-ATM-MIB)	VC301	vclTpAis	Minor	atmVcl Alarm indication signal	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" aisalarm	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
	VC302	vclTpRdi	Minor	atmVcl Remote Detection Indicator	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" rdialarm	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
	VC303	vclLoc	Minor	loss of continuity, vcl	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" coalarmon	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
	VC304	vccTpAis	Minor	atmVcc Alarm indication signal	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" aisalarm	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
	VC305	vccTpRdi	Minor	atmVcc Remote Detection Indicator	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" rdialarm	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
	VC306	vccLoc	Minor	loss of continuity, vcc	Y	yes	This Alarm cannot be generated under normal condition or with a test set. The following Dshell commacd must be used "cd atmss/atmoam" coalarmon	Tear down the SVC and reestablish, check DS1 card for propper operation	SN04		
nnShlFault (NORTEL-UEMG-SHF-MIB)	SHLF301	shelfTalkBatteryA	Critical	SIC Talk Battery A	Y	yes	Pull Talk Battery A Fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF302	shelfTalkBatteryB	Critical	SIC Talk Battery B	Y	yes	Pull Talk battery B fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF303	shelfSignalBatteryA	Major	SIC Signal Battery A	Y	yes	Pull Signal Battery A fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF304	shelfSignalBatteryB	Major	SIC Signal Battery B	Y	yes	Pull Signal Battery B fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF305	shelfSignalBatteryAfuse	Major	SIC Signal Battery A Fuse	Y	yes	Pull Blown Signal Battery A fuse in BIP Panel	Check Fuse	SN04		
	SHLF306	shelfSignalBatteryBfuse	Major	SIC Signal Battery B Fuse	Y	yes	Pull Blown Signal Battery B fuse in BIP Panel	Check Fuse	SN04		
	SHLF307	shelfFailLED	Indeterminate	SIC Shelf Fail LED	N	yes	Any Shelf failure	Remove all Shelf Failures	SN04		
	SHLF308	bipSignalBatteryA1	Major	BIP Signal Battery A1	Y	yes	Pull Signal Battery A1 Fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF309	bipSignalBatteryA2	Major	BIP Signal Battery A2	Y	yes	Pull Signal Battery A2 Fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF310	bipSignalBatteryB1	Major	BIP Signal Battery B1	Y	yes	Pull Signal Battery B1 Fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF311	bipSignalBatteryB2	Major	BIP Signal Battery B2	Y	yes	Pull Signal Battery B2 Fuse (at BIP pannel)	Check Fuse	SN04		
	SHLF312	bipTalkBatteryA	Minor	BIP Talk Battery A	Y	yes	Remove (or Offline/Lock ate EM) TB A Filter card	Re-insert (or Unlock/Online ate EM) TB A Filtercard	SN04		
	SHLF313	bipTalkBatteryB	Minor	BIP Talk Battery B	Y	yes	Remove (or Offline/Lock ate EM) TB B Filter card	Re-insert (or Unlock/Online ate EM) TB B Filtercard	SN04		
	SHLF314	bipFilterA	Minor	BIP Filter A Fail	Y	yes	Requires Bad card or use of Dshell to generate the alarm	Replace bad card	SN04		
	SHLF315	bipFilterB	Minor	BIP Filter B Fail	Y	yes	Requires Bad card or use of Dshell to generate the alarm	Replace bad card	SN04		
	SHLF316	bipScanPoint1	Indeterminate	BIP Scan Point 1	N	yes	Requires closure of Specified Scan Point pins on the Scan Point cable. This may require a test board. Alterntively **Dshell** can be used to generate this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 01 00 b2 e9". To clear the alarm use "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 00 00 b2 e9". XX = ITP slot number and YY = 08	Investigate Scan Point Source to determine problem	SN04		
	SHLF317	bipScanPoint2	Indeterminate	BIP Scan Point 2	N	yes	Same as above except XX = 09	Investigate Scan Point Source to determine problem	SN04		
	SHLF318	bipScanPoint3	Indeterminate	BIP Scan Point 3	N	yes	Same as above except XX = 0a	Investigate Scan Point Source to determine problem	SN04		
	SHLF319	bipScanPoint4	Indeterminate	BIP Scan Point 4	N	yes	Same as above except XX = 0b	Investigate Scan Point Source to determine problem	SN04		
	SHLF320	bipScanPoint5	Indeterminate	BIP Scan Point 5	N	yes	Same as above except XX = 0c	Investigate Scan Point Source to determine problem	SN04		
	SHLF321	bipScanPoint6	Indeterminate	BIP Scan Point 6	N	yes	Same as above except XX = 0d	Investigate Scan Point Source to determine problem	SN04		
	SHLF322	bipScanPoint7	Indeterminate	BIP Scan Point 7	N	yes	Same as above except XX = 0e	Investigate Scan Point Source to determine problem	SN04		
	SHLF323	bipScanPoint8	Indeterminate	BIP Scan Point 8	N	yes	Same as above except XX = 0f	Investigate Scan Point Source to determine problem	SN04		
	SHLF324	bipScanPoint9	Indeterminate	BIP Scan Point 9	N	yes	Same as above except XX = 10	Investigate Scan Point Source to determine problem	SN04		
	SHLF325	bipScanPoint10	Indeterminate	BIP Scan Point 10	N	yes	Same as above except XX = 11	Investigate Scan Point Source to determine problem	SN04		
	SHLF326	bipScanPoint11	Indeterminate	BIP Scan Point 11	N	yes	Same as above except XX = 12	Investigate Scan Point Source to determine problem	SN04		
	SHLF327	bipTalkBatteryA1	Major	Talk Battery A1 Power Feed	Y	yes	Pull PDA fuse	Check Power feed connection and PDA fuse	SN04		
	SHLF328	bipTalkBatteryA2	Major	Talk Battery A Power Feed	Y	yes	Pull PDA fuse	Check Power feed connection and PDA fuse	SN04		
	SHLF329	bipTalkBatteryB1	Major	Talk Battery B1 Power Feed	Y	yes	Pull PDA fuse	Check Power feed connection and PDA fuse	SN04		
	SHLF330	bipTalkBatteryB2	Major	Talk Battery B2 Power Feed	Y	yes	Pull PDA fuse	Check Power feed connection and PDA fuse	SN04		
	SHLF332	bipEcuTemp0	Minor	BIP Environmental Control Unit 0 Temperature	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 01 00 b2 e9". To clear the alarm use "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 00 00 b2 e9". XX = ITP slot number and YY = 1B		SN04		
	SHLF333	bipEcuTemp1	Minor	BIP Environmental Control Unit 1 Temperature	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 01 00 b2 e9". To clear the alarm use "/glan/dsend XX 03 01 b5 70 06 07 00 82 YY 00 00 b2 e9". XX = ITP slot number and YY = 1A		SN04		
	SHLF334	bipEcuFan0	Minor	BIP Environmental Control Unit 0 Fan	Y	yes	Remove Fan Cable	Check Fan cable, fuses, or replace fan	SN04		
	SHLF335	bipEcuFan1	Minor	BIP Environmental Control Unit 1 Fan	Y	yes	Remove Fan Cable	Check Fan cable, fuses, or replace fan	SN04		
	SHLF336	bipRemoteAlarmcutoff	Indeterminate	BIP Remote Alarm Cut Off	N	yes	Engage Remote Alarm Cut Off button on BIP panel	Disengage Alarm cut Off button on BIP panel	SN04		
	SHLF337	bipLocalAlarmcutoff	Indeterminate	BIP Local Alarm Cut Off	N	yes	Engage Alarm Cut Off button on BIP panel	Disengage Remote Alarm cut Off button on BIP panel	SN04		
	SHLF338	bipAbsFusefail	Major	BIP ABS Fuse Fail	Y	yes	Remove ABS fuse	Replace ABS fuse	SN04		
	SHLF339	bipAbsPowerSupply	Critical	BIP ABS Battery Power Supply	Y	yes	Remove ABS power cable	Check (Replace if necessary) ABS Power supply, Check Power supply power cables and leads	SN04		
	SHLF340	bipShfBreakerTrip	Major	BIP Shelf Circuit Breaker Trip	Y	yes	Turn off Breaker	Check Breaker. Turn on Breaker	SN04		
	SHLF341	bbCrApresence A	Major	Presence of BIP's Current-Sense Card A	Y	yes	Remove BIP's Current-Sense Card A	Install BIP's Current-Sense Card A	SN05		
	SHLF342	bbCrBpresence	Major	Presence of BIP's Current-Sense Card B	Y	yes	Remove BIP's Current-Sense Card B	Install BIP's Current-Sense Card B	SN05		
	SHLF343	bipAlmRelayPresence	Major	Presence of BIP's Alarm Relay Card	Y	yes	Remove BIP's Alarm Relay Card	Install BIP's Alarm Relay Card	SN05		
	SHLF344	bbCSAshf0HighThres	Minor	Current-Sense Card A Shelf 0 High Threshold exceeded	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 7a 92 YY 04 c0 ff". To clear the alarm use "/glan/dsend XX 03 01 b5 70 06 07 68 92 YY 03 c0 ff". XX = ITP slot number and YY = 3E		SN05		
	SHLF345	bbCSAshf1HighThres	Minor	Current-Sense Card A Shelf 1 High Threshold exceeded	Y	yes	Same as above except YY = 3F		SN05		
	SHLF346	bbCSAshf2HighThres	Minor	Current-Sense Card A Shelf 2 High Threshold exceeded	Y	yes	Same as above except YY = 40		SN05		
	SHLF347	bbCSAshf3HighThres	Minor	Current-Sense Card A Shelf 3 High Threshold exceeded	Y	yes	Same as above except YY = 41		SN05		
	SHLF348	bbCSBshf0HighThres	Minor	Current-Sense Card B Shelf 0 High Threshold exceeded	Y	yes	Same as above except YY = 42		SN05		
	SHLF349	bbCSBshf1HighThres	Minor	Current-Sense Card B Shelf 1 High Threshold exceeded	Y	yes	Same as above except YY = 43		SN05		
	SHLF350	bbCSBshf2HighThres	Minor	Current-Sense Card B Shelf 2 High Threshold exceeded	Y	yes	Same as above except YY = 44		SN05		
	SHLF351	bbCSBshf3HighThres	Minor	Current-Sense Card B Shelf 3 High Threshold exceeded	Y	yes	Same as above except YY = 45		SN05		
	SHLF352	bbTempHighThres	Minor	Current High Temperature Threshold exceeded	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 50 92 3d 04 co ff". XX = ITP slot number.		SN05		
	SHLF353	bbCSAshf0LowThres	Minor	Current-Sense Card A Shelf 0 Low Threshold exceeded	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend XX 03 01 b5 70 06 07 5f 92 YY 02 c0 ff". To clear the alarm use "/glan/dsend XX 03 01 b5 70 06 07 58 92 YY 01 c0 ff". XX = ITP slot number and YY = 3E		SN05		
	SHLF354	bbCSAshf1LowThres	Minor	Current-Sense Card A Shelf 1 Low Threshold exceeded	Y	yes	Same as above except YY = 3F		SN05		
	SHLF355	bbCSAshf2LowThres	Minor	Current-Sense Card A Shelf 2 Low Threshold exceeded	Y	yes	Same as above except YY = 40		SN05		

	SHLF356	bipCSAnfLowThres	Minor	Current-Sense Card A Shelf 3 Low Threshold exceeded	Y	yes	Same as above except YY = 41		SN05	
	SHLF357	bipCSBnfLowThres	Minor	Current-Sense Card B Shelf 0 Low Threshold exceeded	Y	yes	Same as above except YY = 42		SN05	
	SHLF358	bipCSBnf1LowThres	Minor	Current-Sense Card B Shelf 1 Low Threshold exceeded	Y	yes	Same as above except YY = 43		SN05	
	SHLF359	bipCSBnf2LowThres	Minor	Current-Sense Card B Shelf 2 Low Threshold exceeded	Y	yes	Same as above except YY = 44		SN05	
	SHLF360	bipCSBnf3LowThres	Minor	Current-Sense Card B Shelf 3 Low Threshold exceeded	Y	yes	Same as above except YY = 45		SN05	
	SHLF361	bipTempLowThres	Minor	Current Low Temperature Threshold exceeded	Y	yes	Through **Dshell** reset the the threshold to value that will trigger this alarm. To do this Telnet into an active ITX card and enter the following command "/glan/dsend **XX** 03 01 b5 70 06 07 00 92 3d 01 c0 ff". XX = ITP slot number.		SN05	
	SHLF362	bipSignalBatteryFuse	Major	Status of the Signal Battery Fuse	Y	yes	Pull Signal Battery Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF363	bipTalkBatteryAFuse	Major	Status of Talk Battery A Fuse	Y	yes	Pull Talk Battery A Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF364	bipTalkBatteryBFuse	Major	Status of Talk Battery B Fuse	Y	yes	Pull Talk Battery B Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF365	bipEcuFuse0	Minor	Status of Cooling Unit 0 Fuse	Y	yes	Pull Cooling Unit 0 Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF366	bipEcuFuse1	Minor	Status of Cooling Unit 1 Fuse	Y	yes	Pull Cooling Unit 1 Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF367	bipEndAisleFuse	Minor	Status of the End-Aisle Fuse	Y	yes	Pull End-Aisle Fuse at the BIP panel	Check fuse and replace if necessary	SN05	
	SHLF368	bipSignalDistribution1	Indeterminate	BIP Signal Distribution Point 1	N	yes	At the MG9000 EM enable this SDP		SN04	
	SHLF369	bipSignalDistribution2	Indeterminate	BIP Signal Distribution Point 2	N	yes	At the MG9000 EM enable this SDP		SN04	
	SHLF370	bipSignalDistribution3	Indeterminate	BIP Signal Distribution Point 3	N	yes	At the MG9000 EM enable this SDP		SN04	
	SHLF371	bipSignalDistribution4	Indeterminate	BIP Signal Distribution Point 4	N	yes	At the MG9000 EM enable this SDP		SN04	
	SHLF372	bipVisualCritical	Indeterminate	BIP Visual Critical	N	yes	Generate any Critical Alarm on an MG9000 within the Frame	Clear all Critical Alarm on an MG9000 within the Frame	SN04	
	SHLF373	bipVisualMajor	Indeterminate	BIP Visual Major	N	yes	Generate any Major Alarm on an MG9000 within the Frame	Clear all any Major Alarm on an MG9000 within the Frame	SN04	
	SHLF374	bipVisualMinor	Indeterminate	BIP Visual Minor	N	yes	Generate any Minor Alarm on an MG9000 within the Frame	Clear all any Minor Alarm on an MG9000 within the Frame	SN04	
	SHLF375	bipAudibleCritical	Indeterminate	BIP Audible Critical	N	yes	Generate any Critical Alarm on an MG9000 within the Frame	Clear all Critical Alarm on an MG9000 within the Frame	SN04	
	SHLF376	bipAudibleMajor	Indeterminate	BIP Audible Major	N	yes	Generate any Major Alarm on an MG9000 within the Frame	Clear all any Major Alarm on an MG9000 within the Frame	SN04	
	SHLF377	bipAudibleMinor	Indeterminate	BIP Audible Minor	N	yes	Generate any Minor Alarm on an MG9000 within the Frame	Clear all any Minor Alarm on an MG9000 within the Frame	SN04	
	SHLF378	bipAlarmCutOffLED	Indeterminate	BIP Alarm CutOff LED	N	yes	Engage Alarm Cut Off button on BIP panel	Disengage Remote Alarm cut Off button on BIP panel	SN04	
	SHLF379	bipTalkBatteryFailALED	Indeterminate	BIP Talk Battery A Fail LED	N	yes	Remove (or Offline/Lock ate EM) TB A Filter card	Re-insert (or Unlock/Online ate EM) TB A Filtercard	SN04	
	SHLF380	bipTalkBatteryFailBLED	Indeterminate	BIP Talk Battery B Fail LED	N	yes	Remove (or Offline/Lock ate EM) TB B Filter card	Re-insert (or Unlock/Online ate EM) TB B Filtercard	SN04	
	SHLF381	bipCriticalLEDbank	Indeterminate	BIP Critical LED Bank	N	yes	Generate any Critical Alarm on an MG9000 within the Frame	Clear all Critical Alarm on an MG9000 within the Frame	SN04	
	SHLF382	bipMajorLEDbank	Indeterminate	BIP Major LED Bank	N	yes	Generate any Major Alarm on an MG9000 within the Frame	Clear all any Major Alarm on an MG9000 within the Frame	SN04	
	SHLF383	bipMinorLEDbank	Indeterminate	BIP Minor LED Bank	N	yes	Generate any Minor Alarm on an MG9000 within the Frame	Clear all any Minor Alarm on an MG9000 within the Frame	SN04	
	SHLF384	bipEcuLED	Indeterminate	BIP Environmental Control Unit 0 LED	N	yes	Remove Fan Cable	Check Fan cable, fuses, or replace fan	SN04	
	SHLF385	bipEcu2LED	Indeterminate	BIP Environmental Control Unit 1 LED	N	yes	Remove Fan Cable	Check Fan cable, fuses, or replace fan	SN04	
	SHLF386	bipAlarmFailLED	Indeterminate	BIP Alarm Processor Card Fail LED	N	yes	At EM Offline/Lock the BIP Alarm Processor Card	At EM Online/Unlock the BIP Alarm Processor Card	SN04	
	SHLF387	bipAisleAlarm	Indeterminate	BIP Aisle Alarm	N	yes	Generate any SHLF alarm	Clear all SHLF alarms	SN04	
	SHLF388	bipFrameFail	Indeterminate	BIP Frame Fail	N	yes	Generate any Frame alarm	Clear all Frame alarms	SN04	
	SHLF389	bipAlmRelayLed	Indeterminate	Presence of BIP's Alarm Relay Card LED	N	yes	Remove BIP's Alarm Relay Card	Install BIP's Alarm Relay Card	SN05	
	SHLF390	bipCsALed	Indeterminate	Status of Current-Sense Card A LED	N	yes	At EM Offline/Lock the BIP Current-Sense Card A	At EM Online/Unlock the BIP Current-Sense Card A	SN05	
	SHLF391	bipCsBled	Indeterminate	Status of Current-Sense Card B LED	N	yes	At EM Offline/Lock the BIP Current-Sense Card B	At EM Online/Unlock the BIP Current-Sense Card B	SN05	
	SHLF392	shelfCompatibility		This log is generated when a shelfCompatibility fault is received	N	yes			SN07	
	SHLF393	cardDiscovery		This log is generated when a cardDiscovery fault is received	N	yes			SN07	
		cardDbcPowFa		This log is generated when a cardDbcPowFa fault is received	N	yes			SN07	
		cardDbcPowStz		This log is generated when a cardDbcPowStz fault is received	N	yes			SN07	
		cardDbcSlot02		This log is generated when a cardDbcSlot02 fault is received	N	yes			SN07	
		cardDbcSlot03		This log is generated when a cardDbcSlot03 fault is received	N	yes			SN07	
		cardDbcSlot04		This log is generated when a cardDbcSlot04 fault is received	N	yes			SN07	
		cardDbcSlot05		This log is generated when a cardDbcSlot05 fault is received	N	yes			SN07	
		cardDbcSlot06		This log is generated when a cardDbcSlot06 fault is received	N	yes			SN07	
		cardDbcSlot07		This log is generated when a cardDbcSlot07 fault is received	N	yes			SN07	
		cardDbcSlot08		This log is generated when a cardDbcSlot08 fault is received	N	yes			SN07	
		cardDbcSlot09		This log is generated when a cardDbcSlot09 fault is received	N	yes			SN07	
		cardDbcSlot10		This log is generated when a cardDbcSlot10 fault is received	N	yes			SN07	
		cardDbcSlot11		This log is generated when a cardDbcSlot11 fault is received	N	yes			SN07	
		cardDbcSlot12		This log is generated when a cardDbcSlot12 fault is received	N	yes			SN07	
		cardDbcSlot13		This log is generated when a cardDbcSlot13 fault is received	N	yes			SN07	
		cardDbcSlot14		This log is generated when a cardDbcSlot14 fault is received	N	yes			SN07	
		cardDbcSlot15		This log is generated when a cardDbcSlot15 fault is received	N	yes			SN07	
		cardDbcSlot16		This log is generated when a cardDbcSlot16 fault is received	N	yes			SN07	
		cardDbcSlot17		This log is generated when a cardDbcSlot17 fault is received	N	yes			SN07	
		cardDbcSlot18		This log is generated when a cardDbcSlot18 fault is received	N	yes			SN07	
		cardDbcSlot19		This log is generated when a cardDbcSlot19 fault is received	N	yes			SN07	
		cardDbcSlot20		This log is generated when a cardDbcSlot20 fault is received	N	yes			SN07	
		cardDbcSlot21		This log is generated when a cardDbcSlot21 fault is received	N	yes			SN07	
norLineFault (NORTEL-UEMG-LINE-MIB)	**SWLN301**	lineFault	Minor	Line in Fault	Y	yes	Requires bad hardware.	Perform Line Card diag and replace card if faulty.	SN04	
	SWLN302	lineProtectionFault	Minor	Hazardous Voltage	Y	yes	Apply higher voltage across the loop. An alternitive if to do the following: You can force a line to be in fault (HazardVoltage) via the sethazard command on the active itp. (/linemtc/circuit/setbabble). Do this on a WLC based linecard circuit. ITP [3 2 12] dSH> setbabble 2 31 Slot: 2 Circuit: 31	Remove voltage. Perform Line Card Diag and Replace card if faulty.	SN04	
	SWLN303	lineBabbleState	Minor	Line in Babbling state	Y	yes	Requires test gear to generate this alarm condition. An alternitive if to do the following:You can force a line to be in fault (HazardVoltage) via the sethazard command on the active itp. (/linemtc/circuit/sethazard). Do this on a WLC based linecard circuit. ITP [3 2 12] dSH> sethazard 2 31 Slot: 2 Circuit: 31	Perform Line Card diag and replace card if faulty.	SN04	
nnDslFault (NORTEL-UEMG-DSL-MIB)	**XDSL301**	losATUC	Minor	Loss of signal - Local modem	N	yes	At the DSL line card pull the cable connector	See loiATUC	SN04	
	XDSL302	lofATUC	Minor	Loss of frame - Local modem	N	yes	Utilize the UASHOST PC program to generate faults. A notebook PC is connected directly to the line card via a serial cable and RS232-TTL converter.	See loiATUC	SN04	
	XDSL303	lprATUC	Critical	Loss of Power - Local modem	N	yes	Utilize the UASHOST PC program to generate faults. A notebook PC is connected directly to the line card via a serial cable and RS232-TTL converter.	Reset and/or reseat line card. Investigate shelf/linecard power supplies.	SN04	
	XDSL304	loiATUC	Minor	Loss of link - Local modem	N	yes	At the DSL line card pull the cable connector	Generally indicates the CPE has been powered off. If customer complains, it may indicate loop impairment or faulty modem. Check subscriber connection to line card.	SN04	
	XDSL305	losATUR	Minor	Loss of signal - Remote modem	N	yes	Using an ADSL Modem **test set** inject this type of fault.	See loiATUR	SN04	
	XDSL306	lofATUR	Minor	Loss of frame - Remote modem	N	yes	Using an ADSL Modem **test set** inject this type of fault.	See loiATUR	SN04	
	XDSL307	lprATUR	Minor	Loss of power - Remote modem	N	yes	Using an ADSL Modem **test set** inject this type of fault.	None. This signifies a Dying Gasp from the remote modem (normal power-off condition).	SN04	
	XDSL308	loiATUR	Minor	Loss of link - Remote modem	N	yes	Using an ADSL Modem **test set** inject this type of fault.	See loiATUC	SN04	
	XDSL309	atuNotPresent	Minor	No remote modem present	N	yes	At the DSL line card pull the cable connector (wait a minute or two)	If persistent, changing provisioning parameters of the circuit may improve immunity to loop impairments. Replacing the remote modem or linecard may also correct the problem.	SN04	
	XDSL310	noClock	Critical	Local modem clock failure	N	yes	Using an ADSL Modem **test set** inject this type of fault.	same as above	SN04	
	XDSL311	handshakeFail	Critical	Pro0ocol error	N	yes	At the DSL Modem set it to G.lite	same as above	SN04	
	XDSL312	linkMismatch	Critical	Config uration error	N	yes	Using an ADSL Modem **test set** inject this type of fault.	same as above	SN04	
	XDSL313	vpiNonzero	Critical	ATM traffic dropped at WAC - upstream	N	yes	Using an ATM test set (ADTECH) injetst this type of fault	If persistent, reset and/or reseat the linecard. If still not clear, replace linecard.	SN04	
	XDSL314	lcdIATUC	Critical	Loss of sync of ATM cells - upstream	N	yes	Using an ATM test set (ADTECH) injetst this type of fault	If persistent, reset and/or reseat the linecard. If still not clear, replace remote modem and/or linecard.	SN04	
	XDSL315	lcdIATUR	Critical	Loss of sync of ATM cells - downstream	N	yes	Using an ATM test set (ADTECH) injetst this type of fault	same as above	SN04	
	XDSL316	failATUC	Critical	Local modem critical failure - not responding, in Kernel mode, download failure or message corrupted	N	yes	Using an ADSL Modem test set inject this type of fault.	See vpiNonzero	SN04	
	XDSL317	circuitHardwareFault	Critical	General H/W fault indication - circuit	N	yes	Utilize the UASHOST PC program to generate faults. A notebook PC is connected directly to the line card via a serial cable and RS232-TTL converter.	Replace linecard.	SN04	
BWShelfFault (NORTEL-UEMG-BANDWIDTH-MIB)	**BW300**	bwResBandwShelfFault	Warning	Reserved bandwidth used on the indicated shelf has exceeded the Bandwidth Congestion Threshold	N	yes	At EM (Bandwidth Management view) set this threshold to a very low value. Generate enough traffic on the shelf (including PLoA) to exceed the threshold.	Alarm is cleared when reserved bandwidth on the shelf is 10% below the Bandwidth Congestion Threshold. Increase threshold, try to decrease the number of active calls on the shelf, or take no action	SN04	
BandwidthFault (NORTEL-UEMG-BANDWIDTH-MIB)	**BW301**	bwResBandwTotalFault	Warning	This alarm is generated when reserved bandwidth use on the network interface has exceeded the Bandwidth Congestion Threshold. The alarm is cleared when reserved bandwidth on the network interface is 10% less than the threshold.	N	yes	At EM (Bandwidth Management view) set this threshold to a very low value. Generate enough traffic on the MG9000 (including PLoA) to exceed the threshold.	The alarm is cleared when reserved bandwidth on the network interface is 10% less than the threshold.	SN04	
	BW302	bwResBandwSloaFault	Warning	This alarm is generated when reserved bandwidth dedicated to switched lines connections on the network interface has exceeded the Bandwidth Congestion Threshold with respect to the amount of bandwidth configured the network interface for switched lines.	N	yes	At EM (Bandwidth Management view) set this threshold to a very low value. Generate enough SLoA traffic on the MG9000 to exceed the threshold.	The alarm is cleared when reserved Switched lines bandwidth on the network interface is 10% less than the threshold.	SN04	
	BW304	bwSwitchFabricTotalFault	Warning	Overall Cell Queue Congestion Alarm. Overall atm cell queue is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when the overall cell queue fill is less than 80% full	SN04	
	BW305	bwSwitchFabricCbrFault	Warning	CBR Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW306	bwSwitchFabricRtVbrFault	Warning	RT-VBR Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW307	bwSwitchFabricNrtVbrFault	Warning	NRT-VBR Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW308	bwSwitchFabricUbrFault	Warning	UBR Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW309	bwSwitchFabricUbrPlusFault	Warning	UBR-PLUS Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW310	bwSwitchFabricControlFault	Warning	CONTROL Channel Cell Queue Congestion Alarm. Atm cell queue for this service type is at least 90% full.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	Alarm is cleared when this service type cell queue is less than 80% full.	SN04	
	BW311	bwResBandwAbiFault	Warning	This alarm is generated when reserved bandwidth dedicated to ABI lines connections on the network interface has exceeded the Bandwidth Congestion Threshold with respect to the amount of bandwidth configured the network interface for switched lines.	N	yes	At EM (Bandwidth Management view) set this threshold to a very low value. Generate enough ABI traffic on MG9000 to exceed the threshold.	The alarm is cleared when reserved ABI lines bandwidth on the network interface is 10% less than the threshold.	SN05?	

nnClkSyncFault (NORTEL-UEMG-CLOCKSYNC-MIB)	**CLK301**	lossOfPhaseLock	Minor	Phase PLD [altera 7064b] detected a minimum phase difference greater than eight nano seconds. (FRAME PULSES BETWEEN ITPs DO NOT MATCH)	Y	yes	This alarm cannot be generated by a test set or manual action. These are HW or SW faults. The easist way to produce them is to use the MG9000 FITS **Dshell** commands. To set it ---> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0020 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0020 To clear it --> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0000 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0020		SN05		
	CLK302	lossOfFramePulseLock	Major	Frame pulse alignment did not get established with the active card – it should occur in the inactive card only.(FRAME PULSES BETWEEN ITP DO NOT MATCH)	Y	yes	Pull the Mate ITP card		SN05		
	CLK303	lossOfMyClock	Major	The high and low levels of the SYNC PLL clock are not toggling. (OUTPUT OF FREQUENCY PLL HAS BEEN LOST)	Y	yes	This alarm cannot be generated by a test set or manual action. These are HW or SW faults. The easist way to produce them is to use the MG9000 FITS **Dshell** commands. To set it ---> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0080 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0080 To clear it --> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0000 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0080		SN05		
	CLK304	lossOfMateClock	Minor	The high and Low levels of the mate clock are not toggling	Y	yes	Pull the Mate ITP card		SN05		
	CLK305	lossOfClockOutput	Major	Phase PLD reference clock oscillator not toggling. (OUTPUT OF PHASE PLL HAS BEEN LOST)	Y	yes	This alarm cannot be generated by a test set or manual action. These are HW or SW faults. The easist way to produce them is to use the MG9000 FITS **Dshell** commands. To set it ---> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0100 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0100 To clear it --> 1. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a092 0x0000 2. /hal/writew 0x1230a08a 0x1324;/hal/writel 0x1230a090 0x0100		SN05		
	CLK306	singleReferenceFailure	Minor	Single monitored reference source has been lost	Y	yes	With the MG9000 using BITS but with network clocking available, pull the BITS cable		SN05		
	CLK307	allReferenceFailure	Major	Absolute and Delta reference source signals have been lost	Y	yes	Remove the receive side of the active DCC cards fiber		SN04		
	CLK308	singleSyncUnitFailure	Major	Stratum 3 unit on ITP failed	Y	yes	This alarm cannot be generated by a test set or manual action. These are HW or SW faults. The easist way to produce them is to use the MG9000 **Dshell** FITS commands		SN04		
	CLK312	signalLos	Minor	Single/All source reference occurred due to loss of signal	Y	yes	Remove both Clock sources (BITS and Network Interface)		SN05		
	CLK313	signalLof	Monor	Single/All source(s) reference occurred due to out of frame	Y	yes	?		SN05		
		FlashRsrc	Major	Flash Memory	Y	yes	GW software may not detect all alarm conditions listed. However, GW provides capability to generate these alarms using the debug commands in DSHELL.In DSHELL enter the following commands: > cd /mtc/resources > injectfault When this command is entered, values for additional parameters are listed.	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		ProcessorRsrc	Major	Processor	Y	yes	GW software may not detect all alarm conditions listed. However, GW provides capability to generate these alarms using the debug commands in DSHELL.In DSHELL enter the following commands: > cd /mtc/resources > injectfault When this command is entered, values for additional parameters are listed.	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		IdpromRsrc	Major	Idprom	Y	yes	Same as Processor fault	same as above	SN06		
		Atm50PortRsrc	Minor	ATM200 Port [0-19]; Not at 200 speed, or Init failed	N	yes	Same as Processor fault	same as above	SN06.2		
		RamRsrc	Major	RAM	Y	yes	Same as Processor fault	same as above	SN05		
		CardTypeMismatchRsrc	Critical	Incorrect Card In Slot	N	yes	Same as Processor fault	same as above	SN06.2		
		RedundancyLostRsrc	Warning	Simplex Mode - No Redundancy	N	yes	Same as Processor fault	same as above	SN06.2		
		CardParOOSRsrc	Warning	Active/Master Card Out Of Service	N	yes	Same as Processor fault	same as above	SN06.2		
		CardRsrc	Major	DS1 Card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		DS1Aal1SarRsrc	Major	AAL1 SAR - DS1 Card TDM to ATM converter	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		DS1LinkRsrc	Minor	DS1 Link [0 to 15]	Y	yes	Same as Processor fault	same as above	SN05		
		DS1FramerRsrc	Major	DS1 Framer for DS1 links [0-7, or 8-15]	Y	yes	Same as Processor fault	same as above	SN04		
		DS1LIURsrc	Major	DS1 Line IF Unit for DS1 links [0-7, or 8-15]	Y	yes	Same as Processor fault	same as above	SN04		
		CardRsrc	Major	ITP card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		ITPTimeswitchRsrc	Major	Timeswitch - call processing enging	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		ITPDspServiceCircuitsRsrc	Major	DSP [0-3]	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		ITPEchoCancellationRsrc	Minor	ECAN	Y	yes	Same as Processor fault	same as above	SN04		
		ITPAal1SarRsrc	Major	AAL1 SAR - Call Traffic TDM to ATM converter	Y	yes	Same as Processor fault	same as above	SN04		
	NE301	ITPAtmBusControllerRsrc	Major	Serial Link Control - controls communication with ITX cards	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		ITPDdcIdpromRsrc	Minor	DDC Idprom - DSP Daughter Card Idprom	N	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN06.2		
		ITPDdcCallistoRsrc	Major	DDC Callisto - DSP Daughter Card Callisto	N	yes	Same as Processor fault	same as above	SN06.2		
		ITPVoicePathRsrc	Critical	Voice Path	N	yes	Same as Processor fault	same as above	SN06.2		
		CardRsrc	Major	ITX Card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN04		
		CardRsrc	Major	SCO/SCI card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		SCTerminalIfRsrc	Warning	RS-232 Port	N	yes	Same as Processor fault	same as above	SN05		
		SCBootFlashMemRsrc	Warning	Flash Memory containing software load	N	yes	Same as Processor fault	same as above	SN05		
		SCLocalBusRamRsrc	Major	Local Memory	Y	yes	Same as Processor fault	same as above	SN05		
		SCEthernetIfRsrc	Warning	Ethernet port	N	yes	Same as Processor fault	same as above	SN05		
		SCSWRsrc	Minor	ATM Switch - MMC Chipset	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		SCNetworkIfRsrc	Major	Network Interface (SCO) [0-7] (SCI)	Y	yes	Same as Processor fault	same as above	SN05		
		SCAtmFwdRsrc	Critical	ATM Cell Forwarder	N	yes	Same as Processor fault	same as above	SN06.2		
		CardRsrc	Major	ABI card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		ABITimeswitchNetSideRsrc	Major	Timeswitch - call p engine (network side)	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN05		
		ABITimeswitchLineSideRsrc	Major	Timeswitch - call p engine (Line side)	Y	yes	Same as Processor fault	same as above	SN05		
		ABITimeswitchRsrc	Major	Timeswitch - call processing engine	Y	yes	Same as Processor fault	same as above	SN05		
		ABIEchoCancellationRsrc	minor	ECAN - unit 0 ECAN - unit 1	Y	yes	Same as Processor fault	same as above	SN05		
		ABIAal1SarRsrc	Major	AAL1 SAR - Call Traffic TDM to ATM converter	Y	yes	Same as Processor fault	same as above	SN05		
		ABIAal1NetSideRsrc	Major	Aal1 Network side - unit 0 Aal1 Network side - unit 1	Y	yes	Same as Processor fault	same as above	SN05		
		ABIAal1LineSideRsrc	Major	Aal1 Line side - unit 0 Aal1 Line side - unit 1	Y	yes	Same as Processor fault	same as above	SN05		
		ABIAtmBusControllerRsrc	Major	Serial Link Control - controls communication with ITX cards	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN05		
		ABIVoicePathRsrc	Critical	Voice Path	N	yes	Same as Processor fault	same as above	SN06.2		
		CardRsrc	Major	8X8 ADSL Card	Y	yes	Same as Processor fault	Lock/Unlock the card, wait for the restart to finish, and then run diagnostics. If the faults re-appear, then replace the card.	SN06		
		AtmDataSyncRsrc	Critical	ATM Data Sync	Y	yes	Same as Processor fault	Lock/Unlock the card and the card will restart, most likely causing the alarm to go away. Wait to make sure that the card goes enabled after the restart and no faults re-appear.	SN05		
		BalDataSyncRsrc	Critical	BAL Data Sync	Y	yes	Same as Processor fault	same as above	SN05		
		MegacoDataSyncRsrc	Critical	Megaco Data Sync	Y	yes	Same as Processor fault	same as above	SN05		
		BaseSubsystemRsrc	Critical	Startup failure: Base Platform	Y	yes	Same as Processor fault	same as above	SN05		
		CarrMSubsystemRsrc	Critical	Startup failure: Carrier Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		NodeSubsystemRsrc	Critical	Startup failure: Node Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		MegacoSubsystemRsrc	Critical	Startup failure: Megaco	Y	yes	Same as Processor fault	same as above	SN05		
		DLMSubsystemRsrc	Critical	Startup failure: Data Line Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		TestSubsystemRsrc	Critical	Startup failure: Test Mib	Y	yes	Same as Processor fault	same as above	SN05		
		MTASubsystemRsrc	Critical	Startup failure: MTA Mib	Y	yes	Same as Processor fault	same as above	SN05		
		SHSubsystemRsrc	Critical	Startup failure: Shelf Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		LineSubsystemRsrc	Critical	Startup failure: Line Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		ClkSyncSubsystemRsrc	Critical	Startup failure: Clock Sync Mib	Y	yes	Same as Processor fault	same as above	SN05		
		PatchSubsystemRsrc	Critical	Startup failure: Patching	Y	yes	Same as Processor fault	same as above	SN05		
		DTASubsystemRsrc	Critical	Startup failure: DTA	Y	yes	Same as Processor fault	same as above	SN05		
		MegOMsSubsystemRsrc	Critical	Startup failure: Megaco OMs	Y	yes	Same as Processor fault	same as above	SN05		
		UpgSubsystemRsrc	Critical	Startup failure: Software Upgrade	Y	yes	Same as Processor fault	same as above	SN05		
	NE302	SnmpMASubsystemRsrc	Critical	Startup failure: SNMP Master Agent	Y	yes	Same as Processor fault	same as above	SN05		
		TimeSubsystemRsrc	Critical	Startup failure: Time of Day	Y	yes	Same as Processor fault	same as above	SN05		
		ESASubsystemRsrc	Critical	Startup failure: ESA	Y	yes	Same as Processor fault	same as above	SN05		
		LKMSubsystemRsrc	Critical	Startup failure: Link Maintenance	Y	yes	Same as Processor fault	same as above	SN05		
		MarketFitSubsystemRsrc	Critical	Startup failure: Market Fit	N	yes	Same as Processor fault	same as above	SN06.2		
		TestRsrc	variable	Test Resource	Y	yes	Same as Processor fault	same as above	SN05		
		HeapRsrc	Critical/Major	Low Memory	Y	yes	Same as Processor fault	same as above	SN05		
		MateCommunicationRsrc	Critical	Mate Card Communication Failure	N	yes	Same as Processor fault	same as above	SN06.2		
		SCAtmCPCSUniRsrc	Major	CPCS UNI Signaling	N	yes	Same as Processor fault	same as above	SN06.2		
		ITPWBCallConnRsrc	Major	Call Control Connection	Y	yes	Same as Processor fault	Lock/Unlock the card and the card will restart, most likely causing the alarm to go away. Wait to make sure that the card goes enabled after the restart and no faults re-appear.	SN05		
		NEDataSyncRsrc	Critical	NE Data Sync	Y	yes	Same as Processor fault	Lock/Unlock the card and the card will restart, most likely causing the alarm to go away. Wait to make sure that the card goes enabled after the restart and no faults re-appear.	SN05		
		ABIWBCallConnRsrc	Major	Call Control Connection	Y	yes	Same as Processor fault	Lock/Unlock the card and the card will restart, most likely causing the alarm to go away. Wait to make sure that the card goes enabled after the restart and no faults re-appear.	SN05		
	NE303		Crit/Maj/Minor	Card Restored (SWACT and now inactive)							
		DS1NetworkLinkRsrc	Minor	Link to DCC Card in slot [10 or 11] - Isolation In Progress	Y	yes	Same as Processor fault	This alarm means two cards cannot communicate with each other. The diagnostics will determine (isolate) wher the fault is and this alarm will change into an NE305 within 3 minutes.	SN06.2		
		ITPLineSideExternalRsrc	Minor	Line Card 0, or link to Line Card	Y	yes	Same as Processor fault	same as above	SN06.2		
		ITPNetworkLinkRsrc	Minor	Link to ITX, port [0 to 1] - Isolation in progress Link to Mate ITP	Y	yes	Same as Processor fault	same as above	SN06.2		
	NE304	ITXLinkRsrc	Minor	Link to DCC in slot [10 or 11] - Isolation in progress Link 4 to ITP card - Isolation in progress Link 5 to ITP card - Isolation in progress Link 6 to ITP card - Isolation in progress Link 7 to ITP card - Isolation in progress Link 8 to ITP card - Isolation in progress Link 9 to ITP card - Isolation in progress Link 10 to ITP card - Isolation in progress Link 11 to ITP card - Isolation in progress Link 12 to ITP card - Isolation in progress Link 13 to ITP card - Isolation in progress Link 14 to ITP card - Isolation in progress Link 15 to ITP card - Isolation in progress Link 16 to ITP card - Isolation in progress Link 17 to ITP card - Isolation in progress Link 18 to ITP card - Isolation in progress Link 19 to ITP card - Isolation in progress	Y	yes	Pull cable on ITP card (to ITX card)	same as above	SN06.2		

		SCLineLinkRsrc	Minor	Link to Master Shf ITP 13 - Isolation in progress Link to Master Shf ITP 12 - Isolation in progress Link to Mate DCC - Isolation in progress Link to card in slot 2 - Isolation in progress Link to card in slot 6 - Isolation in progress Link to card in slot 14 - Isolation in progress Link to card in slot 18 - Isolation in progress Link to card in slot 3 - Isolation in progress Link to card in slot 7 - Isolation in progress Link to card in slot 15 - Isolation in progress Link to card in slot 19 - Isolation in progress Link to card in slot 4 - Isolation in progress Link to card in slot 8 - Isolation in progress Link to card in slot 16 - Isolation in progress Link to card in slot 20 - Isolation in progress Link to card in slot 5 - Isolation in progress Link to card in slot 9 - Isolation in progress Link to card in slot 17 - Isolation in progress Link to card in slot 21 - Isolation in progress	Y	yes	Pull an ITX card	same as above	SN06.2		
		ABINetworkLinkRsrc	minor	Link to DCC Card in slot 10 - Isolation in progress Link to DCC Card in slot 11 - Isolation in progress	N	yes	Same as Processor fault	same as above	SN06.2		
		Aal5SarRsrc	Major	AAL5-SAR, Messaging	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		DS1NetworkExternalRsrc	minor	EXTERNAL: DCC Slot 10 EXTERNAL: DCC Slot 11	N	yes	Same as Processor fault	Check the DCC to see if it has alarms. If so, handle them first. If no alarms on DCC, or only EXTERNAL alarms on the DCC, there is a backplane issue between the DS1 and DCC. Reseat DS1 card, see if problem clears. Reseat DCC card, see if problem clears.	SN06.2		
		DS1NetworkPortRsrc	Minor	Serial Device 0 - to DCC Card in slot 10 Serial Device 1 - to DCC Card in slot	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		DS1UtopiaBridgeRsrc	Major	Utopia Bus Master - AAL1, AAL5 to ATM PHYs	Y	yes	Same as Processor fault	same as above	SN04		
		ITPNetworkExternalRsrc	Minor	EXTERNAL: Mate ITP EXTERNAL: ITX attached to port [0,1]	N	yes	Same as Processor fault	Check the ITX to see if it has alarms. If so, handle them first. If no alarms on ITX, or only EXTERNAL alarms on the ITX, replace the cable between ITX and ITP.	SN06.2		
		ITPNetworkPortRsrc	Minor	Serial Device [0 to 1] - to ITX cards HDLC Device - Connects to mate ITP	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		ITPLineSideIfRsrc	Major	Serial device 0 - to Line Card	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		ITPDDCAAL5SARRsrc	Major	DDC AAL5 SAR - Call Traffic TDM to IP converter							
		ITXExternalRsrc	Minor	EXTERNAL: DCC Slot 10 serial device EXTERNAL: DCC Slot 11 serial device EXTERNAL: ITP attached to port [0-7]	N	yes	Same as Processor fault	Check the ITP to see if it has alarms. If so, handle them first. If no alarms on ITP, or only EXTERNAL alarms on the ITX, replace the cable between ITX and ITP. If the alarm is to a DCC card, fix any DCC alarms first. Reseat ITX card, see if problem clears. Reseat DCC card, see if problem clears.	SN06.2		
norNodeFault (NORTEL-UEMG-NODE-MIB)	NE305	ITXPortRsrc	Minor	Serial Device 0 - to DCC card in slot 10 Serial Device 1 - to DCC card in slot 11 Serial Device 4 - to ITP card Serial Device 5 - to ITP card Serial Device 6 - to ITP card Serial Device 7 - to ITP card Serial Device 8 - to ITP card Serial Device 9 - to ITP card Serial Device 10 - to ITP card Serial Device 11 - to ITP card Serial Device 12 - to ITP card Serial Device 13 - to ITP card Serial Device 14 - to ITP card Serial Device 15 - to ITP card Serial Device 16 - to ITP card Serial Device 17 - to ITP card Serial Device 18 - to ITP card Serial Device 19 - to ITP card	Y	yes	Same as Processor fault	same as above	SN04	**59 NE 318 1513 TBL MG9K NorNodeFault Location: f-RM9K-Frame000.Shelf2.Slot12 Notification Id: 850 Stats: not acknowledged Category: Equipment Alarm Cause: Equipment Malfunction Time: Apr 24 14:59:40 2003 Component Id: Card.frame0.shelf2.slot12.ITP Specific Problem: Node Fault - Proxy fault Description: Card communication failure - Proxy mode activated Site Flr RPos Bay_id FFFF FF FFF FFFF FFF	MSH10_I06BE ** NE318 APR24 14:59:40 1513 TBL MG9K NorNodeFault Location: f-RM9K-Frame000.Shelf2.Slot12 Notification Id: 850 Stats: not acknowledged Category: Equipment Alarm Cause: Equipment Malfunction Time: Apr 24 14:59:40 2003 Component Id: Card.frame0.shelf2.slot12.ITP Specific Problem: Node Fault - Proxy fault Description: Card communication failure - Proxy mode activated Site Flr RPos Bay_id FFFF FF FFF FFFF FFF
		ITXLineSideGrpRsrc	Major	Link [0 to 7] to ITP pair	Y	yes	Same as Processor fault	same as above	SN04		
		ITXNetForwarderRsrc	Major	Net side cell forwarder	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		ITXLineForwarderRsrc	Major	Line side cell forwarder	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN04		
		SCLineExternalRsrs	Minor	EXTERNAL: Master Shelf ITP slot 13 EXTERNAL: Master Shelf ITP slot 12 EXTERNAL: Mate DCC EXTERNAL: Card in slot [2-9, 14-21]	N	yes	Same as Processor fault	Check the far end slot to see if it has alarms. If so, handle them first. If no alarms on far end card, or only EXTERNAL alarms on the far end slot, there is a backplane issue between the far end card and DCC. Reseat other card in question, see if problem clears. Reseat DCC card, see if problem clears.	SN06.2		
		SCLinePortRsrc	Minor	Serial Device 0 - to Master Shelf ITP Slot 13 Serial Device 1 - to Master Shelf ITP Slot 12 Serial Device 3 - Link to Mate DCC Card Serial Device 4 - to card in slot 2 Serial Device 5 - to card in slot 6 Serial Device 6 - to card in slot 14 Serial Device 7 - to card in slot 18 Serial Device 8 - to card in slot 3 Serial Device 9 - to card in slot 7 Serial Device 10 - to card in slot 15 Serial Device 11 - to card in slot 19 Serial Device 12 - to card in slot 4 Serial Device 13 - to card in slot 8 Serial Device 14 - to card in slot 16 Serial Device 15 - to card in slot 20 Serial Device 16 - to card in slot 5 Serial Device 17 - to card in slot 9 Serial Device 18 - to card in slot 17 Serial Device 19 - to card in slot 21	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN05		
		SCQuadSerContGrpRsrc	Major	Group of Serial Ports	Y	yes	Same as Processor fault	same as above	SN05		
		ABINetworkExternalRsrc	Minor	EXTERNAL: DCC slot [10 or 11]	N	yes	Same as Processor fault	Check the DCC to see if it has alarms. If so, handle them first. If no alarms on DCC, or only EXTERNAL alarms on the DCC, there is a backplane issue between the ABI and DCC. Reseat ABI card, see if problem clears. Reseat DCC card, see if problem clears.	SN06.2		
		ABINetworkPortRsrc	minor	Serial Device 0 - to DCC Card in slot 10 Serial Device 1 - to DCC Card in slot 11	Y	yes	Same as Processor fault	If these types of alarms appear in conjuntion with external faults, deal with the external faults first. If they appear alone, treat them as a card fault.	SN05		
		ABINetworkSideGrpRsrc	Critical	Both links to DCC Card	Y	yes	Same as Processor fault	same as above	SN05		
	NE306	GlanRsrc	minor	GLAN Link to hub on Active ITP card	Y	yes	Same as Processor fault	The GLAN hub is located on the active ITP in the shelf where the fault appears. First try swacting ITPs and re-run diags on the afflicted card. If that fixes the problem, replace the newly inactive ITP, otherwise treat the fault as a card fault.	SN05		
		ITPGlanHubRsrc	Critical	GLAN Hub, communicates with other cards on shelf	Y	yes	Same as Processor fault	The GLAN hub is located on the active ITP in the shelf where the fault appears. First try swacting ITPs and re-run diags on the afflicted card. If that fixes the problem, replace the newly inactive ITP, otherwise treat the fault as a card fault.	SN04		
	NE307	ABILineSideIfRsrc	Major	DS512 port	Y	yes	Same as Processor fault	- Verify UEMG is in service - Verify this ABI card is unlocked - Verify this ABI card is not disabled, if so, solve other issues causing this card to be disabled. - Check DS512 fibers. (light check, clean fibers, verify fibers are present)	SN05		
		ABILineSideExternalRsrc	minor	XPM unit, or DS512 connection	Y	yes	Same as Processor fault	same as above	SN05		
		ABILiemAllChnlsRsrc	Major	All DS512 channels closed	Y	yes	Pull cable to XPM	- Verify UEMG is in service - Verify this ABI card is unlocked - Verify this ABI card is not disabled, if so, solve other issues causing this card to be disabled. - Check DS512 fibers. (light check, clean fibers, verify fibers are present)	SN05		
	NE308	SCWanBldrOAMPRsrc	Major	Inband Messaging OAMP Link [0,1]	Y	yes	Same as Processor fault	- Check for alarms on shelf controller - Use LCI to verify that AESA provisioning information is correct. - if the problem persists, call your next level of support.	SN05		
		SCWanBldrCCRsrc	Major	Inband Messaging CC Link [0,1]	Y	yes	Same as Processor fault	same as above	SN05		
		SCWanBldrHBRsrc	Major	Heartbeat to Element Manager	N	yes	Same as Processor fault	same as above	SN06.2		
		SCWanBldrDS512Rsrc	Major	Inband Messaging DS512 Link [0,1]	Y	yes	Same as Processor fault	same as above	SN05		
	NE309	ITPClockSyncRsrc	Critical	Clock Sync	Y	yes	Same as Processor fault	- If fault is on both ITPs 1) Verify Clock source is connected. 2) Wait up to 2 minutes for the clock audit to have a chance to detect clock source. 3) If fault persists, lock/unlock to restart the card. 4) If fault persists, call next level of support. - If fault is on one ITP 1) Verify Clock source is connected. 2) Wait up to 2 minutes for the clock audit to have a chance to detect clock source. 3) If fault persists, lock/unlock to restart the card. 4) Replace the faulty card.	SN04		
		ITPClockPhaseLockRsrc	Major	Clock Sync: Loss of Phase Lock	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPClockFramePulseRsrc	Major	Clock Sync: Loss of Frame Pulse Lock	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPClockMyClockRsrc	Major	Clock Sync: Loss of My Clock	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPClockMateClockRsrc	Minor	Clock Sync: Loss of Mate Clock	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPClockOutputRsrc	Major	Clock Sync: Loss of Clock Output	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncSingleRefRsrc	Minor	Clock Sync: Single Reference Failure	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncAllRefRsrc	Major	Clock Sync: All Reference Failure	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncSingleSyncRsrc	Major	Clock Sync: Single Sync Unit Failure	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncLOSRsrc	Minor	Clock Sync: Loss of Signal	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncOOFRsrc	Minor	Clock Sync: Out of Frame	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPClockRsrc	variable	Clock Sync: Clock	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSyncRsrc	variable	Clock Sync: Sync	Y	yes	Same as Processor fault	same a Clock Sync above	SN05		
		ITPSynchOORsrc	Minor	Clock Sync: Holdover Mode	N	yes	Same as Processor fault	same a Clock Sync above	SN06.2		
		SCBitsFwdRsrc	Major	BITS Forwarder	N	yes	Same as Processor fault	same a Clock Sync above	SN06.2		
		SCBitsRefRsrc	Minor	BITS clock reference [A or B]	N	yes	Same as Processor fault	same a Clock Sync above	SN06.2		
		ITXFramerRsrc	Major	Framer - timing synchronization device	Y	yes	Same as Processor fault	- If fault is on both ITPs 1) Verify Clock source is connected. 2) Wait up to 2 minutes for the clock audit to have a chance to detect clock source. 3) If fault persists, lock/unlock to restart the card. 4) If fault persists, call next level of support. - If fault is on one ITP 1) Verify Clock source is connected. 2) Wait up to 2 minutes for the clock audit to have a chance to detect clock source. 3) If fault persists, lock/unlock to restart the card. 4) Replace the faulty card.	SN04		
		ITXBITSrefRsrc	Minor	BITS clock reference A	Y						
		ITXBITSrefRsrc	Minor	BITS clock reference B	Y						
	NE310	ITXNetworkSideIfPortRsrc	Minor	Port 2 on serial device - port only used by Diagnostics	Y						
		SCQuadsercontPortRsrc	Minor	Serial Port 1 - UNUSED link to ITP slot 12	Y						
		SCQuadsercontPortRsrc	Minor	Serial Port 0 - UNUSED link to ITP slot 13	Y						
		SCSerLinkRsrc	Minor	Unused [was serial link #]	Y	yes	Same as Processor fault	N/A	SN05		
		SCOctalPhyContRsrc	Warning	Octal PHY [Unused] Device for ports [0-5] or [8-13]	N	yes	Same as Processor fault	No action required.	SN05		
		SCOctalPhyContPortRsrc	Warning	Octal PHY [Unused] Port [0-13]	N	yes	Same as Processor fault	No action required.	SN05		
	NE311	SCTimeOfDayRsrc	minor	Time of Day: Access to time server [ip] failed	Y	yes	Same as Processor fault	Attempts to access the provisioned time server have failed. - Verify the provisioned ip address of time server is correct - Verify time server is operational and online. - Use the LCI to re-submit the Time of day parameters, this forces immediate time server access.	SN05		
	NE312	ITPCableRsrc	minor	Cable configuration conflict	Y	yes	Same as Processor fault	One of the cables to the ITXs has been connected in an unsupported way. Check to see if the cable on the two ITXes match, and that the ITP ends of the cable are in the right ports.			
		ITXCableRsrc	Minor	Cable configuration conflict, port [0 to 7]	Y	yes	Same as Processor fault	One of the cables to the ITPs has been connected in an unsupported way. Check to see if the cable on this ITX matches the mate ITX, and that the ITP ends of the cable are in the right ports.	SN05		

	NE313	ABIActivityCableRsrc	minor	Activity control cable between ABI cards	Y	yes	Pull activity cable between ABI card pair	The activity control cable is a small cable on the front of the ABI cards that is used for activity determination. - Verify the cable is attached to both cards. - Replace cable. - If the fault persists, replace the inactive card. - If the problem still persists, swact, replace newly inactive card.	SN05		
	NE314	SCXcRsrc	Minor	Backplane Cross Connect	Y	yes	Same as Processor fault	The carriers between the two DCC cards cannot communicate. - Verify and fix any CARRIER alarms - If seen on Active DCC 1) Restart the inactive DCC 2) If problem persists, replace inactive DCC 3) If problem persists, call next level of support - If seen on inactive DCC 1) Restart the inactive DCC 2) If problem persists, swact DCC cards. This will cause carriers to go down momentarily. Be sure to call next level to verify it is permissable to swact. 3) Restart the newly inactive DCC card. 4) If problem persists, replace the newly inactive card. 5) If problem persists, call next level of support. - If both DCCs have this fault, there is a backplane problem in the shelf. Replace the entire shelf backplane.	SN05		
	NE315	SCLinksRsrc	Major	Resource Bandwidth	Y	yes	Same as Processor fault	Some of the carriers are not providing bandwidth. - Verify and fix any CARRIER alarms. - If problem persists, restart the card.	SN05		
	NE316	downstreamFIFO	Major	ADSL: Downstream FIFO	Y	yes		Throttle back the downstream data from the SCO	SN06		
		downstreamHEC	Major	ADSL: Downstream HEC error	Y	yes		?	SN06		
		atm50Fault	Critical	ADSL: ATM50 fault	Y	yes		Restart linecard	SN06		
		upstream buffer overflow	Critical	ADSL: Upstream buffer overflow	Y	yes		Throttle back the upstream data rate on the linecard	SN06		
		downstream buffer overflow	Critical	ADSL: Downstream buffer overflow	Y	yes		Throttle back the downstream data to the linecard	SN06		
		atm device timeout	Critical	ADSL: ATM Device timeout	Y	yes		Reset linecard	SN06		
		clock accuracy	Critical	ADSL: Loss of clock accuracy	Y	yes		Reset linecard	SN06		
		dsp lockup	Critical	ADSL: DSP Lockup	Y	yes		Reload DSPs	SN06		
			Crit/Maj/Minor	Shelf SIC Card Alarm	Y				SN06		
	NE317		Crit/Maj/Minor	Shelf P/O Card Alarm	Y				SN06		
			Crit/Maj/Minor	Shelf BIP card Alarm	Y				SN06		
	NE318		Major	SCI Card NE Proxy	Y				SN06		
	NE320	AudRecoveryRsrc	Major	Require Audit Recovery Executed	Y	yes	Clear Flash on an ITP pair, Pull both cards and replace	No action required.	SN05		
MG9000 Manager Reported Faults	MGEM300	EmDbUnavailable	Major	Generated when MG9000 EM is not able to make connection to the Element Manager Database	Y	Yes	1. Make sure that persistence is turned on.2. Make the database unavailable. 3. Perform some action (add/delete/change) on a VMG or termination. 4. Check the alarm browser for the alarm being SET.	1. Re-establish the database connection. 2. Perform some action (add/delete/change) on a VMG or termination. 3. Check the alarm browser for the alarm being CLEARED.	SN04		
	MGEM301	CommsLostToNE	Critical	Generated when the MG9000 EM loses SNMP communication with MG9000	Y	Yes	Break connection between the GW and the MG9K EM server. This can be done by taking the GWs OC3 OOS at the PP15000, or disabling the Ethernet connect to the MG9K EM Server (disconnect the cable).	EM will periodically retry to establish communication to the Gateway. Check the following : 1. PING the IP address of the Shelf Controller to validate IP connectivity. 2. PING the IP address of the OC3 CIPOA port to validate IP connectivity. 3. Check connectivity between EM and MG. 4. Check for status of the OC3 card and Node Maintenance task.	SN04	*C57 MGEM301 9232 TBL MG9K CommsLostToNE Location: 2-HS9K Notification Id: 817 State: not acknowledged Category: Communication Alarm Cause: Communications Subsystem Failure Time: Apr 24 10:57:05 2003 Component Id: MG9k EM Comm Network Specific Problem: Comm Channel Down - Communication Lost to the NE Description: Loss of Heartbeat to NE Site Flr RPos Bay_id FFFF FF FFF FFFF FFF	MSH10_106BE *** MGEM301 APR24 10:57:05 9232 TBL MG9K CommsLostToNE Location: 2-HS9K Notification Id: 817 State: not acknowledged Category: Communication Alarm Cause: Communications Subsystem Failure Time: Apr 24 10:57:05 2003 Component Id: MG9k EM Comm Network Specific Problem: Comm Channel Down - Communication Lost to the NE Description: Loss of Heartbeat to NE Site Flr RPos Bay_id FFFF FF FFF FFFF FFF
	MGEM302	invalidEMIPAddress	Major	Generated when the MG9000 Manager has added an ne MG9000 and tries to discover the NE. It will check the MG9000 EM IP address provisioned at the MG9000 and if it is incorrect will raise this alarm	Y	Yes	At the MG9000 LCI set the IP address of the MG9000 Manager to an incorrect value. At the MG9000 Manager do a manual discovery of that MG9000.	At the MG9000 LCI check the IP address of the MG9000 Manager and correct if necessary.	SN05		
	MGEM303	AlarmsBeingThrottled	Critical	Generated when the MG9000 sends too many alarms within a 5 second window. When this happens the MG9000 Manager will request this particular MG9000 stop sending Alarms and display this particular alarm. This condition will clear when the number of alarm within 5 sec falls below a set number	Y	yes	At the MG9000 using DSHELL use the alarm generation utility an generate at least 15 alarms a second for at least 10 seconds.	At the MG9000 LCI check the IP address of the MG9000 Manager and correct if necessary.	SN06		
	MGEM304	MG9K AlarmAuditFailed	Critical	Alarm Audit Failed - The alarm audit on the GW failed		yes			SN06.2		
(MEDIA_GATEWAY_MIB)	MGC300	medGwyInvalidControllerAddress		Indicates that a message was received from a controller that did not match any valid controller IP Address	n/a	no	N/A	N/A	SN04		
	MGC301	medGwyInvalid-TerminationId		Indicates a mismatch of Termination ID	n/a	no	N/A	N/A	SN04		
	MGC302	medGwyInvalidPackageElement		Indicates that a message was received from a controller that contained an event, signal, or descriptor that was not recognized for the package	n/a	no	N/A	N/A	SN04		
nMtaFault (NORTEL_MG_MTA_mib)	TEST302	sysHardwareFault			n/a	no	N/A	N/A	SN05		
	TEST303	mtaSysHardwareFault			n/a	no	N/A	N/A	SN05		
	TEST 304	sysConfigAmbiguity			n/a	no	N/A	N/A	SN05		
nnEsaFault (NORTEL-UEMG-ESA-MIB)	ESA300	esaStatusChange	Critical	Communication between GWC and GW is lost. Entered ESA mode	Y	yes	Break connection between the GW and the GWC when ESA is enabled. This can be done by taking the GWs OC3 OOS at the PP15000, or disabling the Ethernet connect to the GWC (disconnect the cable).	Using the Traceroute or Ping MG9000 Manager tool test the network communications path between the EM the the MG9K, and the EM and the GWC. Check OC3 connection at the MG900, PP15000, and the SAM21 Shelf Controller, Check the Ethernet connection at the GWC, PP8600, and SAM21 Shelf Controller, Check the state of the DCC cards at the MG9000. Correct any problems found	SN05		
	ESA301	esaDataFileFailure	Critical	Data download of ESA data from the CS2K Core has failed		yes			SN06.2		
	ESA303	esaEnterFailure	Critical	Failed to enter ESA		yes			SN07		
nnEsaCollFault (NORTEL-UEMG-ESA-MIB)	ESA304	esaCommOfInterest	Major	This log is generated by the EM in response to a trap from the MG9000 (nnEsaCollFault). The MG9000 sends this trap when it detects communication problems to other nodes in the same community of interest.		yes			SN08		
MG9000 Manager Reported Faults	ESA302		Critical	Failed to set up FTP connection: login failure - EM failed to push ESA to VMG		yes			SN07		
	ESA312		Major	This log is generated by the EM when a failure occurs whilst trying to provision intermodal community of interest data for a given NE.		yes			SN08		
nnMegacoFault (NORTEL-UEMG-MEGACO-MIB)	VMG300	VMG OOS	Critical	Generated when Root Termination goes out of service (Communication between Gateway and GWC is lost and ESA is not enabled)	Y	yes	Break connection between the GW and the GWC when ESA is disabled. This can be done by taking the GWs OC3 OOS at the PP15000, or disabling the Ethernet connect to the GWC (disconnect the cable).	Using the Traceroute or Ping MG9000 Manager tool test the network communications path between the EM the the MG9K. Check OC3 connection at the MG900, Check the state of the DCC cards at the MG9000. Correct any problems found	SN05	*C11 VMG 300 1723 TBL MG9K NrMegacoFault Location: 1-RM9K-Frame000.Shelf2.Slot12 Notification Id: 885 State: not acknowledged Category: Equipment Alarm Cause: Equipment Malfunction Time: Apr 24 15:11:34 2003 Component Id: Card.frame0.shelf2.slot12.ITP Specific Problem: NrMegacoFault - Root Termination status change Description: Call Processing Out of Service. Site Flr RPos Bay_id FFFF FF FFF FFFF FFF	MSH10_106BE *** VMG300 APR24 15:11:34 1723 TBL MG9K NrMegacoFault Location: 1-RM9K-Frame000.Shelf2.Slot12 Notification Id: 885 State: not acknowledged Category: Equipment Alarm Cause: Equipment Malfunction Time: Apr 24 15:11:34 2003 Component Id: Card.frame0.shelf2.slot12.ITP Specific Problem: NrMegacoFault - Root Termination status change Description: Call Processing Out of Service. Site Flr RPos Bay_id FFFF FF FFF FFFF FFF
nnMegacoQosFault (NORTEL-UEMG-MEGACO-MIB)	VMG301	BadCalls	Minor	QoS Alarm that is generated when the number of bad call reaches a certain threshold	N	SLoIP only	In the MG9000 EM set the QoS thresholds to a low level. Using a "Packet Storm" or "Shunra" test set, inject errors on the OC3/STM1 network interface on a particular active calls SVC	Check GWC QoS collector for any QoS error patterns. Narrow down probable areas where errors could occur. Run last calls to narrow down futher. If error is only on that one line there may be a card fault. If problem is in the network isolate problem area and correct.	SN06		
	VMG302	PacketLoss	Minor	QoS Alarm that is generated when the number of Packet Loss reaches a certain threshold	N	SLoIP only	Same as above	Same as above	SN06		
	VMG303	Jitter	Minor	QoS Alarm that is generated when IP message Jitter reaches a certain threshold	N	SLoIP only	Same as above	Same as above	SN06		
	VMG304	Latency	Minor	QoS Alarm that is generated when IP message Latency reaches a certain threshold	N	SLoIP only	Same as above	Same as above	SN06		
	VMG311		Major	Application layer framing (ALF) alarm occurs when the MG 9000 is experiencing Megaco retransmissions greater than 50 % for a period of 5 minutes or more.				Verify the MG 9000 is in service from the GWC perspective. Check the network connection between the GWC and the MG 9000.	SN07		
	VMG312		Major	Megaco task alarm indicates one or more of the Megaco Task's input buffers are over 90 % full for a period of 5 minutes or more.				Check the following based on the inputsource: • line card - indicates the MG 9000 has a babbling line card. All line cards should be checked. • DSP - indicates the MG 9000 has a babbling DSP. If the alarm is not raised on the inactive ITP card, perform a SWACT of the ITP card. • GWC - indicates the GWC is flooding the MG 9000 with messages. Check the GWC for faults. • datasync - indicates the active ITP card is flooding the inactive ITP card with messages.	SN07		
	VMG322	vmgAdminStatusOutOfService	Critical	Admin State Out Of Service - Call Processing Out of Service		Yes			SN07		
	VMG323	cardInitializing	Critical	VMG Initializing - Call Processing Out of Service		Yes			SN07		
	VMG324	cardLocked	Critical	Card Locked - Call Processing Out of Service		Yes			SN07		
	VMG325	cardDisabled	Critical	Card Disabled - Call Processing Out of Service		Yes			SN07		
	VMG328	lineMtcNotReady	Critical	Line Maintenance Not Ready - Call Processing Out of Service		Yes			SN07		
	VMG329	megacoMtcNotReady	Critical	Megaco Maintenance Not Ready - Call Processing Out of Service		Yes			SN07		
	VMG373	gwcUnreachable	Critical	GWC Unreachable - Call Processing Out of Service		Yes			SN07		
	VMG374	noGwcReply	Critical	GWC Reachable But No Reply To Service Change - Check LGRP/GWC state - Call Processing Out of		Yes			SN07		
	VMG376	aalBearerSubsysNotReady	Critical	AAL1 Bearer Not Ready - Call Processing Out of Service		Yes			SN07		
	VMG377	ipBearerSubsysNotReady	Critical	IP Bearer Not Ready - Call Processing Out of Service		Yes			SN07		
Performance (NORTEL-UEMG-PERFMON-MIB)	OVLD304	Performance Degraded	Minor/Major	Overload Detection Alarm that is generated whenever the MG9000 actually enters an overload condition.		Yes			SN06.2		
SCTP (NORTEL-UEMG-RELMSGING-MIB)	OVLD808	relMsgLinkFail	Critical	An external messaging link has closed and cannot send/receive		Yes			SN07		
	OVLD809	relMsgLinkSevDegraded	Major	Message loss is high enough such that the message link is in a degraded service state. For ABI, this would mean that some calls are failing and perhaps maintenance action are failing (e.g. static data download, etc)		Yes			SN07		
	OVLD810	relMsgLinkDegraded	Minor	Message retransmissions are high enough that system is starting to see performance degradation. Potentially, this could mean increased latency, reduced messaging through the system, buffer overflows and perhaps heading toward congestion.		Yes			SN07		
GIGE (NORTEL-UEMG-GIGE-MIB)	GIGE301	LOS	Critical	Loss of Signal		Yes			SN08		
	GIGE302	RFI	Critical	Remote Failure Indication		Yes			SN08		
	GIGE303	TxF	Critical	Transmit Failure		Yes			SN08		
	GIGE304	TEM	Critical	threshol exceeded		Yes			SN08		
	GIGE305	POW	Critical	Low Power Indicated		Yes			SN08		
	GIGE306	RxSD	Critical	Transmit Signal Degraded		Yes			SN08		
	GIGE307	RxEER	Critical	Transmit Excessive Error Ratio		Yes			SN08		
	GIGE308	TBC	Critical	Transmit Bias Current		Yes			SN08		
	GIGE309	LINT	Critical	Link Initialization		Yes			SN08		
	GIGE310	OPT	Critical	Transmit Optical Power		Yes			SN08		
	GIGE311	OPR	Critical	Receive Optical Power		Yes			SN08		
	GIGE312	GARP	Critical	GARP Opers		Yes			SN08		

	GIGE313	LKINT	Critical	Link Integrity Failure		Yes			SN08		
	GIGE314	Auto negotiation	Critical	Auto n egotiation Failure		Yes			SN08		
	GIGE315	non preferred link	Critical	Non Preferred Link Is active		Yes			SN08		
	OMC300		Critical	Indicates that OM Collector failed to collect OM file from MG9K during a particular collection interval.							
IPSec (NORTEL-UEMG-IPSEC-MIB)	IPSC300	ipsecMismatchSharedKey	Critical	During negotiation, the key received did not match the one locally set		Yes			SN08		
	IPSC301	ipsecIkePeerLinkExpired	Critical	Phase 1 security association has expired or not present		Yes			SN08		
	IPSC302	ipsecSecurePeerLinkExpired	Critical	Phase 2 security association has expired or not present		Yes			SN08		
	IPSC303	ipsecDoSCallp	Critical	Packets are being replayed to the call processing interface. Possible Denial of Service attack		Yes			SN08		
	IPSC304	ipsecDoSMgmt	Critical	Packets are being replayed to the call processing interface. Possible Denial of Service attack		Yes			SN08		
	IPSC305	ipsecMaxDiscardedPktRate	Minor	An inordinate percentage of the received/transmitted packets are being discarded as a result of current security policies. Indicates possible mis-configuration, or denial of service attack		Yes			SN08		
	IPSC306	ipsecRadiusTimeout	Major	MG9K's requests sent to RADIUS server has timed out		Yes			SN08		

Supported in EM but not enabled at MG9000

New or changed in SN08

MG9000 Reported Event LOGs

LOG Subsystem (MIB)	LOG Id	LOG Type	Description	SN06 VoA Telcordia Coverage?	Supported/ Enabled	Procedure To Generate LOG	EM Supported	LOG Output Example
ATM Event (NORTEL-UEMG-ATM-MIB)	VC600	atmIntfPvcFailures-Trap	Indicates that one or more PVPLs or PVCLs on this interface has failed since the last atmPvcFailuresTrap was sent.	n/a	no	N/A	SN04	
	VC800	nn5AtmIfThreshold	Generated when an ATM interface stat exceeds the specified threshold	n/a	no	N/A	SN04	
	VC801	nnAtmStatsVcThreshTrap	Generated when the VC stat exceeds specified threshold.	n/a	no	N/A	SN04	
Data Audit Event	MGAU600	AuditLogNotification	Generated my the MG9000 Manager when an Audit is started, stopped, a data missmatch was found between them MG9000 and the MG9000 Manager, or a communications failure occurred while the Audit was running	N	yes	Clear the data from an ITP card, start the Audit, letting it run to compleation.	SN05	
Bandwidth Event (NORTEL-UEMG-BANDWIDTH-MIB)	BW800	nnBwSwitchFabricCongestion	A nnBwSwitchFabricCongestion Notification is generated when one of the input cellQueues Cross the configured threshold percentage.	N	yes	This fault is very difficult to produce during normal operations with a test set or manual action. The best way to generate this fault is using the following **Dshell** command. To do this "cd" to SNMP and use the "bwevents" command with the "swfabric" option.	SN04	NTL STD: RTPS BW800 JAN28 22:10:40 0462 THR MG9K BW Switch Fabric Congestion NE Number: 19 NE Name: CO_19 PhysLoc: Ne.ne19 Bandwidth Switch Fabric Congestion Type: CBR Switch Fabric Congestion Bandwidth Bandwith Notification Value: 70.0 % Bandwidth Current Total Queue Fill: 90.0 %
	BW801	nnBwBandwUtilizationCongestion	A nnBwBandwUtilization Notification is generated when the the total or dsl's cell rates Cross the configured threshold percentage.	N	yes	Set the DSL threshold (at BW Manager GUI an EM) to a low level, generate data traffic on a number of DSL lines until the LOG appears.	SN04	SCC2: 10 BW 800 8936 THR MG9K BW Switch Fabric Congestion NE Number: 19 NE Name: CO_19 PhysLoc: Ne.ne19 Bandwidth Switch Fabric Congestion Type: CBR Switch Fabric Congestion Bandwidth Bandwith Notification Value: 70.0 % Bandwidth Current Total Queue Fill: 90.0 %
DS1 Carrier Event (NORTEL-UEMG-CARRIER-MIB)	MGCA500	dsx1LineStatus-Change	Trap is sent when the value of an instance dsx1Line Status changes.	N	yes	Remove the DS1 cable and replace	SN04	
	MGCA600	apsTrapSwitchover	Sent when the value of an instance of apsChanSwitchover increments.	n/a	no	N/A	SN04	
	MGCA601	apsTrapModeMis-match	Sent when the value of an instance of apsStatusModeMismatch increments	n/a	no	N/A	SN04	
	MGCA602	apsProtSwitchRejectEvent		n/a	no	N/A	SN04	
	MGCA800	norCarrThreshold	Sent when a Carrier exceeds the specified threshold on a given performance Measure.	N	yes		SN04	
BIP Input/Output State Change (NORTEL-UEMG-SHF-MIB)	SHLF501	nnShfInputOutputOperStatus	TRAP sent when any BIP Input/Output state change event occurs for an Input/Output with an alarm severity of indeterminate.	N	yes	Change any BIP Input/Output Alarm Severity setting to indeterminate and then follow test procedure for that alarm.	SN04	
Test Event	TEST600	testComplete	Signifies that a test has completed for a particular entity	N	yes	Run a Line test or Run a Line card Diag	SN04	
Link Event	LINK500	linkDown	Signifies that the SNMPv2 entity has detected that the ifOperStatus object is about to enter the down state.	N	yes	Take the ITP card pair Lock and Offline	SN04	
	LINK501	linkUp	Signifies that the SNMP entity has detected that the ifOperStatus object left the down state.	N	yes	Take the ITP card pair online and Unlocked	SN04	
Clock Sync Event (NORTEL-UEMG-CLOCKSYNC-MIB)	CLK500	ClockSyncChange	A change has occured for Clock Sync: timingModeChange (1), clockModeChange (2),	N	yes	Remove the Colck source cable to the ITX card	SN04	
SLoA Event	SWL600	nnMtaTrapConnectionStatus	Sent when SNM indicates status of the connection	N	yes	Put line under test	SN04	
MEGACO Event	MGC500	medGwyLinkStatus-Change	Indicates that status of media gateway control link has changed.	n/a	no	N/A	SN04	
	MGC501	medGwyTermination-StatusChange	Sent when a termination changes Status.	n/a	no	N/A	SN04	
SNMP Event	SNMP600	snmpEnableAuthen-Traps	Indicates permission to generate authentificationFailure traps.	n/a	no	N/A	SN04	
	SNMP601	coldStart	Signifies that the SNMP entity is reinitializing itself and its configuration may have been altered.	N	yes	Initiate Coldstart from the MG9K LCI	SN04	
	SNMP602	warmStart	Signifies that the SNMP entity is reinitializing itself such that its configuration is unaltered.	n/a	no	N/A	SN04	
Network Element Event (NORTEL-UEMG-NODE-MIB)	NE500	norNodeSwact	Generated when the Node does a switch of activity.	N	yes	SWAC the OC3 card pair	SN04	
	NE501	norNodeStateChange	Generated when the Node changes state.	N	yes	Take ITP OOS, put back inservice	SN04	
	NE502	DS1SpareOperationEvent	Generated when a DS1 card is spared	N	yes	Manually spare a ds1 card	SN04	
	NE503		ABI Switch Mastership		yes		SN06.2	
	NE504		ABI State Change		yes		SN06.2	
	NE600	entConfigChange	Generated when the value of entLastChangeTime changes.	N	yes	Plug in new line card	SN04	
	NE601	norNodeRestartBegin	Generated when the Node is restarting.	N	yes	Restart ITP card	SN04	
	NE602	norNodeRestart-Complete	Generated when the Node completes its Restart	N	yes	Same as above	SN04	
	NE603	norNodeSWLoad-Complete	Generated when the Node completes its SoftwareLoad.	N	yes	Load an ITP with new SW load	SN04	
	NE604	norNodeSWUpgrade-Complete	Generated when a SW Upgrade has completed	N	yes	Same as above	SN04	
	NE605		Generated when a Network Element is deleted	N	yes	Delete a MG9K from the EM	SN04	
	NE602		Generated when a Reinitialize Gateway event occurs	N	yes	Envoke the Reinitialize option on the OC3 card	SN05	
	NE607	norNodeCardDeleted	Generated when a card is deleted	N	yes	Provision an MG9K card for deletion from the EM then pull the card from MG9K	SN04	
	NE608	norNodeCardInserted	Generated when a card is inserted	N	yes	Insert a MG9K card at the MG9K	SN04	
	NE609		generated whenever a user executes an image request	N	yes		SN07	
Alarm Reliability Event	ALM998	AlarmSequenceError	Generated when the MG9000 Manager detects it has missed Alarms from the MG9000	N	yes	Break connection (OC3) to MG9K, generate a number of alarms at MG9K, resetup MG9K connection.	SN04	
	ALM999	AlarmSequenceRestored	Generated when the MG9000 Manager recovered the missing Alarms from the MG9000	N	yes	Same as above	SN04	
DSL Event (NORTEL-UEMG-DSL-MIB)	XDSL600	adslAtucRateChangeTrap	The ATUCs transmit rate has changed (RADSL mode only)	n/a	no	N/A	SN04	
	XDSL601	adslAtucInitFailureTrap	ATUC initialization failed	n/a	no	N/A	SN04	
	XDSL602	adslAturRateChangeTrap	The ATURs transmit rate has changed (RADSL mode only)	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL800	adslAtucPerfLofsThreshTrap	Loss of Framing 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL801	adslAtucPerfLossThreshTrap	Loss of Signal 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL802	adslAtucPerfLprsThreshTrap	Loss of Power 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL803	adslAtucPerfESsThreshTrap	Errored Second 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL804	adslAtucPerfLolsThreshTrap	Loss of Link 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL805	adslAturPerfLofsThreshTrap	Loss of Framing 15-minute interval threshold reache	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL806	adslAturPerfLossThreshTrap	Loss of Signal 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL807	adslAturPerfLprsThreshTrap	LPRS 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL808	adslAturPerfESsThreshTrap	Errored Second 15-minute interval threshold reached	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
	XDSL809	nnDSLThreshold Trap	a nnDslThreshold notification is sent when a DSL Interface exceeds the specified threshold on a given performanceMeasure, specified by the nnDslThresholdNotifyType: atuclec (1), atuccrc (2), atucncd (3), atucocd (4), atuchec (5), atuclcd (6), aturfec (7), aturblockError (8), aturncd (9), aturocd (10), aturhec (11), aturlcd (12)	N	yes	Using an ADSL Modem **test set** inject large numbers of this type of error.	SN04	
Manager Upgrade Event	UPGD600		indicating an upgrade is needed.	N	yes	Requires the customer to perform the upgrade or downgrade procedure. Follow MG9K EM upgrade procedures	SN06	
	UPGD601		indicating an export has started	N	yes	Requires no immediate action	SN06	
	UPGD602		indicating an export has completed	N	yes	Same as above	SN06	
	UPGD603		indicating an import has started	N	yes	Same as above	SN06	
	UPGD604		indicating an import has completed	N	yes	Same as above	SN06	
	MGEM687		Indicates that an attempt to correct the database has failed for Line Circuit(s).	N	yes		SN07	
	MGEM688		Indicates that an attempt to correct the database has failed for Termination(s).	N	yes		SN07	
	MGEM89		Indicates that the Database is unavailable and correction failed.	N	yes		SN07	

Manager Event	**MGEM699**		MG9K Discovery Status Event	N	yes		SN07	
	MGEM700		MG9000 Manager Server application Startup	N	yes	Telnet into the MG9000 Manager server and execute the shutdown procedure then execute following command "/opt/nortel/mg9ksrv_06/bin/mg9kimpl start"	SN06	
	MGEM701		MG9000 Manager Server application Shutdown	N	yes	Telnet into the MG9000 Manager server and execute the following command "/opt/nortel/mg9ksrv_06/bin/mg9kimpl stop"	SN06	
	MGEM702		MG9000 Manager Mid-Tier Server application Startup	N	yes	Telnet into the MG9000 Manager Mid-Tier server and execute the shutdown procedure then execute the following command "/opt/nortel/mg9kmtr_06/bin/mg9kmidtimpl start"	SN06	
	MGEM703		MG9000 Manager Mid-Tier Server application Shutdown	N	yes	Telnet into the MG9000 Manager Mid-Tier server and execute the following command "/opt/nortel/mg9kmtr_06/bin/mg9kmidtimpl stop"	SN06	
OM Collector Event	**OMC700**		MG9000 Manager Mid-Tier Server OM Collector application Startup	N	yes	Telnet into the MG9000 Manager Mid-Tier server and execute the shutdown procedure then execute the following command "/opt/nortel/omcltr_06/bin/OMimpl start"	SN06	
	OMC701		MG9000 Manager Mid-Tier Server OM Collector application Shutdown	N	yes	Telnet into the MG9000 Manager Mid-Tier server and execute the following command "/opt/nortel/omcltr_06/bin/OMimpl stop"	SN06	
Performance (NORTEL-UEMG-PERFMON-MIB)	**OVLD800**	ovldRscMonPduRateFault	Pdu Rate Threshold crossed.		yes		SN06.2	
	OVLD801	ovldRscMonCbvMsgRFault	Cbv Message Rate Overloaded Alarm		yes		SN06.2	
	OVLD802	ovldRscMonConnQueFault	Connection Queue Overloaded Alarm.		yes		SN06.2	
	OVLD803	ovldRscMonCpuUtilFault	PDU Rate Overloaded Alarm.		yes		SN06.2	
	OVLD804	perfMonCPUFault	CPU Utilization Overloaded Alarm		yes		SN06.2	
	OVLD805	perfMonRamFault	RAM Utilization Overloaded Alarm		yes		SN06.2	
	OVLD806	perfMonFlashFault	Flash Utilization Overloaded Alarm		yes		SN06.2	
	OVLD807	perfMonChannFault	Chan Utilization Overloaded Alarm		yes		SN06.2	
	VMG600		Indicates that termination data was successfully provisioned in all appropriate areas except for the database.	N	yes		SN07	
	VMG601		Indicates that an attempt to correct termination data in the database has passed.	N	yes		SN07	
	REX600		Indicates the start or completion of REX on a card/card-pair. The cards under consideration are ITP, ITX and DCC.		yes		SN08	
	REX601		Indicates the success or failure of REX on a card/card-pair. The cards under consideration are ITP, ITX and DCC		yes		SN08	
	REX602		Indicates that the REX for the card/card-pair under consideration has been skipped. The card types considered are ITP, ITX and DCC.		yes		SN08	

New or changed in SN07

MG9000 Manager User Action Audit LOGs

LOG Subsystem	LOG Id	LOG Type	Description	SN06 VoA Telcordia Coverage?	Procedure To Generate LOG
MG9000 Manager	**MGEM600**	MG9000 HW	SWACT of ABI, ITP, ITX, OC3, or IMA card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM601	MG9000 HW	Lock of ABI, ITP, ITX, OC3, IMA, DS1, MTA, WLC, SAA, XDSL, SIC card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM602	MG9000 HW	Unlock of ABI, ITP, ITX, OC3, IMA, DS1, MTA, WLC, SAA, XDSL, SIC card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM603	MG9000 HW	Force Lock of ABI, ITP, ITX, OC3, IMA, DS1, MTA, WLC, SAA, XDSL, SIC card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM604	MG9000 HW	Force Unlock of ABI, ITP, ITX, OC3, IMA, DS1, MTA, WLC, SAA, XDSL, SIC card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM605	MG9000 HW	Diag of ABI, ITP, ITX, OC3, IMA, DS1, MTA, WLC, SAA, XDSL, SIC card	n/a	See procedures in MG9000 FCAPS Document Fault Management section
	MGEM606	SLoA Services	Create a VMG	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM607	SLoA Services	Delete a VMG	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM608	SLoA Services	ESA data configuration	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM609	SLoA Services	Gateway data configuration	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM610	SLoA Services	Create Termination	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM611	SLoA Services	Bulk Termination creation	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM612	SLoA Services	Create ESA Service Code	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM613	SLoA Services	Delete ESA Service Code	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM614	SLoA Services	Delete Termination	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM615	SLoA Services	Bulk Termination deletion	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM616	SLoA Services	Delete all termination on a card	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM617	SLoA Services	Change Termination data	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM618	PLoA Services	Create a PLoA Passive Endpoint	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM619	PLoA Services	Create a PLoA Active Endpoint	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM620	PLoA Services	Create a PLoA Hairpin connection	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM621	PLoA Services	PLoA Connection Admin State change	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM622	PLoA Services	PLoA Service Restart	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM623	PLoA Services	PLoA Connection SVC test initiated	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM624	PLoA Services	PLoA Connection SVC test abort	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM625	PLoA Services	PLoA Connection Unlock test	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM626	PLoA Services	Delete a PLoA Endpoint	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM627	ADSL Services	Modify ADSL data circuit provisioning attributes	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM628	ADSL Services	De-provision ADSL data circuit service	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM629	ADSL Services	Add new ADSL data circuit	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM630	ADSL Services	Change ADSL data circuit	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM631	ADSL Services	Delete ADSL data circuit	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM632	DS1 IMA	Set links in DS1 IMA group	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM633	DS1 IMA	Start DS1 IMA group pattern test	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM634	DS1 IMA	Stop DS1 IMA group pattern test	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM635	DS1 IMA	Add DS1 IMA link to group	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM636	DS1 IMA	Remove DS1 IMA link from group	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM637	DS1 IMA	Set administration state on DS1 IMA link	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM638	DS1 IMA	Set configuration state on DS1 IMA link	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM639	Carrier	OC3, DS1 IMA, DS1, DS0, carrier lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM640	Carrier	OC3, DS1 IMA, DS1, DS0, multiple carrier lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM641	Carrier	OC3, DS1 IMA, DS1, DS0, carrier unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM642	Carrier	OC3, DS1 IMA, DS1, DS0, multiple carrier unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM643	Carrier	OC3, DS1 IMA, DS1, DS0, forced carrier lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM644	Carrier	OC3, DS1 IMA, DS1, DS0, forced multiple carrier lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM645	Carrier	OC3, DS1 IMA, DS1, DS0, forced carrier unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM646	Carrier	OC3, DS1 IMA, DS1, DS0, forced multiple carrier unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM647	Carrier	OC3, DS1 IMA, DS1, DS0, carrier online	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM648	Carrier	OC3, DS1 IMA, DS1, DS0, multiple carrier online	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM649	Carrier	OC3, DS1 IMA, DS1, DS0, carrier offline	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM650	Carrier	OC3, DS1 IMA, DS1, DS0, multiple carrier offline	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM651	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM652	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit multiple lock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM653	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section

	MGEM654	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit multiple unlock	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM655	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit diagnostic check	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM656	Line Circuit	WLC, ADSL Data/Line circuit abort diagnostic check	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM657	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit set end to end test port	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM658	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit set PAV test port	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM659	Line Circuit	WLC, ADSL Data/Line, SAA Line circuit clear test	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM660	LCI	Create new LCI user	n/a	
	MGEM661	LCI	Delete existing LCI user	n/a	
	MGEM662	LCI	Modify existing LCI user data	n/a	
	MGEM663	DS1	Channelize DS1 carrier	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM664	DS1	Unchannelize DS1 carrier	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM665	DS1	Modify DS1 carrier provisioning attributes	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM666	DS1	Synchronize pre-provisioned bundles	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM667	DS1	Assign DS1 card spare	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM668	DS1	Rlease DS1 card spare	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM669	DS1	Revert DS1 card sparing activity	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM670	DS1	Initiate DS1 card sparing activity	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM671	DS1	Add DS1 card to protection group	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM672	DS1	Remove DS1 card from protection group	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM673	DS1 DS0	Provision DS0 bundle on DS1 carrier	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM674	DS1 DS0	Modify DS0 bundle	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM675	DS1 DS0	Set DS0 bundle ciruit identifier	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM676	DS1 DS0	Lock DS0 bundle	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM677	DS1 DS0	Unlock DS0 bundle	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM678	DS1 DS0	Delete DS0 bundle	n/a	See procedures in MG9000 FCAPS Document Configuration Management section
	MGEM679	ABI	ABI Card Switch Mastership requested		
	MGEM679		getCardType(+ restart requested		
	MGEM679		Frame location update requested		
	MGEM680		getCardType(+ configuration state (Online/Offline/Deprovision/Re-Initialize change requested		
	MGEM681	NE	Provisioning Request		
	MGEM682	Carrier - OC3	Carrier Modification Request		
	MGEM683	MG9000 Frame	Frame Location Update Request		
	MGEM684	MG9000 HW	Restart Requested		
	MGEM685		Audit request for one NE		
	MGEM686		Software Download Requested-single card type		
	MGEM687		(See Event LOGs)		
	MGEM688		(See Event LOGs)		
	MGEM689		(See Event LOGs)		
	MGEM690		Unused		
	MGEM691		Unused		
	MGEM692		Unused		
	MGEM693		Unused		
	MGEM694		Unused		
	MGEM695		Unused		
	MGEM696		Unused		
	MGEM697		Unused		
	MGEM698		Unused		
	MGEM699		(See Event LOGs)		
	MGEM700		(See Event LOGs)		
	MGEM701		(See Event LOGs)		
	MGEM702		(See Event LOGs)		
	MGEM703		(See Event LOGs)		
	MGEM704		Delete NE request		
	MGEM705		Force Deprovision		
	MGEM706		Provision/Create a DFAD Tap		
	MGEM707		Deprovision/Delete a DFAD Tap		
	MGEM708		Start & Stop - Sync Backup		
	MGEM709		Provision/Create an MTAP request		
	MGEM710		Deprovision/Delete an MTAP request		
	MGEM711		Upgrade VMG requested		
	MGEM712		Submit a request for audit		
	MGEM713		Discovery request		
	MGEM714		Upgrade Request		

Appendix F: CICM Logs and Alarms for SN08

The following table is the list of events that can be generated by the SAM21 blade-based CICM product in SN08. Some notes on the table's contents at the time of writing:

• The CICM353 log events are unique to the SAM16-based CICM product and are not contained in the table below.

• The CICM328 log (WindowsRestart alarm) has no identified clear in the table below. The WindowsRestart alarm occurs when CICM restarts. When the CICM application comes up, there is a cold start trap generated which is not documented in the table below. It may be possible to use this event as a "clear" for WindowsRestart.

• Items highlighted in bold are changes one can expect from the previous release.

CICM Logs and Alarms in SN08

Log	CICM Log Output Path	Alarm	Log Severity	Category	Decription	Specific Problem
CICM300	Legacy Error Log.	Log details: XXX	None	environmental	Legacy Error Log.	Log details: XXX
CICM300	Legacy Warning Log.	Log details: XXX	None	environmental	Legacy Warning Log.	Log details: XXX
CICM301	Software Version Mismatch.	Version Mismatch. Local Version XXX. Mate Version XXX.	Minor	environmental	Software Version Mismatch.	Version Mismatch. Local Version XXX. Mate Version XXX.
CICM301	Software Version Mismatch.	Version Mismatch. Local Version XXX. Mate Version XXX.	None	environmental	Software Version Mismatch.	Version Mismatch. Local Version XXX. Mate Version XXX.
CICM302	Route/element state mismatch	Resetting adapter, state= XXX mate=XXX	None	communications	Route/element state mismatch	Resetting adapter, state= XXX mate=XXX
CICM303	Corrupt VLCM.	VLCM name XXX is corrupt - in memory gateway already has id of XXX.	**None**	equipment	Corrupt VLCM.	VLCM name XXX is corrupt - in memory gateway already has id of XXX.
CICM304	Unable to bind IP.	Unable to bind IP adress XXX to interface XXX.	None	communications	Unable to bind IP.	Unable to bind IP adress XXX to interface XXX.

CICM305	Unable To Bind Adapter.	Unable to obtain dynamic adapter config from Mib - cannot bind adapter.	None	processingError	Unable To Bind Adapter.	Unable to obtain dynamic adapter config from Mib - cannot bind adapter.
CICM306	No admin Ip for node A.	No admin address datafilled for node A	None	processingError	No admin Ip for node A.	No admin address datafilled for node A
CICM306	No admin Ip for node B.	No admin address datafilled for node B	None	processingError	No admin Ip for node B.	No admin address datafilled for node B
CICM306	No admin net mask.	No admin net mask datafilled	None	processingError	No admin net mask.	No admin net mask datafilled
CICM306	Invalid admin address.	Invalid admin ip address specified XXX	None	processingError	Invalid admin address.	Invalid admin ip address specified XXX
CICM306	Invalid admin mask.	Invalid admin mask specified XXX	None	processingError	Invalid admin mask.	Invalid admin mask specified XXX
CICM307	Skipping disabled adapter	Skipping disabled XXX adapter.	None	communications	Skipping disabled adapter	Skipping disabled XXX adapter.
CICM308	UFTPSession Timeout.	Timed out after XXX secs - No request details received from client	None	communications	UFTPSessionTimeout.	Timed out after XXX secs - No request details received from client
CICM308	UFTPSession Timeout.	Timed out after XXX secs - No response from client	None	communications	UFTPSessionTimeout.	Timed out after XXX secs - No response from client
CICM308	UFTPSession Timeout.	Timed out after XXX secs - Terminated after error occured	None	communications	UFTPSessionTimeout.	Timed out after XXX secs - Terminated after error occured
CICM309	NoStreamsAvailable.	No streams available for CreateConnection, XXX streams already allocated	None	communications	NoStreamsAvailable.	No streams available for CreateConnection, XXX streams already allocated

CICM310	H248 Send Port Not Found in MIB.	XXX : H248 send port not found in MIB.Defaulting to XXX	None	communications	H248 Send Port Not Found in MIB.	XXX : H248 send port not found in MIB.Defaulting to XXX
CICM310	H248 Listen Port Not Found in MIB.	XXX : H248 listen port not found in MIB.Defaulting to XXX	None	communications	H248 Listen Port Not Found in MIB.	XXX : H248 listen port not found in MIB.Defaulting to XXX
CICM311	Could not open registry key.	Could not open XXX in registry. New hierarchy needs to be created. This event can be generated during initial configuration of the gateway.	None	processingError	Could not open registry key.	Could not open XXX in registry. New hierarchy needs to be created. This event can be generated during initial configuration of the gateway.
CICM311	Mib failed to open key.	Mib node error: failed to open key XXX.	None	processingError	Mib failed to open key.	Mib node error: failed to open key XXX.
CICM312	MIB compatibility failure.	MIB compatability failure. Could not find the MIB entries for release XXX	None	processingError	MIB compatibility failure.	MIB compatability failure. Could not find the MIB entries for release XXX
CICM312	MIB compatibility remote failure.	MIB compatability failure. Could not find the MIB entries for release XXX on remote node	None	processingError	MIB compatibility remote failure.	MIB compatability failure. Could not find the MIB entries for release XXX on remote node
CICM313	GWC Connection Loss	CICM has lost connection with the GWC	Critical	communications	GWC Connection Loss	CICM has lost connection with the GWC
CICM313	GWC Connection Loss	CICM has regained connection with GWC	None	communications	GWC Connection Loss	CICM has regained connection with GWC
CICM314	Mib Registry Read Failure.	Mib registry error: failed to read attribute XXX in key XXX. Probable cause is out of date config data.	None	processingError	Mib Registry Read Failure.	Mib registry error: failed to read attribute XXX in key XXX. Probable cause is out of date config data.

CICM316	Unable to create a socket.	Unable to create a socket. Error = XXX	None	communications	Unable to create a socket.	Unable to create a socket. Error = XXX
CICM316	Unable to Bind Socket to IP.	Unable to Bind Socket to IP address.	None	communications	Unable to Bind Socket to IP.	Unable to Bind Socket to IP address.
CICM316	Addr not available.	Specified address is not available on the local host.	None	communications	Addr not available.	Specified address is not available on the local host.
CICM316	Addr already in use.	Specified address is already in use.	None	communications	Addr already in use.	Specified address is already in use.
CICM316	No async read mode	Unable to select asynchronous read mode. Error = XXX	None	communications	No async read mode	Unable to select asynchronous read mode. Error = XXX
CICM316	Error setting socket tmo	Error setting socket timeout.Error = XXX	None	communications	Error setting socket tmo	Error setting socket timeout.Error = XXX
CICM322	System Shutdown	System is shutting down due to user command.	Critical	processingError	System Shutdown	System is shutting down due to user command.
CICM322	System Shutdown	System is starting up.	None	processingError	System Shutdown	System is starting up.
CICM323	Slave adapter received no packets	Slave adapter XXX received no packets	None	communications	Slave adapter received no packets	Slave adapter XXX received no packets
CICM324	Fatal Error in state	Fatal error in state XXX.	None	equipment	Fatal Error in state	Fatal error in state XXX.
CICM325	Element Not Configured.	Element XXX is not configured.	None	processingError	Element Not Configured.	Element XXX is not configured.
CICM325	Config data missing.	Configuration data missing, service cannot start.	None	processingError	Config data missing.	Configuration data missing, service cannot start.
CICM326	Unable to get physical link status	Unable to get physical link status for device XXX	None	communications	Unable to get physical link status	Unable to get physical link status for device XXX

CICM327	Failed to start network status	Failed to start network status object, hr=0x XXX	None	equipment	Failed to start network status	Failed to start network status object, hr=0x XXX
CICM328	Windows restart	Auto reboot on failure is set. Initiating windows restart.	Critical	equipment	Windows restart	Auto reboot on failure is set. Initiating windows restart.
CICM329	Audit Mate Node Down	Node initialisation: mate node is down	None	equipment	Audit Mate Node Down	Node initialisation: mate node is down
CICM329	Audit Mate Node Down	Node initialisation: mate node is active in state XXX	None	equipment	Audit Mate Node Down	Node initialisation: mate node is active in state XXX
CICM330	Can't do physical check on link	Can't do physical check on link XXX	None	communications	Can't do physical check on link	Can't do physical check on link XXX
CICM331	Component failure : shutdown	Component XXX has failed. Initiating shutdown. XXX	None	equipment	Component failure : shutdown	Component XXX has failed. Initiating shutdown. XXX
CICM332	Bad transition on mate node	Bad transition on mate node from XXX to XXX	None	equipment	Bad transition on mate node	Bad transition on mate node from XXX to XXX
CICM333	No access to remote name	No access to the remote name in the MIB.	None	communications	No access to remote name	No access to the remote name in the MIB.
CICM334	Audit: Mate Node Failed	Mate node failed - Broadcast failure and ask components to promote to Master.	None	equipment	Audit: Mate Node Failed	Mate node failed - Broadcast failure and ask components to promote to Master.
CICM334	Audit: Mate Node Failed	Mate node recovered.	None	equipment	Audit: Mate Node Failed	Mate node recovered.
CICM335	Route Element Invalid	Local route element XXX or remote route element XXX is invalid	None	communications	Route Element Invalid	Local route element XXX or remote route element XXX is invalid

CICM336	Network loss and recovery	Network has been lost and then recovered, mate (slave) must reboot.	None	communications	Network loss and recovery	Network has been lost and then recovered, mate (slave) must reboot.
CICM337	Message To Node A Failed	Failed to send message to Node A.	Major	equipment	Message To Node A Failed	Failed to send message to Node A.
CICM337	Message To Node A Failed	Clear Failed to send message to Node A.	None	equipment	Message To Node A Failed	Clear Failed to send message to Node A.
CICM338	Network Element Failed	Network Element XXX Failed	None	communications	Network Element Failed	Network Element XXX Failed
CICM339	No Message Received From B	Have not received a message from Node B for 1.5*ALARM_POLL_PERIOD Seconds. XXX	Major	equipment	No Message Received From B	Have not received a message from Node B for 1.5*ALARM_POLL_PERIOD Seconds. XXX
CICM339	No Message Received From B	Clear: Have not received a message from Node B for 1.5*ALARM_POLL_PERIOD Seconds. XXX	None	equipment	No Message Received From B	Clear: Have not received a message from Node B for 1.5*ALARM_POLL_PERIOD Seconds. XXX
CICM340	Can't set local adapter	Can't set local adapter, invalid adapter specified	None	communications	Can't set local adapter	Can't set local adapter, invalid adapter specified
CICM341	Backup Fail.	Scheduled/on-demand backup failed during last iteration.	Minor	processingError	Backup Fail.	Scheduled/on-demand backup failed during last iteration.
CICM341	Backup Fail.	Scheduled/on-demand backup failed during last iteration.	None	processingError	Backup Fail.	Scheduled/on-demand backup failed during last iteration.
CICM342	Unable to bind admin IP address to interface	Unable to bind admin IP address to interface XXX - will continue to attempt to bind	None	communications	Unable to bind admin IP address to interface	Unable to bind admin IP address to interface XXX - will continue to attempt to bind

CICM344	Can't set slave adapter	Can't set slave adapter, invalid adapter specified XXX	None	communications	Can't set slave adapter	Can't set slave adapter, invalid adapter specified XXX
CICM345	EM MAte Down	Mate node down. Name: XXX. XXX	None	communications	EM MAte Down	Mate node down. Name: XXX. XXX
CICM346	EM Mate Down	Couldn't write EM remote node status to Mib	None	communications	EM Mate Down	Couldn't write EM remote node status to Mib
CICM348	Changing slave adapter	Changing slave adapter from XXX to XXX	None	communications	Changing slave adapter	Changing slave adapter from XXX to XXX
CICM350	Get Interface Device Mapping Failed	Get Interface Device Mapping Failed	None	communications	Get Interface Device Mapping Failed	Get Interface Device Mapping Failed
CICM352	Can't map adapter	Can't map XXX to an NT device, link state won't be checked	None	communications	Can't map adapter	Can't map XXX to an NT device, link state won't be checked
CICM354	maxRudpSessionsNotPresent.	Maximum sessions configuration not present	None	equipment	Not Enough Fans	Number of Running Fans = XXX. Must have at least XXX running fans
CICM354	UnableToSetMaxRUDPSessions.	unable to set max RUDP sessions [may already be started]	Major	equipment	Fan Cooling Problem	Fan XXX has a cooling problem.
CICM355	Bind UDP socket for vmg failed.	Failed to start UDP socket. hr XXX	None	equipment	Fan Cooling Problem	Clear fan XXX has a cooling problem.
CICM355	VMG termination invalid.	VMG XXX termination XXX invalid	Minor	equipment	CPU A High Temp	CPU A has a high temperature of XXX
CICM356	Adapter down	Adapter XXX is down - aborting start until all adapters are up	None	equipment	CPU A High Temp	Clearing CPU A has a high temperature. Temperature is now XXX
CICM357	EchoServerPortNotPresent.	Echo server port configuration not present	Minor	equipment	CPU B High Temp	CPU B has a high temperature of XXX
CICM358	Unable to map ne to an interface number	Unable to map ne XXX to an interface number	None	equipment	CPU B High Temp	Clearing CPU B has a high temperature. Temperature is now XXX

CICM359	**Mate Node COM Failure.**	**COM method failed to mate node (XXX).**	None	communications	maxRudpSessionsNotPresent.	Maximum sessions configuration not present
CICM359	**Mate Node COM Failure.**	**COM method succeeded to mate node.**	None	communications	UnableToSetMaxRUDPSessions.	unable to set max RUDP sessions [may already be started]
CICM360	Auto-bind adapter problem	Auto-bind adapter XXX XXX	None	communications	Bind UDP socket for vmg failed.	Failed to start UDP socket. hr XXX
CICM361	HostPortNotPresent.	Host port configuration not present	None	communications	VMG termination invalid.	VMG XXX termination XXX invalid
CICM362	Swact request rejected	Swact request rejected XXX	None	communications	Adapter down	Adapter XXX is down - aborting start until all adapters are up
CICM363	Create ConnectionAck Failed.	CreateConnectionAck::can't determine destination for message	None	communications	EchoServerPortNotPresent.	Echo server port configuration not present
CICM363	Modify ConnectionAck Failed.	ModifyConnectionAck::can't determine destination for message	None	communications	Unable to map ne to an interface number	Unable to map ne XXX to an interface number
CICM363	Set ConnectionAck Failed.	SetConnNetModeAck::can't determine destination for message	Major	communications	Mate Node COM Failure.	COM method failed to mate node (XXX).
CICM363	no ptime can be negotiated.	Ensure a common ptime exists between the GWC and the CICM terminal audio profile	None	communications	Mate Node COM Failure.	COM method succeeded to mate node.
CICM363	no codec can be negotiated.	Ensure a common codec exists between the GWC and the CICM terminal audio profile	None	communications	Auto-bind adapter problem	Auto-bind adapter XXX XXX
CICM364	Register Gateway Failed	Register Gateway XXX Failed	None	communications	HostPortNotPresent.	Host port configuration not present
CICM364	UnRegister Gateway Failed	UnRegister Gateway XXX Failed	None	communications	Swact request rejected	Swact request rejected XXX

CICM365	Mib Sync Mate Failure	Mate node failed during MIB syncronisation. This node will start partially Synchronised.	None	communications	Create ConnectionAck Failed.	CreateConnectionAck::can't determine destination for message
CICM366	Mib Sync SCM Poll Failure	Opening Service Control Manager FAILURE.	None	communications	Modify ConnectionAck Failed.	ModifyConnectionAck::can't determine destination for message
CICM367	Error Datafilling Tones	Error encountered datafilling tones!.	None	communications	Set ConnectionAck Failed.	SetConnNetModeAck::can't determine destination for message
CICM368	Max Sessions Not Present	Invalid config. Max Sessions not present.	None	communications	no ptime can be negotiated.	Ensure a common ptime exists between the GWC and the CICM terminal audio profile
CICM368	MaxSessionsNotPresent.	Maximum sessions configuration not specified	None	communications	no codec can be negotiated.	Ensure a common codec exists between the GWC and the CICM terminal audio profile
CICM369	No Domain License	No network domain license for terminal at XXX	None	communications	Register Gateway Failed	Register Gateway XXX Failed
CICM370	Mate Failure.	Admin reports mate node failure.	None	communications	UnRegister Gateway Failed	UnRegister Gateway XXX Failed
CICM370	Mate Failure.	Admin reports Mate Node start.	None	equipment	Mib Sync Mate Failure	Mate node failed during MIB syncronisation. This node will start partially Synchronised.
CICM371	An Error Occured on the Terminal	Terminal Error XXX	None	equipment	Mib Sync SCM Poll Failure	Opening Service Control Manager FAILURE.
CICM372	Unable to map adapter	Unable to map XXX adapter XXX to an ip address.	None	equipment	Error Datafilling Tones	Error encountered datafilling tones!.
CICM373	UFTPFirmwareFileOpenFailed.	Failed to open file XXX.	None	equipment	Max Sessions Not Present	Invalid config. Max Sessions not present.
CICM373	UFTPFirmwareFileOpenFailed.	Invalid directory or file XXX not found	None	communications	MaxSessionsNotPresent.	Maximum sessions configuration not specified

CICM373	UFTPFirmwareFileReadError.	Firmware file XXX read error	None	equipment	No Domain License	No network domain license for terminal at XXX
CICM373	UFTPCommandFileReadError.	UFTPCommandFileReadError	Major	communications	Mate Failure.	Admin reports mate node failure.
CICM373	UFTPCommandFileCreationError.	Command = XXX	Major	communications	Mate Failure.	Admin reports Mate Node start.
CICM373	UFTPBaseDirectoryMissing.	UFTP base directory missing from registry	None	equipment	An Error Occured on the Terminal	Terminal Error XXX
CICM374	Poll Period Read Fail	Couldn't read gwPollPeriod from mib. Defaulting to 30 seconds.	None	communications	Unable to map adapter	Unable to map XXX adapter XXX to an ip address.
CICM375	SAM21 Version Mismatch.	SAM21 Version Mismatch. Version XXX	None	communications	UFTPFirmwareFileOpenFailed.	Failed to open file XXX.
CICM375	SAM21 Version Mismatch.	SAM21 Version Mismatch. Version XXX	None	communications	UFTPFirmwareFileOpenFailed.	Invalid directory or file XXX not found
CICM376	ShuttingDown Terminals.	Shutdown counter set to zero minutes, shutting down terminals immediately	None	communications	UFTPFirmwareFileReadError.	Firmware file XXX read error
CICM376	TerminalShutDownAborted.	Terminal shutdown aborted	None	communications	UFTPCommandFileReadError.	UFTPCommandFileReadError
CICM377	Syslog Failure.	Syslog failure. Last stream in failure XXX.	None	communications	UFTPCommandFileCreationError.	Command = XXX
CICM377	Syslog Failure.	Syslog failure clear.	None	communications	UFTPBaseDirectoryMissing.	UFTP base directory missing from registry
CICM378	Excessive Nodes on EM	More than 100 nodes present, unrecommended configuration	None	communications	Poll Period Read Fail	Couldn't read gwPollPeriod from mib. Defaulting to 30 seconds.

CICM379	Register Session Failed	Register Session Failed on Gateway XXX	Minor	processingError	SAM21 Version Mismatch.	SAM21 Version Mismatch. Version XXX
CICM379	Register Gateway Failed	Register Gateway XXX Failed termination XXX is out of range	None	processingError	SAM21 Version Mismatch.	SAM21 Version Mismatch. Version XXX
CICM379	Register Gateway Failed	Register Gateway XXX Failed termination XXX is invalid	None	communications	ShuttingDownTerminals.	Shutdown counter set to zero minutes, shutting down terminals immediately
CICM379	Couldn't start audit timer	Couldn't start audit timer	None	communications	TerminalShutDownAborted.	Terminal shutdown aborted
CICM380	Fail Poll MG	Failed to Poll Media Gateway XXX.	Major	communications	Syslog Failure.	Syslog failure. Last stream in failure XXX.
CICM380	Fail Poll MG	Failed to Poll Media Gateway XXX.	None	communications	Syslog Failure.	Syslog failure clear.
CICM381	Network Loss.	Critical network connection loss on adapter XXX	None	communications	Excessive Nodes on EM	More than 100 nodes present, unrecommended configuration
CICM381	Network Loss.	Critical network connection loss cleared on adapter XXX	None	communications	Register Session Failed	Register Session Failed on Gateway XXX
CICM381	Network Loss.	Major network connection loss on adapter XXX	None	communications	Register Gateway Failed	Register Gateway XXX Failed termination XXX is out of range
CICM381	Network Loss.	Major network connection loss cleared on adapter XXX	None	communications	Register Gateway Failed	Register Gateway XXX Failed termination XXX is invalid
CICM381	**Network Redundancy Loss.**	**Network redundancy lost to the mate node**	None	communications	Couldn't start audit timer	Couldn't start audit timer
CICM381	**Network Redundancy Loss.**	**Network redundancy restored to the mate node**	None	communications	Fail Poll MG	Failed to Poll Media Gateway XXX.

CICM382	Remote Host Fail.	Disabling client XXX with interface XXX.	None	communications	Fail Poll MG	Failed to Poll Media Gateway XXX.
CICM382	Remote Host Fail.	Enabling client XXX with interface XXX.	Critical	communications	Network Loss.	Critical network connection loss on adapter XXX
CICM383	FirmwareUpgradeNotSupportedUFTPOverUnistim.	Firmware upgrade is not supported via UFTP over Unistim. File XXX	None	communications	Network Loss.	Critical network connection loss cleared on adapter XXX
CICM383	Firmware upgrade failure.	Firmware upgrade failure.	Major	communications	Network Loss.	Major network connection loss on adapter XXX
CICM383	Firmware upgrade failure.	Firmware upgrade failure.	None	communications	Network Loss.	Major network connection loss cleared on adapter XXX
CICM384	Node Isolated - Forcing transition from master to slave	Node Isolated - Forcing transition from master to slave	**Major**	**communications**	**Network Redundancy Loss.**	**Network redundancy lost to the mate node**
CICM385	Slave Node isolated	Slave Node isolated	**None**	**communications**	**Network Redundancy Loss.**	**Network redundancy restored to the mate node**
CICM386	UFTPmaxSessions value in the mib is incorrect	UFTPmaxSessions must be at least one. Value XXX is invalid	Minor	communications	Remote Host Fail.	Disabling client XXX with interface XXX.
CICM386	UFTPmaxSessions value is missing from the mib	UFTPmaxSessions missing using default value XXX	None	communications	Remote Host Fail.	Enabling client XXX with interface XXX.
CICM387	CICM Poll Failed	Failed to Poll CICM Node XXX.	None	communications	FirmwareUpgradeNotSupportedUFTPOverUnistim.	Firmware upgrade is not supported via UFTP over Unistim. File XXX
CICM387	CICM Poll Failed	Failed to Poll CICM Node XXX.	None	communications	Firmware upgrade failure.	Firmware upgrade failure.
CICM388	UFTPtimerTimeout value is missing from the mib	UFTPtimerTimeout missing using default value XXX	None	communications	Firmware upgrade failure.	Firmware upgrade failure.
CICM389	UFTP_INVALID_CLIENT_MESSAGE	UFTP_INVALID_CLIENT_MESSAGE XXX value XXX is invalid	None	communications	Node Isolated - Forcing transition from master to slave	Node Isolated - Forcing transition from master to slave

CICM390	Failed To Connect PAM server	PAM server XXX is not responding to authentication requests	None	communications	Slave Node isolated	Slave Node isolated
CICM390	Failed To Connect PAM server	PAM server XXX is now responding to authentication requests	None	communications	UFTPmaxSessions value in the mib is incorrect	UFTPmaxSessions must be at least one. Value XXX is invalid
CICM391	Invalid transition	ProcessNetworkStateTransition() called with invalid transition XXX	None	communications	UFTPmaxSessions value is missing from the mib	UFTPmaxSessions missing using default value XXX
CICM392	PAM Server TMO	Timeout occurred whilst awaiting response from PAM server XXX	Major	communications	CICM Poll Failed	Failed to Poll CICM Node XXX.
CICM393	Takeover manual aborted, is not implemented	Takeover manual aborted, is not implemented	None	communications	CICM Poll Failed	Failed to Poll CICM Node XXX.
CICM394	Fatal error: Unable to unbind adapter	Fatal error: Unable to unbind adapter.	None	communications	UFTPtimerTimeout value is missing from the mib	UFTPtimerTimeout missing using default value XXX
CICM395	Mate node failed temporarily	Mate node failed temporarily for XXX iterations	None	communications	UFTP_INVALID_CLIENT_MESSAGE	UFTP_INVALID_CLIENT_MESSAGE XXX value XXX is invalid
CICM396	**Takeover aborted, reverting to Master**	**Takeover aborted, reverting to Master**	Major	communications	Failed To Connect PAM server	PAM server XXX is not responding to authentication requests
CICM397	Mate node lost - Forcing transition from slave to master	Mate node lost - Forcing transition from slave to master	None	communications	Failed To Connect PAM server	PAM server XXX is now responding to authentication requests
CICM398	Mate node lost	Mate node lost	None	communications	Invalid transition	ProcessNetworkStateTransition() called with invalid transition XXX
CICM399	Route map error	Resetting adapter, state= XXX mate=XXX	None	communications	PAM Server TMO	Timeout occurred whilst awaiting response from PAM server XXX

CICM500	State Change.	Admin reports a state change to XXX for component XXX.	None	communications	Takeover manual aborted, is not implemented	Takeover manual aborted, is not implemented
CICM503	Network Access State Change	Netork access state change to XXX	None	communications	Fatal error: Unable to unbind adapter	Fatal error: Unable to unbind adapter.
CICM504	EM Network State Change	Network connectivity XXX. hr=XXX	None	communications	Mate node failed temporarily	Mate node failed temporarily for XXX iterations
CICM505	Stop Monitoring	Stopped monitoring node XXX	None	communications	**Takeover aborted, reverting to Master**	**Takeover aborted, reverting to Master**
CICM506	Start Monitoring	Started to monitor node XXX.	None	communications	Mate node lost - Forcing transition from slave to master	Mate node lost - Forcing transition from slave to master
CICM507	Connect to PAM.	Connect to PAM.	None	communications	Mate node lost	Mate node lost
CICM508	Slave instructed to change to invalid adapter, selecting default	Slave instructed to change to invalid adapter, selecting default	None	communications	Route map error	Resetting adapter, state= XXX mate=XXX
CICM509	Critical Process State Change.	Critical Process XXX is not running.	None	processingError	State Change.	Admin reports a state change to XXX for component XXX.
CICM509	Critical Process State Change.	Critical Process XXX is running.	None	communications	Network Access State Change	Netork access state change to XXX
CICM509	Service State Change.	Service XXX is not running.	None	communications	EM Network State Change	Network connectivity XXX. hr=XXX
CICM509	Service State Change.	Service XXX is running.	None	communications	Stop Monitoring	Stopped monitoring node XXX
CICM510	EM Mate Up.	EM Mate Up. Name: XXX.	None	communications	Start Monitoring	Started to monitor node XXX.
CICM512	Start SWACT.	Admin reports a request to start SWACT.	None	environmental	Connect to PAM.	Connect to PAM.
CICM512	Promote to Master.	Admin reports a request to promote to Master.	None	communications	Slave instructed to change to invalid adapter, selecting default	Slave instructed to change to invalid adapter, selecting default

CICM512	Demote to Slave.	Admin reports a request to demote to slave.	Critical	processingError	Critical Process State Change.	Critical Process XXX is not running.
CICM513	Changing local adapter	Changing local adapter from XXX to XXX	None	processingError	Critical Process State Change.	Critical Process XXX is running.
CICM603	Invalid Event Report.	Invalid report received from Admin.	Major	processingError	Service State Change.	Service XXX is not running.
CICM604	Mate sync error state.	request for mate synchronisation received in state XXX.	None	processingError	Service State Change.	Service XXX is running.
CICM605	GW Reg in Bad State.	Gateway registration received in state XXX.	None	environmental	EM Mate Up.	EM Mate Up. Name: XXX.
CICM606	Premature reg slave gw.	Premature registration of the slave gateway.	None	processingError	Start SWACT.	Admin reports a request to start SWACT.
CICM607	Swact Request from Remote MGM.	Swact request received from the remote MGM.	None	processingError	Promote to Master.	Admin reports a request to promote to Master.
CICM608	Retransmitted RUDP messages.	Retransmitted XXX RUDP messages, XXX retransmissions were throttled.	None	processingError	Demote to Slave.	Admin reports a request to demote to slave.
CICM609	Retransmitted RUDP messages.	Retransmitted XXX RUDP messages.	None	communications	Changing local adapter	Changing local adapter from XXX to XXX
CICM610	Loss of logs.	XXX logs have been lost due to buffering.	None	processingError	Invalid Event Report.	Invalid report received from Admin.
CICM610	Loss of traps.	XXX traps have been lost due to buffering.	None	processingError	Mate sync error state.	request for mate synchronisation received in state XXX.
CICM611	Resource Threshold Crossed	Resource XXX is near or above its threshold of XXX	None	equipment	GW Reg in Bad State.	Gateway registration received in state XXX.

CICM611	Threshold Crossed	Resource XXX is near or above its threshold value of XXX	None	equipment	Premature reg slave gw.	Premature registration of the slave gateway.
CICM612	Start Audit.	Starting the daily audit.	None	equipment	Swact Request from Remote MGM.	Swact request received from the remote MGM.
CICM612	Audit Complete	Daily audit completed.	None	communications	Retransmitted RUDP messages.	Retransmitted XXX RUDP messages, XXX retransmissions were throttled.
CICM614	Message from invalid component	Message received from invalid component type = 0x XXX	None	communications	Retransmitted RUDP messages.	Retransmitted XXX RUDP messages.
CICM615	Node forced to master	Node is being forced to become master.	None	communications	Loss of logs.	XXX logs have been lost due to buffering.
CICM615	Node forced to slave	Node is being forced to become slave.	None	communications	Loss of traps.	XXX traps have been lost due to buffering.
CICM617	Mib Sync Poll Failure	Network status remote state query returned hr=0x XXX.	Major	qualityOfService	Resource Threshold Crossed	Resource XXX is near or above its threshold of XXX
CICM618	No Line ID	User XXX has no LineId attribute in the mib.	None	qualityOfService	Threshold Crossed	Resource XXX is near or above its threshold value of XXX
CICM619	No Toneset Found	Toneset XXX not found A standard tone will be used in place of all toneIDs	None	environmental	Start Audit.	Starting the daily audit.
CICM620	Invalid Tone Component Index	Invalid tone component index toneset XXX toneid	None	environmental	Audit Complete	Daily audit completed.
CICM621	Invalid Volume Datafilled	No volume datafilled for toneset XXX toneid XXX	None	equipment	Message from invalid component	Message received from invalid component type = 0x XXX
CICM622	Invalid Tone Frequency	Invalid tone frequency count toneset XXX toneid XXX	None	equipment	Node forced to master	Node is being forced to become master.

CICM623	Invalid Frequency Datafilled	No frequency datafilled for toneset XXX toneid XXX	None	equipment	Node forced to slave	Node is being forced to become slave.
CICM624	Invalid Cadence Count	Invalid tone cadence count toneset XXX toneid XXX	None	equipment	Mib Sync Poll Failure	Network status remote state query returned hr=0x XXX.
CICM625	No Cadence Off	No Cadence off datafilled for toneset XXX toneid XXX	None	equipment	No Line ID	User XXX has no LineId attribute in the mib.
CICM625	No Cadence On	No Cadence on datafilled for toneset XXX toneid XXX	None	equipment	No Toneset Found	Toneset XXX not found A standard tone will be used in place of all toneIDs
CICM627	Connection mapped to invalid line	Connection XXX is mapped to line XXX which isn't valid.	None	equipment	Invalid Tone Component Index	Invalid tone component index toneset XXX toneid XXX
CICM628	Connection mapped not in E1_CONN state	Connection XXX is mapped to line XXX which isn't in E1_CONNECTION state.	None	equipment	Invalid Volume Datafilled	No volume datafilled for toneset XXX toneid XXX
CICM629	Reset Connection isn't in NO_CONNECTION state	Resetting connection for line XXX which isn't in NO_CONNECTION state.	None	equipment	Invalid Tone Frequency	Invalid tone frequency count toneset XXX toneid XXX
CICM630	Create Connection Fail	Create connection failed. Call type = XXX, result = XXX	None	equipment	Invalid Frequency Datafilled	No frequency datafilled for toneset XXX toneid XXX
CICM631	Delete Connection Fail	Delete connection failed.	None	equipment	Invalid Cadence Count	Invalid tone cadence count toneset XXX toneid XXX
CICM632	No line object	Create Connection: Could not find line object for conflicting connection XXX with lineid = XXX	None	equipment	No Cadence Off	No Cadence off datafilled for toneset XXX toneid XXX

CICM633	Corrupt Connection Map	Connection map is corrupt, or media control is reusing handles, connection id XXX is already in use my lineid XXX.	None	equipment	No Cadence On	No Cadence on datafilled for toneset XXX toneid XXX
CICM634	No Connection Id map	Connection map is corrupt, or media control is reusing handles, connection id XXX could not be found in the map.	None	equipment	Connection mapped to invalid line	Connection XXX is mapped to line XXX which isn't valid.
CICM635	Unable Change Rx Loss	Unable to change rx loss for connection XXX	None	equipment	Connection mapped not in E1_CONN state	Connection XXX is mapped to line XXX which isn't in E1_CONNECTION state.
CICM636	Too Many Features	Terminal type has too many features on the main set (max is XXX).	None	equipment	Reset Connection isn't in NO_CONNECTION state	Resetting connection for line XXX which isn't in NO_CONNECTION state.
CICM637	Too Many Features	Terminal type has too many features on the extension set (max is XXX).	None	equipment	Create Connection Fail	Create connection failed. Call type = XXX, result = XXX
CICM638	Auth User Failed	User XXX	None	equipment	Delete Connection Fail	Delete connection failed.
CICM639	Logout Success	User XXX	None	equipment	No line object	Create Connection: Could not find line object for conflicting connection XXX with lineid = XXX
CICM639	Login Success	User XXX	None	equipment	Corrupt Connection Map	Connection map is corrupt, or media control is reusing handles, connection id XXX is already in use my lineid XXX.
CICM641	Change Password Attempt	User XXX	None	equipment	No Connection Id map	Connection map is corrupt, or media control is reusing handles, connection id XXX could not be found in the map.

CICM642	Release Authentication		None	equipment	Unable Change Rx Loss	Unable to change rx loss for connection XXX
CICM643	Invalid Firmware Protocol	Invalid FirmwareProtocol for TerminalType= XXX	None	equipment	Too Many Features	Terminal type has too many features on the main set (max is XXX).
CICM644	Invalid Firmware Level	Invalid Firmware level for TerminalType= XXX	None	equipment	Too Many Features	Terminal type has too many features on the extension set (max is XXX).
CICM645	No Firmware Level	Terminal has no firmware level recorded in the MIB	None	equipment	Auth User Failed	User XXX
CICM646	Invalid UFTP Host	Invalid UFTP host port	None	equipment	Logout Success	User XXX
CICM647	Invalid Unistim Host	Invalid Unistim host address	None	equipment	Login Success	User XXX
CICM648	Invalid Firmware TFPT Address	Invalid Firmware TFTP Address for TerminalType= XXX	None	equipment	Change Password Attempt	User XXX
CICM649	Config Data Change.	Admin reports a configuration data change.	None	equipment	Release Authentication	
CICM650	Initialising as master	Initialising as master	None	equipment	Invalid Firmware Protocol	Invalid FirmwareProtocol for TerminalType= XXX
CICM650	Initialising as master (no slave)	Initialising as master (no slave)	None	equipment	Invalid Firmware Level	Invalid Firmware level for TerminalType= XXX
CICM650	Initialising as slave	Initialising as slave	None	equipment	No Firmware Level	Terminal has no firmware level recorded in the MIB
CICM650	Starting takeover	Starting takeover	None	equipment	Invalid UFTP Host	Invalid UFTP host port
CICM650	Takeover succeeded, now slave	Takeover succeeded, now slave	None	equipment	Invalid Unistim Host	Invalid Unistim host address
CICM650	Takeover succeeded, now Master	Takeover succeeded, now Master	None	equipment	Invalid Firmware TFPT Address	Invalid Firmware TFTP Address for TerminalType=XXX

CICM650	Forcing transition from slave to master	Forcing transition from slave to master	None	processingError	Config Data Change.	Admin reports a configuration data change.
CICM650	Forcing transition from master to slave	Forcing transition from master to slave	None	communications	Initialising as master	Initialising as master
CICM650	Mate Node Recovered - Forcing transition from slave to master	Mate Node Recovered - Forcing transition from slave to master	None	communications	Initialising as master (no slave)	Initialising as master (no slave)
CICM650	Processing Swact	Processing Swact request	None	communications	Initialising as slave	Initialising as slave
CICM652	Adding a gateway	Gateway XXX has been added.	None	communications	Starting takeover	Starting takeover
CICM653	Deleting a gateway	Deleting gateway XXX	None	communications	Takeover succeeded, now slave	Takeover succeeded, now slave
CICM654	Adding a profile	Adding a XXX profile for gateway XXX	None	communications	Takeover succeeded, now Master	Takeover succeeded, now Master
CICM655	Deleting a profile	Deleting XXX profile for gateway XXX	None	communications	Forcing transition from slave to master	Forcing transition from slave to master
CICM656	Max Rx Rate Exceeded.	Max rx rate of XXX has been exceeded by rate XXX.	None	communications	Forcing transition from master to slave	Forcing transition from master to slave
CICM656	Max Rx Rate Exceeded.	Clear max rx rate of XXX has been exceeded.	None	communications	Mate Node Recovered - Forcing transition from slave to master	Mate Node Recovered - Forcing transition from slave to master
CICM657	Max Creation Attempts.	Reached the max creation attempts for the session.	None	communications	Processing Swact	Processing Swact request
CICM657	Max Creation Attempts.	Reached the max creation attempts for the session.	None	communications	Adding a gateway	Gateway XXX has been added.
CICM658	Mate node recovered	Mate node recovered	None	communications	Deleting a gateway	Deleting gateway XXX
CICM659	Slave adapter recovered	Slave adapter XXX recovered	None	communications	Adding a profile	Adding a XXX profile for gateway XXX

CICM660	Successful PAM Authentication.	User XXX has started a session on the CICM-EM	None	communications	Deleting a profile	Deleting XXX profile for gateway XXX
CICM661	PAM Authenication Failure.	User XXX authentication failure	Minor	processingError	Max Rx Rate Exceeded.	Max rx rate of XXX has been exceeded by rate XXX.
CICM662	User Privileges Revoked.	Privileges revoked	None	processingError	Max Rx Rate Exceeded.	Clear max rx rate of XXX has been exceeded.
CICM663	User Privileges upgraded.	Privileges upgraded	Minor	communications	Max Creation Attempts.	Reached the max creation attempts for the session.
CICM664	Inactive User Timeout.	User XXX is no longer active on the CICM-EM	None	communications	Max Creation Attempts.	Reached the max creation attempts for the session.
CICM665	Network Element recovered	Network Element XXX recovered	None	communications	Mate node recovered	Mate node recovered
CICM668	Reached the maximum number of sessions.	Current number of active sessions has reached the maximum of XXX.	None	communications	Slave adapter recovered	Slave adapter XXX recovered
CICM668	Reached the maximum number of sessions.	Current number of active sessions is below the maximum of XXX.	None	environmental	Successful PAM Authentication.	User XXX has started a session on the CICM-EM
CICM680	Register Gateway Succeeded	Register Gateway XXX Succeeded	None	processingError	PAM Authenication Failure.	User XXX authentication failure
CICM681	Configuration change	XXX	None	environmental	User Privileges Revoked.	Privileges revoked
CICM682	Provisioning change	XXX	None	environmental	User Privileges upgraded.	Privileges upgraded
CICM749	Account Disabled	User XXX	None	environmental	Inactive User Timeout.	User XXX is no longer active on the CICM-EM
CICM750	Change Password Attempt	User XXX	None	communications	Network Element recovered	Network Element XXX recovered

CICM801	**BHHCA Minor Alarm**	**BHHCA is close to maximum value.**	Critical	equipment	Node B in Critical Alarm state	Node B in Critical Alarm state
CICM801	**BHHCA Minor Alarm**	**BHHCA is close to maximum value.**	None	equipment	Node B in Critical Alarm state	Node B in Critical Alarm state
CICM802	**BHHCA Major Alarm**	**BHHCA is at Maximum Limit. Calls may not succeed.**	Major	equipment	Node B in Major Alarm state	Node B in Major Alarm state
CICM802	**BHHCA Major Alarm**	**BHHCA is at Maximum Limit. Calls may not succeed.**	None	equipment	Node B in Major Alarm state	Node B in Major Alarm state
CICM803	**BHHCA Critical Alarm**	**BHHCA is well above Maximum Limit. Calls will be Throttled.**	Minor	equipment	Node B in Minor Alarm state	Node B in Minor Alarm state
CICM803	**BHHCA Critical Alarm**	**BHHCA is well above Maximum Limit. Calls will be Throttled.**	None	equipment	Node B in Minor Alarm state	Node B in Minor Alarm state
CICM804	**Registry Flush Minor Alarm**	**Registry has not been flushed for 1 hour. Registry data could be lost if power outage occurs.**	None	processingError	Reached the maximum number of sessions.	Current number of active sessions has reached the maximum of XXX.
CICM804	**Registry Flush Minor Alarm**	**Registry has not been flushed for 1 hour. Registry data could be lost if power outage occurs.**	None	processingError	Reached the maximum number of sessions.	Current number of active sessions is below the maximum of XXX.
CICM680	/var/log/auditlog	RegisterGatewaySucceeded	None	communications	Register Gateway Succeeded	Register Gateway XXX Succeeded
CICM681	/var/log/auditlog	ConfigurationChange	None	communications	Configuration change	XXX

Appendix H: SNMP-based PM Poller

Performance Monitoring Poller data collection output

The SNMP-based PM poller collects performance attributes from several network elements (i.e., UAS, GWC, SSPFS platform). The data collected by the PM device pollers is output in CSV files to the '/ data/oms' file output directory. The oms directory contains seven sub- directories (named 1- 7). Each of these sub-directories contains a day's collection of CSV output files (i.e., one sub-directory each for the seven-day history the poller maintains). The current day's output files are always written to subdirectory '1'. File rotation occurs just prior to midnight every 24-hour period. When file rotation occurs, the files in sub-directory '7' are removed and contents of all subsequent sub-directories are moved up the directory chain (i.e., files in directory 6 are moved to directory 7, 5 to 6, etc.).

A separate file is created for each device during each profile polling interval. When creating the CSV files the poller adheres to the following naming conventions:

<NodeType>.<NodeName>.OMs.<Report Name>.Year.Mon.Date_HR.MN_<TZ>.csv
where:
NodeType -> Node type (i.e, GWC, UAS, etc....)
NodeName -> A unique node name.
Report Name -> For the SSPFS poller this will correlate to the associated profile name.
TZ -> timezone (i.e., cst or cdt)

An example file name is provided below:

GWC.GWC-10_UNIT_1.OMs.GWC.2002.05.02_10.52_EDT.csv

Viewing CSV files

The CSV files can be viewed locally on the SSPFS platform by using a standard text editor. Alternately the SSPFS platform is configured with a snmp-poller ftp userid. A craftperson can utilize ftp to retrieve the CSV output data files for further analysis. When the snmp-poller ftp userid is used to ftp into the SSPFS server, the home directory for this account is the file oms output directory. For security reasons the snmp-poller ftp user only has access to the output directory and its sub-directories. Sample output files from the MIB-2 profile isprovided in the following table:

Note: A device can reside in more than one profile.

Note: Keep in mind, however, that the CSV file format is not intended to be a user-friendly format for viewing the output in a standard text editor. Typically these files would be parsed by an editor that can format CSV files in a legible manner, or they would be parsed by a machine interface.

Note: The 'poller' ftp userid should be used to retrieve the PM poller output files. Contact your network administrator to obtain the associated password.

Sample CSV output file for profile MIB-2

```
$cat GWC.GWC6.OMs.MIB-2.2002.05.24_16.06_EDT
//MIB-2 - .iso.org.dod.internet.mgmt.mib-2.host.hrSystem
SCALAR_GROUP_BEGIN-hrSystemUptime,hrSystemDate,hrSystemPro-
cesses,1:2:18:51.85,"2002-5-24,20:7:42.0,+0:0",155
SCALAR_GROUP_END
//MIB-2 - .iso.org.dod.internet.mgmt.mib-2.snmp
SCALAR_GROUP_BEGIN-snmpInPkts,snmpOutPkts,snmpInBadVer-
sions,snmpInBadCommunityNames,snmpInBadCommunityUses,snmpInA
SNParseErrs,snmpInTotalReqVars,snmpInTotalSetVars,snmpOut-
Traps,snmpSilentDrops,27608,27614,0,0,0,0,103010,772,7,80
SCALAR_GROUP_END
//MIB-2 - .iso.org.dod.internet.mgmt.mib-2.system
SCALAR_GROUP_BEGIN-sysDescr,"Nortel GateWay Controller GWC;
MCPN750 128MB AA01 AA01 0001af02da30; PGC08AP  (VRTXsa 3303,
SNMP Research Agent 15.2.1.7)"
SCALAR_GROUP_END
//MIB-2 - .iso.org.dod.internet.mgmt.mib-2.host.hrDevice.hrProcessorT-
able.
hrProcessorEntry
TABLE_BEGIN-hrProcessorLoad
1
TABLE_END
//MIB-2 - .iso.org.dod.internet.mgmt.mib-2.host.hrStorage.hrStorageTable.
hrStorageEntry
TABLE_BEGIN-hrStorageIndex,hrStorageType,hrStorageAllocation-
Units,hrStorageSize,hrStorageUsed,hrStorageAllocationFailures
1,host.hrStorage.hrStorageTypes.hrStorageRam,66 Bytes,1023,13,0
2,host.hrStorage.hrStorageTypes.hrStorageRam,1532 Bytes,400,0,0
3,host.hrStorage.hrStorageTypes.hrStorageRam,1536 Bytes,1024,49,0
4,host.hrStorage.hrStorageTypes.hrStorageRam,52 Bytes,512,321,0
5,host.hrStorage.hrStorageTypes.hrStorageRam,1 Bytes,11912704,184672,0
6,host.hrStorage.hrStorageTypes.hrStorageRam,1
Bytes,2097152,1577296,0
TABLE_END
```

The following table shows sample output files from the GWC profile.

Sample CSV output file for profile GWC

```
//GWC - .iso.org.dod.internet.private.enterprises.nortel.voip.ptn.service-
Control.
legacyCallServer.lcsGateWayController.apgMeasurements
SCALAR_GROUP_BEGIN-accState,apgInsertions,maxSimulApg-
Calls,apgCallFailGWException,apgCallFailGWLost,
active,0,0,0,0
SCALAR_GROUP_END
//GWC - .iso.org.dod.internet.private.enterprises.nortel.voip.ptn.service-
Control.
legacyCallServer.lcsGateWayController.dptMeasurements
SCALAR_GROUP_BEGIN-dptCallAttempts,dptCallFailResTimeout,dpt-
CallFailResError,dptCallFailAccOOS,
10,0,0,0
SCALAR_GROUP_END
//GWC - .iso.org.dod.internet.private.enterprises.nortel.voip.ptn.service-
Control.
legacyCallServer.lcsGateWayController.gwcUnitStatusMIB.gwcUnitOb-
jects.gwcUnitStatus
SCALAR_GROUP_BEGIN-norUnitAdminStatus,norUnitOperSta-
tus,norUnitActivity,
unlocked,enabled,active
SCALAR_GROUP_END
//GWC - .iso.org.dod.internet.private.enterprises.nortel.voip.ptn.service-
Control.
legacyCallServer.lcsGateWayController.raMeasurements
SCALAR_GROUP_BEGIN-raState,totalResourceCapacity,resourceRe-
questError,inactive,0,0
SCALAR_GROUP_END
```

CICM682	/var/log/auditlog	ProvisioningChange	None	communications	Provisioning change	XXX
CICM749	/var/log/securitylog	AccountDisabled	None	equipment	Account Disabled	User XXX
CICM750	/var/log/securitylog	ChangePasswordFail	None	equipment	Change Password Attempt	User XXX
CICM801	**Alarm_Trap_to_IEMS**	**bhhcaMinorAlarm**	**Minor**	**qualityOfService**	**BHHCA Minor Alarm**	**BHHCA is close to maximum value.**
CICM801	**Alarm_Trap_to_IEMS**	**bhhcaMinorAlarmClear**	**None**	**qualityOfService**	**BHHCA Minor Alarm**	**BHHCA is close to maximum value.**
CICM802	**Alarm_Trap_to_IEMS**	**bhhcaMajorAlarm**	**Major**	**qualityOfService**	**BHHCA Major Alarm**	**BHHCA is at Maximum Limit. Calls may not succeed.**
CICM802	**Alarm_Trap_to_IEMS**	**bhhcaMajorAlarmClear**	**None**	**qualityOfService**	**BHHCA Major Alarm**	**BHHCA is at Maximum Limit. Calls may not succeed.**
CICM803	**Alarm_Trap_to_IEMS**	**bhhcaCriticalAlarm**	**Critical**	**qualityOfService**	**BHHCA Critical Alarm**	**BHHCA is well above Maximum Limit. Calls will be Throttled.**
CICM803	**Alarm_Trap_to_IEMS**	**bhhcaCriticalAlarmClear**	**None**	**qualityOfService**	**BHHCA Critical Alarm**	**BHHCA is well above Maximum Limit. Calls will be Throttled.**
CICM804	**Alarm_Trap_to_IEMS**	**registryFlushAlarm**	**Minor**	**equipment**	**Registry Flush Minor Alarm**	**Registry has not been flushed for 1 hour. Registry data could be lost if power outage occurs.**
CICM804	**Alarm_Trap_to_IEMS**	**registryFlushAlarmClear**	**None**	**equipment**	**Registry Flush Minor Alarm**	**Registry has not been flushed for 1 hour. Registry data could be lost if power outage occurs.**

Appendix G: Ethernet Routing Switch 8600 Trap List and Trap Raise/Clear Mapping

Trap List

```
<?xml version="1.0" encoding="ISO88591" ?>
 <!--
   severity = 6|5|4|3|2|1
                  Critical = 1
                  Major = 2
                  Minor = 3
                  Warning = 4
                  Clear = 5
                  Info = 6


    -->
   <TRAPS>
      <TRAP oid=".1.3.6.1.2.1.16.0.1" name="risingAlarm">
          <PROPERTIES>
            <eventprop name="severity" value="3" />
            <eventprop name="logName" value="PP" />
            <eventprop name="logNumber" value="310" />
            <eventprop name="eventType" value="TBL" />
            <eventprop name="eventLabel" value="PP Fault" />
             <eventprop name="category" value="qualityOfService" />
             <eventprop name="entity" value="$ip_alarmStatus_$1" />
            <eventprop name="componentID" value="PP8600 = $ip; alarmIndex=$1" />
             <eventprop name="alarmClear" value="3" />
             <eventprop name="probableCause" value="Threshold crossed." />
             <eventprop name="description" value="Threshold Crossed: alarmIndex= $1(
                Threshold= $2 alarmValue= $3)" />
            <eventprop name="specificProblem" value="Rising threshold crossed" />
          </PROPERTIES>
          <VARBINDS>
             <varbind name=".1.3.6.1.2.1.16.3.1.1.1" property="$1" />
            <varbind name=".1.3.6.1.2.1.16.3.1.1.7" property="$2" />
             <varbind name=".1.3.6.1.2.1.16.3.1.1.5" property="$3" />
          </VARBINDS>
          </TRAP>
```

```
        <TRAP oid=".1.3.6.1.2.1.16.0.2" name="fallingAlarm">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="311" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_alarmStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; alarmIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Threshold crossed" />
  <eventprop name="description" value="Threshold Crossed: alarmIndex = $1( Threshold = $2
alarmValue = $3)" />
  <eventprop name="specificProblem" value="Falling threshold crossed" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.16.3.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.16.3.1.1.8" property="$2" />
  <varbind name=".1.3.6.1.2.1.16.3.1.1.5" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.6.3.1.1.5.1.0" name="coldStart">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="313" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="operator" />
  <eventprop name="entity" value="$ip_coldStart" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Agent reinitialized itself with default settings" />
  <eventprop name="description" value="A coldStart trap signifies that the snmp agent is
reinitializing itself with default settings." />
  <eventprop name="specificProblem" value="Agent reinitialized itself with default settings" />
  </PROPERTIES>
  </TRAP>
 <TRAP oid=".1.3.6.1.6.3.1.1.5.2.0" name="warmStart">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="315" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="operator" />
  <eventprop name="entity" value="$ip_warmstart" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Agent reinitialized itself with its configuration
unaltered." />
  <eventprop name="description" value="A warmStart trap signifies that the SNMPv2 agent is
reinitializing itself such that its configuration is unaltered." />
  <eventprop name="specificProblem" value="Agent reinitialized itself with its configuration
unaltered." />
  </PROPERTIES>
  </TRAP>
```

```
 <TRAP oid=".1.3.6.1.6.3.1.1.5.3.0" name="linkDown">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="317" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_linkDown_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; ifIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="loss of communication" />
  <eventprop name="description" value="Link Down: ifIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="Generic Link Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.2.2.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.2.2.1.7" property="$2" />
  <varbind name=".1.3.6.1.2.1.2.2.1.8" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.6.3.1.1.5.4.0" name="linkUp">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="318" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_linkUp_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; ifIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="communication regained" />
  <eventprop name="description" value="Link Up: ifIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="Generic Link Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.2.2.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.2.2.1.7" property="$2" />
  <varbind name=".1.3.6.1.2.1.2.2.1.8" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.6.3.1.1.5.5.0" name="authenticationFailure">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="319" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="security" />
  <eventprop name="entity" value="$ip_authenticationFailure" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="6" />
  <eventprop name="probableCause" value="Authentication failure" />
  <eventprop name="description" value="Authentication failure occured" />
  <eventprop name="specificProblem" value="Authentication failure" />
```

```
 </PROPERTIES>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.6" name="rcnChasPowerSupplyDown">
<PROPERTIES>
 <eventprop name="severity" value="1" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="322" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcnSupplyStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SupplyId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Power Supply down" />
 <eventprop name="description" value="Power Supply Status: SupplyId = $1( OperationStatus =
$2 )" />
 <eventprop name="specificProblem" value="Power Supply Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.6" name="rcChasPowerSupplyDown">
<PROPERTIES>
 <eventprop name="severity" value="1" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="322" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcSupplyStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SupplyId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Power supply down" />
 <eventprop name="description" value="Power Supply Status: SupplyId = $1( OperationStatus =
$2 )" />
 <eventprop name="specificProblem" value="Power Supply Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.14" name="rcChasPowerSupplyUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="323" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcSupplyStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SupplyId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Power supply up" />
 <eventprop name="description" value="Power Supply Status: SupplyId = $1( OperationStatus =
$2 )" />
```

```
 <eventprop name="specificProblem" value="Power Supply Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.14" name="rcnChasPowerSupplyUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="323" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcnSupplyStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SupplyId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Power supply up" />
 <eventprop name="description" value="Power Supply Status: SupplyId = $1( OperationStatus =
$2 )" />
 <eventprop name="specificProblem" value="Power Supply Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.8.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.7" name="rcnChasFanDown">
<PROPERTIES>
 <eventprop name="severity" value="1" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="324" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcnFanStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; fanId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Fan status down" />
 <eventprop name="description" value="Fan Down: fanId= $1( OperationStatus = $2 )" />
 <eventprop name="specificProblem" value="Fan down" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.7" name="rcChasFanDown">
<PROPERTIES>
 <eventprop name="severity" value="1" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="324" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcFanStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; fanId=$1" />
```

```
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Fan Status Down" />
 <eventprop name="description" value="Fan Down: fanId= $1( OperationStatus = $2 )" />
 <eventprop name="specificProblem" value="Fan down" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.21" name="rcnChasFanUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="325" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcnFanStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; fanId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Fan Status Up" />
 <eventprop name="description" value="Fan Up: fanId= $1( OperationStatus = $2 )" />
 <eventprop name="specificProblem" value="Fan Up" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.21" name="rcChasFanUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="325" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcFanStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; fanId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Fan Status Up" />
 <eventprop name="description" value="Fan Up: fanId= $1( OperationStatus = $2 )" />
 <eventprop name="specificProblem" value="Fan Up" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.7.1.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.11" name="rcn2kCardDown">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="326" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
```

```
  <eventprop name="entity" value="$ip_rcn2KCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; cardIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Rc 2k Card Down" />
  <eventprop name="description" value="Card Down: cardIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="RC 2k Card Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.11" name="rc2kCardDown">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="326" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rc2KCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; cardIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Rc 2k Card Down" />
  <eventprop name="description" value="Card Down: cardIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="RC 2k Card Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.12" name="rcn2kCardUp">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="327" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rcn2KCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; cardIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Card status Up" />
  <eventprop name="description" value="Card Up: cardIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="RC 2k Card Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
  </VARBINDS>
  </TRAP>
```

```
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.12" name="rc2kCardUp">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="327" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rc2KCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; cardIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Card Up" />
  <eventprop name="description" value="Card Up: cardIndex = $1( AdminStatus = $2
OperationStatus = $3)" />
  <eventprop name="specificProblem" value="RC 2K Card Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.13" name="rcn2kTemperature">
 <PROPERTIES>
  <eventprop name="severity" value="1" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="328" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rcn2kTemperature" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Overheating of the chassis detected" />
  <eventprop name="description" value="Chassis overheating: rc2kChassisTemperature = $1" />
  <eventprop name="specificProblem" value="RC 2K Chassis Temperature" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.100.1.2" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.3" name="rcnErrorNotification">
 <PROPERTIES>
  <eventprop name="severity" value="$1" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="329" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="unknown" />
  <eventprop name="entity" value="$ip_ErrorNotification" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Error condition occured" />
  <eventprop name="description" value="Error occured: Error Level = $1( Error Code = $2 Error
Text = $3)" />
  <eventprop name="specificProblem" value="RC 2K Error" />
  </PROPERTIES>
 <VARBINDS>
```

```
 <varbind name=".1.3.6.1.4.1.2272.1.20.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.20.2" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.20.3" property="$3" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.8" name="rcnLinkOscillation">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="330" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_linkOscillation_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; portIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Link Oscillation detected" />
 <eventprop name="description" value="LinkOscillation: portIndex = $1" />
 <eventprop name="specificProblem" value="RC Link Oscillation" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.9" name="rcnMacViolation">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="331" />
 <eventprop name="eventType" value="Info" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_MacViolation_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; portIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="RC Mac Violation" />
 <eventprop name="description" value="RC Mac Violation: portIndex= $1( rcErrorText = $2)" />
 <eventprop name="specificProblem" value="RC Mac violation" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.20.3" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.10" name="rcnSonetTrap">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="332" />
 <eventprop name="eventType" value="Info" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_ SonetTrap_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; portIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Sonet port status change" />
 <eventprop name="description" value="Sonet Trap: portIndex = $1( TrapType = $2
TrapIndication = $3)" />
```

```
 <eventprop name="specificProblem" value="Sonet port status change" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.26.5.1" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.26.5.2" property="$3" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.4" name="rcnStpNewRoot">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="333" />
 <eventprop name="eventType" value="Info" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_StpNewRoot _$1" />
 <eventprop name="componentID" value="PP8600 = $ip; stgId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Stp New Root" />
 <eventprop name="description" value="Stp New Root: stgId = $1" />
 <eventprop name="specificProblem" value="Stp New Root" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.13.4.1.1" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.5" name="rcnStpTopologyChange">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="334" />
 <eventprop name="eventType" value="Info" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_ StpTopoChange_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; stgId=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Stp Topology change" />
 <eventprop name="description" value="Stp Topology change: stgId= $1( portIndex = $2)" />
 <eventprop name="specificProblem" value="Stp Topology change" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.13.4.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.16" name="rcnStpTCN">
<PROPERTIES>
 <eventprop name="severity" value="3" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="335" />
 <eventprop name="eventType" value="Info" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_StpTCN_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; portIndex =$1" />
 <eventprop name="alarmClear" value="3" />
```

```
  <eventprop name="probableCause" value="Stp TCN" />
  <eventprop name="description" value="Stp TCN: portIndex= $1( stgId= $2 BridgeAddress= $3)"
/>
  <eventprop name="specificProblem" value="Stp TCN" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.13.4.1.1" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.13.4.1.4" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.15" name="rcn2kAtmPvcLinkStateChange">
 <PROPERTIES>
  <eventprop name="severity" value="$4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="336" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="environmental" />
  <eventprop name="entity" value="$ip_LinkState_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; rc2kAtmPvcIfIndex=$1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="PVC link status change" />
  <eventprop name="description" value="Atm Pvc Link State Change: AtmPvcIfIndex = $1(
AtmPvcVpi = $2 AtmPvcVci = $3 AtmPvcOamVcStatus = $4)" />
  <eventprop name="specificProblem" value="PVC link status change" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.100.9.3.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.100.9.3.1.2" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.100.9.3.1.3" property="$3" />
  <varbind name=".1.3.6.1.4.1.2272.1.100.9.3.1.18" property="$4" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.17" name="rcnSmltIstLinkUp">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="337" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="unknown" />
  <eventprop name="entity" value="$ip_ SplitLinkStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="" />
  <eventprop name="description" value="Split MLT link status up" />
  <eventprop name="specificProblem" value="Split MLT link status up" />
  </PROPERTIES>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.18" name="rcnSmltIstLinkDown">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="338" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="unknown" />
```

```
 <eventprop name="entity" value="$ip_SplitLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Split MLT Link Status Down" />
 <eventprop name="description" value="Split MLT Link Status Down" />
 <eventprop name="specificProblem" value="Split MLT Link Status Down" />
 </PROPERTIES>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.19" name="rcnSmltLinkUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="339" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_rcnSmltLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcMltSmltId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Split SMLT link up" />
 <eventprop name="description" value="Split SMLT link up: rcMltSmltId = $1" />
 <eventprop name="specificProblem" value="Split SMLT Link status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.13" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.19" name="rcSmltLinkUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="339" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_rcSmltLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcMltSmltId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Split SMLT link up" />
 <eventprop name="description" value="Split SMLT link up: rcMltSmltId = $1" />
 <eventprop name="specificProblem" value="Split SMLT Link status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.13" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.20" name="rcnSmltLinkDown">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="340" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_rcnSmltLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcMltSmltId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Split SMLT Link down" />
```

```
 <eventprop name="description" value="Split SMLT link down: rcMltSmltId = $1" />
 <eventprop name="specificProblem" value="Split SMLT link status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.13" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.20" name="rcSmltLinkDown">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="340" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="unknown" />
 <eventprop name="entity" value="$ip_rcSmltLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcMltSmltId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Split SMLT link down" />
 <eventprop name="description" value="Split SMLT link down: rcMltSmltId = $1" />
 <eventprop name="specificProblem" value="Split SMLT Link status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.13" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.22" name="rcnPasswordChange">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="341" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="security" />
 <eventprop name="entity" value="$ip_CLIPasswordChanged" />
 <eventprop name="componentID" value="PP8600 = $ip" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="CLI password changed" />
 <eventprop name="description" value="CLI password changed ( PasswordChange = $1
PassChangeResult = $2)" />
 <eventprop name="specificProblem" value="CLI password has been changed" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.19.17" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.19.18" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.25" name="rcnPcmciaCardRemoved">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="342" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_PCMCIARemoved" />
 <eventprop name="componentID" value="PP8600 = $ip" />
 <eventprop name="alarmClear" value="3" />
```

```
 <eventprop name="probableCause" value="PCMCIA card is being removed." />
 <eventprop name="description" value="PCMCIA card is being removed." />
 <eventprop name="specificProblem" value="PCMCIA card removed." />
 </PROPERTIES>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.26" name="rcnSmartCpldTimerFired">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="343" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_cpldTimerFired_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; CardIndex=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="cpld timer fired" />
 <eventprop name="description" value="cpld timer fired: CardIndex = $1" />
 <eventprop name="specificProblem" value="cpld timer fired" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.100.6.1.1" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.27" name="rcnCardCpldNotUpDate">
<PROPERTIES>
 <eventprop name="severity" value="4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="344" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_alarmStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; CardIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="cpld is not up to date" />
 <eventprop name="description" value="cpld is not up to date: CardIndex = $1" />
 <eventprop name="specificProblem" value="cpld not up to date" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.100.6.1.1" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.28" name="rcnIgapLogFileFull">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="345" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="processing" />
 <eventprop name="entity" value="$ip_IgapLogFileFull" />
 <eventprop name="componentID" value="PP8600 = $ip" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Igap Log file full" />
 <eventprop name="description" value="Igap accounting timeout Log File reach the maximum."
/>
 <eventprop name="specificProblem" value="Igap Log file full" />
```

```
 </PROPERTIES>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.29" name="rcnCpLimitShutDown">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="346" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_CPLimitShutDown_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; PortIndex=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="cp limit for the port is shutting down" />
 <eventprop name="description" value="Cp limit for port is shutting down: PortIndex= $1(
AdminStatus = $2 OperStatus = $3 CpLimitShutDown = $4)" />
 <eventprop name="specificProblem" value="cp limit for the port is shutting down" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.2.1.2.2.1.7" property="$2" />
 <varbind name=".1.3.6.1.2.1.2.2.1.8" property="$3" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.50" property="$4" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.30" name="rcnSshServerEnabled">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="347" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_SshServerStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SshGlobalPort=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="SSH server is enabled" />
 <eventprop name="description" value="SSH server is enabled: SshGlobalPort = $1" />
 <eventprop name="specificProblem" value="SSH server enabled" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.34.1.2" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.31" name="rcnSshServerDisabled">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="348" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_SshServerStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SshGlobalPort=$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="SSH server is disabled" />
 <eventprop name="description" value="SSH server is disabled: SshGlobalPort = $1" />
 <eventprop name="specificProblem" value="SSH server disabled" />
```

```
 </PROPERTIES>
 <VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.34.1.2" property="$1" />
 </VARBINDS>
 </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.32" name="rcnSshSessionLogin">
 <PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="349" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_SshSessionStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SshGlobalHostIpAddr =$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="SSH Session login" />
 <eventprop name="description" value="SSH session login occured: SshGlobalHostIpAddr = $1"
/>
 <eventprop name="specificProblem" value="SSH Session login" />
 </PROPERTIES>
 <VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.34.1.12" property="$1" />
 </VARBINDS>
 </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.33" name="rcnSshSessionLogout">
 <PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="350" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_SshSessionStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SshGlobalHostIpAddr =$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="SSH session logout" />
 <eventprop name="description" value="SSH session logout occured: SshGlobalHostIpAddr =
$1" />
 <eventprop name="specificProblem" value="SSH session logout" />
 </PROPERTIES>
 <VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.34.1.12" property="$1" />
 </VARBINDS>
 </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.34" name="rcnSshUnauthorizedAccess">
 <PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="351" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="security" />
 <eventprop name="entity" value="$ip_SshUnauthorizedAccess_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; SshGlobalHostIpAddr =$1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Unauthorized access" />
```

```
  <eventprop name="description" value="Unauthorized access occured: SshGlobalHostIpAddr =
$1" />
  <eventprop name="specificProblem" value="Unauthorized access" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.34.1.12" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.35" name="rcnHaCpuState">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="352" />
  <eventprop name="eventType" value="Info" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_HaCpuState_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; CardIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="State of the HACPU" />
  <eventprop name="description" value="State of the HACPU: CardIndex = $1 (HaCpuState =
$2)" />
  <eventprop name="specificProblem" value="State of the HACPU" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.100.6.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.32.1" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.36" name="rcnInsufficientMemory">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="353" />
  <eventprop name="eventType" value="Info" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="environmental" />
  <eventprop name="entity" value="$ip_InsufficientMemory_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; CardIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Insufficient memory on CPU blade for proper
operation" />
  <eventprop name="description" value="Insufficient memory: CardIndex = $1" />
  <eventprop name="specificProblem" value="Insufficient memory on CPU" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.100.6.1.1" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.37" name="rcnSaveConfigAction">
 <PROPERTIES>
  <eventprop name="severity" value="6" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="354" />
  <eventprop name="eventType" value="Info" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="processing" />
  <eventprop name="entity" value="$ip_SaveConfig" />
```

```
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Switch run time or boot configuration is saved" />
  <eventprop name="description" value="Switch configuration saved: SysAction = $1" />
  <eventprop name="specificProblem" value="Switch configuration saved" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.1.8" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.38" name="rcnLoopDetectOnPort">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="355" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_LoopOnPort_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; PortIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Loop detected on port. The vlan on that port will be
disabled" />
  <eventprop name="description" value="Loop detected on port: PortIndex = $1 (rcVlanId = $2)"
/>
  <eventprop name="specificProblem" value="Loop detected on port." />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.46.1.3.0.3.0" name="vrrpTrapStateTransition">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="356" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_TrapStateTransition_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; ifIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="State transition has occurred on vrrp interface" />
  <eventprop name="description" value="State Transition: ifIndex = $1 (TransitionType = $2
TransitionCause = $3)" />
  <eventprop name="specificProblem" value="Trap state transition" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.2.2.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.46.1.1.14" property="$2" />
  <varbind name=".1.3.6.1.2.1.46.1.1.15" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.23" name="rcnEmError">
 <PROPERTIES>
  <eventprop name="severity" value="4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="357" />
```

```
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_EmError_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; CardIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Em error detected" />
  <eventprop name="description" value="Em error: CardIndex = $1 (Em Error = $2)" />
  <eventprop name="specificProblem" value="Em error detected" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.100.6.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.23" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.14.16.2.1" name="ospfVirtIfStateChange">
 <PROPERTIES>
  <eventprop name="severity" value="$4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="358" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="environmental" />
  <eventprop name="entity" value="$ip_IfStateChange_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="OSPF virtual interface state change" />
  <eventprop name="description" value="OSPF virtual interface state change: ospfRouterId = $1
(AreaId = $2 Neighbor = $3 State = $4)" />
  <eventprop name="specificProblem" value="OSPF virtual interface state change" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.14.9.1.1" property="$2" />
  <varbind name=".1.3.6.1.2.1.14.9.1.2" property="$3" />
  <varbind name=".1.3.6.1.2.1.14.9.1.10" property="$4" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.14.16.2.2" name="ospfNbrStateChange">
 <PROPERTIES>
  <eventprop name="severity" value="$5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="359" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_NbrStateChange_$1_$4" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Nonvirtual OSPF neighbor state change" />
  <eventprop name="description" value="Nonvirtual OSPF neighbor state change: ospfRouterId
= $1 (NbrIpAddr = $2 )" />
  <eventprop name="specificProblem" value="Nonvirtual OSPF neighbor state change" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.14.10.1.1" property="$2" />
  </VARBINDS>
```

```
 </TRAP>
 <TRAP oid=".1.3.6.1.2.1.14.16.2.3" name="ospfVirtNbrStateChange">
 <PROPERTIES>
  <eventprop name="severity" value="$4" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="360" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="environmental" />
  <eventprop name="entity" value="$ip_VirtNbrStateChange_$1_$3" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Virtual OSPF neighbor state change" />
  <eventprop name="description" value="Virtual OSPF neighbor state change: ospfRouterId = $1
(VirtNbrArea = $2 VirtNbrState = $3)" />
  <eventprop name="specificProblem" value="Virtual OSPF neighbor state change" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.14.11.1.1" property="$2" />
  <varbind name=".1.3.6.1.2.1.14.11.1.5" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.14.16.2.4" name="ospfIfConfigError">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="361" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_IfConfigError" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Configuration error" />
  <eventprop name="description" value="IfConfig Error: ospfRouterId = $1 (IpAddress = $2)" />
  <eventprop name="specificProblem" value="configuration error" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.14.7.1.1" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.14.16.2.5" name="ospfVirtIfConfigError">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="362" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_VirtIfConfigError_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="" />
  <eventprop name="description" value="ospfVirtIfConfigError: ospfRouterId = $1 (AreaId = $2
Neighbor = $3 ErrorType =$4 )" />
  <eventprop name="specificProblem" value="" />
```

```
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
 <varbind name=".1.3.6.1.2.1.14.9.1.1" property="$2" />
 <varbind name=".1.3.6.1.2.1.14.9.1.2" property="$3" />
 <varbind name=".1.3.6.1.2.1.14.16.1.2" property="$4" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.2.1.14.16.2.6" name="ospfIfAuthFailure">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="363" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="security" />
 <eventprop name="entity" value="$ip_IfAuthFailure_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="ospf If authentication failure" />
 <eventprop name="description" value="ospf If authentication failure: ospfRouterId = $1
(ConfigErrorType =$2)" />
 <eventprop name="specificProblem" value="ospf If authentication failure" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
 <varbind name=".1.3.6.1.2.1.14.16.1.2" property="$2" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.2.1.14.16.2.7" name="ospfVirtIfAuthFailure">
<PROPERTIES>
 <eventprop name="severity" value="2" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="364" />
 <eventprop name="eventType" value="TBL" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="security" />
 <eventprop name="entity" value="$ip_VirtIfAuthFailure_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="ospf virtual interface authentication failure" />
 <eventprop name="description" value="ospfVirtIfAuthFailure: ospfRouterId = $1 (AreaId = $2
Neighbor = $3 ErrorType =$4 )" />
 <eventprop name="specificProblem" value="" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
 <varbind name=".1.3.6.1.2.1.14.9.1.1" property="$2" />
 <varbind name=".1.3.6.1.2.1.14.9.1.2" property="$3" />
 <varbind name=".1.3.6.1.2.1.14.16.1.2" property="$4" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.2.1.14.16.2.16" name="ospfIfStateChange">
<PROPERTIES>
 <eventprop name="severity" value="$4" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="365" />
 <eventprop name="eventType" value="TBL" />
```

```
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_ifStateChange_$1_$2" />
  <eventprop name="componentID" value="PP8600 = $ip; ospfRouterId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Nonvirtual OSPF interface state change" />
  <eventprop name="description" value="Nonvirtual OSPF interface state change: ospfRouterId
= $1 (IpAddress = $2 State =$3)" />
  <eventprop name="specificProblem" value="Nonvirtual OSPF interface state change" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.14.1.1" property="$1" />
  <varbind name=".1.3.6.1.2.1.14.7.1.1" property="$2" />
  <varbind name=".1.3.6.1.2.1.14.7.1.12" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.1" name="rcnCardDown">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="366" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rcnCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; rcCardIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="RC Card status down" />
  <eventprop name="description" value="RC card status down: CardIndex = $1 (AdminStatus =
$2 OperStatus = $3)" />
  <eventprop name="specificProblem" value="RC Card status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.1" name="rcCardDown">
 <PROPERTIES>
  <eventprop name="severity" value="2" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="366" />
  <eventprop name="eventType" value="TBL" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="equipment" />
  <eventprop name="entity" value="$ip_rcCardStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; rcCardIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="RC Card Status down." />
  <eventprop name="description" value="RC card status down: CardIndex = $1 (AdminStatus =
$2 OperStatus = $3)" />
  <eventprop name="specificProblem" value="RC Card Status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
```

```
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.2" name="rcnCardUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="367" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcnCardStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcCardIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="RC card status up" />
 <eventprop name="description" value="RC card status up: CardIndex = $1 (AdminStatus = $2
OperStatus = $3)" />
 <eventprop name="specificProblem" value="RC Card Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.2" name="rcCardUp">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="367" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="equipment" />
 <eventprop name="entity" value="$ip_rcCardStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcCardIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="RC card status up" />
 <eventprop name="description" value="RC card status up: CardIndex = $1 (AdminStatus = $2
OperStatus = $3)" />
 <eventprop name="specificProblem" value="RC Card Status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.1" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.5" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.4.9.1.1.6" property="$3" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.39" name="rcnbgpEstablished">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="368" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_bgpEstablished" />
 <eventprop name="componentID" value="PP8600 = $ip" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="BGP FSM entered the ESTABLISHED state" />
```

```
  <eventprop name="description" value="BGP FSM entered the ESTABLISHED state
(PeerLastError = $1 PeerState = $2)" />
  <eventprop name="specificProblem" value="BGP FSM entered the ESTABLISHED state" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.15.3.1.14" property="$1" />
  <varbind name=".1.3.6.1.2.1.15.3.1.2" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.40" name="rcnbgpBackwardTransition">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="369" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_bgpBackwardTransition_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; rcIpBgpPeerIpAddress = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="BGP FSM backward transition" />
  <eventprop name="description" value="BGP FSM backward transition: PeerIpAddress = $1
(PeerLastError = $2 PeerState = $3)" />
  <eventprop name="specificProblem" value="BGP FSM backward transition" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.8.101.9.1.2" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.8.101.9.1.26" property="$2" />
  <varbind name=".1.3.6.1.4.1.2272.1.8.101.9.1.25" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.41" name="rcnAggLinkUp">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="370" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_AggLinkStatus_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; rcMltId = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Aggregator up" />
  <eventprop name="description" value="Aggregator up: rcMltId = $1" />
  <eventprop name="specificProblem" value="Aggregator status" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.1" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.42" name="rcnAggLinkDown">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="371" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
```

```
 <eventprop name="entity" value="$ip_AggLinkStatus_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcMltId = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Aggregator Down" />
 <eventprop name="description" value="Aggregator Down: rcMltId = $1" />
 <eventprop name="specificProblem" value="Aggregator status" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.17.10.1.1" property="$1" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.43" name="rcnIgmpNewGroupMember">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="372" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_GroupMember_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcIgmpGroupIfIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="New Group member in interface" />
 <eventprop name="description" value="New Group member in interface: rcIgmpGroupIfIndex =
$1 (GroupIpAddress = $2 Port = $3 Members $4)" />
 <eventprop name="specificProblem" value="New Group member in interface" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.5" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.1" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.3" property="$3" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.2" property="$4" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.44" name="rcnIgmpLossGroupMember">
<PROPERTIES>
 <eventprop name="severity" value="5" />
 <eventprop name="logName" value="PP" />
 <eventprop name="logNumber" value="373" />
 <eventprop name="eventType" value="Clear" />
 <eventprop name="eventLabel" value="PP Fault" />
 <eventprop name="category" value="communications" />
 <eventprop name="entity" value="$ip_GroupMember_$1" />
 <eventprop name="componentID" value="PP8600 = $ip; rcIgmpGroupIfIndex = $1" />
 <eventprop name="alarmClear" value="3" />
 <eventprop name="probableCause" value="Group member lost on interface" />
 <eventprop name="description" value="Group member lost on interface: rcIgmpGroupIfIndex =
$1 (GroupIpAddress = $2 Port = $3 Members $4)" />
 <eventprop name="specificProblem" value="Group member lost on interface" />
 </PROPERTIES>
<VARBINDS>
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.5" property="$1" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.1" property="$2" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.3" property="$3" />
 <varbind name=".1.3.6.1.4.1.2272.1.8.6.1.2" property="$4" />
 </VARBINDS>
 </TRAP>
<TRAP oid=".1.3.6.1.4.1.2272.1.21.0.45" name="rcnIgmpNewQuerier">
```

```
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="374" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_Querier_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; igmpInterfaceIfIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="New Querier in interface" />
  <eventprop name="description" value="New Querier in interface: igmpInterfaceIfIndex = $1
(igmpInterfaceQuerier = $2 )" />
  <eventprop name="specificProblem" value="New Querier in interface" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.3.59.1.1.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.3.59.1.1.1.1.5" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.46" name="rcnIgmpQuerierChange">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="375" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_QuerierChange_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; igmpInterfaceIfIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Querier changed" />
  <eventprop name="description" value="Querier changed: igmpInterfaceIfIndex = $1 (
NewQuerier = $2 igmpInterfaceQuerier = $3 )" />
  <eventprop name="specificProblem" value="Querier changed" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.3.59.1.1.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.30.1.1.25" property="$2" />
  <varbind name=".1.3.6.1.3.59.1.1.1.1.5" property="$3" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.47" name="rcnDvmrpIfStateChange">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="376" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_DvmrpStateChange_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; dvmrpInterfaceIfIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="DVMRP interface state change" />
  <eventprop name="description" value="DVMRP interface state change: dvmrpInterfaceIfIndex
= $1 (OperState = $2 )" />
  <eventprop name="specificProblem" value="DVMRP interface state change" />
  </PROPERTIES>
```

```
 <VARBINDS>
  <varbind name=".1.3.6.1.3.62.1.1.3.1.1" property="$1" />
  <varbind name=".1.3.6.1.3.62.1.1.3.1.3" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.48" name="rcnDvmrpNewNbrChange">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="377" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_NbrChange_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; dvmrpNeighborIfIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="New neighbor is up on DVMRP interface" />
  <eventprop name="description" value="New neighbor is up on DVMRP interface:
dvmrpNeighborIfIndex = $1 (NeighborAddress = $2 )" />
  <eventprop name="specificProblem" value="New neighbor is up on DVMRP interface" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.3.62.1.1.4.1.1" property="$1" />
  <varbind name=".1.3.6.1.3.62.1.1.4.1.2" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.49" name="rcnDvmrpNbrLossChange">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="378" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_NbrChange_$1" />
  <eventprop name="componentID" value="PP8600 = $ip; dvmrpNeighborIfIndex = $1" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Neighbor gone down on DVMRP interface" />
  <eventprop name="description" value="Neighbor gone down on DVMRP interface:
dvmrpNeighborIfIndex = $1 (NeighborAddress = $2 )" />
  <eventprop name="specificProblem" value="Neighbor gone down on DVMRP interface" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.3.62.1.1.4.1.1" property="$1" />
  <varbind name=".1.3.6.1.3.62.1.1.4.1.2" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.59" name="rcnFdbProtectViolation">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="379" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_FdbProtect_$1_$2" />
  <eventprop name="componentID" value="PP8600 = $ip; PortIndex = $1" />
  <eventprop name="alarmClear" value="3" />
```

```
  <eventprop name="probableCause" value="fdbentries limit violation" />
  <eventprop name="description" value="fdbentries limit violation: PortIndex = $1 (VlanId = $2 )"
/>
  <eventprop name="specificProblem" value="fdbentries limit violation" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.4.10.1.1.1" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.3.2.1.1" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.60" name="rcnLogMsgControl">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="380" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_Log" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Log Message control trap" />
  <eventprop name="description" value="rcnLogMsgControl: SysMsgLogFrequency = $1
(SysMsgLogText = $2 )" />
  <eventprop name="specificProblem" value="Log Message control trap" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.1.66" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.1.67" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.61" name="rcnSaveConfigFile">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="381" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_SaveConfig" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Run time / boot config saved on switch" />
  <eventprop name="description" value="Config saved on switch: SysAction = $1
(SysConfigFileName = $2 )" />
  <eventprop name="specificProblem" value="Run time / boot config saved on switch" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.1.8" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.1.34" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.2272.1.21.0.62" name="rcnDNSRequestResponse">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="382" />
  <eventprop name="eventType" value="Clear" />
```

```
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_DNSResponse" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Request/Response from DNS server" />
  <eventprop name="description" value="Request sent to or response got from DNS server:
DnsServerListIpAddr = $1 (DnsRequestType = $2 )" />
  <eventprop name="specificProblem" value="Request/Response from DNS server" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.4.1.2272.1.1.71" property="$1" />
  <varbind name=".1.3.6.1.4.1.2272.1.1.72" property="$2" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.80.0.1.0" name="pingProbeFailed">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="383" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_ProbeFailed" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Probe failure is detected" />
 <eventprop name="description" value="Probe failure is detected: (ping TargetAddress = $1)" />
  <eventprop name="specificProblem" value="Probe failure is detected" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.80.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.80.0.2.0" name="pingTestFailed">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="384" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_pingTestFail" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Ping test failed" />
  <eventprop name="description" value="Ping test failed: (ping TargetAddress = $1)" />
  <eventprop name="specificProblem" value="Ping test failed" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.80.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.80.0.3.0" name="pingTestCompleted">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="385" />
```

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  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_pingTestComp" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Ping test completed" />
  <eventprop name="description" value="Ping test completed: (ping TargetAddress = $1" />
  <eventprop name="specificProblem" value="Ping test completed." />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.80.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.81.0.1.0" name="traceRoutePathChange">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="386" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_traceRouteChange" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="The path to a target has changed" />
 <eventprop name="description" value="The path to a target has changed: (TargetAddress = $1)"
/>
  <eventprop name="specificProblem" value="The path to a target has changed" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.81.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.81.0.2.0" name="traceRouteTestFailed">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="387" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_RouteTestFail" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="Could not determine the path to a target" />
 <eventprop name="description" value="Could not determine the path to a target: (TargetAddress
= $1)" />
  <eventprop name="specificProblem" value="Could not determine the path to a target" />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.81.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.2.1.81.0.3.0" name="traceRouteTestCompleted">
 <PROPERTIES>
  <eventprop name="severity" value="5" />
  <eventprop name="logName" value="PP" />
```

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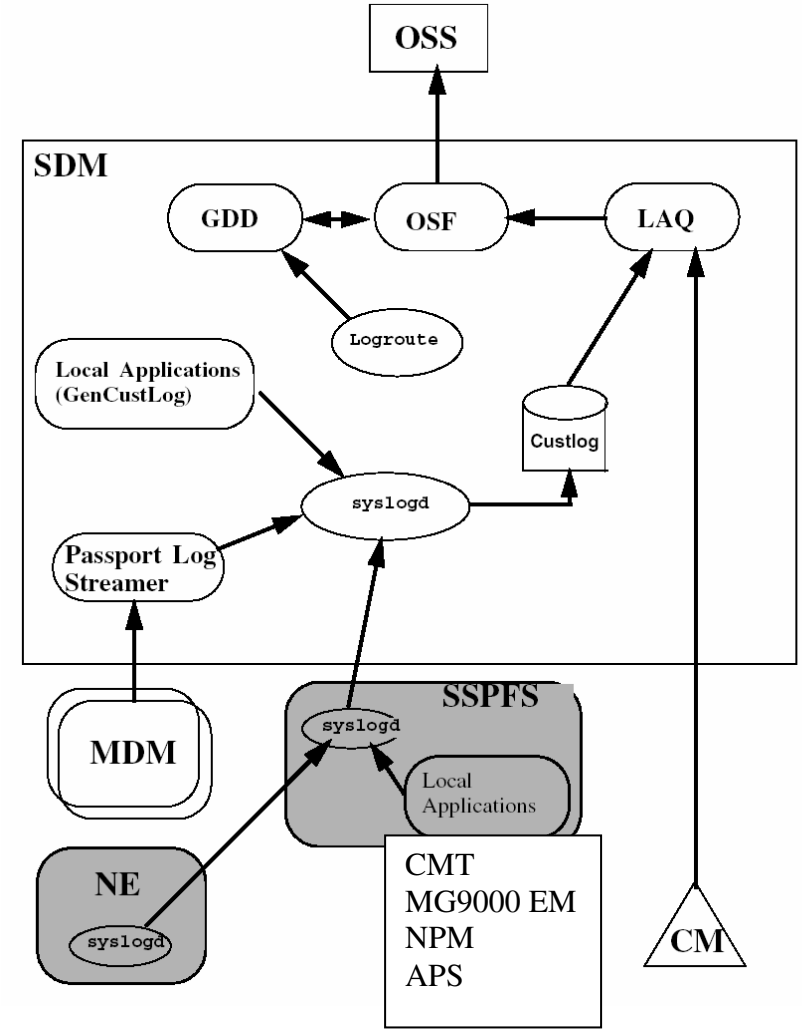
  <eventprop name="logNumber" value="388" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="communications" />
  <eventprop name="entity" value="$ip_RouteTestComplete" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="The path to a target has just been determined." />
  <eventprop name="description" value="The path to a target has just been determined:
(TargetAddress = $1)" />
  <eventprop name="specificProblem" value="The path to a target has just been determined." />
  </PROPERTIES>
 <VARBINDS>
  <varbind name=".1.3.6.1.2.1.81.1.2.1.4" property="$1" />
  </VARBINDS>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.562.42.5.1.3.2.2" name="UDPEapSessionEndTrap">
 <PROPERTIES>
  <eventprop name="severity" value="6" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="389" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="unknown" />
  <eventprop name="entity" value="$ip_UDPEapSessionEnd" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="" />
  <eventprop name="description" value="UDPEapSession end trap" />
  <eventprop name="specificProblem" value="" />
  </PROPERTIES>
  </TRAP>
 <TRAP oid=".1.3.6.1.4.1.562.42.5.1.3.2.1" name="UDPEapSessionStartTrap">
 <PROPERTIES>
  <eventprop name="severity" value="6" />
  <eventprop name="logName" value="PP" />
  <eventprop name="logNumber" value="390" />
  <eventprop name="eventType" value="Clear" />
  <eventprop name="eventLabel" value="PP Fault" />
  <eventprop name="category" value="unknown" />
  <eventprop name="entity" value="$ip_UDPEapSessionSart" />
  <eventprop name="componentID" value="PP8600 = $ip" />
  <eventprop name="alarmClear" value="3" />
  <eventprop name="probableCause" value="" />
  <eventprop name="description" value="UDPEapSession start trap" />
  <eventprop name="specificProblem" value="" />
  </PROPERTIES>
  </TRAP>
  </TRAPS>
```

Ethernet Routing Switch 8600 Trap Raise-Clear Mapping

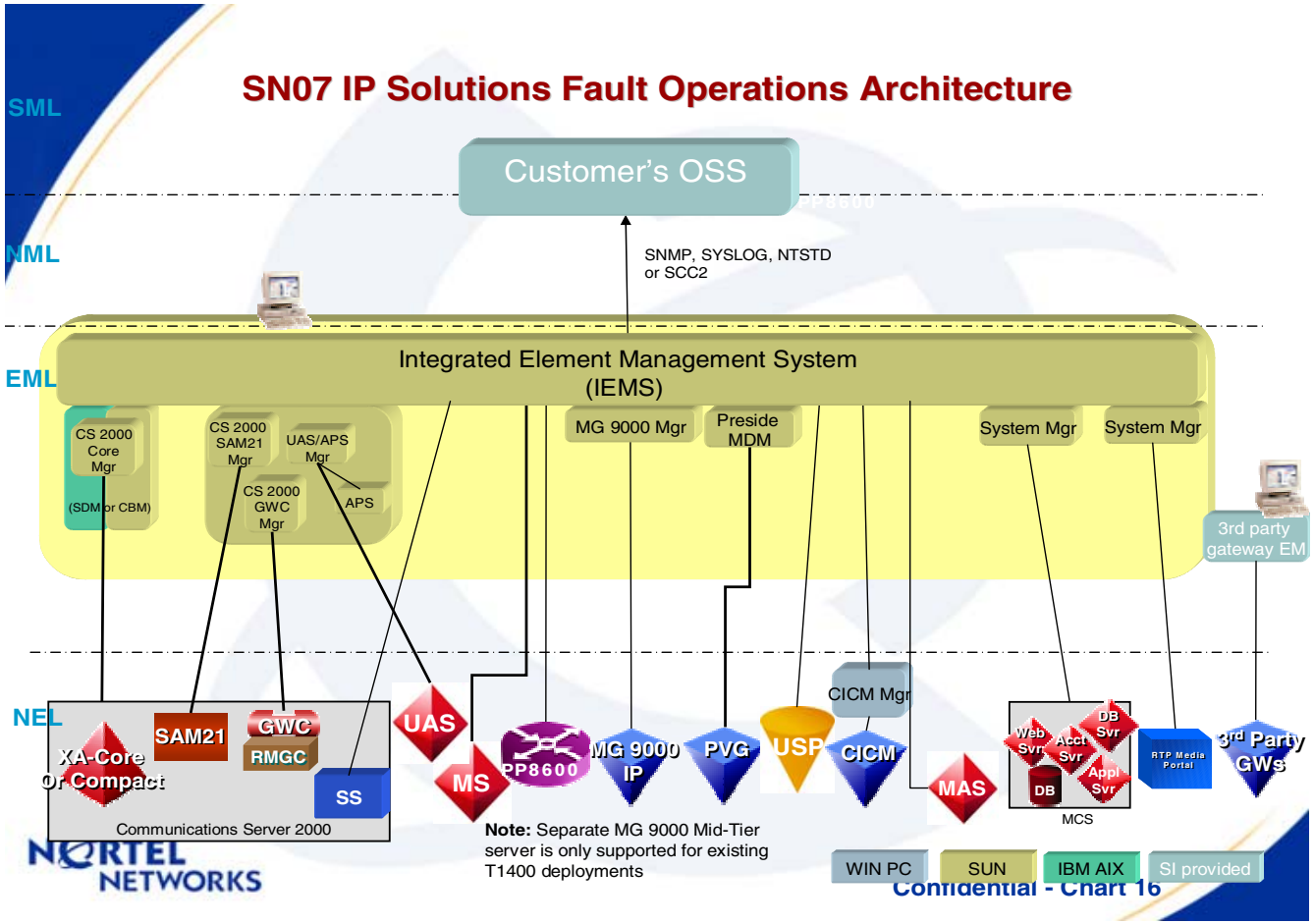
	Raise Alarm	Clear Alarm
1	RisingAlarm(PP310)	FallingAlarm(PP311)
2	LinkDown (PP317)	LinkUp(PP318)
3	RcnChasPowerSupplyDown / RcChasPowerSupplyDown (PP322)	RcnChasPowerSupplyUp / RcChasPowerSupplyUp (PP323)
4	RcnChasFanDown / RcChasFanDown (PP324)	RncChasFanUp / RnChasFanUp (PP325)
5	Rcn2kCardDown / Rc2kCardDown (PP326)	Rcn2kCardUp / Rc2kCardUp (PP327)
6	RcnSmltIstLinkDown(PP338)	RcnSmltIstLinkUp(PP337)
7	RcnSmltLinkDown / RcSmltLinkDown (PP340)	RcnSmltLinkUp / RcSmltLinkUp (PP339)
8	RcnSshServerDisabled(PP348)	RcnSshServerEnabled(PP347)
9	RcnSshSessionLogout(PP350)	RcnSshSessionLogin(PP349)
10	RcnCardDown / RcCardDown (PP366)	RcnCardUp / RcCardUp (PP367)

Appendix J: SN07/SN08 IEMS Fault Transparency with SDM/CBM

Prior to IEMS, Succession supported sending faults and events from network elements via Syslog to the SDM. This feature, SYSLOG Consolidation for Succession, then allows the SDM to convert these logs to SCC2 or NTSTD to forward to the OSS. See the Figure below.



The fault feeds, delivered via IEMS supports SCC2 & NTSTD to the OSS, as did SDM. The implementation with IEMS used a more robust interfaces between the NE/EMS to IEMS and thus on a NE by NE basis there may be changes in the SCC2 log feed versus the SDM implementation. To understand fault diagram with IEMS see the diagram below.



To understand the differences between the IEMS implementation and the SDM implementation see the tables below.

On NT STD and SCC2 Log Format Delimiters (SDM/CBM or IEMS to Fault OSS)

Table 1- **ASCII Character Legend**

ASCII Character Legend			
Character Name	**Hexidecimal**	**Decimal**	**Control Character**
Line Feed:	0A	10	^J
Carriage Return:	0D	13	^M
End of Message:	19	25	^Y

Null:	00	00	^@
Space:	20	32	space

Table 2 - **STD and SCC2 Log Delimiter Comparison between SDM/CBM and IEMS**

STD and SCC2 Log Delimiter Comparison between SDM/CBM and IEMS				
Last Updated:	**Dec. 6, 2004**			
SDM/CBM Load:	**SN07: Generic Data Delivery 20.82.7.3, Log Delivery Service 20.82.7.12**			
IEMS Load:	**SN07: IEMS_070_0435**			
Platform/Product:	**SDM/CBM**	**IEMS**	**SDM/CBM**	**IEMS**
Log Format:	**STD/STD_OLD**	**STD**	**SCC2/SCC2_OLD**	**SCC2**
Start of Log String (HEX):	0A 0D	0D	0A 0D	0D
End of Line String (HEX):	0A 0D	0A 0D	0A 0D	0A 0D
End of Log String (HEX):	20 0A 0D 0A 0D 00	0A 0D 00 0A	0A 19 0A 0D	0A 0D 0A 19 0A

Comments on Table 2:

- The above Log String data in Table 2 data for SN07 is applicable to and unchanged in SN08.
- The spaces between the hexadecimal numbers in Table 2 are there just to enhance readability. ie. 0D immediately follows 0A in the Start of Log String for SDM/CBM.
- In the SDM/CBM, the logroute user interface allows customers to modify, if desired, the:
  - Start of Log String (default value: 0A 0D in hex)
  - End of Line String (default value: 0A 0D in hex) and
  - The provisionable portion of the End of Log strings (default value: 20 0A 0D 0A 0D 00 where the second 0A 0D sequence is the provisionable portion).
- The log delimiters of IEMS are not provisionable in SN07 or SN08.
- IEMS was first generally available (GA) to customers in SN07. There was an SN06.2 beta where the delimiters for IEMS may have been different from those stated above.
- SDM Log delimiters may have been different in SN06 and previous releases. An OSS should consider the potential requirement of needing to support multiple Nortel software releases concurrently.

Table 3 - **NE/EM Comparision**

NE/EM, SCC2 Transparency	**Difference or Notes**	**OSS Impacting**
CS2000, & Peripherals, IW-SPM, MG4000, SDM, CBM,	**Differences:** **a) IEMS mandatory indent rule -** IEMS has a mandatory indent rule where if it comes across a log from the CS2K/SDM that is not indented appropriately in its view, it will add 8 spaces to the beginning of the line. Very few logs (such as BOOT201 below) are believed to be affected by this issue. With well written OSS templates and the fix in place, the	**a)** No Impact

cCS2000 –

Transparent with the following Notes

affected logs should not be adversely affected when it comes to OSS parsing.

SDM SCC2 Samples:	**IEMS SCC2 Sample:**

`* 08 BOOT201 INFO Bootp log report`
`Mac Address : 0001af0bc772`
`MAC addr to node_id lookup failure : 11`
`INM permisssion to boot failure : 0`
`Core IP address lookup failure : 0`
`SEND_UDP_MSG failure : 0`
	`* 08 BOOT201 INFO Bootp log report`
	`Mac Address : 0001af0bc772`
	`MAC addr to node_id lookup failure : 11`
	`INM permisssion to boot failure : 0`
	`Core IP address lookup failure : 0`
	`SEND_UDP_MSG failure : 0`

Notes:

a) Certain logs generated by the CS2K such as OMAU, OMGA, and the protologs (SWER, TRAP, INIT and so on) have no log number, just blank spaces. This is how they look on the CS2K and SDM/CBM. In an SN07 office where the SDM is feeding CS2K logs to IEMS, IEMS adds 000 for a log number. Eg. SWER000. In SN08, a resolution was implemented in IEMS whereby the 000 log number was no longer added to these SDM/CBM logs and the 3 spaces are maintained as it is received. **Resolved in SN08 via CR Q00980472.**

b) When IEMS receives logs from managed components, it implements an 80 character per line rule for log bodies. If 80 characters is exceeded, an End of Line String is inserted at the 80th character and the remainder of the line is put onto the next line. In the case of logs from the SDM/CBM, where rows often exceed 80 characters, this wrap rule could result in visual or transparency differences between what the log looks like on SDM/CBM and IEMS. In some cases, trailing whitespace in a row could potentially be wrapped resulting in a blank line being created. In order to maintain transparency and avoid parsing issues with blank lines and so on, the 80 character wrap rule has been removed from the incoming feed to IEMS from SDM/CBM. **Resolved in SN07 via patch IEM05O7D**

c) Certain CS2K logs such as CARR and PM support an optional field called Equipment Identifier that shows up at the end of the log header after the Event Label. The CS2K has a "newline" rule (which the SDM/CBM implements as well) where the Equipment Identifier is removed from the header line in that it has its own line immediately following the header. The SDM/CBM's Log Delivery Service at SN07 final compile in its implementation of the 65 character newline rule incorrectly took into consideration the 9 characters for the optional ECORE_FORMAT field. (Even when ECORE is set to OFF in the SDM/CBM log device in logroute). This results in the Equipment Identifer field being "newlined" when the CS2K normally would not. (A transparency difference between what the log looks like on the CS2K and on the SDM/CBM). The end result of all this is that templates parsing CARR and PM logs (and any other Equipment Identifier-supporting logs) may no longer be able to parse these logs properly prior to implementation of the patch for this CR. **Resolved in SN07 via patches SDM_BASE.logs-20.82.7.10.tape, SDM_BASE.gdd-20.82.7.3.tape for SDM and NTLOGS208208-15.patch, NTGDD208208-03.patch for CBM.**

d) SDM / CBM transparency issue. In the SN07 CBM product, some applications had started to communicate their failure events via an alarmd process. The resultant log looks different than the original (as seen on SDM). For failure events common to both SDM and CBM platforms, this created 2 versions of the log. 1 for SDM and 1 for CBM. Known logs affected were SDM327/SDM627. This second CBM version was undone in that . **Resolved in SN07 CBM patch CR Q01001000-01**

STORM
Partially Transparent

Differences:

a) Log name/numbers are retained but log formats are different. Believed to affect approx. 8 logs. See example below.

SDM SCC2 Samples:	**IEMS SCC2 Sample:**

a) No Impact if no existing OSS support for STM logs. Otherwise, the template

	* 59 STM 803 5090 THR Threshold exceeded Status: Alarm raised. Number of zombie(s) is 1. Minor alarm threshold value is 1.	* 40 STM 803 0088 FLT STM Fault Location: 172.18.17.6 Notification Id: 56 State: Raised Category: qualityOfService Cause: thresholdCrossed Time: Sep 07 09:40:17 2004 Component Id: STORMIA=storm0 Specific Problem: Description: Status: Alarm raised. Number of zombie(s) is 1. Minor alarm threshold value is 1.		would have to change.

NE/EM & SCC2 Transparency	**Difference or Notes**	OSS Impacting
GWC and GWC EM Partial Transparency	**Differences:** **a)** GWC3XX set logs. (Approx. 17 logs). The syntax of the Category and Cause fields in the log body are different (spaces and Upper case characters). **b)** GWC399 (the clear log for the GWC3XX set logs) is not transparent. IEMS version of the log has 2 extra lines. (mainly for human interpretation). Note: The Component Id structure difference in the example below is tracked by CR Q00976754 and resolved in SN07 patch ZOD41O7D. It is not an SDM / IEMS transparency issue.	**a)** No Impact. **b)** No Impact. A single OSS template should be able to handle both versions these GWC logs.

SDM SCC2 Samples:	**IEMS SCC2 Sample:**
**16 GWC 301 5129 TBL GWC Fault Location: GWC-1-UNIT-1 NotificationID: 1 State: Raise Category: Quality of Service Cause: Underlying resource unavailable Time: Sep 01 13:16:11 2004 Component Id: GWC-1-UNIT-1 Specific Problem: Unit Out of Service: Unit is system disabled; Service is not available Description: Standby unit disabled.	**28 GWC 301 0036 TBL GWC Fault Location: GWC-0-UNIT-1 NotificationID: 1 State: Raise Category: qualityOfService Cause: underlyingResourceUnavailable Time: Aug 27 13:28:43 2004 Component Id: GWC=GWC-?~UNIT-?;Version=GN070CB;Unit=unit_1;Software=NODE MTC Specific Problem: Unit Out of Service: Unit is system disabled; Service is not available Description: Standby unit disabled.
16 GWC 399 5155 INFO GWC Fault Location: GWC-1-UNIT-1 NotificationID: 1 State: Clear Time: Sep 01 13:16:21 2004	30 GWC 399 0050 INFO GWC Fault Location: GWC-0-UNIT-1 NotificationID: 1 State: Clear Time: Aug 27 13:30:45 2004 Component Id: GWC=GWC-?~UNIT-?;Version=GN070CB;Unit=unit_1;Software=NODE MTC

	Description: Standby unit disabled.	
MG9K ATM/IP & MG9000 EM Partial Transparency	**Differences:** **a)** For all MG9000 logs having a format which includes the Category and State fields (generally alarm logs - approx. 200 in SN07, and 40 more in SN08), you will find that the syntax of the field value between SDM and IEMS can be slightly different. This is due to the MG9K EM outputting syslog to SDM and Corba to IEMS. Example for SDM: State: cleared Category: Equipment Alarm Example for IEMS: State: Cleared Category: equipment **Notes:** a) In SN07, the MG9000 Element Manager in an IEMS implementation was duplicating alarm logs sent to IEMS by including them in the syslog feed in addition to the Corba feed to IEMS. Application of the MG9000 EM patch will de-activate sending alarm logs to syslog remove the duplication. **Resolved in SN07 via patch IEM08O7D for IEMS and 9K EM patch ZOD50**	**a)** No Impact
SAM21 Transparent	**Differences:** **a)** Some SAM21 logs (worst case 19 SCU logs) indent the event label 1 character (space). When IEMS processes this, the leading space in the Event Label is removed. SDM maintains the leading space.	**a)** No Impact

NE/EM & SCC2 Transparency	**Difference or Notes**	**OSS Impacting**
Passport 8600 Not transparent	**Differences: (SN07)** **a)** The logs reporting Passport 8600 SNMP trap events are completely different between SDM/CBM and IEMS. In SN07, the SDM uses the PPES300-307 log name/number set and obtains the data for these logs from MDM. IEMS listens to SNMP traps directly from the Passport 8600 and implements the PP398 log for the sets and PP399 for the clears.	**SN07:** **a)** **No impact** – OSS coding support challenges may be present with extracting data from the Specific Problem and Description fields and being able to correlate the sets with the clears. **b)** **Impact Major -** A customer is either other going to ignore all IEMS602s or mark all critical – either way, it is going to be problem in SN07. **c)** **Impact Major -** There is insufficient information (only an IP address) to determine what is causing the fault and what needs to be corrected. **SN08:** **a)** **No impact –** The above SN07 issues are resolved in SN08 and as with any new logs in a release, new templates will have to be written to support them. With the current

SN07 SDM SCC2 Samples:	**SN07 IEMS SCC2 Sample:**
**20 PPES300 1486 TBL time: 2003 11 14 12 17 03 event: set compId: PP8600 BATMAN IF 72 severity: major faultCode: C0000002 alarmType: communications commentData: Link down trap interface: 72	** PP398 SEP08 21:37:57 9992 TBL PP Fault Location: 10.102.15.130 State: Raise Specific Problem: Generic Link Status Description: Link Down: ifIndex = 167 (AdminStatus = up OpeationStatus = down)
20 PPES307 1487 TBL time: 2003 11 14 12 17 06 event: clear compId: PP8600 BATMAN IF 72 severity: cleared	38 PP399 SEP08 21:38:00 9994 INFO PP Fault Location: 10.102.15.130 State: Clear Specific Problem: Generic Link Status Description: Link Up: ifIndex = 167

	faultCode: C0000002 alarmType: commentData: Explicited CLEAR Alarm generated by GMDR.	(AdminStatus = up OpeationStatus = up)	flexibility of the IEMS aging policy and that of an OSS, a working fault management system should be possible between the two of them.
	20 PPES300 1488 TBL time: 2003 11 14 12 17 06 event: clear compId: PP8600 BATMAN IF 72 severity: cleared faultCode: C0000002 alarmType: communications commentData: Link up trap interface: 72		

b) IEMS only supported a limited set of Passport 8600 traps in SN07. (The ones listed below). The unsupported Passport 8600 SNMP traps are treated by IEMS as unknown and reported northbound to the OSS as IEMS602 (Unknown Trap from Known Device).

Alarm Name	**Trap OID (v2c)**	**Log**
coldStart	1.3.6.1.6.3.1.1.5.1.0	PP399
coldStart	1.3.6.1.4.1.2272.0.99001	PP398
warmStart	1.3.6.1.6.3.1.1.5.2.0	PP399
warmStart	1.3.6.1.4.1.2272.0.99002	PP398
linkDown	1.3.6.1.6.3.1.1.5.3.0	PP398
linkUp	1.3.6.1.6.3.1.1.5.4.0	PP399
rcChasPowerSupplyDown	1.3.6.1.4.1.2272.1.21.6.0	PP398
rcChasPowerSupplyUp	1.3.6.1.4.1.2272.1.21.14.0	PP399
rcChasFanDown	1.3.6.1.4.1.2272.1.21.7.0	PP398
rcChasFanUp	1.3.6.1.4.1.2272.1.21.21.0	PP399
rc2kCardDown	1.3.6.1.4.1.2272.1.21.11.0	PP398
rc2kCardUp	1.3.6.1.4.1.2272.1.21.12.0	PP399
rcSmltLinkUp	1.3.6.1.4.1.2272.1.21.19.0	PP399
rcSmltLinkDown	1.3.6.1.4.1.2272.1.21.20.0	PP398

59 IEMS602 7505 INFO
Location: 10.102.15.131
Event: .1.3.6.1.4.1.2272.1.21.8.0
Varbind0: .1.3.6.1.2.1.1.3.0: 203 days, 23 hours, 11 minutes, 22 seconds
.
Varbind1: .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.4.1.2272.1.21.8.0
Varbind2: .1.3.6.1.4.1.2272.1.4.10.1.1.1.0: 267

c) IEMS Location Field has only an IP address.

Notes: (SN08)

a) SN08 feature A00007343 was created to help address the above issues in 8600 fault management via IEMS. With the feature, a new set of logs (PP310 -> PP392) was created to addresses log format/content issues [a) and c)] and PP398/399 is no longer used. Full SNMP trap support as of SN08 was implemented as well [b)] and hence no IEMS602 logs would be seen for unsupported 8600 SNMP traps. This feature does not result in transparency between SDM and IEMS but it does clean up the IEMS log situation. See the SN08 IEMS log samples below for Passport 8600. PP317 is cleared by PP318 when the Component ID matches. At the time of writing, two SN08 IEMS logs for Passport 8600 (PP368 and PP369) have been patched back to SN07.

IEMS PP317 SN08 SCC2 Sample:

```
**01 PP  317 0119 TBL  PP Fault
      Location: PP8600A;10.102.15.130
      State: Raised
      Category: communications
      Cause: loss of communication
      Time: Feb 10 16:01:46 2005
      Component ID: PP8600=10.102.15.130; ifIndex=72
      Specific Problem: Generic Link Status
      Description: Link Down: ifIndex = 72( AdminStatus = up OperationStatus =
       down)
      .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.6.3.1.1.5.3.0
      .1.3.6.1.2.1.1.3.0: 73 days, 5 hours, 35 minutes, 4 seconds.
```

IEMS PP318 SN08 SCC2 Sample:

```
 01 PP  318 0120 INFO PP Fault
      Location: PP8600A;10.102.15.130
      State: Cleared
      Category: communications
      Cause: communication regained
      Time: Feb 10 16:01:48 2005
      Component ID: PP8600=10.102.15.130; ifIndex=72
      Specific Problem: Generic Link Status
      Description: Link Up: ifIndex = 72( AdminStatus = up OperationStatus = u
      p)
      .1.3.6.1.6.3.1.1.4.1.0: .1.3.6.1.6.3.1.1.5.4.0
      .1.3.6.1.2.1.1.3.0: 73 days, 5 hours, 35 minutes, 6 seconds.
```

Differences: (SN08)

a) One noted difference between SN08 IEMS 8600 trap/log fault management and that of SDM/CBM via MDM is that MDM has implemented a per alarm aging mechanism where a trap is not part of a set/clear pair. (There are a lot of 8600 SNMP traps like this.) After a certain period of time, one of these autonomous logs (that has severity) will be cleared automaticly. IEMS as of SN08 does not have a per alarm aging mechanism. In order to prevent a situation in IEMS where these autonomous logs are being raised but never cleared, an 8600 device alarm clearing policy has been implemented by default in the SN08 load. If any 8600 alarm has been present in IEMS for 7 days, it will automaticly

	be cleared by this policy. The clear notification will be an IEMS608 log which will contain information required in order to clear the previous set log for the alarm. While clearing 8600 alarms related to hardware such as fan or link down after 7 days is undesirable it was felt better than having no clear for the multitude of 8600 autonomous traps. Note: An OSS does not have to take action on aging clears if it does not want to. Or it can take action on only a subset of them. The 8600 aging policy in IEMS can also be disabled or modified to be something other than 7 days.	

<table>
<tr><th>NE/EM, SCC2 Transparency</th><th>Difference or Notes</th><th>OSS Impacting</th></tr>
<tr>
<td>MSS15000, MG15000, MDM
Partial Transparency</td>
<td>
Notes:
Between IEMS and SDM/CBM, MSS15000/MG15000/MDM log names are the same and appears to use the same mapping scheme. (Where the log prefix is determined by what the first 4 digits of the fault code is). Names are PPEM, MDM and CA. Log Body tags all the same.

Differences: (SN07 and SN08)
a) Log numbers are maintained except that it would appear IEMS doesn't use PPEM/CA/MDM307 for explicit clears and instead uses a 000 number. OSS templates for PPEM000/CA000/MDM000 should be identical to PPEM307/CA307/MDM307 (explicit clear varieties). Inappropriate use of the 000 log number for explicit clears from MDM was discontinued in SN08. Resolved in SN08 via CR Q00980484.
<table>
<tr><th>SN07 SDM/CBM Explicit Clear Sample:</th><th>SN07 IEMS Explicity Clear Sample:</th></tr>
<tr><td>08 PPEM307 9380 TBL
time: 2004 09 09 12 09 11
event: clear
compId: EM P15KE LP 12 SONET 1 STS 0
severity: cleared
faultCode: 70115261
alarmType:
commentData: Explicited CLEAR Alarm generated by GMDR.</td><td>46 PPEM000 8088 TBL
time: 2004 09 09 12 46 42
event: clear
compId: EM P15KE LP 12 SONET 1 STS 0
severity: cleared
faultcode: 70115261
alarmType: other
commentData: Explicited CLEAR Alarm generated by GMDR.</td></tr>
</table>
b) IEMS has changed the field values of alarmType in some cases so that it aligns with a standard list of X.733 alarm categories. Where there was no equivalent alarm type in X.733, IEMS uses "other". (See table below). When logs come out of SDM/CBM, the original alarmtype as provided by MDM is maintained.
<table>
<tr><th>SN07/08 SDM/CBM alarmtype SCC2 Sample:</th><th>SN07/SN08 IEMS alarmtype SCC2 Sample:</th></tr>
<tr><td>**13 PPEM305 7877 TBL
time: 2005 03 08 16 13 14
event: message
compId: EM P15KL NMIS $ FMIP $ SESSION 9
severity: major
faultCode: 70060006
alarmType: security
commentData: 9 contiguous FMIP login attempts failed, last failure from 10.102.4.4 to userid: DEBUG</td><td>**41 PPEM305 8756 TBL
time: 2005 03 08 14 40 41
event: message
compId: EM P15KL NMIS $ FMIP $ SESSION 9
severity: major
faultcode: 70060006
alarmType: other
commentData: 9 contiguous FMIP login attempts failed, last failure from 10.102.13.16 to userid: DEBUG</td></tr>
</table>
c) In SN07, when the alarmType value is qualityOfService, SDM reports the log number as 301
</td>
<td>
a) Minor impact - Log numbers of 000 are usually invalid. Customers who have written templates for CA/MDM/PPEM3XX would have to add an additional line for PPEM000. The template logic would read something like; if you get an alarm raised with a PPEM3xx look for a PPEM3xx or PPEM307 or PPEM000 with the same compID and faultCode.
b) No Impact
c) No Impact
</td>
</tr>
</table>

longer the case. **Resolved in SN08 via unknown CR.**

SN07 SDM/CBM SCC2 Sample:	**SN07 IEMS SCC2 Sample:**
04 **PPEM301** 5272 TBL time: 2004 08 23 11 04 25 event: clear compId: EM P15KL COL DEBUG AG 1 severity: cleared faultCode: 70030001 alarmType: qualityOfService commentData: currentQueueSize fell back to 500f maximum. 48 records discarded since the Set alarm.	**36 **PPEM307** 3736 TBL time: 2004 09 23 10 36 17 event: set compId: EM P15KH COL DEBUG AG 0 severity: major faultcode: 70030001 alarmType: qualityOfService commentData: currentQueueSize exceeded 75% of maximum.
SN08 SDM/CBM SCC2 Sample:	**SN08 IEMS SCC2 Sample:**
12 **PPEM301 8786 TBL time: 2005 02 23 14 47 02 event: set compId: EM P15KE LP 2 ENG $ AALIST $ severity: major faultCode: 70030007 alarmType: qualityOfService commentData: current list size exceeded 750f maximum	**49 **PPEM301** 5863 TBL time: 2005 02 11 13 49 03 event: set compId: EM P15KL COL DEBUG AG 15 severity: major faultcode: 70030001 alarmType: qualityOfService commentData: currentQueueSize exceeded 75% of maximum.

Summary of Transparency Differences Between SDM & IEMS (bold text):

SDM alarmTpe	SDM log number	IEMS alarmType	IEMS log number
communications	300	communications	300
qualityOfService	301	qualityOfService	**307 (SN07)** / 301 (SN08)
processing	302	**other (SN07/08)**	303
equipment	303	equipment	303
environmental	304	environmental	304
security	305	**other (SN07/08)**	305
debug	600	(unknown)	(unknown)
operator	306	**other (SN07/08)**	306
unknown	307 (set log)	**other (SN07/08)**	307

	(blank)	307 (explicit clear)	**other (SN07/08)**	**000 (SN07)** / 307 (SN08)		

<table>
<tr><th>NE/EM & SCC2 Transparency</th><th>Difference or Notes</th><th>OSS Impacting</th></tr>
<tr>
<td>CMT- SESM
Partial Transparency</td>
<td>
Differences:
a) CMT399 is not transparent. IEMS version of this log has 2 extra lines.
b) Partial transparency amongst all CMT3XX set logs (approx. 4 logs): Syntax of Category, and Cause fields are different. (See samples below).
c) In CMT302 failure scenarios, it appears that IEMS uses an inconsistent Location field value between the set and clear. In SDM, SNMP_NE_Poller is consistently used. Resolution involves making the IEMS clear have SNMP_NE_Poller. Resolved in SN08 via CR Q01078502 and CR Q01078502-02. Plans to patch back to SN07.
<table>
<tr><th>SDM SCC2 Samples:</th><th>IEMS SCC2 Sample:</th></tr>
<tr><td>**14 CMT 302 9000 TBL CMT Fault
Location: SNMP_NE_Poller
NotificationID: 1
State: Raise
Category: Communications
Cause: Communications subsystem failure
Time: Aug 31 13:34:14 2004
Component Id: SESM=SNMP Device Poller;Device=GWC-6-UNIT-1;DeviceID=0x000 00063000000a10a660f43
Specific Problem: SNMP Timeout
Description: CMT Unable to communicate with managed device</td><td>**29 CMT 302 5875 TBL GWC Fault
Location: SNMP_NE_Poller
NotificationID: 4
State: Raise
Category: communications
Cause: communicationsSubsystemFailure
Time: Sep 27 13:29:37 2004
Component Id: SESM=SNMP Device Poller;Device=GWC-5-UNIT-0;DeviceID=0x000 00063000000a10a660f3e
Specific Problem: SNMP Timeout
Description: CMT Unable to communicate with managed device</td></tr>
<tr><td>15 CMT 399 9946 INFO CMT Fault
Location: SNMP_NE_Poller
NotificationID: 1
State: Clear
Time: Aug 31 13:28:15 2004</td><td>38 CMT 399 6002 INFO GWC Fault
Location: GWC-5-UNIT-0
NotificationID: 4
State: Clear
Time: Sep 27 13:38:22 2004
Component Id: SESM=SNMP Device Poller;Device=GWC-5-UNIT-0;DeviceID=0x000 00063000000a10a660f3e
Description: CMT Reestablished communications with managed device</td></tr>
</table>
</td>
<td>a) No Impact.
b) No Impact.
c) Impact Major – Customer may be unable to clear the alarm until the CR issue is resolved.</td>
</tr>
<tr>
<td>CMT-QCA
Partial Transparency</td>
<td>
Differences:
a) IEMS implements an 80 character log body line length for all managed components except the logs from SDM/CBM. Some of the QCA logs as output to /var/log/customerlog on the CMT have a Description field value that exceeds 80 characters. IEMS puts the excess onto a new line whereas SDM/CBM does not when it receives it from syslog.

Notes:
SN08 introduced feature A00008338 to address certain general log supportability concerns for the
</td>
<td>a) No Impact</td>
</tr>
</table>

	OSS. This corrective content feature will be patched back to SN07.	
CMT-NPM Transparent	**Differences:** **a)** Some NPM logs (11 logs worst case) indent the event label 1 character (space). When IEMS processes this, the leading space in the Event Label is removed. SDM/CBM maintains the leading space.	**a)** No Impact
CMT-IEMS (general northbound feed comparison with SDM)	**Differences:** **a)** For NT STD and SCC2 log formats, the characters contained within the "Start of Log" and "End of Log" string delimiters are different. See Table 1 at the beginning of this Appendix. **b)** When IEMS re-syncs its alarm list with devices that support re-sync, IEMS creates clear logs for when discrepancies are found. ie Alarms it thought were there but went away. These clear logs used the original log name/number for the alarm in the database and the content of the "re-sync clear" was not necessarily the same. Resolution of this CR has resulted in the creation of a new IEMS log for re-sync raises/clears. (IEMS607). SDM/CBM has no such re-sync capability. **Resolved in SN07 via IEM10O7D patch** **Notes:** SN07 CR Q01001051 tracked the fact that the "end of log string" for SDM differs depending on whether ECORE_FORMAT is on or off in the device. This is not an SDM/IEMS transparency but an SDM/SDM one. (ECORE_FORMAT is not supported in Succession.) This issue has been resolved through the SN07 SDM/CBM patches. The End of Log string is now the same whether ECORE format is ON or OFF. (ECORE format is not supported in Succession and should be turned off for the SDM/CBM log device for IEMS fault communication).	**a)** No Impact. **b)** No Impact. A new template would have to be created for the IEMS607 log as is the case for any new log.

<table>
<tr><th>NE/EM & SCC2 Transparency</th><th>Difference or Notes</th><th>OSS Impacting</th></tr>
<tr><td>CMT–UAS
Partial Transparency</td><td>
Differences:
a) Minor difference in the syntax of the Cause field values. Eg. "outOfMemory" in IEMS vs "Out of memory" in SDM as per the example below.
b) Minor difference in the syntax of the Category field values. Eg. "processingError" in IEMS vs "Processing Error" in SDM as per the example below.
c) UAS399 not transparent. (Similar in fashion to GWC399 and CMT399). UAS399 is the clear log for all UAS3xx and 8xx raises. The IEMS version has 2 extra rows of information in the clear. See example below.
<table>
<tr><th>SDM SCC2 Samples:</th><th>IEMS SCC2 Sample:</th></tr>
<tr><td>**19 UAS 353 1227 TBL UAS Fault
Location: msh10uas-a
NotificationID: 81924
State: Raise
Category: Processing Error
Cause: Out of memory
Time: May 22 11:19:13 2003
Component Id: UAS;UASUnit=msh10uas-a;Software=LocalResourceManager_0
Specific Problem: 81924
Description: [mem_usage_high_major] Memory usage high. (803554284552sed)</td><td>**10 UAS 353 9836 TBL UAS Fault
Location: cablabuas
NotificationID: 81924
State: Raise
Category: processingError
Cause: outOfMemory
Time: Aug 30 15:10:48 2004
Component Id: UAS;UASUnit=cablabuas;Software=LocalResourceManager_0
Specific Problem: 81924
Description: [mem_usage_high_major] Memory usage high. (91% used)"</td></tr>
<tr><td>19 UAS 399 1228 INFO UAS Fault
Location: msh10uas-a
NotificationID: 81924
State: Clear
Time: May 22 11:19:14 2003</td><td>53 UAS 399 0642 INFO UAS Fault
Location: UAS_RTPU_TST
NotificationID: 49154
State: Clear
Time: May 11 10:53:37 2004
Component Id:
Description:</td></tr>
</table>
</td><td>a) No Impact
b) No Impact
c) No Impact</td></tr>
<tr><td>CMT –APS</td><td>At this time there are no known methods for an APS set log to be transmitted northbound to the OSS.</td><td>No Impact</td></tr>
<tr><td>CICM, MCS5200, USP, USPc, RTP Portal, Session Server, MS20x0, SPC

Not supported via SDM</td><td>N/A</td><td>No Impact</td></tr>
</table>

Succession

OSS-affecting Features in iSN08

Advance Feature Guide

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