NORTEL

Nortel Communication Server 1000

# Features and Services Fundamentals — Book 2 of 6 (C)

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# New in this release

The following sections detail what's new in Feature and Services Fundamentals - Book 2 of 6 (C) (NN43001-106) for CS 1000 Release 6.0:


- "Features" (page 41)
- "Other" (page 41)


## Features

The Calling Party Privacy section has been updated to include configuration information for the feature using Element Manager.

## Other

### Revision History

| | |
|---|---|
| **January 2010** | Standard 03.05. This document has been up-issued to add information on calling number. |
| **August 2009** | Standard 03.04. This document has been up-issued to add information to the chapter CLID Name Enhancement and CLID B. |
| **June 2009** | Standard 03.03. This document is up-issued to support Communication Server Release 6.0. |
| **May 2009** | Standard 03.02 This document is up-issued to support Communication Server Release 6.0. |
| **May 2008** | Standard 02.04. This document has been up-issued to add information on CDP/UDP Calls to the Call Forward to Trunk Restriction chapter. |
| **December 2007** | Standard 02.03. This document has been up-issued to support Communication Server Release 5.5. |
| **July 2007** | July 2007 Standard 01.04. This document is up-issued (revising the 500 Telephone Features and Bandwidth Management Support for Network Wide Virtual Office chapters in Book 1 and revising the Conference Warning Tone Enhancement chapter in Book 2). |
| **June 2007** | Standard 01.03. This document is up-issued (revising the Software Licenses chapter in Book 6). |



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**June 2007**

Standard 01.02. This document is up-issued (revising the Network Music feature implementation in Book 5).

**May 2007**

Standard 01.01. This document is up-issued to support Communication Server 1000 Release 5.0. This document is renamed Features and Services Fundamentals - Book 2 of 6 (NN43001-106-B2) and contains information previously contained in the following legacy documents, now retired:

- Features and Services Fundamentals - Book 1 of 6 (NN43001-106-B1)
- Features and Services Fundamentals - Book 2 of 6 (NN43001-106-B2)
- Features and Services Fundamentals - Book 3 of 6 (NN43001-106-B3)

This document also includes the following updates:

- Corrections to Trunk Route Optimization - Before Answer on page 534 (Book 5) and to Trunk Route Optimization - Before Answer on page 540 (Book 5)
- Updated the description of EXTT prompt in LD 15 on page 338 (Book 6)

**July 2006**

Standard 17.00. This document is up-issued to reflect the following changes:

- Addition of M3900 Full Icon Support feature on pages 797 to 800 (Book 2)
- Addition of M3900 Set-to-Set Messaging feature on pages 801 to 806 (Book 2)
- Addition of M3900 series digital telephone feature reference on pages 341, 342 of the Personal Directory chapter (Book 3)

**April 2006**

Standard 16.00. This document is up-issued to reflect the following changes:

- Addition of keycode commands for CP PIV on pages 595 to 610 (Book 2)
- Addition of IPMG on CS1000E to the following: operating parameters on page 364 (Book 3); and LD 97 on page 379 (Book 3)
- Additions to the following: Call Redirection by Day on page 848 (Book1); the CRDAY prompt on page 852 (Book 1); and Call Redirection by Time of Day on page 858 (Book 1)
- Addition of Flexible Feature Codes to list on pages 371 to 376 of Flexible Feature Codes chapter (Book 2)



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- Correction to Message Intercept for Set Status Lockout on pages 982-983 (Book 2)
- Correction to SECA001 alarm message on page 402 (Book 1)

**January 2006**

Standard 15.00. This document is up-issued to reflect the following changes in content:

- Addition of Converged Office feature on page 1247 (Book 1); changes to interactions with Call Forward All Calls on pages 647, 648, 721, 725 (Book 1), and 521 (Book 2)
- Addition of IP Phones to supported sets referenced in Selectable Conferee Display and Disconnect on pages 667 to 700 (Book 3)

**August 2005**

Standard 14.00. This document is up-issued to support Communication Server 1000 Release 4.5.

**September 2004**

Standard 13.00. This document is up-issued for Communication Server 1000 Release 4.0.

**October 2003**

Standard 12.00. This document is issued to support Succession 3.0.

**November 2002**

Standard 11.00. This document is up-issued to support Meridian 1 Release 25.40 and Succession Communication Server for Enterprise (CSE) 1000, Release 2.0. This is book 1 of a 3 book set.

**January 2002**

Standard 10.00. Up-issued to include content for Meridian 1 Release 25.40 and Succession Communication Server for Enterprise 1000, Release 1.1.

**April 2000**

Standard 9.00. This is a global document and is up-issued for Release 25.0x. Document changes include removal of: redundant content; references to equipment types except Options 11C, 51C, 61C, and 81C; and references to previous software releases.

**June 1999**

Issue 8.00 released as Standard for Generic Release 24.2x.

**October 1997**

Issue 7.00. This is the Release 23.0x standard version of this document. Certain application-specific features have been removed from this document and have been placed in their appropriate Nortel Networks technical publications (technical documents). Automatic Call Distribution features can be found in *Automatic Call Distribution Feature description* () 553-2671-110; Call Detail Recording features can be found in *Call Detail Recording Description and formats* () 553-2631-100; Primary Rate Interface features can be found in *International ISDN PRI Feature description and administration* () 553-2901-301; R2MFC and MFC features can be found in *Multifrequency Compelled Signaling* () 553-2861-100; and DPNSS1 features can be found in *DPNSS1 Features and Services* () 553-3921-300.



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| | |
|---|---|
| **August 1996** | Issue 6.00. This is the Release 22.0x standard version of this document. The features Automatic Number Identification, Automatic Trunk Maintenance, Multi Tenant Service, Radio Paging and X08/11 Gateway have been incorporated into this document. Accordingly, the following Nortel Networks technical publications have been retired to reflect this change: 553-2611-200, 553-2751-104, 553-2831-100, 553-2721-111 and 553-2941-100. |
| **December 1995** | Issue 5.00. This is the Release 21.1x standard version of this document. |
| **July 1995** | Issue 4.00. This is the Release 21 standard version of this document. |
| **October 1994** | Issue 2.0. This is the Release 20.1x soak version of the document. |
| **July 1994** | Issue 1.0. This is the Release 20.0x standard version of this document. |



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# How to get help

This chapter explains how to get help for Nortel products and services.

## Getting help from the Nortel web site

The best way to get technical support for Nortel products is from the Nortel Technical Support web site:

http://www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

## Getting help over the telephone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support web site, and you have a Nortel support contract, you can also get help over the telephone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following web site to obtain the telephone number for your region:

http://www.nortel.com/callus



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## Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

http://www.nortel.com/erc

## Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.



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# Features and Software options

| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **1.5 Mbit Digital Trunk Interface** | 75 | PBXI | 5 |
| • Hong Kong Digital Trunk Interface<br>• Reference Clock Switching (See also packages 129, 131, and 154) | | | |
| **16-Button Digitone/Multifrequency Telephone** | 144 | ABCD | 14 |
| • 16-Button Digitone/Multifrequency Operation | | | |
| **2 Mbit Digital Trunk Interface** | 129 | DTI2 | 10 |
| • DID Recall features on DTI2 for Italy – DID Offering<br>• DID Recall features on DTI2 for Italy – DID Recall<br>• Italian Central Office Special Services (see also packages 131, and 157)<br>• Italian Periodic Pulse Metering<br>• Pulsed E&M DTI2 Signaling<br>• Reference Clock Switching (see also packages 75, 131, and 154)<br>• R2MFC 1.5 Mbps DTI<br>• 2 Mbps Digital Trunk Interface<br>• 2 Mbps Digital Trunk Interface Enhancements:<br>— Alarm Handling on DID Channels<br>— Alarm Handling on Incoming COT/DID Calls<br>— Call Clearance<br>— Clock Synchronization<br>— DID Call Offering<br>— Disable Out-of-Service Alarm State<br>— Fault Signal | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| — Incoming Seizure | | | |
| — Outpulsing Delay | | | |
| — Release Control | | | |
| — Signal Recognition | | | |
| — Trunk Entering Alarm Status/Trunk Pack Exiting Alarm Status | | | |
| — 64 Kbps Alarm Indication Signal (AIS) Handling | | | |
| **2.0 Mb/s Primary Rate Interface** | 154 | PRI2 | 14 |
| • Reference Clock Switching (see also packages 75, 129, and 131) | | | |
| **2500 Set Features** | 18 | SS25 | 1 |
| • Call Hold, Permanent | | | |
| • 2500 Set Features | | | |
| **500 Set Dial Access to Features** | 73 | SS5 | 4 |
| • 500 Set Features | | | |
| • 500/2500 Line Disconnect | | | |
| **AC15 Recall** | 236 | ACRL | 20 |
| • AC15 Recall: Timed Reminder Recall | | | |
| • AC15 Recall: Transfer from Norstar | | | |
| • AC15 Recall: Transfer from Meridian 1 | | | |
| • Access Restrictions | | | |
| **ACD/CDN Expansion** | 388 | ACDE | 25.40 |
| • ACD/CDN Expansion | | | |
| **Administration Set** | 256 | ADMINSET | 21 |
| • Set-based Administration Enhancements | | | |
| **Advanced ISDN Network Services** | 148 | NTWK | 13 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Advice of Charge – Charging Information and End of Call for NUMERIS Connectivity (see also package 101)<br>• Advice of Charge Real-time Supplementary Services for NUMERIS and SWISSNET (see also package 101)<br>• Alternative Conference PAD Levels<br>• Alternative Loss Plan<br>• Alternative Loss Plan for China | | | |
| **Analog Calling Line Identification**<br>• CLID on Analog Trunks for Hong Kong (A-CLID) | 349 | ACLI | 25 |
| **Aries Digital Sets**<br>• Meridian Communications Adapter<br>• Meridian Modular Telephones | 170 | ARIE | 14 |
| **Attendant Administration**<br>• Attendant Administration | 54 | AA | 1 |
| **Attendant Alternative Answering**<br>• Attendant Alternative Answering<br>• Attendant Barge-In | 174 | AAA | 15 |
| **Attendant Announcement**<br>• Attendant Announcement | 384 | AANN | 25.40 |
| **Attendant Break-In/Trunk Offer**<br>• Attendant Break-In<br>• Break-In busy Indication and Prevention<br>• Break-In to Inquiry Calls<br>• Break-In to Lockout Set Denied<br>• Break-In with Secrecy<br>• China Number 1 Signaling – Toll Operator Break-In (see also Package 131)<br>• Network Individual Do Not Disturb (see also packages 9, and 159<br>• Attendant Busy Verify<br>• Attendant Call Selection | 127 | BKI | 1 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Attendant Calls Waiting Indication<br>• Attendant Consoles<br>• Attendant Delay on Hold<br>• Attendant Display of Speed Dial or Autodial | | | |
| **Attendant Forward No Answer** | 134 | AFNA | 14 |
| • Attendant Forward No Answer<br>• Attendant Forward No Answer Expansion<br>• Attendant Incoming Call Indicators<br>• Attendant Interpositional Transfer<br>• Attendant Lockout | | | |
| **Attendant Overflow Position** | 56 | AOP | 1 |
| • Attendant Overflow Position<br>• Attendant Position Busy<br>• Attendant Recall<br>• Attendant Recall with Splitting | | | |
| **Attendant Remote Call Forward** | 253 | ARFW | 20 |
| • Call Forward, Remote (Network and Attendant Wide)<br>• Attendant Secrecy<br>• Attendant Splitting<br>• Attendant Trunk Group Busy Indication<br>• Audible Reminder of Held Calls | | | |
| **Autodial Tandem Transfer** | 258 | ATX | 20 |
| • Autodial Tandem Transfer | | | |
| **Automated Modem Pooling** | 78 | AMP | 5 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Automatic Answerback** | 47 | AAB | 1 |
| • Automatic Answerback<br>• Automatic Call Distribution Answer Time in Night Service<br>• Automatic Call Distribution Call Delays (see also package 40)<br>• Automatic Call Distribution Call Priority (see also package 40)<br>• Automatic Call Distribution Call Waiting Thresholds (see also packages 40 and 41)<br>• Automatic Call Distribution Calls on Hold (see also package 40)<br>• Automatic Call Distribution Dynamic Queue Threshold (see also package 40) | | | |
| **Automatic Call Distribution Enhanced Overflow** | 178 | EOVF | 15 |
| • Automatic Call Distribution Enhanced Overflow | | | |
| **Automatic Call Distribution Load Management** | 43 | LMAN | 1 |
| • Automatic Call Distribution Load Management Reports | | | |
| **Automatic Call Distribution Night Call Forward without Disconnect Supervision** | 289 | ADSP | 23 |
| • Call Processor Input/Output) | | | |
| **Automatic Call Distribution Package C** | 42 | ACDC | 1 |
| • Automatic Call Distribution Report Control (see also package 50)<br>• 500/2500 Line Disconnect | | | |
| **Automatic Call Distribution Package D, Auxiliary Link Processor** | 51 | LNK | 2 |
| • ACD Package D Auxiliary Processor Link | | | |
| **Automatic Call Distribution Package D, Auxiliary Security** | 114 | AUXS | 12 |
| • ACD-D Auxiliary Security | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Automatic Call Distribution Package D**<br>• Automatic Call Distribution Report Control (see also package 42)<br>• Automatic Call Distribution Threshold Visual Indication (see also packages 40 and 41) | 50 | ACDD | 2 |
| **Automatic Call Distribution, Account Code**<br>• Automatic Call Distribution Activity Code | 155 | ACNT | 13 |
| **Automatic Call Distribution, Package A**<br>• Automatic Call Distribution | 45 | ACDA | 1 |
| **Automatic Call Distribution, Package B**<br>• Automatic Call Distribution Call Waiting Thresholds (see also packages 40, and 131)<br>• Automatic Call Distribution Least Call Queuing<br>• Automatic Call Distribution Threshold Visual Indication (see also packages 40, and 131) | 41 | ACDB | 1 |
| **Automatic Call Distribution, Priority Agent**<br>• Automatic Call Distribution Priority Agent | 116 | PAGT | 12 |
| **Automatic Call Distribution, Timed Overflow Queuing**<br>• ACD Timed Overflow<br>• Automatic Gain Control Inhibit<br>• Automatic Guard Detection<br>• Automatic Hold | 111 | TOF | 10 |
| **Automatic ID of Outward Dialing** | 3 | AIOD | 1 |
| **Automatic Installation (Option 11 only)**<br>• Automatic Installation | 200 | AINS | 16 |
| **Automatic Line Selection**<br>• Automatic Line Selection | 72 | LSEL | 4 |
| **Automatic Number Identification Route Selection**<br>• Automatic Number Identification Route Selection | 13 | ANIR | 1 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Automatic Number Identification** | 12 | ANI | 1 |
| • Automatic Number Identification<br>• Automatic Number Identification on DTI<br>• Automatic Preselection of Prime Directory Number | | | |
| **Automatic Re-dial** | 304 | ARDL | 22 |
| • Automatic Re-dial<br>• Automatic Timed Reminders | | | |
| **Automatic Wake-Up** | 102 | AWU | 10 |
| • Automatic Wake Up | | | |
| **Auxiliary Processor Link** | 109 | APL | 10 |
| • Auxiliary Processor Link<br>• Auxiliary Signaling<br>• B34 Dynamic Loss Switching (see also packages 164 and 203) | | | |
| **Background Terminal** | 99 | BGD | 10 |
| • Background Terminal Facility | | | |
| **Basic Alternate Route Selection** | 57 | BARS | 1 |
| • Network Alternate Route Selection/Basic Alternate Route Selection Enhancement – Local Termination (see also package 58) | | | |
| **Basic Authorization Code** | 25 | BAUT | 1 |
| • Basic Authorization Code | | | |
| **Basic Automatic Call Distribution** | 40 | BACD | 1 |
| • Automatic Call Distribution Alternate Call Answer<br>• Automatic Call Distribution Call Delays (see also package 131)<br>• Automatic Call Distribution Call Priority (see also package 131)<br>• Automatic Call Distribution Call Waiting Thresholds (see also packages 41, and 131)<br>• Automatic Call Distribution Calls on Hold (see also package 131) | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Automatic Call Distribution Dynamic Queue Threshold (see also package 131)<br>• Automatic Call Distribution Enhancements<br>• Automatic Call Distribution in Night Service<br>• Automatic Call Distribution Threshold Visual Indication (see also packages 41, and 131)<br>• INIT Automatic Call Distribution (ACD) Queue Call Restore | | | |
| **Basic Call Processing** | 0 | BASIC | 1 |
| **Basic Queuing** | 28 | BQUE | 1 |
| • Basic Queuing | | | |
| **Basic Rate Interface** | 216 | BRI | 18 |
| • Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 235) | | | |
| **Basic Routing** | 14 | BRTE | 1 |
| • Basic Routing | | | |
| **Boss Secretary Filtering (FFC activation)** | 198 | FTCSF | 15 |
| • Flexible Feature Code Boss Secretarial Filtering | | | |
| **BRI line application** | 235 | BRIL | 18 |
| • Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 233)<br>• ISDN Basic Rate Interface Connected Line Presentation/Restriction<br>• Bridging<br>• Busy Lamp Field Array | | | |
| **Business Network Express** | 367 | BNE | 25 |
| • Business Network Express/EuroISDN Call Diversion<br>• Business Network Express/EuroISDN Explicit Call Transfer<br>• Business Network Express/Name and Private Number Display | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Busy Tone Detection** | 294 | BTD | 21 |
| • China Phase II – Busy Tone Detection<br>• Busy Tone Detection for Asia Pacific and CALA<br>• Call Capacity Report | | | |
| **Call Center Transfer Connect** | 393 | UUI | 3.0 |
| • Call Center Transfer Connect | | | |
| **Call Detail Recording Enhancement** | 259 | CDRX | 20 |
| • Call Detail Recording Enhancement | | | |
| **Call Detail Recording Expansion (7 digit)** | 151 | CDRE | 13 |
| • Call Detail Recording Expansion | | | |
| **Call Detail Recording on Teletype Terminal** | 5 | CTY | 1 |
| • CDR on TTY | | | |
| **Call Detail Recording Queue Record** | 83 | CDRQ | 3 |
| • ACD CDR Queue Record | | | |
| **Call Detail Recording, Data Link** | 6 | CLNK | 1 |
| **Call Detail Recording** | 4 | CDR | 1 |
| • Call Detail Recording<br>• Call Detail Recording Enhancement<br>• Call Detail Recording on Redirected Incoming Calls<br>• Call Detail Recording with Optional Digit Suppression<br>• Call Detail Recording 100 Hour Call<br>• NPI and TON in CDR Tickets<br>• Call Forward and Busy Status<br>• Call Forward Busy<br>• Call Forward by Call Type<br>• Call Forward External Deny<br>• Call Forward No Answer, Second Level<br>• Call Forward No Answer/Flexible Call Forward No Answer | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Call Forward Save on SYSLOAD | | | |
| • Call Forward Save on SYSLOAD | | | |
| • Call Forward to Trunk Restriction | | | |
| • Call Forward, Break-In & Hunt Internal/External Network Wide | | | |
| • Call Forward, Internal Calls | | | |
| **Call ID (for AML applications)** | 247 | CALL ID | 19 |
| • Call Identification | | | |
| **Call Page Network Wide** | 307 | PAGENET | 22 |
| • Call Page Network Wide | | | |
| **Call Park Network Wide** | 306 | CPRKNET | 22 |
| • Call Park Network Wide | | | |
| **Call Park** | 33 | CPRK | 2 |
| • Call Park | | | |
| • Recall after Parking | | | |
| • Call Pickup | | | |
| **Call Processor Input/Output (Option 81)** | 298 | CPIO | 21 |
| • Call Processor Input/Output) | | | |
| • Call Redirection by Time of Day | | | |
| • Call Transfer | | | |
| **Call Waiting Notification (Meridian 911)** | 225 | CWNT | 19 |
| • Call Waiting Notification (Meridian 911) | | | |
| • Call Waiting/Internal Call Waiting | | | |
| **Call-by-Call Service** | 117 | CBC | 13 |
| • Call-by-Call Service | | | |
| **Called Party Control on Internal Calls** | 310 | CPCI | 22 |
| • China Phase III - Called Party Control on Internal Calls | | | |
| • Called Party Disconnect Control | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Calling line Identification in Call Detail Recording**<br>• Calling Line Identification in Call Detail Recording | 118 | CCDR | 13 |
| **Calling Party Name Display**<br>• Call Party Name Display<br>• DNIS Name Display (see also packages 98, and 113)<br>• Calling Party Name Display Denied | 95 | CPND | 10 |
| **Calling Party Privacy**<br>• Calling Party Privacy<br>• Camp-On<br>• Camp-On<br>• Camp-on to Multiple Appearance Directory Number<br>• Capacity Expansion<br>• Card LED Status | 301 | CPP | 21 |
| **Centralized Attendant Services (Main)**<br>• Centralized Attendant Services - Main | 26 | CASM | 1 |
| **Centralized Attendant Services (Remote)**<br>• Centralized Attendant Services – Remote<br>• Centralized Multiple Line Emulation | 27 | CASR | 1 |
| **Charge Account for CDR**<br>• Charge Account and Calling Party Number | 23 | CHG | 1 |
| **Charge Account/Authorization Code**<br>• Charge Account/Authorization Code Base<br>• Charge Display at End of Call (see also package 101) | 24 | CAB | 1 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **China Attendant Monitor Package** | 285 | CHINA | 21 |
| • China – Attendant Monitor<br>• China Number 1 Signaling – Toll Operator Break-In (see also Package 127)<br>• China Number 1 Signaling Enhancements<br>• China Number 1 Signaling Trunk Enhancements (see also packages 49, 113, and 128) | | | |
| **China Toll Package** | 292 | CHTL | 21 |
| • China Phase II – Toll Call Loss Plan | | | |
| **CLASS Calling Name Delivery** | 333 | CNAME | 23 |
| • CLASS | | | |
| **CLASS Calling Number Delivery** | 332 | CNUMB | 23 |
| • CLASS | | | |
| **Collect Call Blocking** | 290 | CCB | 21 |
| • Collect Call Blocking | | | |
| **Command Status Link** | 77 | CSL | 8 |
| • Command Status Link | | | |
| **Commonwealth of Independent States Multifrequency Shuttle Signaling** | 326 | CISMFS | 23 |
| • CIS Multifrequency Shuttle Signaling | | | |
| **Commonwealth of Independent States Trunks** | 221 | CIST | 21 |
| • Commonwealth of Independent States Digital Trunk Interface | | | |
| • Three-Wire Analog Trunk – CIS | | | 24 |
| • Commonwealth of Independent States Automatic Number Identification (ANI) Digits Manipulation and Gateways Enhancements | | | 24 |
| • Commonwealth of Independent States Automatic Number Identification (ANI) Reception | | | 24 |
| • Commonwealth of Independent States Toll Dial Tone Detection | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Conference<br>• Conference Warning Tone Enhancement for Italy | | | |
| **Console Operations**<br>• Console Operations | 169 | COOP | 14 |
| **Console Presentation Group**<br>• Console Presentation Group Level Services | 172 | CPGS | 15 |
| **Controlled Class Of Service**<br>• Controlled Class of Service | 81 | CCOS | 7 |
| **Coordinated Dialing Plan**<br>• Coordinated Dialing Plan | 59 | CDP | 1 |
| **Core Network Module**<br>• Core Network Module<br>• CP3 | 299 | CORENET | 21 |
| **Corporate Directory**<br>• Corporate Directory | 381 | CDIR | 25 |
| **CSL with Alpha Signalling** | 85 | CSLA | 8 |
| **Customer Controlled Routing**<br>• Customer Controlled Routing<br>• MFC Inter-working with AML Based Applications (see also packages 128, and 214)<br>• Dataport Hunting | 215 | CCR | 17 |
| **CP Pentium® Backplane for Intel® Machine** | 368 | CPP_CNI | 25 |
| **Deluxe Hold**<br>• Call Hold, Deluxe<br>• Call Hold, Individual Hold Enhancement | 71 | DHLD | 4 |
| **Departmental Listed Directory Number** | 76 | DLDN | 5 |
| **Dial Intercom**<br>• Dial Intercom<br>• Distinctive Ringing for Dial Intercom<br>• Dial Pulse/Dual-tone Multifrequency Conversion | 21 | DI | 1 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Dial Tone Detector** | 138 | DTD | 10 |
| • Dial Tone Detection | | | |
| • Flexible Dial Tone Detection | | | |
| **Dialed Number Identification System** | 98 | DNIS | 10 |
| • Dialed Number Identification Services | | | |
| • Dialed Number Identification Services Length Flexibility | | | |
| • Dialed Number Identification Services Name Display (see also packages 95, and 131) | | | |
| • 7 Digit DNIS for MAX | | | |
| • N Digit DNIS | | | 24 |
| **Digit Display** | 19 | DDSP | 1 |
| • Digit Display | | | |
| **Digit Key Signaling** | 180 | DKS | 1 |
| **Digital Access Signaling System 2** | 124 | DASS2 | 16 |
| • Analog Private Network Signaling System (APNSS) (see also packages 190, 122, and 123) | | | |
| • DASS2/DPNSS1 – Integrated Digital Access (see also packages 122, and 123) | | | |
| **Digital Private Network Signaling Network Services (DPNSS1)** | 231 | DNWK | 16 |
| • Attendant Call Offer | | | |
| • Attendant Timed Reminder Recall and Attendant Third Party Service | | | |
| • Call Back when Free and Next Used | | | |
| • D-channel Handler Interface Expansion | | | |
| • Extension Three-Party Service | | | |
| • Loop Avoidance | | | |
| • Redirection | | | |
| • Route Optimization | | | |
| • Step Back on Congestion | | | |
| • Diversion | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Night Service<br>• Route Optimization/MCDN Trunk Anti-Tromboning Inter-working | | | |
| **Digital Private Network Signaling System 1 Message Waiting Indication** | 325 | DMWI | 23 |
| • DPNSS1 Message Waiting Indication | | | |
| **Digital Private Network Signaling System 1** | 123 | DPNSS | 16 |
| • Analog Private Network Signaling System (APNSS) (see also packages 190, 122, and 124)<br>• DASS2/DPNSS1 – Integrated Digital Access (see also packages 122, and 124)<br>• Digital Trunk Interface Enhancements<br>• Digitone Receiver Enhancements: – Digitone Receiver Timeout Enhancement<br>• Digitone Receiver Enhancements: – Quad Density Digitone Receiver Card | | | |
| **Direct Inward Dialing to TIE (Japan only)** | 176 | DTOT | 16 |
| • Direct Inward Dialing to TIE<br>• Direct Inward Dialing to TIE Connection | | | |
| **Direct Inward System Access** | 22 | DISA | 1 |
| • Call Park on Unsupervised Trunks<br>• Direct Inward System Access<br>• Direct Inward System Access on Unsupervised Trunks | | | |
| **Direct Private Network Access** | 250 | DPNA | 21 |
| • Direct Private Network Access | | | |
| **Directed Call Pickup** | 115 | DCP | 12 |
| • Call Pickup, Directed<br>• Directory Number Delayed Ringing | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Directory Number Expansion (7 Digit)**<br>• Directory Number Expansion<br>• Directory Number<br>— Flexible Attendant Directory Number<br>— Listed Directory Numbers<br>— Single Appearance Directory Number<br>— Multiple Appearance Directory Number<br>— Prime Directory Number<br>• Diskette Overflow Warning<br>• Display of Calling Party Denied | 150 | DNXP | 13 |
| **Distinctive Ringing**<br>• Distinctive/New Distinctive Ringing | 74 | DRNG | 4/9 |
| **Do Not Disturb, Group**<br>• Do Not Disturb Group | 16 | DNDG | 1 |
| **Do Not Disturb, Individual**<br>• Do Not Disturb<br>• Network Individual Do Not Disturb (see also packages 127, and 159)<br>• Electronic Brandlining | 9 | DNDI | 1 |
| **Emergency Services Access Calling Number Mapping**<br>• Emergency Services Access (See also packages 329 and 330) | 331 | ESA_CLMP | 23 |
| **Emergency Services Access Supplementary**<br>• Emergency Services Access (See also packages 329 and 331) | 330 | ESA_SUPP | 23 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Emergency Services Access** | 329 | ESA | 23 |
| • Emergency Services Access (See also packages 330 and 331)<br>• End of Selection<br>• End of Selection Busy<br>• End-of-Dialing on Direct Inward/Outward Dialing Incoming Call Indicator Enhancement | | | |
| **End-To-End Signaling** | 10 | EES | 1 |
| • Attendant End-to-End Signaling<br>• End-to-End Signaling | | | |
| **Enhanced ACD Routing** | 214 | EAR | 17 |
| • Enhanced Automatic Call Distribution Routing<br>• MFC Inter-working with AML Based Applications (see also packages 128, and 215) | | | |
| **Enhanced Call Trace** | 215 | ECT | 18 |
| • Customer Controlled Routing<br>• MFC Inter-working with AML Based Applications (see also packages 128, and 214) | | | |
| **Enhanced Controlled Class of Service** | 173 | ECCS | 15 |
| **Enhanced DPNSS Services** | 288 | DPNSS_ES | 21 |
| • DPNSS1 Executive Intrusion | | | |
| **Enhanced DPNSS1 Gateway** | 284 | DPNSS189I | 20 |
| • Enhanced DPNSS1 Gateway | | | |
| **Enhanced Hot Line** | 70 | HOT | 4/10 |
| • Hot Line<br>• Network Intercom<br>• Enhanced input/output buffering<br>• Enhanced Maintenance (Patching) | | | |
| **Enhanced Music** | 119 | EMUS | 12 |
| • Music, Enhanced | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Enhanced Night Service** | 133 | ENS | 20 |
| • Enhanced Night Service<br>• Enhanced package printout<br>• Equal Access Compliance | | | |
| **Euro ISDN Trunk - Network Side** | 309 | MASTER | 22 |
| • EuroISDN Trunk - Network Side | | | |
| **Euro ISDN** | 261 | EURO | 20 |
| • ISDN – Advice of Charge for EuroISDN<br>• ISDN BRI and PRI Trunk Access for Europe (EuroISDN)<br>• EUROISDN Continuation | | | |
| **Euro Supplementary Service** | 323 | ETSI_SS | 22 |
| • EuroISDN Call Completion Supplementary Service | | | |
| **Executive Distinctive Ringing** | 185 | EDRG | 16 |
| • Executive Distinctive Ringing | | | |
| **Fast Tone and Digit Switch** | 87 | FTDS | 7 |
| • Fast Tone Digit Switch | | | |
| **FCC Compliance for DID Answer Supervision** | 223 | FCC68 | 17 |
| • Federal Communications Commission Compliance for DID Answer Supervision | | | |
| **Feature Group D** | 158 | FGD | 17 |
| • Feature Group D (Inbound to Meridian 1)<br>• Federal Communications Commission Compliance for Equal Access<br>• First-Second Degree Busy Indication<br>• First-Second Degree Busy Indication, ISDN<br>• Flexible Attendant Call Waiting Thresholds<br>• Flexible Busy Tone Timer | | | |
| **Fiber Network** | 365 | FIBN | 25 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Flexible Call Back Queuing** | 61 | FCBQ | 1 |
| • Flexible Call Back Queuing | | | |
| **Flexible Direct Inward Dialing** | 362 | FDID | 24 |
| • Flexible Direct Inward Dialing | | | |
| **Flexible Feature Codes** | 139 | FFC | 15 |
| • Call Forward/Hunt Override Via Flexible Feature Code | | | |
| • China Number 1 Signaling – Flexible Feature Codes | | | |
| • Dial Access to Group Calls (see also package 48). | | | |
| • Direct Inward Dialing Call Forward No Answer Timer | | | |
| • Electronic Lock Network Wide/Electronic Lock on Private Lines | | | |
| • Flexible Feature Codes | | | |
| • Automatic Wake FFC Delimiter | | | |
| • Call Forward Destination Deactivation | | | |
| **Flexible Numbering Plan** | 160 | FNP | 14 |
| • Alternative Routing for DID/DOD | | | |
| • Flexible Numbering Plan | | | |
| • Special Dial Tones after Dialed Numbers | | | |
| • Flexible Numbering Plan Enhancement | | | |
| • Flexible Orbiting Prevention Timer | | | |
| **Flexible Tones and Cadences** | 125 | FTC | 16 |
| • Flexible Tone and Digit Switch Control | | | |
| • Reverse Dial on Routes and Telephones | | | |
| • Tones and Cadences | | | |
| **Forced Charge Account** | 52 | FCA | 1 |
| • Charge Account, Forced | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **French Type Approval** | 197 | FRTA | 15 |
| • Camp-on to a Set in Ringback or Dialing<br>• Forward No Answer Call Waiting Direct Inward Dialing<br>• Group Hunt Queuing (see also package 120)<br>• Group Hunt Queuing Limitation Enhancement (see also package 120)<br>• Loopback on Central Office Trunks | | | |
| **Geographic Redundancy Primary system** | 404 | GRPRIM | 4.0 |
| **Geographic Redundancy Secondary system** | 405 | GRSEC | 4.0 |
| **Group Call** | 48 | GRP | 1 |
| • Dial Access to Group Calls (see also package 139).<br>• Group Call<br>• Group Hunt Queuing Limitation (see also package 120) | | | |
| **Group Hunt/DN Access to SCL** | 120 | PLDN | 15 |
| • Group Hunt Queuing (see also package 197)<br>• Group Hunt Queuing Limitation (see also package 131)<br>• Group Hunt Queuing Limitation Enhancement (see also package 197)<br>• Group Hunt<br>• Speed Call Directory Number Access<br>• Handset Volume Reset<br>• Handsfree Download (Meridian Digital Telephones<br>• Held Call Clearing | | | |
| **H323 Virtual Trunk** | 399 | H323_VTRK | 3.0 |
| • IP Peer Networking Phase 2<br>• Branch Office | | | |
| **HiMail Fax Server** | 195 | FAXS | 18 |
| **History File** | 55 | HIST | 1 |
| • History File | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Hold in Queue for IVR** | 218 | IVR | 18 |
| **Hospitality Management** | 166 | HOSP | 16 |
| **Hospitality Screen Enhancement** | 208 | HSE | 17 |
| • Hospitality Enhancements: Display Enhancements<br>• Hunting By Call Type<br>• Hunting<br>— Circular Hunting<br>— Linear Hunting<br>— Secretarial Hunting<br>— Short Hunting<br>— Data Port Hunting<br>— Trunk Hunting<br>• Incoming Call Indicator Enhancement | | | |
| **Incoming DID Digit Conversion** | 113 | IDC | 12 |
| • China Number 1 Signaling Trunk Enhancements (see also packages 49, 128, and 131)<br>• DNIS Name Display (see also packages 95, and 98)<br>• Incoming DID Digit Conversion<br>• Incoming Trunk Programmable Calling Line Identification<br>• Incremental Software Management<br>• Input/Output Access and System Limits | | | |
| **Integrated Digital Access** | 122 | IDA | 16 |
| • Analog Private Network Signaling System (APNSS) (see also packages 190, 123, and 124)<br>• DASS2/DPNSS1 – Integrated Digital Access (see also packages 123 and 124)<br>• DPNSS1 Satellite<br>• DASS2/DPNSS INIT Call Cutoff | | | |
| **Integrated Message System UST and UMG are part of IMS Package.** | 35 | IMS | 2 |
| • Integrated Messaging System Link | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Integrated Services Digital Network Application Module Link for Third Party Vendors**<br>• Application Module Link<br>• Network Application Protocol Link Enhancement | 153 | IAP3P | 13 |
| **Integrated Services Digital Network BRI Trunk Access**<br>• Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 235) | 233 | BRIT | 18 |
| **Integrated Services Digital Network Supplementary Features**<br>• Call Connection Restriction (see also packages 146 and 147)<br>• Direct Inward Dialing to Network Calling<br>• Incoming Digit Conversion Enhancement<br>• Network Time Synchronization<br>• X08 to X11 Gateway | 161 | ISDN INTLS UP | 14 |
| **Integrated Services Digital Network Signaling Link**<br>• Call Connection Restriction (see also packages 146 and 161) | 147 | ISL | 13 |
| **Integrated Services Digital Network**<br>• Backup D-Channel to DMS-100/250 and AT&T 4ESS<br>• Call Pickup Network Wide<br>• D-Channel Error Reporting and Monitoring<br>• Integrated Services Digital Network (ISDN) Primary Rate Interface<br>• Network Name Display (Meridian 1 to DMS-100/250)<br>• Total Redirection Count<br>• T309 Time<br>• Integrated Voice and Data | 145 | ISDN | 13 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Intercept Computer Interface** | 143 | ICP | 10 |
| • Intercept Computer Dial from Directory<br>• Intercept Computer Enhancements<br>• Intercept Computer Flexible DN Length<br>• Intercept Computer Interface<br>• Intercept Computer Meridian Mail Interactions<br>• Intercept Computer Network Screen Activation, Flexible DN, Meridian Mail Interactions<br>• Intercept Treatment Enhancements | | | |
| **Intercept Treatment** | 11 | INTR | 1 |
| • Intercept Treatment | | | |
| **Inter-Exchange Carrier** | 149 | IEC | 13 |
| • Inter Exchange Carrier | | | |
| **Internal CDR** | 108 | ICDR | 10 |
| • Internal Call Detail Recording | | | |
| **International 1.5/2.0 Mb/s Gateway** | 167 | GPRI | 18 |
| • Radio Paging<br>• International Meridian 1 | | | |
| **International nB+D** | 255 | INBD | 20 |
| • ISDN PRI D70 Trunk Access for Japan (nB+D) | | | |
| **International Primary Rate Access (CO)** | 146 | PRA | 13 |
| • Call Connection Restriction (see also packages 147 and 161)<br>• Integrated Services Digital Network Primary Rate Access<br>• Integrated Services Digital Network Primary Rate Access Central Office Connectivity to Japan D70 | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **International Primary Rate Access** | 202 | IPRA | 15 |
| • Integrated Services Access/Call by Call Service Selection Enhancements | | | |
| • Integrated Services Digital Network Primary Rate Access to 1TR6 Connectivity | | | |
| • Integrated Services Digital Network Primary Rate Access to NUMERIS Connectivity | | | |
| • Integrated Services Digital Network Primary Rate Access to SwissNet 2 Connectivity | | | |
| • Integrated Services Digital Network Primary Rate Access to SYS-12 Connectivity | | | |
| **International Supplementary Features** | 131 | SUPP | 9 |
| • IODU/C | | | |
| **IP Expansion** | 295 | IPEX | 25.40 |
| • IP Expansion | | | |
| **IP Media Gateway** | 403 | IPMG | 4.0 |
| **ISDN Semi-Permanent Connection** | 313 | ISPC | 22 |
| • ISDN Semi-Permanent Connections for Australia | | | |
| • Italian Central Office Special Services (see also packages 129, and 157) | | | |
| **Japan Central Office Trunks** | 97 | JPN | 9 |
| • Japan Central Office Trunk | | | |
| **Japan Digital Multiplex Interface** | 136 | JDMI | 14 |
| • Japan Digital Multiplex Interface | | | |
| **Japan Telecommunication Technology Committee** | 335 | JTTC | 23 |
| • Japan TTC Common Channel Signaling | | | |
| **Japan Tone and Digit Switch** | 171 | JTDS | 14 |
| • Japan Tone and Digit Switch | | | |
| **Last Number Redial** | 90 | LNR | 8 |
| • Last Number Redial | | | |
| **Latin American Spanish** | 279 | MLMS_SPL | 20 |
| • Latin American Spanish | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Limited Access to Overlays** | 164 | LAPW | 16 |
| • B34 Dynamic Loss Switching (see also packages 131 and 203)<br>• Faster I/O<br>• Limited Access to Overlays<br>• Limited Access to Overlays Password Enhancement<br>• Teletype Terminal Access Control in Multi-Customer Environment (see also package 131) | | | |
| **Line Load Control** | 105 | LLC | 10 |
| • Line Load Control<br>• Line Lockout | | | |
| **Local Steering Code Modifications** | 137 | LSCM | 10 |
| • Local Steering Code Modifications<br>• Lockout, DID Second Degree Busy and MFE Signaling Treatments<br>• LOGIVOX Telephone<br>• Loop Start Answer Supervision XUT<br>• Loop Start Supervisory Trunks<br>• Loop Start Supervisory Trunks (Incoming Calls) | | | |
| **Location Code Expansion** | 400 | LOCX | 4.0 |
| **M2000 Digital Sets** | 88 | DSET | 7 |
| • Distinctive Ringing for Digital Telephones<br>• M2317 Telephones<br>• Flexible Voice/Data Terminal Number | | | |
| **M2250 Attendant Console** | 140 | DCON | 15 |
| • Digital Attendant Console | | | |
| **M2317 Digital Sets** | 91 | DLT2 | 9 |
| • M2317 Digital Sets | | | |
| **M3000 Digital Sets** | 89 | TSET | 7 |
| • M3000 Telephones | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **M3900 Full Icon Support** | 397 | ICON_ PAC KAGE | 3.0 |
| • M3900 Full Icon Support | | | |
| **M3900 Phase III Virtual Office Enhancement** | 387 | VIR_OFF_ ENH | 25.40 |
| • Virtual Office Enhancement | | | |
| **M3900 Ring Again** | 396 | M3900_RGA _PROG | 3.0 |
| **M911 Enhancement Display** | 249 | M911 ENH | 25 |
| • 10/20 Digit ANI on 911 Calls | | | |
| **Maid Identification** | 210 | MAID | 17 |
| • Maid Identification | | | |
| • Make Set Busy and Voice Call Override | | | |
| **Make Set Busy** | 17 | MSB | 1 |
| • Make Set Busy | | | |
| • Make Set Busy Improvement | | | |
| • Malicious Call Trace on Direct Inward Dialing | | | |
| **Malicious Call Trace** | 107 | MCT | 10 |
| • Enhanced Malicious Call Trace | | | |
| • Malicious Call Trace | | | |
| • Malicious Call Trace DN/TN Print | | | |
| • Malicious Call Trace Idle | | | |
| • Manual Line Service | | | |
| • Manual Service Recall to Attendant | | | |
| • Manual Signaling (Buzz) | | | |
| • Manual Trunk Service | | | |
| **MAT 5.0** | 296 | MAT | 22 |
| • Meridian 1 Attendant Console Enhancements (see also package 76) | | | |
| **Meridian 1 Companion Option** | 240 | MCMO | 19 |
| • Nortel Networks Integrated DECT | | | |
| **MCDN End to End Transparency** | 348 | MEET | 24 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Meridian 1 Enhanced Conference, TDS and MFS**<br>• Meridian 1 Enhanced Conference, TDS and MFS | 204 | XCT0 | 15 |
| **Meridian 1 Fault Management**<br>• Alarm Management<br>• Meridian 1 Initialization Prevention and Recovery | 243 | ALRM_FILTER | 19 |
| **Meridian 1 Microcellular Option** | 303 | MMO | 22 |
| **Meridian 1 Mobility Multi-Site Networking** | 314 | MMSN | 22 |
| **Meridian 1 Packet Handler**<br>• Meridian 1 Packet Handler | 248 | MPH | 19 |
| **Meridian 1 Superloop Administration (LD 97)**<br>• Extended DID/DOD Software Support – Europe<br>• Extended Flexible Central Office Trunk Software Support<br>• Extended Tone Detector and Global Parameters Download (see also package 203)<br>• Generic XFCOT Software Support | 205 | XCT1 | 15 |
| **Meridian 1 XPE**<br>• B34 Codec Static Loss Plan Downloading<br>• B34 Dynamic Loss Switching (see also packages 131, and 164)<br>• Extended Multifrequency Compelled Sender/Receiver<br>• Extended Tone Detector and Global Parameters Download (see also package 205)<br>• Intelligent Peripheral Equipment Software Support Enhancements | 203 | XPE | 15 |
| **Meridian 911**<br>• Meridian 911 Enhancements – Call Abandon<br>• Meridian 911 Enhancements – MADN Display Coordination | 224 | M911 | 19 |
| **Meridian Hospitality Voice Service**<br>• Meridian Hospitality Voice Services | 179 | HVS | 16 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Meridian Link Modular Server** | 209 | MLM | 16 |
| • Meridian Link Enhancements | | | |
| **Meridian SL-1 ST Package** | 96 | SLST | 9 |
| • Meridian SL-1 ST Package | | | |
| **Message Intercept** | 163 | MINT | 15 |
| • Message Intercept | | | |
| **Message Waiting Center** | 46 | MWC | 1 |
| • Message Waiting Lamp Maintenance<br>• Message Waiting Unconditional<br>• Meridian Mail Trunk Access Restriction | | | |
| **Message Waiting Indication Inter-working with DMS** | 219 | MWI | 19 |
| • Message Waiting Indication (MWI) Inter-working | | | |
| **Mini CDR** | 31 | MCDR | 1 |
| **Mobile Extensions** | 412 | MOBX | 5.50 |
| **Mobility Server** | 302 | MOSR | 22 |
| • Modular Telephone Relocation | | | |
| **Multifrequency Compelled Signaling** | 128 | MFC | 9 |
| • China Number 1 Signaling Trunk Enhancements (see also packages 49, 113, and 131)<br>• China Number 1 Signaling – Active Feature Dial Tone (see also package 126)<br>• China Number 1 Signaling – Audible Alarm (see also package 126)<br>• China Number 1 Signaling – Vacant Number Announcement (see also package 126)<br>• India Phase 2<br>• R2 Multifrequency Compelled Signaling (MFC) DID/DTMF DOD<br>• R2 Multifrequency Compelled Signaling (MFC) Selective Route To Attendant<br>• MFC Inter-working with AML Based Applications (see also packages 214 and 215) | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • R2 Multifrequency Compelled Signaling Timer Control<br>• Semi-Compelled MFC and Calling Name Identification Charges | | | |
| **Multifrequency Signaling for Socotel** | 135 | MFE | 10 |
| • Multifrequency Signaling for Socotel | | | |
| **Multi-Language I/O Package** | 211 | MLIO | 16 |
| • Multi-language TTY Input/Output | | | |
| **Multi-Language Wake Up** | 206 | MLWU | 16 |
| • Multi-language Wake Up<br>• Multi-Party Operation Enhancements | | | |
| **Multi-Party Operations** | 141 | MPO | 20 |
| • Attendant Clearing during Night Service<br>• Multi-Party Operations<br>• Multiple Appearance DN Redirection Prime<br>• Multiple Console Operation | | | |
| **Multiple Queue Assignment** | 297 | MQA | 21 |
| • Multiple Queue Assignment | | | |
| **Multiple-Customer Operation** | 2 | CUST | 1 |
| • Multiple Customer Operation | | | |
| **Multiple-Tenant Service** | 86 | TENS | 7 |
| • Multi-Tenant Service | | | |
| **Multipurpose Serial Data Link Serial Data Interface** | 227 | MSDL SDI | 19 |
| • Multipurpose Serial Data Link Serial Data Interface | | | |
| **Multipurpose Serial Data Link Single Terminal Access** | 228 | MSDL STA | 19 |
| • Single Terminal Access | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Multipurpose Serial Data Link** | 222 | MSDL | 18 |
| • Multipurpose Serial Data Link | | | |
| **Multi-Site Mobility Networking** | 370 | MSMN | 25 |
| **Multi-User Login** | 242 | MULTI_USER | 19 |
| • Multi-User Login | | | |
| **Music Broadcast** | 328 | MUSBRD | 23 |
| • Music Broadcast | | | |
| **Music** | 44 | MUS | 1 |
| • Music | | | |
| **N/W Communications Management Center** | 30 | CMAC | 1 |
| **Network Alternate Route Selection** | 58 | NARS | 1 |
| • Equi-distribution Network Attendant Service Routing (see also package 159) | | | |
| • Network Alternate Route Selection/Basic Alternate Route Selection Enhancement – Local Termination (see also package 57) | | | |
| • Network Anti-tromboning | | | |
| • Virtual Network Services/Virtual Directory Number Expansion (see also package 183) | | | |
| **Network Attendant Service** | 159 | NAS | 20 |
| • Equi-distribution Network Attendant Service Routing (see also package 58) | | | |
| • Network Individual Do Not Disturb (See also packages 9 and 127). | | | |
| **Network Authorization Code** | 63 | NAUT | 1 |
| • Network Authorization Code | | | |
| **Network Automatic Call Distribution** | 207 | NACD | 15 |
| • Network Automatic Call Distribution | | | |
| **Network Call Back Queuing** | 38 | MCBQ | 2 |
| • Network Call Back Queuing | | | |
| **Network Call Transfer** | 67 | NXFR | 3 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Network Class Of Service** | 32 | NCOS | 1 |
| • Network Class of Service | | | |
| **Network Message Services** | 175 | NMS | 16 |
| **Network Priority Queuing** | 60 | PQUE | 1 |
| • Network Priority Queuing | | | |
| **Network Signaling** | 37 | NSIG | 2 |
| • Network Signaling | | | |
| **Network Speed Call** | 39 | NSC | 2 |
| • Network Speed Call | | | |
| **Network Traffic Measurements** | 29 | NTRF | 1 |
| • Network Traffic Measurement | | | |
| **New Flexible Code Restriction** | 49 | NFCR | 2 |
| • China Number 1 Signaling Trunk Enhancements (see also packages 113, 128, and 131) | | | |
| • New Flexible Code Restriction | | | |
| **New Format CDR** | 234 | FCDR | 18 |
| • Call Detail Recording Time to Answer | | | |
| • CDR on Busy Tone | | | |
| **Next Generation Connectivity** | 324 | NGEN | 22 |
| **NI-2 Call By Call Service Selection** | 334 | NI-2 CBC | 23 |
| • Night Restriction Classes of Service | | | |
| • Night Service | | | |
| • Night Service Enhancements – All Calls Remain Queued for Night Service | | | |
| • Night Service Enhancements – Recall to Night DN | | | |
| • Night Service Enhancements – Re-queuing of Attendant Present Calls | | | |
| • Night Service Enhancements – Re-queuing of Attendant Present Calls | | | |
| **NI-2 Name Display Service** | 385 | NDS | 25.40 |
| • NI-2 Name Display Supplementary Service | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Nortel Symposium Call Center** | 311 | NGCC | 22 |
| **North America National ISDN Class II Equipment** | 291 | NI2 | 21 |
| • North American Numbering Plan | | | |
| • Off-Hook Alarm Security | | | |
| **Observe Agent Security** | 394 | OAS | 3.0 |
| • Observe Agent Security | | | |
| **Off-Hook Queuing** | 62 | OHQ | 1 |
| • Network Drop Back Busy and Off-hook Queuing (see also package 192) | | | |
| **Office Data Administration System** | 20 | ODAS | 1 |
| • Office Data Administration System | | | |
| • Off-Premise Extension | | | |
| **On Hold On Loudspeaker** | 196 | OHOL | 20 |
| • On-Hook Dialing | | | |
| **Open Alarms** | 315 | OPEN ALARM | 22 |
| **Operator Call Back (China #1)** | 126 | OPCB | 14 |
| • Busy Verify on Calling Party Control Calls | | | |
| • China Number 1 Signaling – Active Feature Dial Tone (see also package 128) | | | |
| • China Number 1 Signaling – Audible Alarm (see also package 128) | | | |
| • China Number 1 Signaling – Called Party Control | | | |
| • China Number 1 Signaling – Calling Number Identification on Outgoing Multifrequency Compelled Signaling | | | |
| • China Number 1 Signaling – Calling Party Control | | | |
| • China Number 1 Signaling – Flexible Timers | | | |
| • China Number 1 Signaling – KE Multifrequency Compelled Tandem Signaling | | | |
| • China Number 1 Signaling – Malicious Call Trace Enhancement | | | |
| • China Number 1 Signaling – Off-hook Tone | | | |
| • China Number 1 Signaling – Toll Call Identification | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • China Number 1 Signaling – Toll Operator Call Back<br>• China Number 1 Signaling – Toll Operator Call Back Enhancement<br>• China Number 1 Signaling – Vacant Number Announcement (see also Package 128) | | | |
| **Optional Features** | 1 | OPTF | 1 |
| • Autodial<br>• Call Forward All Calls<br>• Ring Again<br>• Speed Call<br>• Speed Call on Private Lines (see also package 0)<br>• Speed Call/Autodial with Authorization Codes (see also package 34)<br>• Speed Call Delimiter (see also package 34) | | | |
| **Optional Outpulsing Delay** | 79 | OOD | 5 |
| • Optional Outpulsing Delay | | | |
| **Originator Routing Control** | 192 | ORC_RVQ | 18 |
| • Network Drop Back Busy and Off-hook Queuing (see also package 62)<br>• Remote Virtual Queuing<br>• Out-of-Service Unit | | | |
| **Outpulsing, asterisk (*) and octothorpe (#)** | 104 | OPAO | |
| • Outpulsing of Asterisk (*) and Octothorpe (#) | | | |
| **Overlap Signaling (M1 to M1 and M1 to 1TR6 CO)** | 184 | OVLP | 15 |
| • Overlap Signaling<br>• Overlay 45 Limited Repeats<br>• Overlay Cache Memory<br>• Override<br>• Paging<br>• Partial Dial Timing<br>• PBX (500/2500) Telephones<br>• Periodic Camp-on Tone | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| • Periodic Clearing<br>• Periodic Clearing Enhancement<br>• Periodic Clearing on RAN, Meridian Mail, ACD, and Music | | | |
| **Personal Call Assistant** | 398 | PCA | 3.0 |
| • Personal Call Assistant | | | |
| **Phantom TN** | 254 | PHTN | 20 |
| • Phantom TNs<br>• Position Busy with Call on Hold | | | |
| **PPM/Message Registration** | 101 | MR | 10 |
| • Advice of Charge Real-time Supplementary Services for NUMERIS and SWISSNET (see also package 131)<br>• Advice of Charge – Charging Information and End of Call for NUMERIS Connectivity (see also package 131)<br>• Message Registration<br>• Periodic Pulse Metering<br>• Predictive Dialing | | | |
| **Pre-translation** | 92 | PXLT | 8 |
| • Pre-translation<br>• Preventing Reciprocal Call Forward | | | |
| **Priority Network Override** | 389 | PONW | 25.40 |
| • Network Breaking and Force Disconnect | | | |
| **Priority Override/Forced Camp-On** | 186 | POVR | 20 |
| • Forced Camp-on and Priority Override<br>• Privacy<br>• Privacy Override<br>• Privacy Release<br>• Private Line Service | | | |
| **Proactive Voice Quality Management** | 401 | PVQM | 4.0 |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Property Management System Interface** | 103 | PMSI | 10 |
| • Property Management System Interface<br>• Public Switched Data Service | | | |
| **Pulsed E&M (Indonesia, French Colisée)** | 232 | PEMD | 18 |
| • Pulsed E&M DTI2 Signaling | | | |
| **Q Reference Signaling Point Interface** | 263 | QSIG | 20 |
| • Integrated Services Digital Network QSIG Basic Call | | | |
| **QSIG Generic Functional protocol** | 305 | QSIG GF | 22 |
| • ISDN QSIG Generic Functional Transport | | | |
| **QSIG Supplementary Service** | 316 | QSIG-SS | 22 |
| • ISDN QSIG Call Completion<br>• ISDN QSIG Call Diversion Notification<br>• ISDN QSIG Path Replacement | | | |
| **Radio Paging** | 187 | RPA | 15 |
| • Radio Paging<br>• Radio Paging Product Improvements<br>• Recall to Same Attendant<br>• Recall with Priority during Night Service<br>• Recall With Priority during Night Service<br>• Recall With Priority during Night Service Network Wide | | | |
| **Recorded Announcement Broadcast** | 327 | RANBRD | 23 |
| • Recorded Announcement Broadcast | | | |
| **Recorded Announcement** | 7 | RAN | 1 |
| • Recorded Announcement | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Recorded Overflow Announcement** | 36 | ROA | 2 |
| • Recorded Overflow Announcement<br>• Recorded Telephone Dictation<br>• Recovery of Misoperation on the Attendant Console<br>• Recovery on Misoperation of Attendant Console<br>• Reference Clock Switching<br>• Reference Clock Switching (see also packages 75, 129, and 154) | | | |
| **Remote IPE** | 286 | REMOTE_IPE | |
| • Remote Intelligent Peripheral Equipment | | | |
| **Remote Virtual Queuing** | 192 | RVQ | 18 |
| • Network Drop Back Busy and Off-hook Queuing (see also package 62)<br>• Remote Virtual Queuing | | | |
| **Resident Debug** | 82 | RSDB | 9 |
| • Restricted Call Transfer<br>• Ring and Hold Lamp Status<br>• Ringback Tone from Meridian 1 Enhancement | | | |
| **Ringing Change Key** | 193 | RCK | 15 |
| • Ringing Change Key | | | |
| **Room Status** | 100 | RMS | 10 |
| • Room Status | | | |
| **Scheduled Access Restrictions** | 162 | SAR | 20 |
| • Scheduled Access Restrictions<br>• Secrecy Enhancement<br>• Secretarial Filtering<br>• Seizure Acknowledgment<br>• Selectable Conferee Display and Disconnect<br>• Selectable Directory Number Size | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Semi-Automatic Camp-On** | 181 | SACP | 15 |
| • Attendant Blocking of Directory Number<br>• Attendant Idle Extension Notification<br>• Semi-Automatic Camp-On<br>• Serial Port Expansion | | | |
| **Series Call** | 191 | SECL | 15 |
| • Series Call | | | |
| **Set Relocation** | 53 | SR | 1 |
| • Automatic Set Relocation<br>• Short Buzz for Digital Telephones<br>• Short Memory Test<br>• Single Digit Access to Hotel Services | | | |
| **Set-to-Set Messaging** | 380 | STS | 25 |
| • Set-to-Set Messaging | | | |
| **Single Term Access** | 228 | STA | 19 |
| • Single Term Access<br>• Slow Answer Recall Enhancement<br>• Slow Answer Recall for Transferred External Trunks<br>• Source Included when Attendant Dials | | | |
| **SIP Gateway and Converged Desktop** | 406 | SIP | 4.0 |
| **Soft Switch** | 402 | SOFTSWITCH | 4.0 |
| **Spanish KD3 DID/DOD interface** | 252 | KD3 | 20 |
| • KD3 Direct Inward Dialing/Direct Outward Dialing for Spain<br>• Special Signaling Protocols<br>• Special Trunk Support<br>• Speed Call Directory Number Access<br>• Speed Call on Private Lines (see also package 1)<br>• Speed-Up Data Dump | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Standalone Meridian Mail** | 262 | SAMM | 20 |
| • Meridian Mail, Standalone | | | |
| **Station Activity Records** | 251 | SCDR | 20 |
| • Station Activity Records | | | |
| **Station Camp-On** | 121 | SCMP | 20 |
| • Station Camp-On | | | |
| **Station Category Indication** | 80 | SCI | 7 |
| • Station Category Indication | | | |
| **Station Loop Preemption** | 106 | SLP | 10 |
| **Station Specific Authorization Codes** | 229 | SSAU | 19 |
| • Station Specific Authorization Code<br>• Station-to-Station Calling | | | |
| **Stored Number Redial** | 64 | SNR | 3 |
| • Stored Number Redial | | | |
| **Supervisory Attendant Console** | 93 | SUPV | 8 |
| • Supervisory Attendant Console | | | |
| **Supervisory Console Tones** | 189 | SVCT | 20 |
| • System Capacity Enhancements | | | |
| **System Errors and Events Lookup** | 245 | SYS_MSG_ LKUP | 19 |
| • System Message Lookup | | | |
| **System Speed Call** | 34 | SSC | 2 |
| • Speed Call/Autodial with Authorization Codes (see also package 1)<br>• Speed Call, System<br>• Speed Call Delimiter (see also package 34)<br>• Telephones (PBX)<br>• Teletype Terminal Access Control in Multi-Customer Environment (see also package 164)<br>• Telset Call Timer Enhancement | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Time and Date** | 8 | TAD | 1 |
| • Time and Date | | | |
| **Tone Detector Special Common Carrier** | 66 | SCC | 7 |
| **Tone Detector** | 65 | TDET | 7 |
| • Tone Detector | | | |
| • Tone to Last Party | | | |
| • Tones, Flexible Incoming | | | |
| **Traffic Monitoring** | 168 | TMON | |
| **Trunk Anti-Tromboning** | 293 | TAT | 21 |
| • Trunk Anti-Tromboning | | | |
| **Trunk Barring** | 132 | TBAR | 20 |
| • Trunk Barring | | | |
| **Trunk Failure Monitor** | 182 | TFM | 15 |
| • Trunk Failure Monitor | | | |
| • Trunk Failure Monitor Enhancement | | | |
| **Trunk Hook Flash (Centrex)** | 157 | THF | 14 |
| • Centrex Switchhook Flash | | | |
| • Italian Central Office Special Services (see also packages 129, and 131) | | | |
| • Trunk to Trunk Connections | | | |
| • Trunk Traffic Reporting Enhancement | | | |
| **Trunk Verification from Station** | 110 | TVS | 9.32 |
| • Trunk Verification from a Station | | | |
| • Uninterrupted Line Connection | | | |
| **United Kingdom** | 190 | UK | 16 |
| • Analog Private Network Signaling System (APNSS) (see also packages 122 123, and 124) | | | |
| • UK Analogue Hardware Support | | | |



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| Package Name | Number | Mnemonic | Release |
|---|---|---|---|
| **Universal ISDN Gateways** | 283 | UIGW | 20 |
| • Universal ISDN Gateway<br>• Variable Flash Timing and Ground Button<br>• Variable Guard Timing | | | |
| **VIP Auto Wake Up** | 212 | VAWU | 17 |
| • Hospitality Enhancements: V.I.P. Auto Wake Up | | | |
| **Virtual Network Services** | 183 | VNS | 16 |
| • Virtual Network Services<br>• Virtual Network Services/Virtual Directory Number Expansion (see also package 58)<br>• Voice Call | | | |
| **Virtual Office** | 382 | VIRTUAL_ OFFICE | 25 |
| • Branch Office<br>• Emergency Services For Virtual Office<br>• Internet Telephone Virtual Office<br>• Virtual Office | | | |
| **Virtual Office Enhancement** | 387 | VOE | 3.0 |
| • Branch Office<br>• Emergency Services For Virtual Office<br>• Internet Telephone Virtual Office | | | |
| **Voice Mailbox Administration** | 246 | VMBA | 19 |
| • Meridian Mail Voice Mailbox Administration | | | |
| **X08 to X11 Gateway** | 188 | L1MF | 15 |
| • X08 to X11 Gateway | | | |
| **Zone Call Admission Control** | 407 | ZCAC | 4.5 |
| • Adaptive Network Bandwidth Management | | | |



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# Call Forward All Calls

## Contents

This section contains information on the following topics:

“Feature description” (page 87)

“Operating parameters” (page 88)

“Feature interactions” (page 89)

“Feature packaging” (page 98)

“Feature implementation” (page 98)

“Feature operation” (page 101)

## Feature description

Call Forward All Calls (CFW) automatically forwards incoming calls to another destination, within or outside the system. Only calls to the Prime DN or any single-appearance DN on the telephone are forwarded. Outgoing calls can still be placed from the telephone when Call Forward is active.

Call Forward All Calls can be selectively activated depending on the source of the originating party. With the Internal Call Forward (ICF) feature, the user can cause only internal calls to be forwarded. The Call Forward Reminder Tone (CFRT) presents special dial tones on analog (500/2500 type) telephones with CFW active. One tone indicates that CFW is active; a second indicates that there is a message waiting for the telephone with CFW active.

Call Forward All Calls, as well as Internal Call Forward, is assigned on a per-telephone basis. Meridian 1 proprietary telephones must be equipped with separate key/lamp pairs to allow the activation and deactivation of each feature. Customers can specify the length of the destination number



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in LD 11. Options are 4, 8, 12, 16, 20, or 23 digits. If you enter another number for the length, the system rounds to the nearest acceptable choice. The default is 16 digits.

When you use Multiple Appearance DNs (MADNs), call redirection is determined based on the Terminal Number (TN) order in your DN block. To determine the TN order, print the DN block from LD 20 or LD 22 (TYPE = DNB). When a call comes in to an MADN, the system begins a search to determine how the call is handled. Using the TN list you printed, the system performs the following search, beginning at the bottom of the TN list, and working up.

1. Searches for the first Prime DN appearance of the MADN with Call Forward All Calls activated.
2. If there are no Prime DN appearances, the Call Forward All Calls cannot be activated.

The search does not necessarily determine the lowest numerical TN. The search starts at the bottom of the TN list.

## Operating parameters

The forwarding of a call depends on the access limitations assigned to the telephones and the trunks involved in the call. If call forwarding results in a connection that is not permitted by the assigned access limitations, the incoming call is not forwarded.

The customer can specify which telephone determines the successful completion of the call: the originating telephone or the forwarding telephone.

Internal Call Forward requires a programmable feature key. Therefore, Internal Call Forward is not supported on BRI telephones.

LD 17 CFWS allows telephones to have their CFW status saved as part of the data dump routine and then reinstated following a SYSLOAD. For more information, refer to the Call Forward Save feature RL.

Call Forward Reminder Tone does not apply to telephones that have a visual indication of active CFW status.

The Reciprocal Call Forward All Calls option prevents the situation whereby an infinite loop is caused in a network-wide Call Forward configuration resulting from telephone A being call forwarded (all calls) to telephone B at another node, which in turn has been call forwarded back to telephone A. A check is provided using the Flexible Orbiting Prevention Timer (FOPT), which prohibits any telephone from call forwarding more than one call off node for a period of 14 seconds.



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The Flexible Orbiting Prevention Timer, previously fixed at 14 seconds, can be set during Service Change from 0 to 30 seconds (even numbers only). If a value of 0 is defined, then Orbit Prevention is disabled and call forwarding is not inhibited in any way.

The Orbit Prevention protection, however, does not extend to all potential orbiting situations. Improperly engineered networking or multiple switching arrangements can produce orbiting.

## Feature interactions

### Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another telephone using Call Forward All Calls are charged against the last telephone that answers the call and the controlling telephone releases. Additionally, the last party that transfers or forwards a call to an ISDN Central Office trunk is charged for both connections.

### Attendant Alternative Answering

Call Forward All Calls takes precedence over all other Call Forwarding features for a particular telephone. Calls forwarded by Attendant Alternative Answering (AAA) are subject to the Call Forwarding conditions on the AAA DN.

### Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override Call Forward All Calls. If the dialed DN of the telephone is idle, the DN can be blocked; if the DN is busy, busy tone is heard.

### Attendant Break-In

The attendant can override call forwarding on a destination DN by pressing the Break-In key before dialing the destination DN. The attendant may not apply Camp-On to a telephone with Call Forward active.

### Attendant Break-In to Inquiry Calls

The operation of Call Forward All Calls is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Call Forward All Calls that may be applied to the telephone.

### Attendant Busy Verify

If the DN is call forwarded to the attendant console, the attendant will receive a click followed by silence.



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### Attendant Overflow Position

If the telephone assigned an Attendant Overflow DN has activated the Call Forward All Calls feature, overflow calls are not rerouted to the telephone. If a analog (500/2500 type) telephone is forwarded, AOP is canceled.

### Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward All Calls feature operates; however, it does provide information about the answering party in the Call Detail Recording ID field if incoming calls have been redirected by any one of these features.

### Call Forward and Busy Status

Call Forward All Calls must be assigned to Party A's telephone to enable the Call Forward Status function, which allows party B to monitor and alter the Call Forward state of party A's telephone.

### Call Forward by Call Type

If a call is unanswered at the forwarded DN, the telephone that has Call Forward All Calls activated is checked for the Class of Service and the call forward DN. If a chain of call forwarding occurs, the Class of Service and the forward DN for Call Forward No Answer are obtained from the first telephone in the chain. This applies when FDN and HNT have been specified for Call Forward No Answer at the customer level.

### Call Forward Destination Deactivation

If the Call Forward All Calls (CFW) DN of telephone A is the DN of telephone B and telephone A dials the CFW FFC to activate Call Forward All Calls, then telephone A's calls are forwarded to telephone B. Telephone B can deactivate CFW on telephone A by dialing the Call Forward Destination Deactivation (CFDD) FFC.

### Call Forward External Deny

This feature overrides other Call Forward All Calls parameters. For example, if Call Forward to Trunk Access Code (CFTA) is allowed for the customer, but Call Forward External Deny (CFXD) is enabled for the telephone, CFXD takes precedence and call forwarding to a trunk access code is denied.

### Call Forward/Hunt Override Via Flexible Feature Code

The Call Forward All Calls feature is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.



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### Call Forward, Internal Calls

If Call Forward Reminder Tone Allowed (CFRA) is in effect, whenever an analog (500/2500 type) telephone with Internal Call Forward active goes off hook to originate a call, the telephone sounds the reminder tone. The reminder tone is either Call Forward Dial Tone (CFDT) or Call Forward/Message Waiting Dial Tone (CFMW).

### Call Forward No Answer

Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls party B, and party B has programmed Call Forward All Calls to party C. Flexible Call Forward No Answer will forward a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.

### Call Forward No Answer, Second Level

Second Level Call Forward No Answer uses the final (ringing) telephone in the chain to obtain Class of Service and forwarding DN information.

First level treatment operates in the following manner. Suppose that Party A calls Party B, and Party B has programmed Call Forward All Calls to Party C. Flexible Call Forward No Answer will forward a No Answer call at Party C to the forwarding directory number associated with Party B, the dialed DN.

### Call Forward Save on SYSLOAD

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

### Call Page Network Wide

Call Page Network Wide (PAGENET) does not block a telephone from being programmed to Call Forward All Calls to an external Paging trunk. At call termination time, calls that are forwarded to an external PAGENET uncontrolled trunk are not blocked. However, calls forwarded to an external PAGENET controlled trunk are given access denied intercept treatment at the Paging node.

### Call Redirection by Time of Day

Call Forward All Calls has precedence over Call Redirection by Time of Day.



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### Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating telephone. This display is allowed or denied depending on the Class of Service of the calling telephone and the forwarding/transferring telephone. The name of the forwarding/transferring telephone is not displayed on the calling and terminating telephone.

### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (for example, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Call Forward Busy
### Call Waiting
### Call Waiting Redirection
### Camp-On
### Camp-On, Station

Call Forward All Calls has precedence over Call Forward Busy, Call Waiting, Call Waiting Redirection, Camp-On and Station Camp-On.

### China - Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

### China - Flexible Feature Codes - Customer Call Forward
### Enhanced Flexible Feature Codes - Customer Call Forward

When Customer Call Forward (CCFW) is active CFWAC cannot be activated by Flexible Feature Code, but can be activated by SPRE. When CFWAC is active, CCFW cannot be activated.

CCFW can be deactivated by deactivating CFWAC. CFWAC can only be deactivated by the CCFD FFC if the current CFW DN is the same as the current CCFW DN.



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### China - Flexible Feature Codes - Outgoing Call Barring
### Enhanced Flexible Feature - Outgoing Call Barring

When a telephone with Outgoing Call Barring active activates CFWAC with a new CFW DN, the CFW DN is tested against the current barring level. If the DN is not allowed to be dialed, it can also not be used as a Call Forward DN. This is to prevent a telephone from forwarding to a barred DN and then dialing its own DN to bypass the limitations.

### China - Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Conference

On analog (500/2500 type) telephones, Call Forward All Calls can be activated or canceled during a conference call.

### Display of Calling Party Denied

When a telephone activates any of the call forwarding features, the displays given on the calling telephone and the terminating telephone are in accordance with the Class of Service of the telephones involved in the call.

If the terminating telephone has Dialed Name Display Denied (DNDD), the display on the terminating telephone reflects the name and number of the calling party and the name and the number of the forwarding telephone.

If the terminating telephone has Dialed Name Display Allowed (DNDA), the display on the terminating telephone reflects the number of the calling party and the name and number of the forwarding telephone. In both cases, the terminating telephone's display is in accordance with the DPD Class of Service options of the calling and forwarding telephones.

For a MCDN ISDN call, the calling party's Calling Line Identification (CLID) is replaced with the ISDN route access code (ACOD) and the route member number, and the calling party's name is replaced by a string of four Xs (X X X X).

The display given on the calling telephone of an internal call, which has been forwarded to a telephone within the same switch, includes the name and number of the terminating telephone along with the number of the forwarding telephone. If the DPD Class of Service options, which are specified for the terminating telephone, indicate that the display of the



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name and number of the terminating telephone be denied, then on the calling telephone, the name of the terminating telephone is replaced by a string of four Xs (X X X X). The number is replaced by dashes (- - - -). If the number of the terminating telephone is blocked from being displayed on the calling telephone, the number of the forwarding telephone is also blocked from being displayed on the calling telephone, regardless of the DPD Class of Service options of the forwarding telephone. Conversely, if the display of the terminating telephone's number is allowed in the calling telephone, then the number of the forwarding telephone is also displayed on the calling telephone, irrespective of the DPD Class of Service options of the forwarding telephone.

### Do Not Disturb

If activated, Call Forward All Calls will take precedence over Do Not Disturb busy indication.

### DPNSS1 Diversion

Call Forward All Calls on unanswered calls are activated in the following order: Call Forward All Calls, Message Waiting, Call Forward No Answer, Slow Answer Recall. For busy telephones the order is: Call Forward All Calls, Hunting, Calling Waiting/Camp On, Message Waiting Busy Forward, Call Forward Busy.

### Electronic Lock Network Wide/Electronic Lock on Private Lines

For Call Forwarding, the COS and NCOS used for the forwarding call can be taken from either the forwarding telephone or from the forwarded telephone, depending on the option defined in the Customer Data Block.

For example, telephone B call forwards all calls to an external trunk. Telephone A calls telephone B. If OPT = CFF in LD 15 (Call Forward forwarded to party's COS and NCOS), the COS and NCOS of telephone B are used for forwarding the call to the trunk. If OPT = CFO (Call Forward originating party's COS and NCOS), the COS and NCOS of telephone A are used for forwarding the call to the trunk.

### Flexible Feature Code Boss Secretarial Filtering

Although Call Forward All Calls and Flexible Feature Code Boss Secretarial Filtering can be equipped on the same telephone, they cannot both be active at the same time. There is no precedence of one over the other; it is not possible to activate one if the other is active on the telephone.

### Flexible Feature Codes

When Flexible Feature Codes (FFC) are configured for a customer, #1 automatically becomes the FFC DN for both Call Forward Activate (CFWA) and Call Forward Deactivate (CFWD). When the same DN is used for both CFWA and CFWD, FFC toggles the call forward activated/deactivated



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state of the telephone. When call forward is activated for a telephone, entering #1 automatically deactivates call forward, no matter what follows #1. When call forward is deactivated for a telephone, the result of entering #1 depends on what follows #1:

- If the telephone goes on hook immediately, Call Forward is activated for the telephone to its previous Call Forward number.
- If a valid DN is entered after #1, Call Forward is activated for the telephone to that valid DN.
- If an invalid DN is entered after #1, Call Forward remains deactivated for the telephone.

### Flexible Voice/Data Terminal Number

Voice calls directed to a dynamic voice/data Terminal Number are forwarded, if either of these features are enabled. Data calls, to a dynamic voice/data TN, are not forwarded.

### Group Call

A Group Call to a telephone with Call Forward active is forwarded one step only. The Call Forward number must be a valid DN.

### Group Hunt

When Group Hunting attempts to terminate on a DN which has CFW All Calls active, it will continue with the next DN in the group if the attempted DN is busy, or if the DN is idle and the response to the Call Forward Ignore (CFWI) prompt in LD 57 is "NO". If the attempted DN is idle and the response to the CFWI prompt in LD 57 is "YES", then Group Hunting will terminate and the stations associated with the DN is rung.

### Hunting

Call Forward All Calls takes precedence over Hunting.

### ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification "50" is sent to the ICP computer, when the call is answered.

### Idle Extension Notification

When an extension that is being supervised for Idle Extension Notification becomes idle, it has the ability to make outgoing calls. If Call Forward All Calls or Intercept Call Forward are activated at the extension before the attendant presses the SACP key to ring that extension, the attendant’s call is forwarded to the Call Forward destination. The attendant display will show both the call forward DN, as well as the original extension’s DN.



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If the Call Forward DN is busy, SACP can be activated towards the Call Forward DN, if all the requirements for allowing Idle Extension Notification are met by this DN.

### Incoming Call Indicator Enhancement

When a Direct Inward Dialing (DID) call to station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward All Calls or Call Forward Busy, the call is RDI-intercepted to the attendant. The attendant display shows the DN of the dialed party.

If the call has been forwarded to the attendant, the Call Forward All Calls/Call Forward Busy ICI lights up, and not the RDI-intercept ICI.

### ISDN QSIG Call Completion

When the Call Forward feature is activated on a local basis and an incoming Call Completion request is received, the Call Completion request is registered against the forwarded DN.

### ISDN QSIG Name Display

When an incoming QSIG call, with name display presentation allowed Name Display, is forwarded locally, the calling party's name information is displayed on the forwarding telephone. With presentation restriction, the calling party's name information is not displayed to the destination telephone.

### Make Set Busy

Call Forward All Calls takes precedence over Make Set Busy.

### Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Call Forward All Calls.

### Multi-Party Operations

A telephone which has activated Call Forward All Calls can still initiate calls and become the controlling party of a consultation connection. In this case, if the telephone fails to operate, then Multi-Party operations while re-ringing the controlling party as a part of failed operation recovery ignores the Call Forward All Calls indication present on the controlling party.

### Multiple Appearance Directory Number Redirection Prime

Multiple Appearance Directory Number Redirection Prime (MARP) affects how call redirection operation is defined. Refer to the MARP module in this document for details.



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### Network Intercom (Hot Type D and Hot Type 1 Enhancements)

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

### Network Individual Do Not Disturb

Call Forward All Calls takes precedence over Do Not Disturb Individual (DNDI) treatment.

### Night Service Enhancements

Any call which has been presented to the Attendant Overflow Position cannot be removed from the console and re-queued by pressing the Make Set Busy (MSB) key. The call will only be removed if the Attendant Forward No Answer feature is active, and the Attendant Forward No Answer Timer has timed out. In this case, the call is re-queued and the Attendant Overflow Position is idled.

### Paging

Calls that originate on a TIE trunk to a telephone that is redirected to a paging route are blocked.

### Periodic Pulse Metering

Metered calls transferred or extended from one station to another using the Call Forward All Calls feature are charged against the last station at which the call is answered as the controlling station releases. The last party to forward a call onto a metered Periodic Pulse Metering trunk is charged.

### Phantom Terminal Numbers (TNs)

Call Forward All Calls is used in conjunction with Remote Call Forward (RCFW) to redirect incoming calls from a phantom TN/DN to a valid DN.

Call Forward cannot be overridden on phantom TNs. Overflow tone occurs if an override is attempted.

### Recorded Announcement for Calls Diverted to External Trunks

If a call is forwarded to an outgoing external Central Office (CO) route with the Recorded Announcement for Calls Diverted to External Trunks (RANX) flag set, RANX is activated.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Ring Again on No Answer

If an unanswered call is forwarded to another station by Call Forward All Calls, Ring Again on No Answer is applied to the originally dialed station.



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### Special prefix SPRE access codes

SPRE access codes cannot be used as CFW DNs. If an attempt is made to program SPRE access code as a CFW DN, the overflow tone is given at the time of CFW activation.

### Total Redirection Count

Call Forward All Calls redirection is limited to the value defined in the Total Redirection Count limit (if greater than 0). If this limit is exceeded, intercept treatment is given.

### Trunk Access Codes

There is an option in LD 15 to allow or disallow telephones to program Call Forward All Calls to a Trunk Access Code. See “Call Forward All Calls” (page 87).

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

### User Selectable Call Redirection

When CFW redirects a call from telephone A to telephone B, and telephone B does not answer, the Ringing Cycle Options of telephone B determines how long it rings. After the designated number of rings, the Flexible Call Forward No Answer of telephone A redirects the call.

## Feature packaging

Internal Call Forward requires the 500 Set Dial Access to Features (SS5) package 73 for analog (500/2500 type) telephones, and the Flexible Feature Codes (FFC) package 139. Call Forward Reminder Tone is packaged with the Call Forward All Calls feature.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 1 "LD 15 - Define Class of Service for Call Forward All Calls." (page 99)

   Define Class of Service for Call Forward All Calls

2. Table 2 "LD 10 - Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones." (page 99)

   Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones.

3. Table 3 "LD 11 - Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones." (page 100)



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Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones.

4. Table 4 "LD 57 - Add/change Flexible Feature Codes for Internal Call Forward." (page 101)

   Add/change Flexible Feature Codes for Internal Call Forward.

On an analog (500/2500 type) telephone, the user accesses the Call Forward All Calls and Internal Call Forward features by dialing either the SPRE plus the feature code, or the appropriate Flexible Feature Codes (FFCs). On a digital telephone, the user accesses each feature using its feature key.

**Table 1**
**LD 15 - Define Class of Service for Call Forward All Calls.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Call Redirection. |
| CUST | | Customer number. |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | (CFO) CFF | (CFO) = Calling party Class of Service is active during Call Forward All Calls.<br><br>CFF = Forwarding party Class of Service is active during Call Forward All Calls. |
| | (PVCA) PVCD | Prevention of reciprocal Call Forward (allowed) or denied. |
| - CFTA | (NO) YES | (Deny) allow telephones to Call Forward All Calls to a Trunk Access Code. |
| - OPT | (CFRD) CFRA | Call Forward Reminder Tone (denied) allowed for analog (500/2500 type) telephones. |

In LD 56, the XCT Tone Code (XCAD) default value is set to 0. If the XCAD prompt is not changed in LD 56, an Analog 500-type telephone will not receive Call Forward Reminder Tone (CFRT) even if it has been enabled in LD 15 (OPT = CRFA).

**Table 2**
**LD 10 - Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |



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**Table 2**
**LD 10 - Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FTR | CFW xx yyyy...y | Allow Call Forward All Calls, where:<br><br>xx = maximum number of digits in the CFW DN. Valid entries are any integer in the range of (4)-31. yyyy = number where calls are forwarded.<br><br>YYYY cannot be entered from the maintenance terminal. When the telephone information is printed in LD 20, yyyy shows the call forward number. |
| FTR | ICF xx | Allow Internal Call Forward, where:<br><br>xx = maximum number of digits in the Forward DN. Valid entries are any integer in the range of (4)-31. |

**Table 3**
**LD 11 - Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 3**
**LD 11 - Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| KEY | xx CFW yy zzzz...z | Define Call Forward All Calls, where:<br><br>xx = key number; M2317 must use key 22<br>yy = maximum number of digits in the CFW DN. Valid entries for M2317 telephones are any integer in the range of (4)-23. For all other Meridian 1 proprietary type telephones, valid entries are any integer in the range of (4)-31.<br>zzzz = number where calls are forwarded. |
| KEY | xx ICF yy zzzz | Define Internal Call Forward, where:<br><br>xx = key number<br>yy = maximum number of digits in the Forward DN. Valid entries are any integer in the range of (4)-31.<br>zzzz = number where calls are forwarded. |

**Table 4**
**LD 57 - Add/change Flexible Feature Codes for Internal Call Forward.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG OUT | Add, change, or remove an FFC. |
| TYPE | FFC | Flexible Feature Code. |
| CODE | ICFA<br>ICFD<br>ICFV | Access code for Internal CFW Activate.<br>Access code for Internal CFW Deactivate.<br>Access code for Internal CFW Verify. |
| ICFA | xxxx | Internal CFW Activate Code (ICFD and ICFA may share the same code). |
| ICFD | xxxx | Internal CFW Deactivate Code (ICFD and ICFA may share the same code). |
| ICFV | xxxx | Internal CFW Verify Code. |

## Feature operation

To forward all calls from a Meridian 1 proprietary telephone:

| Step | Action |
|---|---|
| 1 | Press **Forward**. |
| 2 | Dial the number where calls are to be forwarded. |



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| | |
|---|---|
| **3** | Press **Forward**. |

**--End--**

To forward internal calls only from a Meridian 1 proprietary telephone:

| Step | Action |
|---|---|
| **1** | Press **Internal Call Forward**. |
| **2** | Dial the number where calls are to be forwarded. |
| **3** | Press **Internal Call Forward**. |

**--End--**

To cancel Call Forward All Calls:

- Press **Forward**.

To cancel Internal Call Forward:

- Press **Internal Call Forward**.

To forward calls from an analog (500/2500 type) telephone:

| Step | Action |
|---|---|
| **1** | Lift the handset and dial SPRE 74<br>or lift the handset and dial #1 (2500 telephone)<br>or lift the handset and dial the Call Forward Allowed FFC. |
| **2** | Dial the number where calls are to be forwarded. |
| **3** | Hang up. |

**--End--**

If you deactivate Call Forward, then reactivate without changing the number, calls is forwarded to the previously established CFW DN.

To forward internal calls from an analog (500/2500 type) telephone:

| Step | Action |
|---|---|
| **1** | Lift the handset and dial SPRE 9914<br>or lift the handset and dial the Internal Call Forward FFC. |



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2 Dial the number where calls are to be forwarded.

3 Hang up.

**--End--**

To cancel Call Forward All Calls:

- Lift the handset and dial SPRE 74
  or lift the handset and dial #1 (2500 telephone)
  or lift the handset and dial the Call Forward Deny FFC.

To cancel Internal Call Forward:

- Lift the handset and dial SPRE 9914
  or lift the handset and dial the Internal Call Forward Deny FFC.



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# Call Forward and Busy Status

## Contents

The following are topics in this section:

“Feature description” (page 105)

“Operating parameters” (page 106)

“Feature interactions” (page 107)

“Feature packaging” (page 108)

“Feature implementation” (page 108)

“Feature operation” (page 110)

## Feature description

The Call Forward and Busy Status feature was designed for an environment where Party A forwards calls to Party B for screening.

When equipped with a Busy/Forward Status (BFS) key-lamp or key-Liquid Crystal Display (LCD) pair, Party B can perform the following:

- monitor, activate, or deactivate Call Forward for Party A
- override Call Forward of Party A, in order to place a call to Party A or
- determine whether Party A is busy on a call

The BFS key-lamp or key-LCD pair serves a dual purpose. The Busy Status function indicates to Party B, using lamp or LCD state, whether Party A is busy or not. The Call Forward Status function allows Party B to monitor and alter the Call Forward state of Party A. Therefore, the BFS lamp or LCD state of Party B may indicate that Party A is in any one of the following four possible states:

- Call Forward activated and not busy
- Call Forward activated and busy



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- Call Forward deactivated and not busy or
- Call Forward deactivated and busy

The BFS key also acts as an Autodial (ADL) key. To use the BFS key as an ADL key to call Party A, Party B goes off-hook and presses the BFS key for Party A.

### Busy Status

The Busy Status portion of the feature indicates if Party A is busy for any of the following reasons:

- call active on a Directory Number (DN) key (SCR, SCN, MCR, or MCN)
- has Make Set Busy (MSB) activated
- has Do Not Disturb (DND) activated
- call active on a Group Call (GRC) key
- call active on a Private-line non-ringing (PVN) or Private-line Ringing (PVR) key
- Party A ringing
- if Party A is a Meridian 1 proprietary telephones and has call on Hold
- if Party A is an analog (500/2500 type) telephone and has a call on permanent Hold

### Call Forward Status

The Call Forward portion allows Party B to monitor and alter the Call Forward state of Party A. Party A may be either an analog (500/2500 type) telephone or Meridian 1 proprietary telephone and must have Call Forward All Calls equipped. The Call Forward and Busy Status feature introduces a modification to the Call Forward All Calls feature functionality. The modification is activated or deactivated on a customer-wide basis by the response to OPT in LD 15. The OPT responses are "FKD" (Forward Key Denied) and the default setting "FKA" (Forward Key Allowed).

## Operating parameters

Party B must be using a Meridian Modular telephone. Party A may have an Meridian Modular or 500/2500-type telephone, with Call Forward All Calls (CFAC) equipped. The operating parameters are the same as for CFAC.

A station may be monitored by a maximum of 16 other stations using the BFS key.



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The monitored and monitoring stations must all belong to the same customer.

## Feature interactions

### Attendant and Network-Wide Remote Call Forward

When the call forward status of a BFS station is changed from a telephone or attendant-based Remote Call Forward feature, the BFS lamp(s) associated with that station are updated accordingly.

### Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override these Call Forward and Busy Status. If the dialed DN of the telephone is idle, the DN can be blocked; if the DN is busy, busy tone is heard.

### Autodial

Party A can use the Busy/Forward Status key as an Autodial key to dial Party B.

### Call Forward All Calls

Call Forward All Calls must be assigned to Party A's telephone to enable the Call Forward Status function, which allows Party B to monitor and alter the Call Forward state of Party A's telephone.

### Call Forward/Hunt Override Via Flexible Feature Code

Call Forward and Busy Status is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

### Call Forward, Remote (Attendant and Network-Wide)

When the call forward status of a BFS station is changed from a telephone or attendant-based Remote Call Forward feature, the BFS lamp(s) associated with that station are updated accordingly.

### Calling Party Privacy

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (that is,



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at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Flexible Feature Code Boss Secretarial Filtering

If the secretary telephone is a Meridian 1 proprietary telephone, or a compact digital telephone, it may be equipped with a Call Forward and Busy Status (BFS) key/lamp pair, to perform the following:

- monitor the status of the Call Forward feature on a boss telephone
- activate/deactivate the Call Forward feature on a boss telephone
- monitor whether or not a boss telephone is busy on a call, and
- override the Call Forward All Calls feature on a boss telephone, in order to place a call to the boss telephone.

The above functions, however, can only be performed by the secretary telephone while it is in an unattended state, since BFS and Flexible Feature Code Boss Secretarial Filtering cannot be active simultaneously.

### Network Intercom

In a Secretarial filtering scenario, the secretary's Busy/Forward Status (BFS) lamp also will reflect that the boss' telephone is busy if the boss is on a Hot Type I call.

### Phantom Terminal Numbers (TNs)

When a user attempts to define a BFS key for a phantom TN, the system generates the following error message: "An invalid TN has been entered for the Busy/Forward Status (BFS) key."

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 5 "LD 15 - Activate the Call Forward and Busy Status mode of operation." (page 109)

   Activate the Call Forward and Busy Status mode of operation.

2. Table 6 "LD 11 - Assign a Busy/Forward Status (BFS) key." (page 109)

   Assign a Busy/Forward Status (BFS) key.

3. Table 7 "LD 20 - Print the BFS key type and related information." (page 109)



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Print the BFS key type and related information.

4. Table 8 "LD 21 - Print the OPT setting." (page 110)

   Print the OPT setting.

**Table 5**
**LD 15 - Activate the Call Forward and Busy Status mode of operation.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | RDR | Call Redirection |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B |
| ... | | |
| NCOS | ... | |
| - OPT | (FKA) FKD | Forward Key (Allowed) Denied — determines whether Call Forward keys on telephones for this customer are operational. |

**Table 6**
**LD 11 - Assign a Busy/Forward Status (BFS) key.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG NEW | Request: Modify or create data block. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| ... | | |
| LANG | ... | |
| KEY | | Key number (0-69), Busy/Forward Status (BFS), Terminal Number (TN) of telephone to be monitored. |
| | 0-69 BFS l s c u | For Large Systems |
| | 0-69 BFS c u | For Small Systems |

**Table 7**
**LD 20 - Print the BFS key type and related information.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | PRT | Request: Print data block. |
| TYPE: | xxxx | Type of data block. |
| TN | ... | |



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**Table 8**
**LD 21 - Print the OPT setting.**

| Prompt | Response | Description |
|---|---|---|
| REQ | PRT | Request: Print data block. |
| TYPE | CDB | Type of data block: Customer Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |

# Feature operation

## Call Forward Status

With FKA, the default, selected Party A's Call Forward (CFW) key-lamp or key-LCD pair operation is unaffected and depressing Party B's BFS key will result in one of the following:

- If Party A does not currently have Call Forward activated, Party A has Call Forward activated to Party B's DN and Party A's CFW lamp or LCD is activated.
- If Party A already has Call Forward activated to Party B's DN, Party A has Call Forward deactivated and Party A's CFW lamp or LCD is deactivated.
- If Party A already has Call Forward activated to a DN other than Party B's, Call Forward is left as is.

With FKD selected Party A's CFW key-lamp or key-LCD pair operation is modified so that the pair is usable as an indicator only, the key is disabled, and depressing Party B's BFS key will result in one of the following:

- If Party A has Call Forward active to the DN of a BFS key equipped telephone other than Party B, Call Forward is left as is.
- If Party A has Call Forward active to a remote DN and Call Forward was activated by a remote FFC, the existing Call Forward DN is overridden and all new calls are forwarded to Party B's DN.
- If Party A has Call Forward active to Party B's DN, Party A's Call Forward is deactivated and Party A's CFW lamp or LCD is deactivated.
- If Party A does not have Call Forward active, Call Forward is activated to Party B's DN and Party A's CFW lamp or LCD is activated.

When the Boss telephone is call forwarded to one of the secretary DNs, then calling the Boss telephone from the secretary by using the BFS key overrides the call forward. If the secretary calls the Boss, and Boss telephone has been call forwarded to a DN which is not a secretary DN, then the call is forwarded.



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## BFS lamp or LCD states

Party B's BFS lamp or LCD reflects the status of Party A's telephone in terms of both the Busy or Idle and the Call Forward states. The following gives the possible BFS lamp or LCD states for the various states Party A can be in:

| Party A's telephone | Party A's Call Forward | |
|---|---|---|
| | **Deactivated** | **Activated** |
| **Idle** | Dark | Wink = Fast Flash |
| **Busy** | Lit | Flash |

**Dark indicates lamp or LCD is off.**
**Wink indicates lamp or LCD is winking at 60 impulses per minute (ipm) (0.875 seconds on, 0.125 seconds off).**
**Lit indicates lamp or LCD is on**
**Flash indicates lamp or LCD is flashing at 30 ipm (0.5 seconds on, 0.5 seconds off).**



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# Call Forward Busy

## Contents

This section contains information on the following topics:

“Feature description” (page 113)

“Operating parameters” (page 113)

“Feature interactions” (page 113)

“Feature packaging” (page 117)

“Feature implementation” (page 117)

“Feature operation” (page 118)

## Feature description

Call Forward Busy (CFB) automatically routes incoming Direct Inward Dialing (DID) calls to the attendant console when a telephone is busy. This capability is allowed or denied in the Class of Service (FBA/FBD) of the telephone.

## Operating parameters

On incoming DID calls, Hunting takes precedence, followed by Call Waiting, then Call Forward Busy. In busy situations, the call hunts if the telephone has Hunting specified.

## Feature interactions

### Attendant Alternative Answering

If Call Forward Busy is allowed for the Attendant Alternative Answering (AAA) DN (and that DN is busy), a DID call is returned to the attendant and can again be eligible for AAA timing and operation.

### Attendant Busy Verify

Attendant Busy Verify does not affect Call Forward Busy.



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### Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward Busy feature operates; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

### Call Forward All Calls

Call Forward All Calls takes precedence over Call Forward Busy.

### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (for example, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Call Waiting for Meridian 1 proprietary telephones

If Class of Service allows CFB and Call Waiting Allowed, and the telephone has a Call Waiting key, calls do not forward to the attendant when the telephone is busy and another call is waiting.

### Call Waiting for analog (500/2500 type) telephones

If a telephone has CFB and Call Waiting Allowed Class of Service, calls are forwarded to the attendant when the telephone is busy and has another call waiting.

### Camp-On, Station

For DID calls only, Call Forward Busy takes precedence over Camp-On, Station.

### China - Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.



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### China - Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Departmental Listed Directory Number

Call Forward Busy operates like Call Forward to 0, and are routed to any idle attendant console in the customer group.

### Dial Access to Group Calls

Call Forward Busy cannot be applied to a Group Call.

### Call Forward Busy

Calls modified by Call Forward Busy are not given Distinctive Ringing as they terminate on the attendant console.

### Dial Access to Group Calls
### Group Call

Call Forward Busy cannot be applied to Dial Access to Group Calls or Group Call.

### Flexible Feature Code Boss Secretarial Filtering

Call Forward Busy to a boss telephone with filtering active is routed to the secretary telephone.

### Flexible Voice/Data Terminal Number

Voice calls directed to a call processing busy dynamic voice/data TN are redirected using Call Forward Busy provided this feature is configured for the TN. Data calls to dynamic voice/data TNs are not redirected.

### Group Hunt

Group Hunting has priority over the Call Forward Busy feature.

If the DN attempted for termination has FBA (Forward Busy Allowed) Class of Service, and if it is busy, then Group Hunting continues with the next DN in the group

### Hot Line

Any Hot Line telephone can be assigned Call Forward Busy but it applies only to the two-way Hot Line capability.



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### Hunting

When a telephone is busy, an incoming call hunts only if Hunting is allowed for that telephone. If all the steps in the hunt group are busy, and Call Waiting is not allowed, the call forwards to the attendant console.

### ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification "50" is sent to the ICP computer, when the call is answered.

### Incoming Call Indicator Enhancement

When a DID call to station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward All Calls or Call Forward Busy, the call is RDI-intercepted to the attendant. The attendant display shows the DN of the dialed party.

If the call has been forwarded to the attendant, the Call Forward All Calls/Call Forward Busy ICI lights up, and not the RDI-intercept ICI.

### Lockout, DID Second Degree Busy, and MFE Signaling Treatments

Call Forward Busy takes precedence over lockout and second degree busy.

### Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

### Night Service

When the system is in Night Service, DID calls forwarded by Call Forward Busy are routed to the specified night number. If the night telephone is busy, subsequent calls receive busy tone.

### Recorded Announcement for Call Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) is activated if the call is forwarded to an outgoing external CO trunk with the RANX feature active.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Total Redirection Count

Call Forward Busy redirections is limited to the value defined in the Total Redirection Count limit (if greater than 0). If this limit is exceeded, intercept treatment is given.



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### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 9 "LD 15 - Add/change a Call Forward Busy Incoming Call Indicator (ICI) on attendant consoles." (page 117)

   Add/change a Call Forward Busy Incoming Call Indicator (ICI) on attendant consoles.

2. Table 10 "LD 10 - Allow/deny Call Forward Busy on analog (500/2500 type) telephones." (page 117)

   Allow/deny Call Forward Busy on analog (500/2500 type) telephones.

3. Table 11 "LD 11 - Allow/deny Call Forward Busy on Meridian 1 proprietary telephones." (page 118)

   Allow/deny Call Forward Busy on Meridian 1 proprietary telephones.

**Table 9**
**LD 15 - Add/change a Call Forward Busy Incoming Call Indicator (ICI) on attendant consoles.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | ATT_DATA | Attendant console options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B |
| - ICI | xx CFB | Add a Call Forward Busy ICI key; xx = 0-19. |

**Table 10**
**LD 10 - Allow/deny Call Forward Busy on analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | <br>l s c u | Terminal Number<br>Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 10**
**LD 10 - Allow/deny Call Forward Busy on analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (FBD) FBA | (Deny) allow Call Forward Busy. |

**Table 11**
**LD 11 - Allow/deny Call Forward Busy on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (FBD) FBA | (Deny) allow Call Forward Busy. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward by Call Type

## Contents

This section contains information on the following topics:

“Feature description” (page 119)

“Operating parameters” (page 120)

“Feature interactions” (page 121)

“Feature packaging” (page 125)

“Feature implementation” (page 125)

“Feature operation” (page 127)

## Feature description

Call Forward by Call Type (CFCT) routes calls receiving a no answer or busy signal to separately defined DNs based on the type of incoming call. The two types of incoming calls are internal and external.

An internal call is defined as a station-to-station call, a Direct Inward System Access (DISA) call, or an incoming call over a trunk route class marked as internal. An external call is an incoming call over a trunk route class marked as external. The trunk route data block (LD 16) allows routes to be defined as internal or external for this feature.

Four options are available at the customer level for Call Forward No Answer: Flexible Call Forward No Answer DN (FDN), Attendant Recall (ATT), Call Forward denied for all telephones (NO), and Hunting (HNT). Call Forward by Call Type (CFCT) is enabled only when the FDN and HNT options are chosen.

In LD 15 Call Forward No Answer is defined by FNAT for external non-DID calls and by FNAL for internal calls. FNAD continues to define Call Forward No Answer for Direct Inward Dialing (DID) trunk calls.



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CFCT is allowed or denied for each telephone in LD 10 or LD 11 with Class of Service (CFTA/CFTD). If CFCT is allowed (CFTA), the forwarding destination is also defined in LD 10 or LD 11.

Once enabled, CFCT requires no intervention. How the system initiates Call Forward by Call Type is described below.

When a call is presented to a telephone, the telephone is checked for the appropriate Class of Service (Hunting Allowed (HTA), Call Forward No Answer (FNA), Call Forward by Call Type (CFTA). The incoming call is then checked to determine if it is a telephone, DISA, or trunk call. If it is a trunk call, the trunk route is checked to determine whether the call should be treated as an internal or external call. After these checks, internal calls are forwarded to the FDN or Hunt DN of the telephone. External calls are forwarded to the External Flexible DN (EFD) or External Hunt (EHT) DN of the telephone.

The order in which the system handles no answer and busy calls is an important consideration when implementing this feature. The order of precedence is listed below.

Calls to telephones that do not answer:

- Call Forward All Calls
- Message Waiting
- Call Forward No Answer
- Attendant Recall

Calls to busy telephones:

- Call Forward All Calls
- Hunting
- Call Waiting or Camp-On
- Message Waiting Forward Busy
- Call Forward Busy

## Operating parameters

Attendant Administration does not support the entry of the new EFD and EHT Class of Service required for Call Forward by Call Type.

The following trunk routes can be defined as internal or external call types for CFCT: CO, DID, FX, ATVN, CCA, TIE, WATS, and CSA.



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Incoming DISA calls are always treated as internal calls irrespective of the trunk route class mark defined for the incoming trunk.

If an incoming call has been modified by Call Forward All Calls or Hunting, the Class of Service and forwarding DN are obtained from the dialed DN. This applies when Call Forward No Answer specified at the customer level is HNT or FDN.

## Feature interactions

### Attendant

An attendant-extended call is classified internal or external by the originating telephone or class mark of the trunk type. This is the case whether or not the attendant has released before forwarding occurs.

### Attendant Alternative Answering

If Call Forward by Call Type is enabled on the Attendant Alternative Answering (AAA) DN, calls are forwarded based on the Call Type of the originator.

### Attendant Break-In to Inquiry Calls

The operation of Call Forward by Call Type is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

### Automatic Timed Recall

Calls eligible for Flexible Call Forward No Answer treatment, and handled by Call Forward by Call Type, use the Call Forward No Answer timer in the Customer Data Block as the recall timer for attendant extended calls. Irrespective of the relative timeout for Automatic Timed Recall, the ringing continues as long as allowed by the Call Forward No Answer Timer.

### Call Forward All Calls

If a call is unanswered at the forwarded DN, the telephone that has Call Forward All Calls activated is checked for the Class of Service and the call forward DN. If a chain of call forwarding occurs, the Class of Service and the forward DN for Call Forward No Answer are obtained from the first telephone in the chain. This applies when FDN and HNT have been specified for Call Forward No Answer at the customer level.

### Call Forward No Answer

The sequence for forwarding unanswered calls is Call Forward All Calls, Message Waiting, Call Forward No Answer, then Attendant Recall (if the call is attendant-extended). The same sequence is used when Call Forward by Call Type is active for the customer.



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### Call Forward No Answer, Second Level

To implement CFCT for Second Level Call Forward No Answer eligible calls, the originating party's call type is checked. If it is internal, the call is forwarded to the Flexible Call Forward No Answer DN (FDN). If it is external, the call is forwarded to the External Flexible DN (EFD).

### Call Forward Save on SYSLOAD

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

### Call Forward, Break-In and Hunt Internal/External Network Wide

If the Internal/External definition in LD 15 is set to YES, a call is treated as internal or external on a network wide basis.

### Call Redirection by Time of Day

Call Forward by Call Type (CFCT) takes precedence over Call Redirection by Time of Day.

If Call Forward by Call Type (CFCT) is enabled with Call Forward No Answer (CFNA) and Call Redirection by Time of Day (CRTOD), unanswered internal calls receiving CFNA are routed to the Flexible CFNA DN, Hunt DN, Alternate Flexible CFNA DN or Alternate Hunt DNs. External calls are routed in the same manner.

If CFNA is enabled with Hunting by Call Type and Call Redirection by Time of Day (CRTOD), unanswered internal calls are redirected to the Hunt DN or Alternate Hunt DN during the alternative time. External calls are routed in the same manner. The alternate time is defined on the called DN's data block.

### Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating telephone. This display is allowed or denied depending on the Class of Service of the calling telephone and the forwarding/transferring telephone. The name of the forwarding/transferring telephone is not displayed on the calling and terminating telephone.

### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (for



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example, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Call Transfer
### Network Call Transfer

Calls modified by Call Transfer and Network Call Transfer receive CFCT treatment. If party A (telephone or trunk) calls party B, and B transfers to party C, the forwarding DN and Class of Service are obtained from party C.

### Call Waiting Redirection

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, "no answer" internal calls receiving Call Waiting treatment are routed for CFNA treatment to the Flexible CFNA DN (FDN) or Hunt DN, and "no answer" external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

### Conference

Calls modified by Conference receive CFCT treatment for the conferenced telephone. If party A calls party B, and B tries to conference in party C, the forwarding DN and Class of Service are that of C. For example, Joan and Bob are in conversation, and they try to conference in Mack. Mack is not at his desk, so the attempted conference call is sent to the destination associated with Mack’s telephone.

### Direct Inward Dialing (DID)

Eligibility of a DID call for Call Forward by Call Type is determined by allowing or denying the type of call in the Customer Data Block (FNAD prompt). The decision to treat a DID call as internal or external is made on a trunk route basis.

### Group Hunting Queuing Limitation Enhancement

An external call is made to the PLDN. An idle group hunt list member station is rung but does not answer. If the member station has Call Forward No Answer (FNA) or Call Forward by Call Type Allowed (CFTA) Class of Service, then the call is transferred to the attendant after the number of ring cycles defined for Call Forward No Answer has been reached. If the call is an internal call, then the system searches for another idle group hunt list member.

### ISDN Semi Permanent Connections for Australia

ISPC calls are handled according to the configuration of the route associated to the phantom trunk TN. This configuration is independent of the route associated to the real TN.



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### Message Center

Message Center uses the Flexible Call Forward No Answer DN (FDN) of the called telephone to route no answer calls. If CFCT is enabled, unanswered internal calls use the FDN to route a call. Unanswered external calls use the External Flexible DN (EFD) to route a call.

### Multiple Appearance Directory Numbers

Call redirection parameters like Call Forward No Answer are derived from the TN data block of the prime appearance of the called Multiple Appearance Directory Number. If there is more than one prime appearance, the parameters are selected from the last TN in the DN block.

If more than one prime appearance of a MADN exists, the following information must be considered prior to configuring call redirection parameters for MADNs.

The DN Block organizes MADN information in numerical TN order. The TN with the highest numerical value (000-0-06-03) is placed at the beginning of the list. The list then continues in descending order with the lowest numerical TN (000-0-03-01) at the end of the list. Service change activity affects the organization of the DN list as described in the following paragraphs.

- If a telephone undergoes Service Change, its TN is moved to the beginning of the DN list, irrespective of the numerical value. This telephone remains at the beginning of the list until another service change or a SYSLOAD.
- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A Service Change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A Service Change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list back to numerical TN order, with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.



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## Feature packaging

Call Forward by Call Type is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 12 "LD 15 - Enable Call Forward by Call Type for a customer." (page 125)

   Enable Call Forward by Call Type for a customer.

2. Table 13 "LD 16 - Define a trunk route as internal or external for Call Forward by Call Type." (page 126)

   Define a trunk route as internal or external for Call Forward by Call Type.

3. Table 14 "LD 10 - Enable Call Forward by Call Type for analog (500/2500 type) telephones." (page 126)

   Enable Call Forward by Call Type for analog (500/2500 type) telephones.

4. Table 15 "LD 11 - Enable Call Forward by Call Type for Meridian 1 proprietary telephones." (page 126)

   Enable Call Forward by Call Type for Meridian 1 proprietary telephones.

**Table 12**
**LD 15 - Enable Call Forward by Call Type for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Call Redirection |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System Media Gateway 1000B. |
| - FNAD | (HNT)<br>ATT<br>NO<br>FDN | Treatment for incoming DID calls. |
| - FNAT | (HNT)<br>ATT<br>NO<br>FDN | Treatment for incoming external calls. |



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**Table 12**
**LD 15 - Enable Call Forward by Call Type for a customer. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - FNAL | (HNT)<br>ATT<br>NO<br>FDN | Treatment for incoming internal calls. |
| - CFNA | 1-(4)-15 | Number of ringing cycles for CFNA. |

**Table 13**
**LD 16 - Define a trunk route as internal or external for Call Forward by Call Type.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | CDB | Customer Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ROUT | | Route number |
| | 0-511 | Range for Large System and CS 1000E system. |
| | 0-127 | Range for Small System and Media Gateway 1000B |
| RCLS | (EXT) INT | Route class marked as (external) or internal. |

**Table 14**
**LD 10 - Enable Call Forward by Call Type for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| HUNT | xxxx | Hunt DN for internal calls. |
| CLS | (CFTD) CFTA | (Deny) allow Call Forward by Call Type Telephone. Must have Hunting (HTA) and Call Forward No Answer (FNA) allowed. |
| FTR | EFD xxxx<br>EHT xxxx<br>FDN xxxx | Flexible Call Forward No Answer DN for external calls. Hunt DN for external calls.<br>Flexible Call Forward No Answer DN for internal calls. |

**Table 15**
**LD 11 - Enable Call Forward by Call Type for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |



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**Table 15**
**LD 11 - Enable Call Forward by Call Type for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FDN | xxxx | Flexible Call Forward No Answer DN for internal calls. |
| CLS | (CFTD) CFTA | (Deny) allow Call Forward by Call Type Telephone. Must have Hunting (HTA) and Call Forward No Answer (FNA) allowed. |
| EFD | xxxx | Flexible Call Forward No Answer DN for external calls. |
| HUNT | xxxx<br>000 | Hunt DN for internal calls.<br>Short Hunt for internal calls. |
| EHT | xxxx<br>000 | Hunt DN for external calls.<br>Short Hunt for external calls. |
| LHK | xx | Last hunt key number for internal and external calls |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward Destination Deactivation

## Contents

This section contains information on the following topics:

“Feature description” (page 129)

“Operating parameters” (page 130)

“Feature interactions” (page 131)

“Feature packaging” (page 132)

“Feature implementation” (page 132)

“Feature operation” (page 134)

## Feature description

The existing Call Forward All Calls feature allows users to divert incoming calls from a telephone. The activation/deactivation of Call Forward All Calls must occur from the originating telephone. The Flexible Feature Codes and Remote Call Forward features allowed users the extended flexibility to activate/deactivate Call Forward All Calls from within the system, or outside the local network using Direct Inward System Access.

Call Forward Destination Deactivation (CFDD) permits the call forwarded destination to deactivate the Call Forward All Calls functionality on the call forward station. As illustrated in Figure 1 "Call Forward Destination Deactivation Capability" (page 130), if telephone A is call forwarded to telephone B, then telephone B can deactivate call forward.

This feature also allows a user to deactivate call forward by using Remote Call Forward deactivate Flexible Feature Code.

In China, the Call Forward Destination Deactivation feature requires an octothorpe (#) as an end of dial delimiter when entering FFC’s to deactivate.



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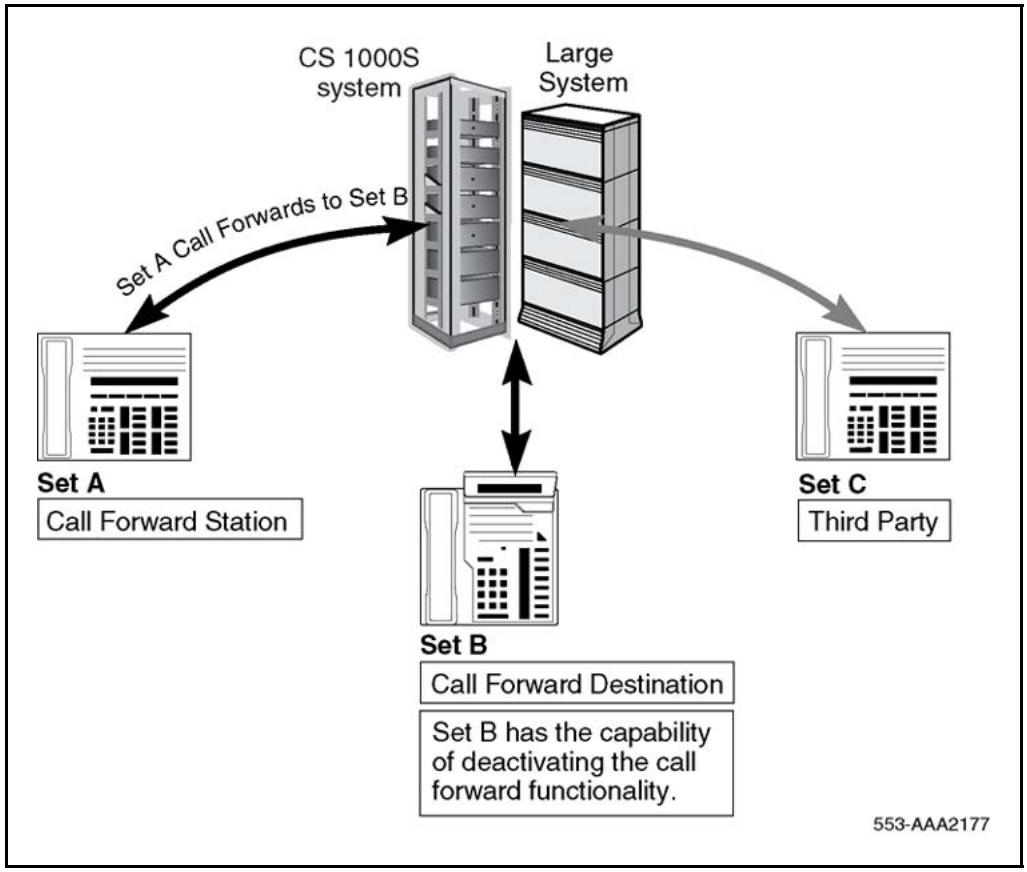
**Figure 1**
**Call Forward Destination Deactivation Capability**




## Operating parameters

The feature is applicable to all systems.

Call Forward Destination Deactivation is only supported on Call Forward. This feature is not supported on Internal Call Forward.

The existing Call Forward All Calls features allows users to program a call forward station within a system switch or Public Switching Telephone Network. The Call Forward Destination Deactivation feature is designed for stand alone application only. Therefore, both the destination and originator must belong to the same customer on the system.

The call forwarded destination can deactivate the Call Forward All Calls functionality. However, the call forwarded destination cannot activate the call forward functionality from the originating telephone unless using the RCFA FFC.



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CFDD can be activated on proprietary, ISDN Basic Rate Interface and Analog (500/2500 type) telephones by dialing the CFDD FFC. 16-button Dual-Tone Multi-Frequency telephones can use one of the A,B,C or D function keys, configured as CFDD, or they can also dial CFDD FFC to use this feature.

CFDD can be activated on Meridian proprietary, ISDN Basic Rae interface and Analog (500/2500 type) telephones by dialing the CFDD FFC. An analog 500-type telephone with a dial pulse Class of Service cannot dial an octothorpe (#) as the end of dial delimiter. To Activate CFDD, the call forwarded destination of an analog 500-type telephone has to dial the string of digits (as defined in LD 15) for the end of dial delimiter.

An analog 500-type telephone with a dial pulse Class of Service cannot dial an octothorpe (#) as the end of dial delimiter. To activate CFDD on an analog 500-type telephone, the dial string digits (the STRG prompt in LD 15) must be configured for the end of dial delimiter.

If the string to indicate end of dialing (STRG prompt in LD 15) is defined, then analog (500/2500 type), 16-button DTMF, ISDN BRI and proprietary telephones must dial string digits as an end of dial delimiter to activate CFDD.

In China, to activate CFDD a user must dial an octothorpe (#) as an end of dial delimiter. In this market, an analog 500-type telephone does not support this feature.

An Automatic Call Distribution (ACD) agent can only activate this feature from their personal Directory Number key. This feature cannot be activated on the ACD in calls key.

If the call forward station has a Prime DN and Secondary DN defined, then the Call Forward Destination Deactivation feature only considers the Prime DN to forward a call. Therefore, during the feature operation, the call forwarded destination's dialed DN of telephone A is compared with the call forward station's Prime DN.

## Feature interactions

### Call Forward All Calls

If a user's call forwarded Directory Number (DN) is defined as DN of telephone B and telephone A dials the CFW FFC to activate call forward, then telephone A gets forwarded to telephone B. Telephone B can deactivate CFW on telephone A by dialing the CFDD FFC.



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### Call Forward, Remote

Remote Call Forward (RCFW) and Call Forward Destination Deactivation (CFDD) provide the same functionality but are activated differently. CFDD does not require the call forward station's control password to deactivate the call forward functionality on the call forward station.

The call forwarded destination can use the Remote Call Forward deactivation FFC as well as CFDD to deactivate the Call Forward All Calls functionality on the call forward station.

### Meridian Mail

Meridian Mail cannot deactivate the CFW functionality on the call forward station by using CFDD FFC.

## Feature packaging

Call Forward Destination Deactivation (CFDD) requires Flexible Feature Code (FFC)/China Flexible Feature Code (CHFFC) package 139.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 16 "LD 15 - Configure Dial String in Customer Data Block." (page 132)

   Configure Dial String in Customer Data Block.

2. Table 17 "LD 57 - Configure Flexible Feature Codes for Call Forward Destination Deactivation." (page 133)

   Configure Flexible Feature Codes for Call Forward Destination Deactivation.

3. Table 18 "LD 18 - Configure Call Forward Destination Deactivation FFC on 16-button DTMF telephone." (page 134)

   Configure Call Forward Destination Deactivation FFC on 16-button DTMF telephone.

The Call Forward All Calls feature is configured in LD 10 for Analog (500/2500 type) telephones and LD 11 for proprietary telephones.

**Table 16**
**LD 15 - Configure Dial String in Customer Data Block.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data block. |
| TYPE: | FFC | Flexible Feature Code gate opener. |
| CUST | | Customer number |



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**Table 16**
**LD 15 - Configure Dial String in Customer Data Block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System Media Gateway 1000B. |
| ... | | |
| - FFCS | YES | Change end of dialing digits. |
| - - STRL | 1-3 | Number of digits to indicate end of dialing. |
| - - STRG | xxx | String to indicate end of dialing. Outpulsing of Asterisk (*) and Octothorpe (#) (OPAO) package 104 is required to out-pulse (*) and (#) in the string.<br><br>The asterisk (*) used to introduce a pause while out-pulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit. |

**Table 17**
**LD 57 - Configure Flexible Feature Codes for Call Forward Destination Deactivation.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |
| TYPE | FFC | Flexible Feature Codes data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| FFCT | (NO) YES | Flexible Feature Confirmation Tone.<br>YES = confirmation tone is required. |
| CODE | DEAF | Deactivate Feature. |
| - DEAF | xxxx | Enter Flexible Feature Code on a telephone. |
| CODE | CFWA | Call Forward All Calls Activate Code. |
| - CFWA | xxxx | Enter Flexible Feature Code to activate. |
| CODE | CFWD | Call Forward All Calls Deactivation Code. |
| - CFWD | xxxx | Enter Flexible Feature Code to deactivate. |
| CODE | CFWV | Call Forward All Calls Verify Code. |
| - CFWV | xxxx | Enter Flexible Feature Code to verify. |
| CODE | CFDD | Call Forward All Calls Destination Deactivation Code. |
| - CFDD | xxxx | Enter Flexible Feature Code. |



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**Table 18**
**LD 18 - Configure Call Forward Destination Deactivation FFC on 16-button DTMF telephone.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG | Add, or Change 16-button data block. |
| TYPE | ABCD | 16-button data block. |
| TBNO | 1-254 | Number of ABCD Table to be added or changed. |
| DFLT | 1-254 | Number of default function table. |
| PRED | YES | Function table is changed for pre-dial.<br>NO = default mnemonics are used. |
| - A | CFDD | Call Forward Destination Deactivation FFC assignment of key. |
| - B | CFWA | Call Forward All Call Activation FFC assignment of key. |
| ... | | |
| **Call Forward Destination Deactivation FFC function can be assigned to any A, B, C or D key of the 16-button DTMF telephone.** | | |

ISDN BRI telephones can deactivate the Call Forward All Call feature. To set up the digital subscriber loop and terminal service profile for a BRI telephone refer to Overlay 27.

## Feature operation

To enable the Call Forward Destination Deactivation feature, complete the following:

| Step | Action |
|---|---|
| **1** | Go off-hook on the "call forward to" Directory Number of the call forwarded telephone and listen for dial tone. |
| **2** | Dial the CFDD FFC followed by DN of the call forward originator and end of dial delimiter. |
| **3** | Response provided. |
| | **--End--** |

The following responses are provided to the user of the call forwarded destination.

1. If originator’s call forward DN is the same as active DN of destination then the call forward feature on originator is deactivated. If the confirmation tone in LD 57 is enabled, then a confirmation tone or



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speech is provided to the destination telephone. Otherwise, silence is provided.

2. If the originator's call forward DN does not match the active DN of the destination, then an overflow tone is provided to the destination telephone.
3. If the Call Forward All Calls functionality on the originator telephone is already deactivated, then an overflow tone is provided to the destination telephone.
4. If the originator does not have call forward all calls defined, then an overflow tone is provided to the destination telephone.

### 16-Button DTMF telephone

To activate CFDD on this telephone, the user must press one of the ABCD function keys that is defined as CFDD FFC, followed by DN of call forward telephone and end of dial delimiter.

### Deactivating Multiple Appearance DN

The Call Forward Destination Deactivation feature operation remains the same. However, if the call forward station is a Multiple Appearance DN (MADN) telephone, then the station's Prime DN is considered to find the Call Forward All Calls functionality for deactivation.

If more than one MADN call forward stations have Call Forward All Calls defined and the call forward DN on one or more MADN call forward stations matches the active DN of telephone B, then the call forward functionality on one or more MADN call forward stations is deactivated.

Any one of MADN call forwarded destination station is allowed to deactivate the call forward function on the call forward station by using the CFDD FFC.



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# Call Forward External Deny

## Contents

This section contains information on the following topics:

“Feature description” (page 137)

“Operating parameters” (page 138)

“Feature interactions” (page 138)

“Feature packaging” (page 139)

“Feature implementation” (page 139)

“Feature operation” (page 140)

## Feature description

This enhancement provides the option to restrict, on a per-telephone basis, the DN that can be programmed for Call Forward All Calls to internal DNs only. Internal DNs are defined as:

- DNs that terminate on an analog (500/2500 type) telephone
- DNs that terminate on a Meridian 1 proprietary telephone
- DNs that terminate on a data terminal defined in LD 10 or LD 11
- Attendant DNs or Centralized Attendant Service (CAS) local attendant DNs
- Listed DNs (LDNs)
- Message Center DNs as defined in LD 23

External DNs include (but are not limited to) trunk access codes, Coordinated Dialing Plan (CDP) steering codes, Basic and Network Alternate Route Selection (BARS/NARS) access codes, Electronic



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Switched Network (ESN) Location Codes, non-message center Automatic Call Distribution (ACD) numbers, Call Park numbers, and Direct Inward Services Access numbers.

When Call Forward External Deny is enabled for a telephone:

- A user trying to forward calls from an analog (500/2500 type) telephone to an external DN receives overflow tone. The telephone is not call forwarded.
- A user trying to forward calls from a Meridian 1 proprietary telephone to an external DN receives overflow tone and the lamp associated with the Call Forward key of the telephone flashes. The telephone is not call forwarded.
- A user trying to forward calls from a Meridian digital or a display telephone to an external DN receives overflow tone. The telephone is not call forwarded and the following message is displayed on M2317 telephones:

  — **Release and try again**
- A user trying to forward calls from a data module to an external DN does not receive overflow tone. Calls are not forwarded and the following message is displayed on M2317 telephones:

  — **Invalid data forward number**

## Operating parameters

External DNs cannot be used with Call Forward All Calls if Call Forward External Deny is enabled for the telephone.

Both ESN access codes and CDP steering codes are considered external DNs, and cannot be used as a Call Forward All Calls DN if Call Forward External is denied for the telephone.

The number of digits specified in LD 10 or LD 11 for the Call Forward DN must be equal to or greater than the number of digits of any other internal DN.

Attendant Administration cannot change Call Forward External Deny Class of Service.

## Feature interactions

### Automatic Call Distribution (ACD)

If Call Forward External Deny (CFXD) is enabled, Call Forward to an ACD DN is allowed only if the ACD DN is a message center.



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### Call Forward All Calls

This feature overrides other Call Forward All Calls parameters. For example, if Call Forward to Trunk Access Code (CFTA) is allowed for the customer, but Call Forward External Deny (CFXD) is enabled for the telephone, CFXD takes precedence and call forwarding to a trunk access code is denied.

### Calling Party Privacy

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (that is, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Network Call Forward

Call Forward External Deny restricts a telephone from being forwarded unconditionally to a number that is not on the home switch. Therefore, Call Forward External Deny and the Integrated Services Digital Network Primary Rate Interface (ISDN PRI) feature Network Call Forward are mutually exclusive.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 19 "LD 10 - Allow/deny Call Forward External Deny for analog (500/2500 type) telephones." (page 140)



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Allow/deny Call Forward External Deny for analog (500/2500 type) telephones.

2. Table 20 "LD 11 - Allow/deny Call Forward External Deny for Meridian 1 proprietary telephones." (page 140)

   Allow/deny Call Forward External Deny for Meridian 1 proprietary telephones.

**Table 19**
**LD 10 - Allow/deny Call Forward External Deny for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | CFXA | Allow Call Forward to an external DN CFXD = Deny Call Forward to an external DN (default). |

**Table 20**
**LD 11 - Allow/deny Call Forward External Deny for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | CFXA | Allow Call Forward to an external DN. CFXD = Deny Call Forward to an external DN (default). |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward No Answer, Second Level

## Contents

This section contains information on the following topics:

“Feature description” (page 141)

“Operating parameters” (page 143)

“Feature interactions” (page 143)

“Feature packaging” (page 147)

“Feature implementation” (page 148)

“Feature operation” (page 149)

## Feature description

Second Level Call Forward No Answer enhances Flexible Call Forward No Answer by forwarding unanswered calls twice. The following example best illustrates this enhancement.

Party A places a call to extension 5000, which does not answer. Extension 5000 has Call Forward No Answer (CFNA) allowed and extension 6000 defined as its CFNA number. The call forwards to extension 6000. This is the first level CFNA.

Extension 6000 also does not answer the call. This telephone has a Call Forward No Answer and Second Level Call Forward No Answer allowed Class of Service (FNA and SFA). As it has a CFNA number of 7000, it forwards there. This is the second level of Call Forward No Answer. Note that the forwarding DN is always obtained from the currently ringing telephone.



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If extension 7000 does not answer the call, one of two things may occur:

- If the original call is a Direct Inward Dialing (DID) or internal call, the forwarded call continues to ring until answered or the calling party disconnects.
- If the original call is extended by the attendant console, Attendant Recall occurs.

Second Level Call Forward No Answer uses the same customer-level timer as Flexible Call Forward No Answer to determine the number of rings before forwarding a call.

Telephones with a message waiting allowed (MWA) Class of Service should have the Message Center DN defined as their FDN. Calls to these telephones forward to the Message Center and are not eligible for Second Level Call Forward No Answer.

Call Forward No Answer Second Level for Message Waiting Allowed Telephones, enables an SFA Class of Service to be defined on telephones with a Message Waiting Allowed (MWA) Class of Service. Thus, a message waiting indication can be activated at the originally dialed DN for Second Level CFNA calls terminating at a message center.

Requirements at the dialed DN for first-level CFNA are as follows:

- Flexible Call Forward No Answer or Hunting is allowed at the customer level for the incoming call type (DID, non-DID, or internal).
- The telephone has an FNA Class of Service.
- The terminating call has rung for the number of rings specified for CFNA or DFNA in the Customer Data Block (LD 15).
- The forwarding DN (Flexible Call Forward No Answer DN [FDN], Coordinated Dialing Plan DN [CDP DN], External Flexible DN [EFD], Hunting [HNT], or External Hunt [EHT]) must be distinct from the ringing DN and be a valid number within the system.

Requirements at the originally called telephone DN for Second Level Call Forward No Answer are as follows:

- Flexible Call Forward No Answer or Hunting is allowed at the customer level for the incoming call type (DID, non-DID, or internal).
- The telephone has SFA and FNA Class of Service.
- Call Forward No Answer has occurred only once prior to ringing this telephone.
- The forwarding DN (FDN, EFD, Hunt, or EHT) must be distinct from the ringing DN and must be a valid number within the system.



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The order of precedence for activation of first level Call Forward No Answer is as follows:

- Call Forward All Calls
- Message Waiting
- Call Forward No Answer, and
- Attendant Recall.

The order of precedence for activation of Second Level Call Forward No Answer is as follows:

- Call Forward All Calls
- Second Call Forward No Answer (CFNA calls only)
- Attendant Recall

## Operating parameters

A maximum of two levels of Call Forward No Answer are allowed for an unanswered call.

Calls directed to an attendant or Automatic Call Distribution (ACD) Message Center cannot have Second Level Call Forward No Answer.

Attendant Administration cannot change the SFA/SFD Class of Service. Error messages are generated if changes made to the Forward No Answer or Hunt Class of Service conflict with the SFA/SFD Class of Service.

## Feature interactions

### Automatic Timed Reminders

When Call Forward No Answer is activated on a telephone, the slow answer timer begins only after the call reaches its final destination.

### Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how these features operate; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

### Call Forward All Calls

Second Level Call Forward No Answer uses the final (ringing) telephone in the chain to obtain Class of Service and forwarding DN information.



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First level treatment operates in the following manner. Suppose that Party A calls Party B, and Party B has programmed Call Forward All Calls to Party C. Flexible Call Forward No Answer will forward a No Answer call at Party C to the forwarding directory number associated with Party B, the dialed DN.

### Call Forward by Call Type

To implement Call Forward by Call Type for Second Level Call Forward No Answer eligible calls, the originating party's call type is checked. If it is internal, the call is forwarded to the Flexible Call Forward No Answer DN (FDN). If it is external, the call is forwarded to the External Flexible DN (EFD).

### Call Forward No Answer

Second Level Call Forward No Answer applies to the Hunt and Flexible Call Forward No Answer options. This is implemented by defining the FNAD, FNAT, or FNAL prompts in LD 15 as FDN or HNT. If the attendant option is defined, an unanswered call goes to the attendant queue and is not eligible for Second Level Call Forward No Answer.

### Call Redirection by Time of Day

Existing Second Level CFNA allows unanswered calls to receive Call Forward No Answer treatment twice. Call Redirection by Time of Day (CRTOD) parameters are obtained from the last rung Directory Number. A maximum of two levels of CFNA is allowed for an unanswered call.

### Call Waiting Redirection

The existing Second Level CFNA treatment is applicable to Call Waiting calls redirected by CFNA (first level) with the Call Waiting Redirection feature which are still not answered at the last rung DN.

### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (for example, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).



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### Directory Number Delayed Ringing

The Directory Number Delayed Ringer (DNDR) feature allows the SCN/MCN (non ringing keys) to actually ring after a definable period of time (DNDR prompt in LD 11). If the time before CFNA takes effect is less than the DNDR time for a particular telephone, CFNA will forward this call before any SCN/MCN keys can ring on this telephone. Note that CFNA is defined in the number of rings and DNDR is defined in seconds.

If the Forward DN telephone is busy or invalid when the call is forwarded, the call will return to the originally called telephone. However, the DNDR delay timer is reapplied to the called telephone if DNDR is defined.

If a call is forwarded, as per existing operation, this call is treated as a new incoming call to the forward DN. For example, if the forward DN has a DNDR value defined, a new timer isgin timing according to the forward DN's DNDR delay.

### Distinctive/New Distinctive Ringing

The ringing cadence for all telephones in a chain of call redirections remains the same as for the original DN called.

### Flexible Call Forward No Answer

If Second Level Call Forward No Answer is disabled, Flexible Call Forward No Answer operates as described.

### Group Hunt

Second Level Call Forward No Answer will not be applied to calls that are Group Hunting.

### Hunting

A forwarded call may be modified by Hunting if the Call Forward No Answer DN is busy. This call is eligible for Second Level Call Forward No Answer if the SFA Class of Service is allowed and a Call Forward No Answer DN has been defined for the last rung DN.

If Group Hunting is active, Second Level CFNA is not applied.



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## Message Centers

There are three types of Message Centers:

- Automatic Call Distribution (ACD)
  Calls forwarded to an ACD Message Center are queued, so that no CFNA timeout occurs.
- Attendant
  Calls forwarded to an Attendant Message Center are queued, so no CFNA timeout occurs.
- DN
  An indirect call forwarded to a DN Message Center and not answered by an operator is forwarded to a second level if SFA for DN-MC.

  It is recommended that DN Message Center stations be denied CFNA, Call Forward Busy (CFB), Call Forwarding (CFW), and Call Hunting (HUNT).

## Multiple Appearance Directory Numbers

Call redirection parameters like Hunt and Call Forward No Answer are derived from the TN data block (LD 20 TNB) of the prime appearance of the called Multiple Appearance Directory Number (MADN). If there is more than one prime appearance, the parameters are selected from the last TN in the DN block for the DN (LD 22 DNB).

If more than one prime appearance of a MADN exists, the following information must be considered prior to configuring call redirection parameters for MADNs.

The DN Block organizes MADN information in numerical TN order. The TN with the highest numerical value (000-0-06-03) is placed at the beginning of the list. The list then continues in descending order with the lowest numerical TN (000-0-03-01) at the end of the list. Service change activity affects the organization of the DN list as described in the following paragraphs:

- If a telephone undergoes Service Change, its TN is moved to the beginning of the DN list, irrespective of the numerical value. This telephone remains at the beginning of the list until another Service Change or a SYSLOAD.
- If a DN is assigned as a Prime DN on a telephone and as a secondary DN on one or more telephones, the DN list is still organized as described in the preceding paragraphs. If only one prime appearance of a DN exists, however, call redirection parameters are derived from the TN of the prime appearance telephone, even though it may not be at the end of the list. A prime appearance is always the first TN used when the system looks for call redirection instructions.



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- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A service change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A Service Change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Slow Answer Recall

When a Call Forward No Answer call is unanswered at a telephone eligible for Second Level Call Forward No Answer, and the call was extended by an attendant, Second Level Call Forward No Answer takes precedence over Slow Answer Recall. If the telephone has a Second Level Call Forward No Answer Denied Class of Service, the system performs Slow Answer Recall for the unanswered call.

### Total Redirection Count

If a call has attempted Call Forward No Answer and was extended by the attendant, the call will not be intercepted when the Total Redirection Count limit has been exceeded. The call will continue to ring the telephone until recalled to the attendant.

If Overflow (OVF), Busy (BSY), or Source (SRCx) is configured as Intercept Treatments, a call attempting Call Forward No Answer, that exceeds the Total Redirection Count limit, will not be intercepted. Further redirections are prohibited and the call continues to ring the current telephone.

### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

## Feature packaging

This feature is included in base system software.



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 21 "LD 15 - Assign Message Center to allow the Message Waiting indication." (page 148)

   Assign Message Center to allow the Message Waiting indication.

2. Table 22 "LD 10 - Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones." (page 148)

   Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones.

3. Table 23 "LD 11 - Add/change Second Level Call Forward No Answer for Meridian 1 proprietary telephones." (page 149)

   Add/change Second Level Call Forward No Answer for Meridian 1 proprietary telephones.

**Table 21**
**LD 15 - Assign Message Center to allow the Message Waiting indication.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | (MCX) MCI | (Exclude) include Message Center. |

**Table 22**
**LD 10 - Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 22**
**LD 10 - Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CLS | (FND) FNA<br>(MWD) MWA<br>(SFD) SFA | (Deny) allow Forward No Answer.<br>(Deny) allow Message Waiting.<br>(Deny) allow second level CFNA<br><br>SFA can be implemented with an MWA Class of Service. |
| FTR | FDN xxxx...x | Flexible Call Forward No Answer DN. |

**Table 23**
**LD 11 - Add/change Second Level Call Forward No Answer for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FDN | xxx...x | Flexible Call Forward No Answer DN. |
| CLS | (FND) FNA<br>(MWD) MWA<br>(SFD) SFA | (Deny) allow Forward No Answer.<br>(Deny) allow Message Waiting.<br>(Deny) allow) Second Level CFNA<br><br>SFA can be implemented with an MWA Class of Service. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward No Answer/Flexible Call Forward No Answer

## Contents

This section contains information on the following topics:

“Feature description” (page 151)

“Operating parameters” (page 153)

“Feature interactions” (page 153)

“Feature packaging” (page 161)

“Feature implementation” (page 161)

“Feature operation” (page 164)

## Feature description

Call Forward No Answer automatically forwards unanswered calls to another DN. The customer can specify the number of rings (1 to 15) before the system invokes Call Forward No Answer. The default is four rings.

Four options are available at the customer level for Call Forward No Answer:

- deny for all telephones
- route all unanswered calls to the attendant
- route all unanswered calls to the Hunt number defined for the telephone
- route all unanswered calls to the Flexible Call Forward No Answer DN defined for the telephone



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Flexible Call Forward No Answer allows the customer to specify, on a per-telephone basis, where an unanswered call should be routed. This is independent of the Hunt number assigned to the telephone. This capability is implemented on a per-customer basis and can be specified for Direct Inward Dialing (DID) and non-DID call types. When activated, a call to a telephone that does not answer within the specified number of ring cycles is forwarded to the Flexible Call Forward No Answer DN (FDN) associated with that telephone.

The Flexible Call Forward No Answer operation applies only to individual DN calls of analog (500/2500 type) telephones, and not to Automatic Call Distribution (ACD) calls.

A call is forwarded under the following conditions:

- The Class of Service of the dialed telephone is Forward No Answer allowed.
- Flexible Call Forward No Answer is enabled at the customer level.
- The call has rung the specified number of times.
- The Call Forward No Answer DN (FDN) is valid and has been assigned.

System or telephone features such as Hunting and Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In these cases, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

When you use Multiple Appearance DNs (MADNs), call redirection is determined based on the Terminal Number (TN) order in your DN block. To determine the TN order, print the DN block from LD 20 or LD 22 (TYPE = DNB). When a call comes in to a MADN, the system begins a search to determine how the call is handled. Using the TN list you printed, the system performs the following search, beginning at the bottom of the TN list and working up.

| Step | Action |
|---|---|
| 1 | Search for the first Prime DN appearance of the MADN with Call Forward All Calls activated. |
| 2 | If there are no Prime DN appearances, the TN at the bottom of the list controls call redirection. |



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The search does not necessarily determine the highest or lowest numerical TN.

**--End--**

## Operating parameters

Calls are forwarded one step only. For Call Forward No Answer enhancements, refer to the Call Forward, Second Level module.

Incoming calls on private lines with the Restricted Call Modification option enabled are not forwarded.

Flexible Call Forward No Answer DN (FDN) can be assigned to telephones with Message Waiting Allowed Class of Service. This is irrespective of the telephone's Class of Service and how forward no answer is specified in the Customer Data Block. Message Center always uses the FDN associated with the telephone to route unanswered calls.

## Feature interactions

### Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another telephone using Call Forward No Answer are charged against the last telephone that answers the call and the controlling telephone releases.

### Attendant Administration

Attendant Administration can assign and change a Flexible Call Forward No Answer DN with the function key on the attendant console.

### Attendant Alternative Answering

When Attendant Alternative Answering (AAA) DN does not answer, the call can be forwarded by CFNA to the DN defined as the CFNA DN for the originally dialed DN. If the originally dialed DN is the attendant, the call is forwarded to the CFNA DN defined for the AAA DN.

### Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override the Call Forward No Answer feature. If the blocked DN of the telephone has the Call Forward No Answer feature active when the SACP key is pressed to ring the DN, the DN will ring until answered or disconnected. No Call Forward No Answer is done for the Attendant Blocking of DN call.

### Attendant Break-In to Inquiry Calls

The operation of Call Forward No Answer is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.



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If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Call Forward No Answer that may be applied to the telephone.

### Attendant Overflow Position

A call rerouted through Attendant Overflow Position will Call Forward to the forwarding DN only if it is the Prime DN or a single appearance DN on that telephone.

### Automatic Call Distribution

The Flexible Call Forward No Answer operation does not apply to Automatic Call Distribution (ACD) calls.

### Automatic Set Relocation

Calls will not forward no answer to a telephone that is being relocated

### Automatic Timed Recall

Flexible Call Forward No Answer timing takes precedence over Automatic Timed Recall timing. Irrespective of the relative timeout intervals for each feature, ringing continues as long as allowed by Call Forward No Answer.

### Automatic Timed Reminders

When Call Forward No Answer is activated on a telephone, the slow answer timer begins only after the call reaches its final destination.

### Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward No Answer feature operates; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

### Call Forward All Calls

Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls party B, and party B has programmed Call Forward All Calls to party C. Flexible Call Forward No Answer will forward a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.



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### Call Forward by Call Type

The sequence for forwarding unanswered calls is Call Forward All Calls, Message Waiting, Call Forward No Answer, then Attendant Recall (if the call is attendant-extended). The same sequence is used when Call Forward by Call Type is active for the customer.

### Call Forward/Hunt Override Via Flexible Feature Code

Call Forward No Answer is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

### Call Forward No Answer, Second Level

Second Level Call Forward No Answer applies to the Hunt and Flexible Call Forward No Answer options. This is implemented by defining the FNAD, FNAT, or FNAL prompts in LD 15 as FDN or HNT. If the attendant option is defined, an unanswered call goes to the attendant queue and is not eligible for Second Level Call Forward No Answer.

### Call Page Network Wide

Call Page Network Wide (PAGENET) does not block a telephone from being programmed to Call Forward No Answer to an external Paging trunk. At call termination time, calls that are forwarded to an external PAGENET uncontrolled trunk are not blocked. However, calls forwarded to an external PAGENET controlled trunk are given access denied intercept treatment at the Paging node.

### Call Redirection by Time of Day

Call redirection parameters for Call Forward No Answer are obtained from the originally dialed Directory Number. When Call Redirection by Time of Day (CRTOD) is activated, unanswered calls given CRTOD treatment are forwarded with CFNA according to the time of day. No changes are made to the existing CFNA feature.

### Call Waiting

If a call to a telephone gets CFNA treatment to another telephone that is busy, Call Waiting and Camp-On do not apply. The call will attempt to terminate on the original DN again.

### Call Waiting Redirection

Per existing Call Forward No Answer feature operation, the call redirection parameters for CFNA are obtained from the originally dialed DN for redirected calls.

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on telephones with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.



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### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding telephone (for example, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Camp-On

When the Call Forward No Answer timer expires for a ringing camped-on call, the call is given Attendant Recall treatment instead of Call Forward No Answer treatment.

### China - Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

### China - Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Dial Access to Group Calls

Call Forward No Answer cannot be applied to a Group Call.

### Departmental Listed Directory Number

Call Forward No Answer to the attendant operates like Call Forward to 0, and are routed to any idle attendant console in the customer group.

### Directory Number Delayed Ringing

The Directory Number Delayed Ringing (DNDR) feature allows the SCN/MCN (non ringing keys) to actually ring after a definable period of time (DNDR prompt in LD 11). If the time before CFNA takes effect is less than the DNDR time for a particular telephone, CFNA will forward this call before any SCN/MCN keys can ring on this telephone. Note that CFNA is defined in the number of rings and DNDR is defined in seconds.



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If the Forward DN telephone is busy or invalid when the call is forwarded, the call will return to the originally called telephone. However, the DNDR delay timer is reapplied to the called telephone if DNDR is defined.

If a call is forwarded, as per existing operation, this call is treated as a new incoming call to the forward DN. For example, if the forward DN has a DNDR value defined, a new timer isgin timing according to the forward DN's DNDR delay.

### Direct Inward Dialing Call Forward No Answer Timer

Call Forward No Answer takes precedence over the Message Center feature.

### Electronic Lock Network Wide/Electronic Lock on Private Lines

For Call Forwarding, the COS and NCOS used for the forwarding call can be taken from either the forwarding telephone or from the forwarded telephone, depending on the option defined in the Customer Data Block.

For example, telephone B call forwards all calls to an external trunk. Telephone A calls telephone B. If OPT = CFF in LD 15 (Call Forward forwarded to party's COS and NCOS), the COS and NCOS of telephone B are used for forwarding the call to the trunk. If OPT = CFO (Call Forward originating party's COS and NCOS), the COS and NCOS of telephone A are used for forwarding the call to the trunk.

### Group Call

Group Call cannot be applied to Call Forward No Answer.

### Group Hunt

Call Forward No Answer (CFNA) can optionally be configured to use a Pilot DN. This option is available when the HUNT DN or the FDN is defined as a Pilot DN.

If an idle station attempted for termination has CFNA defined, then the station is rung. If the station does not answer within the customer specified number of ring cycles, then group hunting will continue with the next DN in the group. The calling party will continue to hear ring back tone until one of the termination conditions mentioned in the "Group Hunt" feature description (the last condition is not applicable in this case) is met, or until they releases the call.

### Group Hunting Queuing Limitation Enhancement

An external call is made to the PLDN. An idle group hunt list member station is rung but does not answer. If the member station has Call Forward No Answer (FNA) or Call Forward by Call Type Allowed (CFTA) Class of Service, then the call is transferred to the attendant after the



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number of ring cycles defined for Call Forward No Answer has been reached. If the call is an internal call, then the system searches for another idle group hunt list member.

### Hot Line

Any Hot Line telephone can be assigned Call Forward No Answer but it applies only to the two-way Hot Line capability.

### Hunting

Hunting may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls to busy party B, and party B has programmed Hunting to party C. Flexible Call Forward No Answer forwards a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.

### ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification "50" is sent to the ICP computer, when the call is answered.

### Incoming Call Indicator Enhancement

When a DID call to a station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward No Answer, the call is not RDI-intercepted to the attendant. The dialed party continues to ring. If the call has been forwarded to the attendant, the Call Forward No Answer ICI lights up, and not the RDI-intercept ICI.

### Listed Directory Numbers, Network Wide

A Listed Directory Number (LDN) that is assigned to an Incoming Call Indicator (ICI) has a higher priority than a CFNA ICI. When a call is forwarded to an LDN through Flexible DN, the call is presented on an LDN ICI.

### Meridian Mail Operator Revert

The Called Party ID can be passed along from the ACD Message Center when Operator Revert is activated. The attendant can now activate the Message Waiting key for the Called Party while active on the redirected call by pressing the Message Indicator key.



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For example, Party A calls Party B, which Call Forward No Answers to Meridian Mail. Party A dials 0 and is transferred to a message center with "live" agents. The agent receiving the call sees information for Party B along with the information for Party A, the calling party.

### Multi-Party Operations

For Call Transfer with Ring No Answer (RGNA) if the user has selected an option other than Standard, the optional treatment has priority over the CFNA option selected in the LD 15. If the user has chosen the standard option for RGNA, the call is treated as a normal CFNA call, and handled according to the options selected for CFNA in LD 15. Once the call is routed to a Night DN during recovery of a failed operation and the Night DN does not answer, the call is treated according to the NFNA and FDN options chosen for the Night DN. The Night DN can use flexible CFNA DN in two levels. MPO misoperation does not change the operation of the DNFD timer if one has been configured in LD 15.

### Multiple Appearance Directory Number Redirection Prime

The MARP TN always controls the call redirection for Call Forward No Answer.

- If a DN is assigned as a Prime DN on a telephone and as a secondary DN on one or more telephones, the DN list is still organized as described in the preceding paragraphs. If only one prime appearance of a DN exists, however, call redirection parameters are derived from the TN of the prime appearance telephone, even though it may not be at the end of the list. A prime appearance is always the first TN used when the system looks for call redirection instructions.
- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A service change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A service change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list back to numerical TN order with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

### Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.



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### Network-Wide Listed Directory Number

A Listed Directory Number (LDN) ICI has a higher priority than a Call Forward No Answer ICI. When a call is forwarded to an LDN through Flexible DN, the call is presented on an LDN ICI.

### Night Service enhancements

Any call which has been presented to the Attendant Overflow Position cannot be removed from the console and re-queued by pressing the Make Set Busy (MSB) key. The call will only be removed if the Attendant Forward No Answer feature is active, and the Attendant Forward No Answer Timer has timed out. In this case, the call is re-queued and the Attendant Overflow Position is idled.

### Periodic Pulse Metering

Metered calls transferred or extended from one station to another using the Call Forward No Answer are charged against the last station at which the call is answered as the controlling station releases. The last party to forward a call onto a metered Periodic Pulse Metering trunk is charged.

### Recall to Same Attendant

If the attendant does not answer a call and the Attendant Forward No Answer feature is equipped, the console is forced into the Position Busy state and the call routed to the first available idle attendant.

### Recorded Announcement for Calls Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) is activated if the call is forwarded to an outgoing external CO trunk with the RANX feature active.

### Recovery on Misoperation of Attendant Console

Call Forward No Answer takes precedence over the Misoperation feature.

### Ring Again on No Answer

If an unanswered call is forwarded to another station by Call Forward No Answer, Ring Again on No Answer is applied to the originally dialed station.

### Slow Answer Recall for Transferred External Trunks

If the ringing station to which the call has been transferred has Call Forward No Answer active, the call is transferred to the call forward DN after the specified number of ring cycles.

### Total Redirection Count

If a call has attempted Call Forward No Answer and was extended by the attendant, the call will not be intercepted when the Total Redirection Count limit has been exceeded. The call will continue to ring the telephone until recalled to the attendant.



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If Overflow (OVF), Busy (BSY), or Source (SRCx) is configured as Intercept Treatments, a call attempting Call Forward No Answer, that exceeds the Total Redirection Count limit, will not be intercepted. Further redirections are prohibited and the call continues to ring the current telephone.

### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 24 "LD 15 - Define Call Forward No Answer for a customer." (page 161)

   Define Call Forward No Answer for a customer.

2. Table 25 "LD 10 - Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones." (page 162)

   Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones.

3. Table 26 "LD 11 - Add/change Flexible Call Forward No Answer for Meridian 1 proprietary telephones." (page 163)

   Add/change Flexible Call Forward No Answer for Meridian 1 proprietary telephones.

4. Table 27 "LD 10 - Implement Call Forward No Answer to the Hunt DN on analog (500/2500 type) telephones." (page 163)

   Implement Call Forward No Answer to the Hunt DN on analog (500/2500 type) telephones.

5. Table 28 "LD 11 - Implement Call Forward No Answer to the Hunt DN on Meridian 1 proprietary telephones." (page 164)

   Implement Call Forward No Answer to the Hunt DN on Meridian 1 proprietary telephones.

**Table 24**
**LD 15 - Define Call Forward No Answer for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | ATT_DATA | Attendant console options |



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**Table 24**
**LD 15 - Define Call Forward No Answer for a customer. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - ICI | xx CFN | Attendant Incoming Call Indicator for Call Forward No Answer, where:<br><br>xx = key number (00-19). |
| TYPE | RDR | |
| - FNAD | (HNT)<br>ATT<br>FDN<br>NO | Forward No Answer DID calls to the Hunt number.<br>Forward No Answer DID calls to the attendant.<br>Forward No Answer DID calls to the Flexible CFNA DN.<br>No Answer DID calls are not forwarded. |
| - FNAT | (HNT)<br>ATT<br>FDN<br>NO | Forward No Answer external calls to the Hunt number.<br>Forward No Answer external calls to the attendant.<br>Forward No Answer external calls to the Flexible CFNA DN.<br>No answer external calls are not forwarded. |
| - FNAL | (HNT)<br>ATT<br>FDN<br>NO | Forward No Answer local calls to the Hunt number.<br>Forward No Answer local calls to the attendant.<br>Forward No Answer local calls to the Flexible CFNA DN.<br>No Answer local calls are not forwarded. |
| - CFNA | 1-(4)-15 | Number of ringing cycles before No Answer calls are forwarded (default is 4). |
| - CFN0 | 1-(4)-15 | Number of normal rings for CFNA, Option 0.<br><br>CFNA has three ringing cycle options. Refer to the User Selectable Call Redirection feature in this technical document for more information. |
| - CFN1 | 1-(4)-15 | Number of normal rings for CFNA, Option 1. |
| - CFN2 | 1-(4)-15 | Number of normal rings for CFNA, Option 2. |

**Table 25**
**LD 10 - Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 25**
**LD 10 - Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (FND) FNA | (Deny) allow Call Forward No Answer. |
| FTR | FDN xxxx...x | Flexible Call Forward No Answer DN (if the DN Expansion package is equipped, the DN can have up to 13 digits). |

**Table 26**
**LD 11 - Add/change Flexible Call Forward No Answer for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FDN | xxx...x | Flexible Call Forward No Answer DN (if the DN Expansion package is equipped, the DN can have up to seven digits). |
| CLS | (FND) FNA | (Deny) allow Call Forward No Answer. |

**Table 27**
**LD 10 - Implement Call Forward No Answer to the Hunt DN on analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| HUNT | xxxx | Hunt DN where a No Answer call is to be routed (if the DN Expansion package is equipped, the DN can have up to 10 digits). |
| CLS | (FND) FNA | (Deny) allow CFNA. |



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**Table 28**
**LD 11 - Implement Call Forward No Answer to the Hunt DN on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (FND) FNA | (Deny) allow CFNA. |
| HUNT | xxxx | Hunt DN where a No Answer call is to be routed (if the DN Expansion package is equipped, the DN can have up to 10 digits). |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward Save on SYSLOAD

## Contents

This section contains information on the following topics:

“Feature description” (page 165)

“Operating parameters” (page 165)

“Feature interactions” (page 166)

“Feature packaging” (page 166)

“Feature implementation” (page 166)

“Feature operation” (page 166)

## Feature description

This feature enables telephones to have their Call Forward (CFW) status saved as part of the data dump routine, thereby allowing the telephone to have its CFW status reinstated following a SYSLOAD. Whether a telephone has Call Forward activated following a SYSLOAD is dependant on the response to the Call Forward Save (CFWS) prompt in LD 17, and the status of the CFW as of the last successful data dump:

- If CFWS is set to NO (the default), no sets will have their CFW saved and all sets will have CFW set to the default (deactivated) following a SYSLOAD; or
- If CFWS is set to YES, all sets will have their CFW status saved and set to the state they were in as of the last successful data dump following a SYSLOAD.

## Operating parameters

There are no operating parameters associated with this feature.



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## Feature interactions

### Call Forward All Calls

### Call Forward by Call Type

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

## Feature packaging

This feature is included in base system software.

## Feature implementation

**Table 29**
**LD 17 - Add or change Call Forward Save on data dump.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | PARM | Systems Parameters |
| ... | | |
| MSCL | ... | |
| - CFWS | (NO) YES | Call Forward Save on SYSLOAD. |

## Feature operation

If CFWS = YES, the Call Forward status of every set is saved at data dump. Should a SYSLOAD occur, all sets are returned to the Call Forward state that they were in as of the last successful data dump.



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# Call Forward to Trunk Restriction

## Contents

This section contains information on the following topics:

“Feature description” (page 167)

“Operating parameters” (page 167)

“Feature interactions” (page 167)

“Feature packaging” (page 168)

“Feature implementation” (page 168)

“Feature operation” (page 168)

## Feature description

The Call Forward to Trunk Restriction feature prevents stations from forwarding calls from their station to a Public Switched Telephone Network (PSTN) trunk. This conforms with the regulatory requirements of certain countries.

A second option of this feature allows calls to be forwarded to a PSTN trunk, as in previous operation, while recording the internal DN of the originating station (rather than the forwarding station) in the Call Detail Recording (CDR) record.

## Operating parameters

The CDR option can only be applied to calls originated by internal telephones. Only the true originator’s DN is recorded.

## Feature interactions

There are no feature interactions associated with this feature.

### CDP/UDP Calls

The CFW restriction will not apply if the call forward DN is a NARS DN.



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## Feature packaging

International Supplementary Features (SUPP) package 131.

## Feature implementation

**Table 30**
**LD 16 - Create or modify the data blocks for trunk routes.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | RDB | Route Data Block. |
| ... | | |
| CFWR | (NO) YES | Call Forward Restriction (does not) does apply to the trunk route. If NO is the response, the IDOP prompt follows. |
| - IDOP | (NO) YES | Identify Originating Party.<br>Responding YES modifies the trunk CDR for internal calls to identify the originating party instead of the forwarding station. If NO is the response, CDR is allowed to proceed as usual. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Forward, Internal Calls

## Contents

This section contains information on the following topics:

“Feature description” (page 169)

“Operating parameters” (page 170)

“Feature interactions” (page 171)

“Feature packaging” (page 174)

“Feature implementation” (page 174)

“Feature operation” (page 175)

## Feature description

The Internal Call Forward (Internal CFW) feature allows you to selectively forward only internal calls to the Internal CFW DN.

Internal CFW is activated/deactivated on a per-telephone basis and is user programmable when Internal CFW is activated. On a Meridian 1 proprietary telephone, the Internal CFW feature (ICF) key is the only access method. On an analog (500/2500 type) telephone, Internal CFW can be accessed by either dialing SPRE and the Internal CFW feature code (9914), or by the appropriate Flexible Feature Codes (FFCs).

All internal calls terminating on the primary (or any single appearance) DN of an Internal CFW active telephone are automatically forwarded to the programmed Internal CFW DN (refer to the “Operating parameters” (page 170) section for information on primary and secondary, and single and multiple appearance DNs).



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An internal call is defined by the Internal CFW feature as one of the following:

- an extension-to-extension call
- a Direct Inward System Access (DISA) call
- an attendant-originated call
- a conference call
- a Group Call feature initiated call
- an incoming trunk call over a trunk route classified as internal (LD 16 where RCLS = INT), and
- an incoming Integrated Services Digital Network (ISDN) trunk call using private numbering.

Non-internal calls are not affected by the Internal CFW feature.

## Operating parameters

Call Forward All Calls takes precedence over Internal CFW, but is not a prerequisite for the Internal CFW feature. For example, if a telephone is already CFW All Calls active, it will not be allowed to activate Internal CFW at the same time. Internal CFW can only be activated if CFW All Calls is explicitly deactivated.

Also, if Internal CFW is active when trying to activate CFW All Calls, Internal CFW will automatically be deactivated.

Internal CFW operation is consistent with the CFW All Calls feature. Therefore, when a Meridian 1 proprietary telephone activates Internal CFW, the following DNs iscome Internal CFW activated:

- the primary DN (key 0), regardless of whether the DN is multiple appearance or not, and
- all secondary DNs that are single appearance.

Consequently, if all the appearances of a multiple appearance DN are on non-primary Meridian 1 proprietary telephone keys, calls to these DNs will never receive Internal CFW treatment.

When an analog (500/2500 type) telephone activates Internal CFW, regardless of whether the DN is multiple appearance or not, Internal CFW becomes activated.

Internal CFW supports only the voice line on digital telephones that have both voice and data options.



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On 2317 telephones, the CFW programming screen (invoked by pressing the CFW softkey) is not displayed when the ICF key is pressed. Instead, the screen displays the previously programmed ICF number.

If an Internal CFW call is rejected, a display message is given if the telephone is digital and has a digit display module (this display message is the same as that given to a failed CFW All Calls activation request). Otherwise, overflow tone is given.

Internal CFW is not maintained through a SYSLOAD.

Internal CFW is not supported on Basic Rate Interface (BRI) telephones.

## Feature interactions

### Attendant Administration

This feature does not support Internal CFW.

### Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override Internal CFW. If the dialed DN of the set is idle, the DN can be blocked; if the DN is busy, busy tone is heard.

### Attendant Busy Verify

When the attendant is using this feature to call a telephone that is Internal CFW active, the call will not receive Internal CFW treatment.

### Attendant-Extended Calls

When the attendant extends a call on its SRC key to a telephone that is Internal CFW active, the call on the SRC key will only receive Internal CFW treatment if it is an internal call.

### Attendant Night Service

When a call to the attendant is redirected to the Attendant Night DN that is defined on an Internal CFW active telephone, the call will only receive Internal CFW treatment if it is an internal call.

### Attendant Overflow

If Attendant Overflow redirects an internal call to a telephone that is Internal CFW active, the call will remain in the attendant queue, and will not receive Internal CFW treatment.



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### Call Forward All Calls
### Call Forward Reminder Tone

If Call Forward Reminder Tone Allowed (CFRA) is in effect, whenever an analog (500/2500 type) telephone with Internal CFW active goes off hook to originate a call, the telephone sounds the reminder tone. The reminder tone is either Call Forward Dial Tone (CFDT) or Call Forward/Message Waiting Dial Tone (CFMW).

If the customer option is set to Call Forward Reminder Tone Denied (CFRD), whenever an analog (500/2500 type) telephone with internal CFW active goes off hook to originate a call, the telephone sounds either the normal dial tone (DIAL) or the Message Waiting Dial Tone (MWDT).

### Call Forward, Break-In and Hunt Internal/External Network Wide

If a treated call is a transfer call and the transferring call is on the treating node, the transferred party is considered. However, when the transferring party is not on the treating node, the transferring party will determine the treatment given.

### Call Forward/Hunt Override Via Flexible Feature Code

Call Forward, Internal Calls is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

### Call Redirection by Time of Day

Call Forward Internal Calls takes precedence over Call Redirection by Time of Day.

### Call Waiting
### Call Waiting Redirection

Internal CFW takes precedence over Call Waiting and Call Waiting Redirection.

### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding set (for example, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).



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If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding set (for example, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

### Camp-On

Internal CFW takes precedence over Camp-On.

### China - Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

### China - Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Do Not Disturb
### Hunting

Internal Call Forward take precedence over Do Not Disturb and Hunting.

### Flexible Voice/Data Terminal Number

Voice calls directed to a dynamic voice/data Terminal Number are forwarded, if either of these features are enabled. Data calls, to a dynamic voice/data TN, are not forwarded.

### Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.



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### Phantom Terminal Numbers (TNs)

Internal CFW cannot be enabled on a Phantom TN.

### Recorded Announcement for Calls Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) feature supports call forward to an outgoing external Central Office (CO) trunk if the trunk has the RANX flag set and is located in a node with a RAN trunk.

### Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

### Remote Call Forward

Remote CFW Activate (RCFA), Remote CFW Deactivate (RCFD), and Remote CFW Verify (RCFV) FFCs can be used only to access CFW All Calls; they cannot be used to access Internal CFW.

### Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

## Feature packaging

Internal CFW requires the following packages:

- Basic Call Processing (BASIC) package 1 (CFW package required but does not have to be enabled)
- 500 Set Dial Access to Features (SS5) package 73 for access to analog (500/2500 type) telephones
- Flexible Feature Codes (FFC) package 139 to implement FFC

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 31 "LD 10 - Add/change Internal CFW for analog (500/2500 type) telephones." (page 175)

   Add/change Internal CFW for analog (500/2500 type) telephones.

2. Table 32 "LD 11 - Add/change CFW Internal Calls for Meridian 1 proprietary telephones." (page 175)

   Add/change CFW Internal Calls for Meridian 1 proprietary telephones.

3. Table 33 "LD 57 - Add/change Internal CFW for analog (500/2500 type) telephones using a Flexible Feature Code." (page 175)

   Add/change Internal CFW for analog (500/2500 type) telephones using a Flexible Feature Code.



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**Table 31**
**LD 10 - Add/change Internal CFW for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Telephone type. |
| FTR | ICF 4-(16)-23<br><br>XICF | Allow Internal CFW for the specified telephone and the maximum forward DN length.<br>Remove Internal CFW from the telephone. |

**Table 32**
**LD 11 - Add/change CFW Internal Calls for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| KEY | xx ICF 4-(16)-23 <nnnn> | Define an Internal CFW feature key for the telephone. The command consists of:<br><br>xx = key number.<br>ICF = feature mnemonic.<br>4-23 = the maximum forward DN length.<br>nnnn = forward DN. |
| | xx null | Remove function/feature from a key. |

**Table 33**
**LD 57 - Add/change Internal CFW for analog (500/2500 type) telephones using a Flexible Feature Code.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG OUT | Add, change, or remove data. |
| TYPE | FFC | Flexible Feature Code. |
| CODE | ICFA<br>ICFD<br>ICFV | Access Code for Internal CFW Activate.<br>Access Code for Internal CFW Deactivate.<br>Access Code for Internal CFW Verify. |
| ICFA | xxxx | Internal CFW Activate code. |
| ICFD | xxxx | Internal CFW Deactivate code. |
| ICFV | xxxx | Internal CFW Verify code. |

# Feature operation

## Meridian 1 proprietary telephone

To forward internal calls from a Meridian 1 proprietary telephone:



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| Step | Action |
|---|---|
| 1 | Press the ICF key. |
| 2 | Dial the number where calls are to be forwarded. |
| 3 | Press the ICF key. |

--End--

To cancel Internal CFW from a Meridian 1 proprietary telephone:

- Press the ICF key.

### Analog (500/2500 type) telephone

To forward internal calls from an analog (500/2500 type) telephone:

| Step | Action |
|---|---|
| 1 | Lift the handset and dial SPRE 9914 (Internal CFW feature code)<br>- ***or*** –<br>Lift the handset and dial the Internal CFW Activate (ICFA) FFC. |
| 2 | Dial the number where calls are to be forwarded. |

--End--

To cancel Internal CFW from an analog (500/2500 type) telephone:

- Lift the handset and dial SPRE 9914 (Internal CFW feature code)
  – ***or*** –
  Lift the handset and dial the Internal CFW Deactivate (ICFD) FFC.



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# Call Forward, Remote (Attendant and Network Wide)

## Contents

This section contains information on the following topics:

“Feature description” (page 177)

“Operating parameters” (page 178)

“Feature interactions” (page 178)

“Feature packaging” (page 180)

“Feature implementation” (page 181)

“Feature operation” (page 185)

## Feature description

Call Forward Remote (Attendant and Network wide) introduces the RCFW feature across the Meridian Customer Defined Network (MCDN), while also providing the attendant with RCFW capabilities. New ISDN FACILITY messages are used to facilitate the RCFW feature operation in an MCDN.

The feature capabilities of the set-based (Flexible Feature Code activated) network wide application of the RCFW feature match those of the current standalone RCFW feature.

The attendant RCFW functionality is controlled by a new flexible Attendant key (RFW). The attendant has the capability to view the current call forward number and determine the call forward status of any station. It is also possible for an attendant to activate or deactivate call forward for a particular station. This functionality is applicable both local within the system and network wide.



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A new optional customer-based password is introduced for attendant RCFW operation. This password is configured in LD 15 and is the only password required for attendant RCFW operation. The station control password previously used by the Flexible Feature Code (FFC) set-based RCFW is not required when the attendant activates RCFW by pressing the RFW key.

## Operating parameters

The network wide application of this feature is only applicable to nodes in an MCDN environment. The nodes in the network must be system switches. No other Central Office (CO) or circuit switched network type is supported for this feature operation.

For set-based network operation of the Remote Call Forward feature, the Station Control Password Length (SCPL) must be configured to be the same length for all nodes in the network. Attempts to operate RCFW with different SCPLs will result in overflow tone being presented to the user.

For network operation of the RCFW feature, the Private Network Identifier (PNI) must be configured consistently for all nodes in the network.

The Attendant and Network Wide RCFW features use the existing RCFW code to activate or deactivate call forward on stations. As such, all limitations applicable to the local RCFW feature are applicable to the network and attendant operation of the feature.

No new hardware is required for this feature.

## Feature interactions

### Basic Rate Interface (BRI)

Since ISDN BRI sets do not support Flexible Feature Codes, Remote Call Forward cannot be activated from a BRI set.

### Call Forward Activation from any Feature
### Call Forward and Busy Status

There are no direct conflicts with either of these features and the RCFW feature.

### Call Forward Destination Deactivation

Remote Call Forward (RCFW) and Call Forward Destination Deactivation (CFDD) provide the same functionality but are activated differently. CFDD does not require the call forward station's control password to deactivate the call forward functionality on the call forward station.

The call forwarded destination can use the Remote Call Forward deactivation FFC as well as CFDD to deactivate the Call Forward All Calls functionality on the call forward station.



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### Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator is tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator is outpulsed to the terminating node to inhibit the number of the forwarding set (that is, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such, as *67 + ACOD + the DN on the terminating node).

### Multiple Appearance Directory Numbers

The RCFW feature only applies to the primary appearances of Multiple Appearance DNs, and it is recommended that only one appearance of a Multiple Appearance DN be configured as the prime DN.

For the case of multiple stations with the same prime DN and SCPW, the RCFW operation will apply to the station that has the Multiple Appearance Redirection Prime (MARP) assigned to it.

If none of the stations having the DN and SCPW assigned are configured as the MARP TN for that DN, the RCFA and RCFD will apply to all stations matching the DN and SCPW.

The attendant-based RCFW feature will only apply remote call forward operation to the prime DN with MARP status. If the DN is not the prime DN or does not have MARP status, overflow tone is received by the user.

### Outpulsing of Asterisk and Octothorpe (OPAO)

If the OPAO package is equipped, the octothorpe (#) is treated as any other dialed digit and will not be used to signal end of dialing. The end of dialing digits to be used are defined in LD 15.

### Phantom Terminal Numbers (TNs)

A Phantom TN does not physically exist. It is configured with no hardware associated with it (that is, no telephones or line cards); however, all required data blocks are configured.

The Phantom TN feature uses the RCFW feature to configure and activate/deactivate the CFW DN on the Phantom TNs.

As the data blocks associated with Phantom TNs match those of standard analog (500/2500 type) telephones configured within the system, the operation of the RCFA and RCFD features on Phantom TNs is applicable



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to the RCFW feature. As such, the set-based local and network RCFW features can be used to configure and activate/deactivate the CFW DN of Phantom TNs.

The Phantom TN feature uses a Default Call Forward (DCFW) DN. If call forward is not active on the Phantom TN, all calls to the Phantom TN DN are routed to the DCFW DN.

The Phantom TN feature modifies the set-based RCFW feature so that if CFW is not active on the Phantom TN, and the CFW DN entered in the RCFV operation matches the DCFW DN, confirmation tone is returned to the RCFV user; if the CFW DN entered does not match the CDFW DN, overflow is returned.

This change to the set-based RCFV operation is applicable to the network RCFV operation. The operation of this feature network wide requires no changes to the ISDN message passing for the set-based network RCFV operation.

There is no Attendant RCFW operation which interacts with the DCFW DN of Phantom TNs.

### Preventing Reciprocal Call Forward

When Preventing Reciprocal Call Forward Allowed (PVCA) is defined in LD 15, a set within the same customer configuration cannot be call forwarded to a set that is call forwarded back to it. Thus, CFW loops are prevented.

This feature applies when the CFW DN is changed by Remote Call Forward. For network operation of the set- and attendant-based RCFW features, entering an invalid CFW DN (under the rules of the PRCF feature) results in overflow tone being returned and the CFW DN being ignored.

### Traffic Measurements

The peg count, for the attendant RFW key, is generated on the first RFW key press of the RCFW operation. While the RFW key may be pressed multiple times during a single RCFW function, the peg count will only be implemented once.

The RFW key peg count is included in the TFC005 feature key usage traffic report.

## Feature packaging

The Attendant Remote Call Forward (ARFW) package 253 must be provisioned to activate the Attendant-based RCFW feature.



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For network operation the following software packages are required:

- Integrated Services Digital Network (ISDN) package 145
- Network Alternate Route Selection (NARS) package 58
- Any other trunk or dialing plan packages, as required by the customer's configuration

The following are prerequisites for set-based RCFW:

- Optional Features (OPFT) package 1
- Flexible Feature Codes (FCC) package 139
- Controlled Class of Service (CCOS) package 81

The following are prerequisites for implementation on analog (500/2500 type) telephones:

- Special Service for 2500 Sets (SS25) package 18
- 500 Set Dial Access to Features (SS5) package 73

# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 34 "LD 15 - Set the Station Control Password Length." (page 182)

   Set the Station Control Password Length.

2. Table 35 "LD 15 - Configure a Special Prefix Number (SPRE) for the customer." (page 182)

   Configure a Special Prefix Number (SPRE) for the customer.

3. Table 36 "LD 57 - Define Remote Call Forward FFCs and set FFCT." (page 182)

   Define Remote Call Forward FFCs and set FFCT.

4. Table 37 "LD 10 - Set the Station Control Password and allow Call Forward." (page 183)

   Set the Station Control Password and allow Call Forward.

5. Table 38 "LD 11 - Set the Station Control Password and allow Call Forward." (page 183)

   Set the Station Control Password and allow Call Forward.

6. Table 39 "LD 12 - Configure the attendant console RFW key." (page 184)



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Configure the attendant console RFW key.

7. Table 40 "LD 15 - Configure the Attendant RCFW password." (page 184)

   Configure the Attendant RCFW password.

## Set-based configuration

**Table 34**
**LD 15 - Set the Station Control Password Length.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FFC | Flexible Feature Code |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - SCPL | 0-8 | Station Control Password Length (must be consistent network wide). |
| - FFCS | YES | Change end of dialing digits in FFC. |
| - - STRL | 1-3 | Number of digits to indicate FFC end of feature activation. |
| - - STRG | (#) xxx | One to three digits to indicate FFC end of a feature activation. |

**Table 35**
**LD 15 - Configure a Special Prefix Number (SPRE) for the customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - SPRE | xxx | Special Prefix Number. |

**Table 36**
**LD 57 - Define Remote Call Forward FFCs and set FFCT.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Codes. |
| CUST | xx | Customer number, as defined in LD 15 |
| FFCT | (NO) YES | Confirmation tone is (is not) to be given after an FFC. |



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**Table 36**
**LD 57 - Define Remote Call Forward FFCs and set FFCT. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CODE | RCFA | Remote Call Forward Activate. |
| RCFA | xx | xx = RCFA code. |
| CODE | RCFD | Remote Call Forward Deactivate. |
| RCFD | xx | xx = RCFD code. |
| CODE | RCFV | Remote Call Forward Verify. |
| RCFV | xx | xx = RCFV code. |

**Table 37**
**LD 10 - Set the Station Control Password and allow Call Forward.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| FTR | CFW 4-(16)-23 | Allow Call Forwarding and set the forwarding DN length. |

**Table 38**
**LD 11 - Set the Station Control Password and allow Call Forward.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| SCPW | xxxxxxxx | Station Control Password (0 to 8 digits, defined in LD 15). |
| KEY | xx CFW 4-(16)-23 | Assign Call Forward key (xx) and set the forwarding DN length. |



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### Attendant-based configuration

A new Flexible Attendant feature key, RFW, has been added to this overlay. Configuration of the key on the attendant console is required to allow attendant access to the RCFW feature. Configuration of the RFW key is only allowed if the ARFW package is equipped.

**Table 39**
**LD 12 - Configure the attendant console RFW key.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | 2250 | Attendant console type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| KEY | xx RFW | Key number assigned as Attendant Remote Call Forward key. |

**Table 40**
**LD 15 - Configure the Attendant RCFW password.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | ATT_DATA | Attendant console options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| - IRFR | (NO) YES | Internal Remote Call Forward Password required.<br><br>An internal password is the password required to perform an attendant RCFW operation within the same customer as the attendant. |
| - - IRFP | xxxxxxxx | Internal RCFW Password (only prompted if the response to IRFR is YES).<br>The password length is one to eight digits; the password is numeric only. |



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**Table 40**
**LD 15 - Configure the Attendant RCFW password. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - XRFR | (NO) YES | External Remote Call Forward Password required.<br><br>An external password is the password required to perform an attendant RCFW operation on a different customer than the attendant. |
| - XRFP | xxxxxxxx | External RCFW password (only prompted if the response to XRFR is YES).<br>The password length is one to eight digits; the password is numeric only. |

# Feature operation

## Network Wide Set-based Remote Call Forward

From the remote set dial:

| Step | Action |
|---|---|
| **1** | FCC RCFA code. |
| **2** | SCPW for the set to be forwarded. |
| **3** | The complete DN of the set to be forwarded. This DN is the full DN required to call the set to be forwarded from the user's present location.<br><br>**Expected Result:** Confirmation tone is delivered to the user.<br><br>From the remote set continue dialing: |
| **4** | The CFW DN to be activated followed by the end of dial indicator (#).<br><br>**Expected Result:** Confirmation tone is delivered to the user.<br><br>Error Condition: If an error should occur during set-based RCFW, the user is presented with an Overflow tone. To remove the error condition, the user must release from the operation and begin again. |

**--End--**

## Attendant-based Remote Call Forward

From the attendant console, perform the following:



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**Procedure 1**
**Attendant-based Remote Call Forward**

| Step | Action |
|---|---|
| 1 | Press an idle loop key followed by the RFW key.<br><br>**Expected Result:** The RFW key is flashing and the Loop key is steady lit. |
| 2 | Dial the DN of the set to be forwarded.<br><br>Expected Result: If a password is required, the RFW key is winking, and the console display shows "PWD –". If the console does not support alpha characters, the display is blank.<br><br>If a password is not required, the console display will show the DN of the set to be forwarded followed by the CFW DN stored on that set. The RFW key lamp will display the status of the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active. Proceed to Step 4. |
| 3 | Dial the password followed by #.<br><br>**Expected Result:** The console display will show the DN of the set to be forwarded followed by the CFW DN stored on that set. The RFW key lamp will display the status of the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active. |
| 4 | The user can now enter a new CFW DN or press the RFW key to activate or deactivate the stored CFW DN.<br><br>**Expected Result:** The console display will show the DN of the set to be forwarded followed by the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active. |
| 5 | When RCFW operation is in this state, the user has the following three options:<br><br>• Press the Release or Release Source key to terminate RCFW operation.<br>• Press the RFW key to reverse the CFW status.<br>• Enter a new CFW DN to begin the task of changing the CFW DN programmed. The new CFW DN is not active until the RFW key is pressed again.<br><br>Error Condition: If an error should occur during the attendant-based RCFW, the user is presented with an Overflow |



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tone. To remove the error condition, the user must release from the operation and begin again.

**--End--**



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# Call Forward/Hunt Override Via Flexible Feature Code

## Contents

The following are topics in this section:

“Feature description” (page 189)

“Operating parameters” (page 190)

“Feature interactions” (page 190)

“Feature packaging” (page 194)

“Feature implementation” (page 194)

“Feature operation” (page 196)

## Feature description

Call Forward Override provides all telephone users (having a specific Class of Service) and attendants with the ability to override Intercept Computer Call Forward (ICP-CFW), Call Forward All Calls, Call Forward No Answer, Hunting and Make Set Busy by entering a Flexible Feature Code. In order to use this feature, the originating set must have Call Forward Hunt Allowed (CFHA) Class of Service. When this feature is enabled if override is attempted, and the called party is idle, the set is rung regardless of any diversion. If the dialed set is busy and has Hunt active, the calling party will terminate on the wanted set and receive a busy indication. Sets without Call Forward/Hunt Override denied (CFHD) Class of Service will not be able to use the Call Forward/Hunt Override (CFHO) Via Flexible Feature Code (FFC) feature.

Call Forward/Hunt Override Via FFC works in network environments with system nodes and Meridian Customer Defined Network (MCDN) links.



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## Operating parameters

The Call Forward/Hunt Override FFC can only be used in pre-dial mode from a set (for instance, it must be dialed before dialing the DN that has Call Forward All Calls, Intercept Call Forward, Call Forward No Answer, Internal Call Forward, Hunt, or Make Set Busy active).

The Call Forward/Hunt Override FFC can only be dialed from its own node (that is, it must be dialed before any trunk access code).

On an ABCD set the Call Forward/Hunt Override FFC can only be configured as a pre-dial FFC (ABCD sets are a type of German telephone).

Call Forward/Hunt Override FFC can only be used against extensions with one of the following type: HOT/MCN/MCR/SCN/SCR/Basic Rate Interface (BRI) DNs and analog (500/2500 type) telephones.

It is not possible for BRI extensions to dial a Call/Forward Hunt Override FFC.

The Call Forward/Hunt Override Via FFC feature can only be used in standalone and MCDN environments. If no MCDN links are involved, no information about Call Forward/Hunt Override is passed on to other nodes.

To get the functionality of Call Forward/Hunt Override Via FFC in an MCDN environment these enhancements must be integrated in the originating node, terminating node and any intermediate nodes.

## Feature interactions

### Attendant Blocking of DN

Using Call Forward/Hunt Override FFC after activation of ABDN is not allowed. Any attempt is canceled and overflow tone is returned.

### Automatic Call Distribution

Automatic Call Distribution (ACD) DNs are not overridden by Call Forward/Hunt Override Via FFC. Any attempt is canceled and access denied treatment is returned. Individual DNs on an ACD set are overridden by Call Forward/Hunt Override Via FFC with the same limitations as for other sets.

### Attendant Barge-in
### Attendant Busy Verify
### Attendant Break-in

Using Call Forward/Hunt Override Via FFC after activation of Barge-in, Busy Verify or Break-in is not allowed. Attempts is canceled and overflow tone is returned.



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Using post-dial Break-in after dialing the Call Forward/Hunt Override FFC is possible after encountering a busy set, if Break-in is enabled.

### Basic Rate Interface (BRI)

BRI sets are not supported; any attempt to dial Call Forward/Hunt Override from a BRI set is ignored and access denied treatment is returned.

### BRIT

BRI TIE trunks in a Meridian Customer Defined Network (MCDN) are supported.

### Call Forward-older features

The following features are overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the features themselves:

- Call Forward All Calls
- Call Forward No Answer
- Call Forward and Busy Status
- Call Forward, Internal Calls
- Call Forward No Answer/Flexible Call Forward No Answer
- Make Set Busy
- Secretarial Filtering

### Call Redirection by Time of Day

Call Forward/Hunt Override Via FFC has precedence over Call Redirection by Time of Day.

### Call Transfer

A set can activate Call Forward/Hunt Override Via FFC when initiating a transfer. If the transfer is completed while ringing, the Call Forward/Hunt Override will still be active and passed on to the transferred party.

### Call Waiting

Call Waiting can be used even if the Call Forward/Hunt Override Via FFC feature has been activated. When a busy set with Call Waiting configured is encountered, it will terminate on Call Waiting.

### Call Waiting Redirection

There is no interaction with the Call Waiting treatment component of the Call Waiting Redirection feature. However, Call Forward/Hunt Override Via Flexible Feature Code does override CFNA, and thus the CFNA treatment given to unanswered Call Waiting calls by the Call Waiting Redirection



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feature is overridden by the CFHO feature. The incoming call will continue to be given Call Waiting treatment as if the Call Waiting Redirection feature is disabled when the CFHO feature is enabled by the calling party.

### Camp-on

When a busy set is encountered, it is possible to Camp-on to the set, even if Call Forward/Hunt Override Via FFC has been activated.

### Digital Private Network Signaling System One (DPNSS1)

DPNSS1 is only supported as an incoming trunk transferred to a MCDN environment using Call Forward/Hunt Override Via FFC.

### Direct Inward System Access

Direct Inward System Access is not supported. Any attempt to dial the Call Forward/Hunt Override FFC is ignored and access denied treatment is returned.

### Do Not Disturb

Do Not Disturb is not overridden by the Call Forward/Hunt Override Via FFC feature.

### Flexible DN
### External Flexible DN

It is not possible to store the Call Forward/Hunt Override FFC as a Flexible Directory Number or External Flexible Directory Number.

### Group Call

It is not possible to use the Call Forward/Hunt Override FFC as a Group Call DN.

### Group Hunt

Primary Line Directory Numbers (PLDNs) are not overridden by the Call Forward/Hunt Override Via FFC feature. Any attempt is ignored and access denied treatment will result.

### Hunt

This feature is overridden by the Call Forward/Hunt Override Via FFC feature. If a set activating Call Forward/Hunt Override Via FFC encounters a busy set no hunt steps is performed; the call will terminate on the DN and busy tone is returned.

### Hunt DN/External Hunt DN

It is not possible to store the Call Forward/Hunt Override FFC as a Hunt or External Hunt DN.



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### Idle Extension Notification

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When a busy set is encountered, it is possible to place an Idle Extension Notification request against the set.

### Intercept Computer Call Forward

This feature is overridden by the Call Forward/Hunt Override Via FFC feature. The Call Forward/Hunt Override FFC replaces the Intercept Computer Override FFC.

### Intercept Computer Dial from Directory - Pre-dial Operations

Call Forward Hunt Override Via Flexible Feature Code can be dialed prior to dialing the DN from the Intercept Computer.

### Last Number Redial

The Call Forward/Hunt Override FFC and the dialed DN are stored under Last Number Redial.

### Multiple Appearance Multiple Call Arrangements (MCAs)
### Multiple Appearance Single Call Arrangements (SCAs)

If the Call Forward/Hunt Override FFC is used against an MCA (MCR/MCN) or SCA (SCR/SCN) DN it will override any active forward and terminate on all idle appearances. If all appearances are busy, busy treatment is returned.

### Primary Line Directory Number (PLDN)

It is not possible to store the Call Forward/Hunt Override FFC as a PLDN.

### Phantom TN

If Call Forward/Hunt Override Via FFC is used against a Phantom TN, the attempt is canceled and overflow tone is given.

### Priority Override

It is possible to use Priority Override after using the Call Forward/Hunt Override FFC and encountering a busy set.

### Radio Paging

If Radio Paging is activated in a call where Call Forward/Hunt Override has been used, the Call Forward/Hunt Override feature is deactivated.

### Ring Again
### Network Ring Again

Using the Ring Again feature is possible after using the Call Forward/Hunt Override FFC and encountering a busy signal. Ring Again can be placed against the set for which the Call Forward/Hunt Override FFC was used (that is, the set with CFW active should be rung by the Ring Again feature).



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### Ring Again No Answer
### Network Ring Again No Answer

Using the Ring Again No Answer feature is possible after using the Call Forward/Hunt Override FFC and encountering an idle set that does not answer. Ring Again No Answer can be placed against the set for which the Call Forward/Hunt Override FFC was used (that is, the set should be rung by the Ring Again No Answer feature).

### Single Digit Access

It is not possible to store Call Forward/Hunt Override FFCs in a Single Digit Access list.

### Semi-automatic Camp-On

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When encountering a busy set, it is possible to activate Semi-automatic Camp-On, if it is applicable.

### Speed Call

The Call Forward/Hunt Override FFC cannot be stored in a speed call list.

## Feature packaging

In a standalone environment, the Flexible Feature Codes (FFC) software package 139 must be provisioned to activate this feature.

For network environments, Network Attendant Service (NAS) package 159 must also be provisioned. Attendant Overflow Position (AOP) package 56 must be restricted, as it is mutually exclusive with Network Attendant Service.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 41 "LD 57 - Define FFC for Call Forward/Hunt Override." (page 195)

   Define FFC for Call Forward/Hunt Override.

2. Table 42 "LD 10 - Set Class of Service for the Forward/Hunt Override Via FFC feature for analog (500/2500 type) telephones." (page 195)

   Set Class of Service for the Forward/Hunt Override Via FFC feature for analog (500/2500 type) telephones.

3. Table 43 "LD 11 - Set Class of Service for the Forward/Hunt Override Via FFC feature for Meridian 1 proprietary telephones." (page 195)



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Set Class of Service for the Forward/Hunt Override Via FFC feature for Meridian 1 proprietary telephones.

4. Table 44 "LD 18 - Configure ABCD key for the Forward/Hunt Override Via FFC feature." (page 195)

   Configure ABCD key for the Forward/Hunt Override Via FFC feature.

**Table 41**
**LD 57 - Define FFC for Call Forward/Hunt Override.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | FFC | Flexible Feature Code. |
| ... | | |
| CODE | CFHO | Call Forward/Hunt Override Via FFC. |
| CFHO | nnnn | Call Forward/Hunt Override FFC. |

**Table 42**
**LD 10 - Set Class of Service for the Forward/Hunt Override Via FFC feature for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Type of telephone. |
| ... | | |
| CLS | (CFHD) CFHA | Call Forward/Hunt Override Via FFC is (denied) or allowed. |

**Table 43**
**LD 11 - Set Class of Service for the Forward/Hunt Override Via FFC feature for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| ... | | |
| CLS | (CFHD) CFHA | Call Forward/Hunt Override Via FFC is (denied) or allowed. |

**Table 44**
**LD 18 - Configure ABCD key for the Forward/Hunt Override Via FFC feature.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |



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**Table 44**
**LD 18 - Configure ABCD key for the Forward/Hunt Override Via FFC feature. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE | ABCD | Modifying 16-button DTMF. |
| ... | | |
| PRED | YES | Function table for pre-dial. |
| A | CFHO | CFHO is assigned to key A. |
| B | CFHO | CFHO is assigned to key B. |
| C | CFHO | CFHO is assigned to key C. |
| D | CFHO | CFHO is assigned to key D. |

# Feature operation

## Standalone

To activate the Call Forward/Hunt Override feature, the user dials the FFC for Call Forward/Hunt Override and the DN of the wanted party. If the set is idle, the set is rung regardless of any diversion (for example, Call Forward All Calls, Intercept Call Forward, Call Forward No Answer, or Hunt) or Make Set Busy on the set.

If the set(s) have displays, the display(s) are updated. If the display on the originating set is updated when the call is answered, the Call Forward/Hunt Override FFC will no longer be displayed.

If the dialed set is busy and Hunt is active, the calling party will terminate on the wanted set and will receive busy indication.

If the dialed set is idle, but does not answer within the defined number of ringing cycles for CFNA, the call is not forwarded (that is, it continues to ring).

If the dialed set is busy, the attendant can activate Camp-on, if Camp-on is applicable. In addition, Ring Again can be placed against a set for which Call Forward/Hunt Override was used and a busy set was encountered.

## Network

The user gets the same functionality in a Meridian Customer Defined Network (MCDN) as in standalone environments. The Call Forward/Hunt Override information is transmitted from the originating node to the terminating node using the Network Attendant Service (NAS) feature.

Activation of the service is call dependent; network-wide Call Forward/Hunt Override is part of the NAS feature.



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# Call Hold, Deluxe

## Contents

This section contains information on the following topics:

“Feature description” (page 197)

“Operating parameters” (page 198)

“Feature interactions” (page 198)

“Feature packaging” (page 199)

“Feature implementation” (page 199)

“Feature operation” (page 200)

## Feature description

Deluxe Call Hold (DHLD) offers two options: Individual Hold and Exclusive Hold.

Individual Hold indicates only those calls placed on hold on Meridian 1 proprietary telephones in a multiple appearance, single call arrangement. When a user puts a call on hold, normal hold (winking) is indicated at the user’s telephone only. A slow flicker is shown at all other telephones with the multiple appearance.

With Exclusive Hold Class of Service, multiple appearances of a line remain exclusive to the user’s telephone, even when the call is put on hold. While hold (winking) is indicated at the telephone holding the call, the Directory Number (DN) lamp is steadily lit on all other appearances of the held call. The Privacy Release key must be used for access by other appearances of the DN. Telephones with the Exclusive Hold capability can be held at any single-line or Meridian digital telephone with an appearance.



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## Operating parameters

Exclusive Hold has priority over Individual Hold. If a telephone is equipped with Exclusive Hold, the other telephones receive the Exclusive, not Individual, Hold indication.

## Feature interactions

### Attendant Administration

Deluxe Hold (DHLD) cannot be administered through the Attendant Administration feature.

### Attendant Break-In

The attendant cannot break in to a call on hold.

### Camp-On, Forced
### Override, Enhanced
### Override, Priority

Neither held calls nor telephones with calls on hold can be camped on or overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-on or Priority Override.

### Call Hold, Deluxe

When a call is retrieved from hold, the calling and called parties' displays reflect their individual DPD Class of Service options.

### Calling Line Identification

In a trunk call for ISDN interfaces, if the originating party puts the call on hold and then retrieves the call, the CLID at the originating party will reflect the trunk access code and member number. This behavior is not applicable to transferred call scenarios.

### Call Park on Unsupervised Trunks

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state is disconnected if left in that state for an extended period.

### Call Party Name Display

When a call is put on hold, the holding telephone's display clears. The held telephone's display does not change. When the telephone reestablishes the call, the display returns the original DN and name.

### Call Transfer

A consultation call can be placed on Hold.

### Called Party Control on Internal Calls

The calling party and called party can put either party on hold. However, the calling party cannot release the call while the called party is on hold. The called party is permitted to release the call.



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### Calling Party Privacy

When a user takes an incoming trunk call with the Privacy Indicator off of hold, no Calling Party Number or Name is displayed on the set.

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is put on hold by another station at the same node. This restriction also applies to the unrequested party if the unrequested party is located at the same node as the requested party (standalone) or if the requested party and the unrequested party are linked using DPNSS1.

### Mixed DNs

If a call is put on Exclusive Hold in a mixed Directory Number (DN) group, other telephones with an appearance of the DN that go off hook are not included in the call, nor do they receive any tone. Privacy Release cannot be used with exclusively held calls in a mixed-appearance DN group.

### Multiple Appearance Directory Number

If two or more proprietary sets of the same Directory Number are in conference due to privacy release or privacy override, then only one set can hold the call at a given time.

### Music, Enhanced

A caller placed on Hold by a member of a multiple appearance group receives Music regardless of whether the call is on Hold or Exclusive Hold.

### Predictive Dialing

If an established call is put on hold by the set initiating the Fast Transfer, the switch will not be able to transfer the call. The switch can only transfer a call if it is in the established state.

## Feature packaging

Deluxe Hold (DHLD) package 71 has no feature package dependencies.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 45 "LD 15 - Enable/disable Individual Hold for the customer." (page 200)

   Enable/disable Individual Hold for the customer.

2. Table 46 "LD 10 - Enable/disable Exclusive Hold for analog (500/2500 type) telephones" (page 200)

   Enable/disable Exclusive Hold for analog (500/2500 type) telephones.

3. Table 47 "LD 11 - Enable/disable Exclusive Hold for Meridian 1 proprietary telephones" (page 200)



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Enable/disable Exclusive Hold for Meridian 1 proprietary telephones

**Table 45**
**LD 15 - Enable/disable Individual Hold for the customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | (IHD) IHA | (Disable) enable Individual Hold. |

**Table 46**
**LD 10 - Enable/disable Exclusive Hold for analog (500/2500 type) telephones**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (XHD) XHA | (Disable) enable Exclusive Hold. |

**Table 47**
**LD 11 - Enable/disable Exclusive Hold for Meridian 1 proprietary telephones**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (XHD) XHA | (Disable) enable Exclusive Hold. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Hold, Individual Hold Enhancement

## Contents

This section contains information on the following topics:

“Feature description” (page 201)

“Operating parameters” (page 203)

“Feature interactions” (page 203)

“Feature packaging” (page 205)

“Feature implementation” (page 205)

“Feature operation” (page 207)

## Feature description

Individual Hold Enhancement (IHE) expands the functionality of the Individual Hold feature. This enhancement is part of Deluxe Call Hold. Individual Hold Enhancement provides, in a single line Multiple Appearance Directory Number (MADN) environment, the following options:

- Lamp Option
- Release Option

With the Lamp Option allowed (HLPA), if one of the single line MADNs is on hold, all other appearances of the same single line MADN now remain steadily lit.

With the Lamp Option denied (HLPD), the existing Individual Hold functionality is retained.



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With the Release Option allowed (HRLA), if the user presses the Hold key while another member of the same single line MADN is still active on the call, the set that put the call on hold is now disconnected from the call.

With the Release Option allowed (HRLA), if the user is the only active member of the single line MADN on the call, pressing the hold key puts the call on hold as per the existing operation.

With the Release Option denied (HRLD), the existing Individual Hold functionality is retained.

Table 48 "Lamp Status of a single line MADN with Lamp (HLPA/HLPD) and Release (HRLA/HRLD) Options configured" (page 202) shows the lamp status of a single line MADN when the Lamp (HLPA/HLPD) and Release (HRLA/HRLD) Options are configured in LD 15.

**Table 48**
**Lamp Status of a single line MADN with Lamp (HLPA/HLPD) and Release (HRLA/HRLD) Options configured**

| OPT in LD 15 | Held or Disconnected Appearance | Other Appearances |
|---|---|---|
| IHA, HLPD, HRLD (See Note "1" (page 202) ) | wink (held appearance) | flicker |
| IHA, HLPA, HRLD | wink (held appearance) | steadily lit |
| IHA, HLPD, HRLA (See Note "2" (page 202) ) | steadily lit (disconnected appearance) | steadily lit |
| IHA, HLPD, HRLA (See Note "3" (page 202) ) | wink (held appearance) | flicker |
| IHA, HLPA, HRLA (See Note "2" (page 202) ) | steadily lit (disconnected appearance) | steadily lit |
| IHA, HLPA, HRLA (See Note "3" (page 202) ) | wink (held appearance) | steadily lit |
| **In this situation, the existing functionality of Individual Hold is retained.**<br><br>**In this situation, a single line MADN member is disconnected from the active call. Another member of the same single line MADN remains active on the call.**<br><br>**In this situation, a single line MADN member places a call on hold. No other member of the same single line MADN is active on the call.** | | |



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## Operating parameters

For Individual Hold Enhancement to be activated, Individual Hold Allowed (IHA) and the Lamp (HLPA/HLPD) and Release (HRLA/HRLD) Options must be defined in the Customer Data Block. Also, a single line MADN must be defined for the sets.

The Lamp Option applies to Meridian 1 proprietary sets with a call on hold and to analog (500/2500 type) sets which perform the Permanent Hold operation.

If the single line MADN member is an analog (500/2500 type) set, the lamp option only applies when Permanent Hold is initiated from that set.

The Release Option only applies when two or more parties with the same single line MADN are active in a conference call.

The Release Option (HRLA/HRLD) only applies to Meridian 1 proprietary sets with a Hold key or to Meridian 1 proprietary sets with Automatic Hold enabled (CLS = AHA) in LD 11.

For Meridian 1 proprietary sets with the Release Option allowed (HRLA), the Conference (A03/A06) and Transfer (TRN) keys are ignored if more than one single line MADN is active on a Conference call.

For analog (500/2500 type) sets, Transfer, Conference, and Permanent Hold work as per the existing operation.

## Feature interactions

### Automatic Call Distribution

When an Individual Directory Number (IDN) on an Automatic Call Distribution (ACD) set is configured as a single line MADN, both the Lamp and Release Options of the Individual Hold Enhancement feature are applicable to that IDN.

### Automatic Hold

When a proprietary set has Automatic Hold allowed and more than one single line MADN (SCR/SCN/HOT/PVR/PVN) is active on a conference call, if the user presses the hold key or presses the active single line MADN, the following occurs:

- Without the Release Option enabled, the active call on the single line MADN is put on hold. That is, the lamp on the single line MADN flashes as per the existing operation.
- With the Release Option allowed (HRLA), the active call on the single line MADN is disconnected.



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If only one single line MADN is active on a conference call, the existing operation is retained.

### Multi-Party Operations

*Call Join*

If a conference is set up using Call Join, Individual Hold Enhancement still functions.

When the Lamp Option is allowed (HLPA) and the user presses the Hold key on an active single line MADN in Call Join operation, the lamps of all other appearances of the same single line MADN are steadily lit.

When the Release Option is allowed (HRLA) and the user presses the Hold key on an active single line MADN in order to enlarge a conference using the Call Join feature, the following occurs:

- The call is disconnected if another member of the same single line MADN is still active on the call.
- The call is placed on hold if the active single line MADN is the only active member of the single line MADN on the call.

### Conference (A03/A06, C6A)

With the Release Option allowed (HRLA), the Conference key is ignored on the Meridian 1 proprietary set, when more than one Multiple Appearance Directory Number (MADN) is active in the conference.

### Exclusive Hold

The Exclusive Hold feature takes precedence over the Lamp Option of the Individual Hold Enhancement feature. The lamps on all other single line appearances of the MADN are steadily lit while the call is held on one of the single line MADNs. When the Lamp Option is enabled (HLPA), the existing Exclusive Hold functionality is retained.

With the Release Option allowed (HRLA) and more than one single line MADN active in a conference, the call is disconnected when the hold key is pressed.

### Permanent Hold on an analog (500/2500 type) set

When an analog (500/2500 type) set puts a call on Permanent Hold, the lamp status remains steadily lit on all other members of the same single line MADN if the customer has the Lamp Option allowed.

With the Release Option configured, if an analog (500/2500 type) set with the same single line MADN initiates Permanent Hold, the call is not dropped even if other appearances are active on this call. This is as per the existing functionality.



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### Switch Hook Flash

When a single line MADN member uses Switch Hook Flash to place a call on hold, all other appearances of the same single line MADN remain lit as per the existing operation.

When an analog (500/2500 type) set with the same single line MADN initiates hold by Switch Hook Flash, the existing functionality is retained.

### Transfer (TRN)

For Meridian 1 proprietary sets with the Release Option allowed (HRLA), the transfer feature is disabled on the single line MADN, while more than one appearance is active in the conference.

For analog (500/2500 type) sets, transfers work as per the existing operation.

## Feature packaging

Individual Hold Enhancement requires Deluxe Call Hold (DHLD) package 71.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 49 "LD 15 - Configure Individual Hold Allowed, the Individual Hold Lamp Option and the Individual Hold Release Option in the Customer Data Block." (page 206)

   Configure Individual Hold Allowed, the Individual Hold Lamp Option and the Individual Hold Release Option in the Customer Data Block.

2. Table 50 "LD 10 - Enable Call Transfer Allowed (XFA), Enhanced Hot Line Denied (EHTD), Exclusive Hold Denied (XHD), and Permanent Hold (PHD) for analog telephones." (page 206)

   Enable Call Transfer Allowed (XFA), Enhanced Hot Line Denied (EHTD), Exclusive Hold Denied (XHD), and Permanent Hold (PHD) for analog telephones.

3. Table 51 "LD 11 - Enable Privacy Override Allowed (POA) and Exclusive Hold Denied (XHD) for Meridian proprietary telephones." (page 207)

   Enable Privacy Override Allowed (POA) and Exclusive Hold Denied (XHD) for Meridian proprietary telephones.



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**Table 49**
**LD 15 - Configure Individual Hold Allowed, the Individual Hold Lamp Option and the Individual Hold Release Option in the Customer Data Block.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options data. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| OPT | IHA | Individual Hold Allowed. |
| | HLPA | Individual Hold Lamp Option Allowed.<br><br>HLPD = Individual Hold Lamp Option Denied (default). |
| | HRLA | Individual Hold Release Option Allowed.<br><br>HRLD = Individual Hold Release Option Denied (default). |
| ... | | |

**Table 50**
**LD 10 - Enable Call Transfer Allowed (XFA), Enhanced Hot Line Denied (EHTD), Exclusive Hold Denied (XHD), and Permanent Hold (PHD) for analog telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Analog (500/2500 type) set data block. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| CLS | XFA<br>EHTD<br>XHD | Call Transfer Allowed.<br>Enhanced Hot Line Denied.<br>Exclusive Hold Denied. |
| ... | | |
| FTR | PHD | Permanent Hold. |
| ... | | |



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**Table 51**
**LD 11 - Enable Privacy Override Allowed (POA) and Exclusive Hold Denied (XHD) for Meridian proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| CLS | POA<br>XHD | Privacy Override Allowed.<br>Exclusive Hold Denied. |
| ... | | |
| KEY | xx SCR yyyy | Single Call Ringing key, where:<br>xx = key number<br>SCR = Single Call Ringing<br>yyyy = DN<br><br>KEY may also be defined as HOT (Two-way), PVN, PVR, or SCN. |

## Feature operation

With the Release Option allowed (HRLA), the user of a single line MADN disconnects from an active call by

- pressing the release key; or
- pressing the hold key to disconnect from the active call while another member of the same single line MADN is still active on the call.

However, if a user is the only active member of the single line MADN on the call with the Release Option allowed (HRLA), pressing the hold key puts the call on hold as per the existing operation.

With the Release Option denied (HRLD), the existing functionality is retained. Therefore, the user must press the release key to disconnect from the active call. When the hold key is pressed, the call is not released.



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# Call Hold, Permanent

## Contents

This section contains information on the following topics:

“Feature description” (page 209)

“Operating parameters” (page 209)

“Feature interactions” (page 210)

“Feature packaging” (page 211)

“Feature implementation” (page 212)

“Feature operation” (page 213)

## Feature description

Permanent Hold holds an active call on a 2500 telephone without attendant assistance. Calls cannot be originated or received while in the Permanent Hold mode. Incoming calls receive a busy signal if Hunting is not defined for the called telephone.

If the telephone user goes on-hook after activating Permanent Hold, the telephone periodically receives a one-second ring burst as a reminder that the call is on hold. This interval is defined at the customer level.

## Operating parameters

Permanent Hold is allowed only when a call is active, and if the Class of Service allows transfer.

If Busy Verify is attempted on a telephone with a call on Permanent Hold, busy tone is received.

Override cannot be used on a telephone with a call on Permanent Hold.

Permanent Hold cannot be activated during a Conference call.



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Two parties, connected trunk-to-trunk, can activate Permanent Hold at the same time if they both have the feature defined. After being placed on Permanent Hold, the second party can flash the switchhook and dial #4 to hold the call. After flashing the switchhook, any dialing sequence other than the access code results in overflow tone.

Permanent Hold is not supported on station-to-station calls.

If the telephone activating Permanent Hold is part of a mixed arrangement with another 2500, or Meridian 1 proprietary telephone, the following events occur:

- If a different telephone with the same DN goes off hook, that telephone connects to the held party.
- When Permanent Hold is activated, the DN lamp on the Meridian 1 proprietary telephone remains steadily lit.

If the telephone activating Permanent Hold goes off hook, it is automatically reconnected to the held call.

If the held party disconnects, the hold reminder ring stops.

## Feature interactions

### Attendant Break-In

The attendant cannot break in to a call on hold.

### Audible Reminder of Held Call (ARCH)

If Audible Reminder of Held Call (ARCH) is enabled in LD 15, the Audible Reminder of Held Call (ARCH) timer takes precedence over the Permanent Hold timer.

### AC15 Recall: Timed Reminder Recall

Call Hold Permanent is activated when the attendant presses the HOLD key, then the Release (RLS) key, when extending a call; then the call is held permanently on the Loop key. If the attendant retrieves the original call on hold by pressing the Loop key, the recall timer is stopped. If the attendant then presses the RLS key, the call is extended, and the recall timer is restarted.

### Call Park on Unsupervised Trunks

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state are disconnected if left in that state for an extended period.

### Calling Party Privacy

When a user answers a held incoming trunk call with the Privacy Indicator, no Calling Party Number or Name are displayed on the telephone.



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### Camp-On, Forced
### Override, Enhanced
### Override, Priority

Neither held calls nor telephones with calls on hold can be camped on or overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-on or Priority Override.

### China - Attendant Monitor

Monitoring is not affected if any caller involved in the monitor's call activates hold, except for the case of a simple call. For a monitored simple call, activating hold deactivates monitoring. In all cases, activation of music on hold deactivates monitoring.

An attendant monitoring a call cannot put the monitored DN on hold. The attendant pressing the hold key has no effect while monitoring is enabled.

### DECT and DCS telephones

With CS 1000 Release 4.5 and later, you cannot activate Permanent Hold (PHD) from DECT and DCS telephones. Users hear overflow tone if they attempt to activate the feature.

You cannot configure the PHD feature on these telephones as of CS 1000 Release 4.5 in LD 10.

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is put on hold by another station at the same node. This restriction also applies to the unrequested party, if the unrequested party is located at the same node as the requested party (standalone), or if the requested party and the unrequested party are linked using DPNSS1.

### Predictive Dialing

If an established call is put on hold by the set initiating the Fast Transfer, the switch cannot transfer the call. The switch can only transfer a call if the call is in the established state.

### Privacy

A call placed on Permanent Hold no longer has Privacy. Privacy is reinstated when the call is removed from Permanent Hold.

## Feature packaging

Special Service for 2500 Sets (SS25) package 18 includes Permanent Hold, and has no feature package dependencies.



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 52 "LD 15 - Enable/disable Permanent Hold reminder ring timer for the customer." (page 212)

   Enable/disable Permanent Hold reminder ring timer for the customer.

2. Table 53 "LD 10 - Enable/disable Permanent Hold for 2500 telephones." (page 212)

   Enable/disable Permanent Hold for 2500 telephones.

**Table 52**
**LD 15 - Enable/disable Permanent Hold reminder ring timer for the customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | TIM | Timers. |
| CUST | | Customer number. |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - PHDT | 1-(30)-63 | Permanent Hold reminder ring timing in two-second increments (that is, 30 = 60 seconds). |

**Table 53**
**LD 10 - Enable/disable Permanent Hold for 2500 telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number. |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | XFA | Allow transfer. |
| FTR | PHD | Enable Permanent Hold. |



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## Feature operation

To place a call on hold, follow these steps:

- While on an active call, flash the switchhook, or press the Link key.
- Dial #4, or the Flexible Feature Code (FFC), if enabled.
- Hang up.
  The Permanent Hold timer begins.

To retrieve a held call, lift the handset.



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# Call Park

## Contents

This section contains information on the following topics:

“Feature description” (page 215)

“Operating parameters” (page 216)

“Feature interactions” (page 217)

“Feature packaging” (page 223)

“Feature implementation” (page 223)

“Feature operation” (page 225)

## Feature description

Call Park (CPRK) places a call in a parked state, similar to hold, where it can be retrieved by any attendant console or telephone. A parked call must have an access ID, also known as a Park DN. This is done by parking the call on a System Park DN or on any telephone Directory Number (DN) in the system. A parked call does not occupy a DN, nor is there a lamp to indicate its presence.

Up to 50 System Park DNs are available per customer. There is no limit to the number of DNs that can be used as a Call Park access ID. However, only one call at a time can be parked against any particular telephone or System Park DN.

In addition, the system can offer a default access ID. If System Call Park is defined, the default access ID for attendant consoles and Meridian Digital Telephones is the next available System Park DN.

If System Park DNs are not defined for the customer, the default access ID is the DN of the telephone where the call was parked. An attendant must press the Park key and enter a DN if System Park DNs are not defined.



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Park the call, then page the person called. The person called then picks up the call directly or through the attendant. Call Park also enables the telephone that originally receives the call to park it so that another telephone can retrieve it later. The telephone placing the call in Park is free to make or answer other calls.

Calls can be parked from telephones or attendant consoles with the Park key/lamp pair or Special Prefix (SPRE) code. Parked calls not retrieved within a specified time (30 to 240 seconds) are recalled to the telephone that parked it. Music for parked calls can be provided if Music (MUS) package 44 is installed.

If a call is parked on a System Park DN, it is recalled to the attendant who parked it if the parking attendant is idle. If the parking attendant is busy, the call is presented to any idle attendant.

If a call is parked on a telephone DN, the recall is placed in the attendant queue and presented to any available attendant. In all cases, parked calls recalled to the attendant appear on the Recall Incoming Call Identification (ICI) key, if defined.

The Park DN of the most recently parked call can be displayed again on Meridian 1 proprietary telephones equipped with displays, a Park key, and a Display key. This is done by pressing the Display key, then the Park key. The attendant can display the last call parked by pressing the Park key when no loop key is active.

## Operating parameters

Call Park is not available for calls on Dial Intercom keys or for calls on analog (500/2500 type) telephones designated as Dial Intercom telephones.

Call Park is not permitted when Privacy Release or Conference is active.

Calls parked from Meridian 1 proprietary telephones and analog (500/2500 type) telephones are recalled to the telephone that parked the call.

When a Multiple Appearance Single Call telephone mix (the same DN appears on Meridian 1 proprietary telephones, and single-line telephones) is parked, other appearances are not automatically bridged to the parked call when going off hook. The call can be retrieved by another Multiple Appearance DN (MADN) telephone only by dialing the Call Park retrieval code and the DN.

Remote access (for example, Centralized Attendant Service or Direct Inward System Access) for parked parties is not permitted.



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Private lines, attendant DNs, Automatic Call Distribution (ACD), and Direct Inward System Access (DISA) DNs are not valid park numbers.

Trunks without disconnect supervision cannot be parked.

Parked calls are not retained during initialization or SYSLOAD.

Parked calls cannot be accessed with the Automatic Call Distribution (ACD) In-calls key. If parked access from Automatic Call Distribution (ACD) positions is required, a DN key must be provided.

A parked call recall cannot be placed on hold by the attendant.

A call transferred to the attendant by the Conference key on a Meridian 1 proprietary telephone cannot be parked by the attendant. A call transferred to the attendant by the Transfer key on a Meridian 1 proprietary telephone can be parked by the attendant.

## Feature interactions

### AC15 Recall: Transfer from Meridian 1

If Party Z parks the call initiated by Party X (an external caller), then the AC15 Recall: Transfer cannot be used to call Party Y. Party Z can neither park, selectively, one member of a split trunk nor park a whole split trunk. This avoids a recall to an attendant on the recall originating node that would not be able to send a recall to toggle from one party to another.

### AC15 Recall: Transfer from Norstar

Remote access to call park from AC15 TIE trunks is not permitted. It is not possible to park an AC15 trunk if it has a call on hold. When an AC15 trunk is parked, it is not allowed to initiate a consultation call.

### Access Restrictions

A call can be parked on any DN, regardless of its Class of Service. Access to a parked call is governed by the same Class of Service limitations for normal trunk-to-telephone call processing. Table 54 "Accessing telephone Class of Service" (page 217) details the limitations. These limitations can be overridden with the Authorization Code.

**Table 54**
**Accessing telephone Class of Service**

| Parked call type | Accessing telephone Class of Service | | |
|---|---|---|---|
| | FRE | FR1 | FR2 |
| Telephone | allowed | allowed | allowed |
| CO/FX/WATS | denied | denied | denied |



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**Table 54**
**Accessing telephone Class of Service (cont'd.)**

| Parked call type | Accessing telephone Class of Service | | |
|---|---|---|---|
| | FRE | FR1 | FR2 |
| DID Trunk | denied | denied | denied |
| TIE trunk | allowed | allowed | denied |

### Advice of Charge for EuroISDN

When a set parks a call charged with Advice of Charge, the calling party continues to be charged until the call is answered by another set.

### Attendant Blocking of Directory Number

It is not possible to park an Attendant Blocking of DN call. If a Call Park call recalls to a blocked DN, the recall is treated as if the DN is in a ringing state.

### Attendant Break-In

The attendant cannot break in to a parked call.

### Automatic Call Distribution

Calls parked by Automatic Call Distribution (ACD) agents are recalled to the ACD DN queue and presented to any available agent.

### Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Call Park (PRK) key is ignored.

### Attendant Consoles

The Call Park access code and the Park DN are displayed on the M2250 attendant console for parked call recalls.

### Autodial
### Speed Call

Autodial and Speed Calls can be programmed to park calls or access parked calls.

### Automatic Timed Reminders

A Call Park recall to an attendant appears on the Recall Incoming Call Indicator.

### Busy Lamp Field

A Busy Lamp Field can be equipped to display the status of System Park DNs.



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### Call Detail Recording (CDR)

Call Detail Recording (CDR) records for Call Park are similar to the start and end records generated when a call is transferred or terminated. When a call is parked, a Call Detail Recording (CDR) start record is generated if one has not already been generated by another feature. A CDR record is not generated when the parked call is accessed. A CDR end record is generated when the trunk call is terminated or when a parked call disconnects.

### Call Detail Recording on Redirected Incoming Calls

There is no interaction with Call Detail Recording on Redirected Incoming Calls, as there is no "N" record generated in a Call Park scenario.

### Call Forward

A recalled parked call to telephones with Call Forward, Call Forward Busy, or Call Forward No Answer (CFNA) is not forwarded.

### Call Page Network Wide

A station set or attendant console that parks an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

### Call Park on Unsupervised Trunks

A 14-second Disconnect Timer applies to parked calls on all trunks on the route. All answered calls in the parked state is disconnected if left in that state for an extended period.

### Call Party Name Display

Upon valid operation of the Park key, or dial-access if used, Call Party Name Display (CPND) shows the SPRE code and the Park Access ID. Because the Park Access Code is displayed, no CPND name is displayed. The only time that the digit display shows the actual DN of the parked party is when the parked party has been retrieved, put on hold, and then retrieved from hold.

### Call Pickup

An analog (500/2500 type) telephone user on a call can pick up a call by parking the existing call, then activating the Call Pickup feature.

### Call Pickup Network Wide

The Call Pickup Network Wide feature cannot be used to pick up parked calls. A recall of a parked call can be picked up, in which case the call is un-parked and answered by the requesting party.

### Call Transfer
### Conference

A parked call can be accessed after Call Transfer or Conference is activated.



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### Call Waiting

A recall of a parked call is not presented in the Call Waiting mode. If an internal telephone is in the parked state, Call Waiting to that telephone is not provided.

### Centralized Attendant Service

Call Park is limited to the local system for systems equipped with Centralized Attendant Service. Call Park cannot be accessed from release-link trunks.

### China - Attendant Monitor

If a DN being monitored becomes parked by another party, the Attendant Monitor feature is deactivated.

### Conference

A parked call can be accessed after Conference is activated

### Console Presentation Group Level Services

If the attendant who parked a call on the System Park DN is busy when that call is recalled and the parking attendant does not belong to the same Console Presentation Group (CPG) specified for the tenant of the calling station, the parked call is presented to an idle attendant in the same CPG specified for the calling station. If no attendant in that CPG is available to receive the recall, the parked call is queued until one of the attendants in the CPG becomes idle.

Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

Attempts to intrude into a parked call receive Executive Intrusion Denied treatment.

### Display of Calling Party Denied

When the Call Park timer expires on a parked call, a set's display reflects the Directory Number the call is parked against. The display does not include the name and DN of the calling party. When a parked call is retrieved by another set, display information is based on the DPD Class of Service of the individual sets.



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### Do Not Disturb

Calls can be parked on telephone DNs that are in the Do Not Disturb mode (DND). Telephones in the DND mode can park a call or access a parked call. Recall of a parked call to a DND telephone is recalled to the attendant.

### Generic XFCOT Software Support

Call Park feature allows an attendant or telephone user to place a call in parked state (connected to a parked DN) where it can be retrieved by any attendant console or station set. If the call is not retrieved after a customer-defined time, the call is recalled to the telephone user who parked it.

Call Park is allowed on disconnect-supervised or unsupervised IPE loopstart Central Office trunks. If a caller on an unsupervised loopstart trunk disconnects while the call is in parked state is detected when the parked call is recalled or answered.

Caller disconnection during park state is detected by a disconnect supervised loopstart trunk on an XFCOT card. The disconnected caller is then dropped from the parked DN.

### Group Call

Call Park cannot be applied on a Group Call.

### Held Call Clearing

A call put on hold during a Call Park is not cleared by an on-hook action on that set.

### Hot Line

Analog (500/2500 type) Hot Line telephones with EHTA and XFA Class of Service are allowed to park calls using the established Call Park procedures. Once a call is parked on an analog (500/2500 type) Hot Line telephone and the telephone is placed on hook, it cannot be unparked. Parked calls will recall to the parking telephone after the Call Park timeout. Two-way Meridian 1 proprietary telephone Hot Line stations that are equipped with a Call Park key/lamp pair are allowed to park calls in the normal fashion. As with analog (500/2500 type) telephones, a call parked from a Hot Line key cannot be picked up using the same key.

### In-Band Automatic Number Identification

If an agent parks an In-Band ANI call and it times out and recalls the agent, the ANI number is not displayed.

### INIT ACD Queue Call Restore

Parked calls are restored by ACDR as new incoming calls to the ACD DN.



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### Intercept Computer Dial from Directory - Pre-dial Operation

An attendant can park a call in the following manner:

- Press the Call Park key on the attendant console.
- Dial a DN from the Intercept Computer.

Terminate Call Park operation by pressing the Release key.

### Make Set Busy

Recall of a parked call to a telephone in the Make Set Busy mode is intercepted by the attendant.

### Multi-Tenant Service

If the attendant who parked a call on the System Park DN is busy when that call is recalled and the parking attendant does not belong to the same Console Presentation Group (CPG) specified for the tenant of the calling station, the parked call is presented to an idle attendant in the same CPG specified for the calling station. If no attendant in that CPG is available to receive the recall, the parked call is queued until one of the attendants in the CPG becomes idle.

Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

### Music

When a call is parked, music is not heard. When a trunk is parked, music plays if music is enabled for the route.

### Network Intercom
### Private Line Service

Hot Type I and Private Line Service calls cannot be parked.

### Periodic Pulse Metering

When a metered call is parked from one station to another, the controlling station is charged until the call is answered.

### Privacy Override

Calls in a Privacy Override conference state cannot be parked.



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### Privacy Release

When a call from a Meridian 1 proprietary telephone is parked, that telephone cannot activate Privacy Release. For example, Party A calls Party B. Party B parks the call. Party A cannot activate Privacy Release.

### Recall After Parking

This enhancement to Call Park causes a parked call to be recalled to the attendant or night DN if the attendant is in Night Service, rather than to the parking telephone, if not answered within a customer-defined period of time (two-minute maximum). The call may be external or internal.

The recall to the attendant appears on the Recall ICI key. If the attendant is in Night Service, the recall occurs to the night DN. If the night DN is busy, the call is queued if it is an external call.

### Traffic measurements

TFC007 is included for Call Park. It provides traffic measurements for the following:

- system park usage
- system park overflow
- telephone park usage
- park access
- park recall
- average waiting time

## Feature packaging

Call Park (CPRK) is package 33 and has no feature package dependencies.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 55 "LD 15 - Enable or disable Call Park." (page 224)

   Enable or disable Call Park.

2. Table 56 "LD 50 - Add/change or print Call Park. This overlay must be defined for Call Park operation." (page 224)

   Add/change or print Call Park. This overlay must be defined for Call Park operation.

3. Table 57 "LD 10 - Allow or deny access to Call Park for analog (500/2500 type) telephones." (page 225)



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Allow or deny access to Call Park for analog (500/2500 type) telephones.

4. Table 58 "LD 11 - Add or change a Call Park key on Meridian 1 proprietary telephones." (page 225)

   Add or change a Call Park key on Meridian 1 proprietary telephones.

5. Table 59 "LD 12 - Add or change a Call Park key on attendant consoles." (page 225)

   Add or change a Call Park key on attendant consoles.

**Table 55**
**LD 15 - Enable or disable Call Park.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | CPA | Enable Call Park. |

**Table 56**
**LD 50 - Add/change or print Call Park. This overlay must be defined for Call Park operation.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | CPK | Call Park data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| CPTM | 30-(45)-240<br>30-(45)-480 | Call Park Timer (in seconds).<br>Call Park recall time (in seconds) if CPRK package 33 is equipped.<br>The amount of time a call is held in the parked state before recalling the parking set or the attendant. |
| SPDN | (0)-50 xxxx | Number of contiguous System Park DNs and the first System Park DN. The default 0 (zero) disables System Park DN capability, but allows Telephone Park DNs.<br><br>If the DN Expansion package is equipped, the System Park DN can have up to seven digits. |
| MURT | <br>0-511<br>0-127 | Music route number for parked calls.<br>For Large Systems<br>For Small Systems |



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**Table 57**
**LD 10 - Allow or deny access to Call Park for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | XFA | Allow access to Call Park. |

**Table 58**
**LD 11 - Add or change a Call Park key on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx PRK | Add a Call Park key (key number must be 17 for the M2317). |

**Table 59**
**LD 12 - Add or change a Call Park key on attendant consoles.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | 2250 | Attendant console type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx PRK | Add a Call Park key (key number can be 00-19 on the M2250). |

## Feature operation

To park a call with the Park key:



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| Step | Action |
|---|---|
| 1 | Press **Park** twice.<br>If there is a System Park extension, the call is parked on it. Otherwise, it is parked on your extension. |

**--End--**

To park a call on an extension other than the System Park extension, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Park**. |
| 2 | Enter the extension number. |
| 3 | Press **Park** again. |

**--End--**

To park a call using SPRE codes, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Transfer** or **Conference**. |
| 2 | Dial SPRE 71.<br>You can dial an extension number to park the call, or you can use the System Park extension, chosen automatically. It shows on your telephone's display, if equipped. |
| 3 | Press **Transfer** or **Conference** again. |

**--End--**

To retrieve a parked call, follow these steps:

| Step | Action |
|---|---|
| 1 | Select a free extension. |
| 2 | Dial SPRE 72. |



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3 Dial the extension where the call is parked.

**--End--**



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# Call Park on Unsupervised Trunks

## Contents

This section contains information on the following topics:

“Feature description” (page 229)

“Operating parameters” (page 229)

“Feature interactions” (page 230)

“Feature packaging” (page 230)

“Feature implementation” (page 230)

“Feature operation” (page 231)

## Feature description

This enhancement to the Call Park feature allows Central Office (CO), FEX, and Wide Area Telephone Service (WATS) trunks, without disconnect supervision, to be call-parked. All other trunk types without disconnect supervision cannot be parked. The Disconnect Timer (DCTI) is used to prevent phantom calls from ringing beyond the set time. Answered calls in the held, parked, camped-on, or ringing state are disconnected when the DCTI times-out.

This enhancement also allows Direct Inward System Access (DISA) on CO, FEX, and WATS trunks without disconnect supervision. DISA on unsupervised trunks does not intercept to the attendant, but is subject to Timed Forced Disconnect Timer, which prevents the CO trunk from being seized if the far end hangs up.

## Operating parameters

The Disconnect Timer apples not only to Call Park but also to all trunks on the route. All answered calls in the held, parked, ringing, or Camp-On states is disconnected if left in that state for an extended period (this even applies to calls in a call waiting queue type).



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# Feature interactions

### Attendant Calls Waiting Indication

If all the attendants are busy and a Call Park Recall occurs, the recall is placed in the calls waiting queue. If the recalled station is busy when the recall occurs, the Disconnect Timer (DCTI) temporarily suspends timing until the recall is presented. After the recall is presented, the Disconnect Timer continues timing for the remainder of the period.

### Automatic Call Distribution (ACD)

If all the ACD agents are busy and a Call Park Recall occurs, the recall is placed in the ACD DN queue.

### Call Hold, Deluxe
### Call Hold, Permanent

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state is disconnected if left in that state for an extended period.

### Call Park

A 14-second Disconnect Timer applies to parked calls on all trunks on the route. All answered calls in the parked state is disconnected if left in that state for an extended period.

### Camp-On

A Disconnect Timer applies to camped-on calls on all trunks on the route. All answered calls in the camped-on state is disconnected if left in that state for an extended period.

# Feature packaging

Call Park on Unsupervised Trunks is included in Direct Inward System Access (DISA) package 22.

# Feature implementation

**Table 60**
**LD 16 - Set the disconnect timer.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | RDB | Route Data Block. |



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**Table 60**
**LD 16 - Set the disconnect timer. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| DCTI | (0)-511 | Time, in seconds, that an extension is allowed to ring or be on hold or Call Park before the trunk is disconnected. 0, the default, or <CR> means that the condition goes on indefinitely.<br><br>Respond with a value equal to the number of seconds a set is to ring after recall, plus the value of the Call Park Recall Timer (which is defined in LD 50 in response to the CPTM prompt).<br><br>The value stored, which is the closest lower multiple of four, is echoed back upon entry. |

## Feature operation

Feature operation for Call Park on Unsupervised Trunks is the same as that for Call Park.



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# Call Party Name Display

## Contents

This section contains information on the following topics:

“Feature description” (page 233)

“Operating parameters” (page 236)

“Feature interactions” (page 237)

“Feature packaging” (page 241)

“Feature implementation” (page 242)

“Feature operation” (page 247)

## Feature description

Call Party Name Display (CPND) identifies the calling or called number in addition to the DN. The identifier (for example, the name) associated with a DN on telephones with an alphanumeric display is defined in LD 95.

Whenever the calling party’s DN displays on the terminating telephone, the calling party’s name also appears. Likewise, on an internal call, the called party’s name is appended to the displayed DN on the originator’s telephone, as soon as a valid DN is completely dialed.

CPND displays the DN and name of the originally dialed party for redirected calls. A Class of Service, DNDA/DNDD (Dialed Name Display Allowed or Denied), is assigned on a per-telephone basis. The terminating telephone must have DNDA to display the name of the originally dialed party.

The M2250 attendant console can extend a call to a DN requested by a calling party.



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Multi-Language CPND displays the party's name in Roman/English or Katakana (Japanese alphabet) characters on Meridian modular telephones. The names are stored in the database under each character set and the language is specified with the Meridian modular program keys.

Two languages can be stored in the database for any given name. For this enhancement to work fully, both telephones involved must have the same name in the same languages. (For example, John Smith calls Anne Jones. Both John and Anne must have Katakana in their database for the name to appear in Katakana characters. If John has Katakana enabled, but Anne does not, Anne sees the English version.)

Entering Katakana, or any other non-ASCII Roman characters, requires a system terminal that supports eight-bit, no-parity Input/Output.

The maintenance terminal must support ISO 8859-1 Latin 1 for the Roman character mode.

## Call Party Name Display assignment

A CPND name string can be assigned to internal DNs associated with any of the following:

- analog (500/2500 type) telephones
- Trunk access codes
- Attendant DNs
- Automatic Call Distribution (ACD) DNs
- Dial Intercom Group member numbers

As a customer option for multiple appearance DNs (MADNs), the assigned CPND name can be linked with its member telephone's designator (DES field in the TN block) to further identify the party of a shared DN.

## Call Party Name Display composition

A CPND name is the name used to identify a DN, entered in ASCII alphanumeric character format. The maximum CPND length is the smaller of two values: the maximum length configured in LD 95 or 27 characters, including spaces and special characters.

The ASCII characters supported are A-Z, 0-9, space, Hex 20-127, and the following special characters:

" ( ) - # ,



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The NAME prompt in LDs 10, 11, and 95 accepts first name, a comma as a separator, and last name (such as Mary,Smith). CPND also supports names using a space separator (such as Mary Smith), treating the entire name string as the first name. See Table 61 "Response formats for CPND NAME prompt" (page 235) for examples.

**Table 61**
**Response formats for CPND NAME prompt**

| Entered Data | Displayed Result |
|---|---|
| Sue Smith <CR> | Sue Smith |
| Sue,Smith <CR> | Sue Smith |
| Sue <CR><br>Sue, <CR> | Sue<br>(Trailing comma is ignored.) |
| Sue,Smith, Dept. 410 <CR> | Sue Smith, Dept. 410 |
| Sue Smith, Joe Brown <CR> | Sue Smith, Joe Brown |

The default is to accept the names as entered, replacing the comma with a space. Hence, a value entered as Mary,Smith displays as Mary Smith.

Do not enter leading spaces. LD 95 ignores them. When CPND information is printed (using LD 10/11 or LD 20), the printout reflects what is in the database, not what appears on the telephone display.

In addition to the caller's name, a reason field can be provided to indicate the cause of a redirection. This is a customer option and the actual mnemonics are service changeable. The following call redirections have a reason displayed:

- Call Forward All Calls
- Call Forward No Answer
- Hunting/Call Forward Busy
- Call Transfer with Network Call Redirection
- Attendant Alternative Answering
- Call Pickup

## Display Devices and Capabilities

The M2317 has a display line of 40 characters, 33 available for displaying DN-related information.

If there are more characters than the telephone's display allows, the system deletes letters to make the name fit.



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The M2250 attendant console is equipped with four lines of LCD alphanumeric display. Each line has 40 characters, and lines 2 and 3 are used to display DN-related information. If the number of characters displayed is more than 40, an arrow appears in the upper right corner of the display. The arrow alerts the user that more information can be retrieved using the scrolling keys. For more information, see *M1250/M2250 Attendant Console User Guide*

The call type, originating or terminating telephone, and the Class of Service all affect the display and CPND information. Three Classes of Service are associated with the display function. CPND conforms to whichever Class of Service is configured for the telephone.

- Automatic Digit Display (ADD)
- Digit Display Selection (DDS)
- Touch phone Digit Display (TDD)

No user interaction is required to display information on the call. On the M2317 telephone, however, the user can press the SAVE # softkey to save the name and number of the calling party. This applies to all outgoing and answered incoming calls.

## Operating parameters

CPND is not displayed if a live call is not involved (for example, while programming a Speed Call key).

Attendant Administration does not support the entry of CPND class marks for digital telephones.

CPND is not displayed on the calling telephone while making an outgoing trunk call.

CPND is not supported on data calls.

CPND applies only to redirected calls on M2008, M2016, M2216, M2616, and M2317 telephones.

For M2008, M2016, M2216, M2616, and M2317 telephones, CPND is provided on a per-telephone basis, depending on the Class of Service.

DNDA (Dialed Name Display Allowed) and NDD (No Digit Display) Class of Service are mutually exclusive.

Multi-Language CPND operates on Meridian modular telephones only.



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An individual DN can have Roman/English, or Katakana, or both programmed in the database if MLIO is equipped.

If the call destination is a trunk or a telephone type other than Meridian modular, the name is translated into the ASCII equivalent.

Multi-Language CPND applies to DNs on local switches only. CPND for Integrated Services Digital Network (ISDN) calls is displayed in English only.

The CPND feature uses JIS X 0201-1976, the RCode for Information Interchanges, also known as JIS-Roman, which specifies the upper- and lower- case letters, numbers, punctuation and symbols, and Katakana.

## Feature interactions

### AC15 Recall: Timed Reminder Recall

When the AC15 recall is presented to an attendant or a set with a display, the source and destination names are shown beside the DNs or the ACODs.

### ACD Routing by DNIS

When an incoming trunk call from a route with Routing by DNIS is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS DN.

### Attendant Recall

Attendant Recall using the Attendant Recall key or a switchhook flash results in both source and destination information being displayed. No redirection reason is displayed, however. In this type of recall, the party that pressed the Attendant Recall key or switchhook is the destination party.

Attendant Recall using Call Transfer or Conference displays the recalling party's DN and CPND information on the attendant's source line. No redirection reason is displayed. If the recall is done with the Transfer key the third party's DN and CPND information are displayed on the source line when the transfer is complete.

### Attendant Recall with Splitting

For the M2250 attendant console, M2317, and Meridian Modular sets, the appropriate DN and calling party's name is correctly shown on the digit display when the attendant presses either the Exclude Source or the Exclude Destination key.



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### Autodial
### Speed Call

No name information displays during the programming of Autodial and Speed Call numbers.

### Automatic Call Distribution (ACD) Dialed Number Identification Services (DNIS)

If an incoming trunk call from a route with DNIS is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS incoming trunk group.

### Automatic Wake Up

All display information associated with Automatic Wake Up (AWU) programming is directed to line three of the display. Names are appended to DNs appearing on line three if they are different from those on line two, or if no DN appears on line two. There is no DN information on line two if the attendant has initiated the AWU process while not on an active call. No DES information is appended, since AWU operates on a DN basis.

### Call Hold, Deluxe

When a call is put on hold, the holding telephone's display clears. The held telephone's display does not change. When the telephone reestablishes the call, the display returns the original DN and name.

### Call Park

Upon valid operation of the Park key, or dial-access if used, CPND shows the SPRE code and the Park Access ID. Because the Park Access Code is displayed, no CPND name is displayed. The only time that the digit display shows the actual DN of the parked party is when the parked party has been retrieved, put on hold, and then retrieved from hold.

### Call Pickup

For Call Pickup, CPND applies when the call is answered.

### Call Pickup Network Wide

Network Call Party Name Display information is exchanged during Call Pickup Network Wide calls if the sets involved in the call would normally exchange the information for calls over the routes that have been used for the original call and the call pickup. Conversely, if Network Called Party Name Display would not operate for a normal call from the originating party to the terminating party, the service will not be supported when Call Pickup Network Wide is involved.

### Call Transfer

When the Transfer key is pressed during an active call, the display clears. The call is in a held state. The DN and name of the transferred telephone appear on the display when the DN is dialed. When the transfer



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is complete, the transferring telephone's display clears because the telephone is now disconnected. The transferred telephone's display changes to show the name of the newly connected party.

### Calling Party Privacy

In current operations, if the International Supplementary Features (SUPP) package 131 is not equipped in the system, an incoming ISDN call with the Call Party Name Display (CPND) Indicator field set to "Presentation Denied" still displays the Calling Party Name. If package 131 is equipped in the system, the current operations will inhibit the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied".

The CPP feature will inhibit the display of the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied" if package 131 is not equipped.

### Centralized Attendant Service (CAS)

When an attendant in the CAS mode extends a call to a remote station, the display shows only the source line.

### Conference

When pressed during an active call, or to set up a conference, the Conference, Connect, or Join Parties key clears the display. The telephones involved in the conference have blank displays. If the conference returns to a two-way only call, each telephone displays the DN and name of the other telephone.

### Dial Intercom

The display on telephones connected by Dial Intercom shows the group member's DIG number plus CPND information.

### Dialed Number Identification Service

If an incoming trunk call from a route with Dialed Number Identification Service (DNIS) is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS incoming trunk group.

### Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Inter-working

The Call Party Name Display feature is supported in a DPNSS1 UDP network. Names can be associated with the access codes of the DPNSS1 UDP routes defined in LD 95.



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### Display Key

When pressed during a call, the Display key clears the display until pressed again. The original display reappears. When the telephone is inactive and the DSP key is pressed, followed by a function key like Autodial, no CPND information is displayed.

### End-to-End Signaling

When entered after a call is answered, EES digits are displayed immediately following the CPND name of the connected party. Leading DN digits and name characters may be shifted out of the display window.

### ISDN

On incoming ISDN calls, the Calling Line ID number can be displayed instead of a DN on the source party line. CPND applies to telephones configured for ISDN when redirection is supported. CPND allows calls to redirect across a network with Network Call Redirection. The CPND is maintained through the redirection.

### ISDN QSIG Name Display

Call Party Name Display and Calling Party Name Display Denied interact with ISDN QSIG Name Display, depending on the Name Display configuration in LD 16 for BRI or LD 17 for PRI. When a QSIG network is interacting with an MCDN network providing network capability ND3, both the MCDN and QSIG Name Display feature function on the same level.

### Listed Directory Number

CPND is not supported for LDNs. If the LDN is an incoming trunk route, the CPND assigned to the route access code is displayed.

### Manual Signaling (Buzz)

If the Signal key is pressed to buzz another telephone, no digit or name display appears on the telephone.

### Meridian Hospitality Voice Services

The maximum length of a CPND name sent from the PMSI/Background Terminal (BGD) is 27 characters. When the full 27 character length is used, part of the CPND name may scroll off the screen. To avoid this problem, the PMSI/Background Terminal (BGD) software has been updated to strip from the screen all trailing blanks from the CPND name.

### Meridian Mail Voice Mailbox Administration

There is significant interaction between the Meridian 1 Call Party Name Display (CPND) database and the Meridian Mail VMB database. These interactions are further described in the "Meridian Mail Voice Mailbox Administration" description in Features and Services Fundamentals, Book 2.



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### Meridian 911

The Call Party Name Display feature can be used to configure and display the incoming 911 route name.

### Network Intercom

Hot Type I calls display names the same as a normal call.

Hot Type I calls that become a normal call indicate on the originating station's display that the call is no longer a Hot Line call.

### Override

When Overriding an established call, the displays of the other telephones show the DN and name of the overriding party.

### Slow Answer Recall

Slow Answer Recall results in displays showing source and destination information. If a redirection occurs, the reason is displayed.

### Voice Call

The telephone originating a Voice Call displays the called DN's CPND. The called telephone shows the caller's DN and name on its display.

## Feature packaging

Call Party Name Display (CPND) package 95 requires:

- Digit Display (DDSP) package 19
- M2000 Digital Sets (DSET) package 88
- M3000 Digital Sets (TSET) package 89 or
- M2317 Digital Sets (DLT2) package 91
- Aries Digital Sets (ARIE) package 170

Multi-Language CPND requires Multi-Language TTY Input/Output (MLIO) package 211.

If the designator field is to be used for multiple-appearance DNs, CPND requires:

- Office Data Administration System (ODAS) package 20

For Hotel/Motel applications configuring CPND, CPND requires:

- Background Terminal Facility (BGD) package 99
- Multi-Language TTY Input/Output (MLIO) package 211 to support eight-bit, no-parity system terminals



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 62 "LD 95 - Create the CPND data block." (page 242)

   Create the CPND data block.

2. Table 63 "LD 95 - Add names to the CPND data block." (page 243)

   Add names to the CPND data block.

3. Table 64 "LD 10 - Allow names to be assigned to analog (500/2500 type) telephones." (page 244)

   Allow names to be assigned to analog (500/2500 type) telephones.

4. Table 65 "LD 11 - Allow names to display on Meridian 1 proprietary telephones." (page 244)

   Allow names to display on Meridian 1 proprietary telephones.

5. Table 66 "LD 12 - Allow names to display on attendant consoles." (page 245)

   Allow names to display on attendant consoles.

6. Table 67 "LD 95 - Open the CPND data block to change or remove entries." (page 245)

   Open the CPND data block to change or remove entries.

7. Table 68 "LD 95 - Print information associated with entries in the CPND data block." (page 246)

   Print information associated with entries in the CPND data block.

8. Table 69 "LD 10/11 - Add or change CPND name." (page 246)

   Add or change CPND name.

Before name strings can be assigned to various telephones, the CPND data block must be created in LD 95. The number and size of CPND name strings is limited by available space in the Protected Data Store, so it is recommended that you initially use a small number for the maximum character length.

## Enable CPND and add names to the CPND data block

**Table 62**
**LD 95 - Create the CPND data block.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Create CPND database (or open existing database). |
| TYPE | CPND | CPND data block. |
| CUST | xx | Customer number, as defined in LD 15 |



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**Table 62**
**LD 95 - Create the CPND data block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CNFG | <CR> | Standalone memory. |
| MXLN | 5-(17)-27 | Maximum number of characters allowed in each name string. Once defined, this value can be changed only by removing the CPND data block and recreating it. |
| STAL | (NO) YES | Static allocation of name storage. Must be YES if Background Terminal is equipped, or whenever name strings change frequently. |
| - DFLN | 5-MXLN | Average default character string length. Suggested default is 13 or the maximum length given to MXLN, whichever is less. Prompted if STAL = YES. |
| DES | (NO) YES | (Do not) allow designator for MADNs. |
| RESN | (NO) YES | (Do not) allow display of reason for redirecting calls. |
| - CFWD | aaaa (F) | Mnemonic for Call Forward All Calls display. |
| - CFNA | aaaa (N) | Mnemonic for Call Forward No Answer display. |
| - HUNT | aaaa (B) | Mnemonic for Hunt/Call Forward Busy display. |
| - PKUP | aaaa (P) | Mnemonic for Call Pickup display. |
| - XFER | xxxx (T) | Mnemonic for Call Transfer display for NCRD. |
| - AAA | aaaa (A) | Mnemonic for Attendant Alternative Answering. |

**Table 63**
**LD 95 - Add names to the CPND data block.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Open CPND data block to add new entries. |
| TYPE | NAME | Create a new name string. |
| LANG | (ROM) KAT <CR> | Store the name in Roman or Katakana. <CR> stores the name in English. |
| CUST | xx | Customer number, as defined in LD 15 |
| DIG | 0-2045 0-99 | Dial Intercom Group number and member number. Each time a name string is assigned to a Dial Intercom Group member, the DIG prompt repeats, until a carriage return is entered to go to the DN prompt. |
| | <CR> | Bypass Dial Intercom Group and go to the DN prompt to assign names on a DN basis. |
| - NAME | aaaa bbbb | CPND name string; maximum of 27 characters. |
| - XPLN | xx | Expected Length.<br><br>Range must be between the Input Name length and the MXLN, or it defaults to DFLN. |
| | <CR> | Set XPLN to average default character string length (DFLN) or the actual length (NAME), whichever is longer. |



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**Table 63**
**LD 95 - Add names to the CPND data block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| DN | xxx...x | DN to which name string is linked. |
| - NAME | aaaa bbbb | CPND name string; maximum of 27 characters. |
| - XPLN | xx | Expected Length.<br><br>Range must be between the Input Name length and the MXLN, or it defaults to DFLN. |
| | <CR> | Set XPLN to average default character string length (DFLN) or the actual length (NAME), whichever is longer. |
| DCNO | xxx | IDC conversion table number (0-254). |
| IDC | nnn | Existing complete or partial IDC number.<br>Prompted only when DCNO is valid. |
| NAME | aaaa bbbb | CPND name string; maximum of 27 characters. |

**Table 64**
**LD 10 - Allow names to be assigned to analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system,<br>where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FTR | CPND | Allow CPND name assignment on this telephone. |

**Table 65**
**LD 11 - Allow names to display on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system,<br>where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CNDD) CNDA<br>(DNDD) DNDA | (Deny) allow display of CPND entries.<br>(Deny) allow display of CPND originally dialed entries. |



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**Table 66**
**LD 12 - Allow names to display on attendant consoles.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 2250 | Attendant console type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CPND | (CNDD) CNDA | (Deny) allow CPND name assignment. |
| DNDI | (DNDD) DNDA | (Deny) allow display of originally dialed CPND entries. |

## Change or remove names in the CPND data block

**Table 67**
**LD 95 - Open the CPND data block to change or remove entries.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG OUT | Change, or remove an existing entry. |
| TYPE | NAME | Change, or remove an existing CPND name string. |
| CUST | xx | Customer number, as defined in LD 15 |
| LANG | ROM KAT ALL | Change or remove the name in Roman or Katakana. ALL is used to remove all names stored for the DIG. |
| DIG | 0-2045 0-99<br>ALL <CR> | Dial Intercom Group number and member number. Each time a name string is assigned to or removed from a Dial Intercom Group member, the DIG prompt repeats, until a carriage return is entered to go to the DN prompt. ALL removes all entries for that DIG. <CR> bypasses DIG and goes to the DN. |
| - NAME | aaaa bbbb | CPND name string for this DIG; maximum of 27 characters. |
| | <CR> | Leave this entry unchanged. |
| DN | xxx...x | DN of name string being changed or removed. |
| | ALL | Remove all DN-defined entries. |
| | <CR> | Return to REQ prompt. |
| - NAME | aaaa bbbb | CPND name string; maximum of 27 characters. |
| DCNO | xxx | IDC conversion table number (0-254). |
| - IDC | nnn | Existing complete or partial IDC number. Prompted only when DCNO is valid. |
| NAME | aaaa bbbb | CPND name string; maximum of 27 characters. |



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## Print entries from the CPND data block

**Table 68**
**LD 95 - Print information associated with entries in the CPND data block.**

| Prompt | Response | Description |
|---|---|---|
| REQ | PRT | Print entries in the CPND data block. |
| TYPE | NAME | CPND name strings. |
| CUST | xx | Customer number, as defined in LD 15 |
| LANG | ROM KAT | Print names in Roman or Katakana. |
| PAGE | (NO) YES | Page headers and page numbers for multiple DNs and DIGs. |
| DIG | ALL | Print information on all entries defined by Dial Intercom Groups. |
| | 0-2045 0-99 | Dial Intercom Group and member number. The DIG prompt repeats until a carriage return is entered. |
| | <CR> | Bypass Dial Intercom Group and go to the DN prompt to print information on a DN basis. |
| DN | ALL | Print information on all DN entries. |
| | xxxx | DN to print information from. DN prompt repeats until a carriage return is entered. |
| | <CR> | Return to REQ prompt. |
| DCNO | xxx | IDC conversion table number (0-254). |
| - IDC | nnn | Existing complete or partial IDC number. Prompted only when DCNO is valid. |
| | ALL | All names defined are printed. |
| SHRT | (NO)<br>YES | Short form.<br>Prints one IDC per single line.<br>Prints several IDCs on single line. |

## Add or change CPND name entry for a telephone

**Table 69**
**LD 10/11 - Add or change CPND name.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add or change CPND name information. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 69**
**LD 10/11 - Add or change CPND name. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| CPND | NEW CHG OUT | Add, change, or remove the CPND information. |
| CPND_LANG | (ROM) KAT | Use Roman or Katakana characters. |
| NAME | aaaa bbbb | CPND name; maximum of 27 characters. |
| XPLN | xx | Expected name length. |
| DISPLAY_FMT | (FIRST) LAST | First name; Last name (John Doe).<br>Last name; First name (Doe John). |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Pickup

## Contents

This section contains information on the following topics:

“Feature description” (page 249)

“Operating parameters” (page 250)

“Feature interactions” (page 250)

“Feature packaging” (page 252)

“Feature implementation” (page 252)

“Feature operation” (page 254)

## Feature description

Call Pickup allows telephones to be arranged in groups consisting of any combination of analog (500/2500 type) telephones, and Meridian 1 proprietary telephones.

Telephones can be specified as Call Pickup allowed or Call Pickup denied. If the telephone’s Class of Service is Call Pickup allowed, the user can answer calls made to any telephone within the Call Pickup group. If the telephone’s Class of Service is Call Pickup denied, but the telephone is assigned to a Call Pickup group, the user cannot answer calls directed to other telephones. Calls to the denied telephone, however, can be answered by other members of the group.

Meridian 1 proprietary telephones can dial-access this feature, or be equipped with a Call Pickup key. An associated lamp is not required.



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Central Office (CO) Trunk Priority, provides CO trunk calls priority over other calls within the distinctive ringing and normal ringing queues. If the CO Trunk Priority is implemented, calls are answered in the following order:

- Distinctive Ringing Queue CO call (Priority 1)
- Distinctive Ringing Queue non-CO call (Priority 3)
- Normal Ringing Queue CO call (Priority 2)
- Normal Ringing Queue non-CO call (Priority 4)

## Operating parameters

The number of Call Pickup groups is 4095. The number of members assigned to each group is unlimited, depending on available system memory.

## Feature interactions

### Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another set using Call Pickup are charged against the last set that answers the call and the controlling set releases.

### Attendant Alternative Answering

The Attendant Alternative Answering (AAA) DN can be assigned to a Call Pickup group to allow members of the same group to answer the call.

### Attendant Overflow Position

An Attendant Overflow Position Call presented to the AOP DN can be picked up by any station belonging to the same Call Pickup Group.

### Automatic Call Distribution

Automatic Call Distribution (ACD) DNs are not supported by Call Pickup.

### Call Park

An analog (500/2500 type) telephone user on a call can pick up a call by parking the existing call, then activating the Call Pickup feature.

### Calling Party Privacy

If an incoming trunk call with the Privacy Indicator is picked up locally, the display of the calling Party Number and Name are not displayed on the terminating set.

### Call Detail Recording on Redirected Incoming Calls

When an incoming call is picked up, the answering set is identified in the Terminating ID. This operation remains the same.



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### Call Pickup, Directed

Call Pickup can be assigned to a telephone independent of Directed Call Pickup (DCP).

### Conference

This feature cannot be activated during a conference call. Meridian 1 proprietary telephones can activate Call Pickup if an idle Directory Number (DN) key is available. The conference call must be put on hold before pressing the idle DN key to pick up the call.

### Dial Intercom

Call Pickup may be used by Meridian 1 proprietary telephones if the telephones are all in the same Dial Intercom Group (DIG) and Call Pickup Group and the ring option is specified for the DIG

### Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Inter-working

Call Pickup is supported in a DPNSS1 UDP network.

### Display of Calling Party Denied

When a call is picked up from another set, the terminating set's display is in accordance with the Class of Service of the dialed and calling sets. The calling party's display includes the dialed DN, the terminating DN and the name of the terminated set. However, if the terminating set has Digit Display Denied (DDGD), then both the dialed and terminating sets' DNs are blocked from the calling party's display. The same occurs when Digit Display Allowed (DDGA) is configured on the terminating set. Both the dialed and terminating sets' DNs are displayed on the calling party's set, regardless of the Class of Service of the dialed set.

### Flexible Feature Codes

Flexible Feature Codes are not supported on a Meridian 1 proprietary telephone during an attempt to pick up a Dial Intercom ringing call.

### Group Call

This feature can be used to answer a Group Call if it is activated by a valid telephone in the same Call Pickup group, or by using Directory Number (DN) Pickup or Group Pickup.

### Hot Line

Telephones with two-way Hot Line keys, and analog (500/2500 type) Hot Line telephones, can be assigned to pickup groups. Incoming Hot Line calls may be picked up by group members. To prevent someone from picking up a Hot Line call, do not put the Hot Line user into a Call Pickup group.



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### ISDN QSIG Name Display

An incoming QSIG call with name display presentation allowed has name information displayed on the set that picks up the call. If the incoming QSIG call has presentation denied, the calling party's name is not displayed on the set picking up the incoming call.

### Multi-Party Operations

Analog (500/2500 type) telephones with PUA and TSA Class of Service can pick up a call only if they are not involved in another call. After picking up a call, the user can form a Consultation connection and dial Programmable Control Digits as normal.

### Network Intercom

Hot Type I calls cannot be picked up. An attempt to pick up a Hot Type I call results in an overflow tone.

### Periodic Pulse Metering

Metered calls transferred or extended from one station and answered at another station using the Call Pickup feature are charged against the station where the call is picked up as the controlling party disconnects.

### M3900 (Single Site) Virtual Office

The Call Pickup feature is not supported for Virtual Set TNs. A Virtual Set cannot be a member of a call pickup group since the DPU and GPU keys cannot be configured.

The RNPG prompt is blocked in LD 11. Dialing a SPRE code for Call Pickup from a logged in Host Telephone results in overflow tone.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 70 "LD 15 - Implement CO Trunk Priority in the Customer Data Block." (page 253)

   Implement CO Trunk Priority in the Customer Data Block.

2. Table 71 "LD 10 - Define Call Pickup group and Class of Service for analog (500/2500 type) telephones." (page 253)

   Define Call Pickup group and Class of Service for analog (500/2500 type) telephones.

3. Table 72 "LD 11 - Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones." (page 253)



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Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones.

**Table 70**
**LD 15 - Implement CO Trunk Priority in the Customer Data Block.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | (COX) COP | CO Trunk Priority for the Call Pickup feature.<br>COX is no Priority. |

**Table 71**
**LD 10 - Define Call Pickup group and Class of Service for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| RNPG | 0-4095 | Call Pickup group number. |
| CLS | PUA | Allow Call Pickup. |

**Table 72**
**LD 11 - Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| RNPG | 0-4095 | Call Pickup group number. |



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**Table 72**
**LD 11 - Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CLS | PUA | Allow Call Pickup. |
| KEY | xx RNP | Add a Call Pickup key. |

## Feature operation

To answer a call in your Call Pickup group from a Meridian 1 proprietary telephone, follow these steps:

| Step | Action |
|---|---|
| 1 | Lift the handset, or press a DN key. |
| 2 | Press **Call Pickup** or dial SPRE + 3. |

**--End--**

To answer a call in your Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

| Step | Action |
|---|---|
| 1 | Lift the handset. |
| 2 | Dial SPRE 3 or PURN FFC.<br>You are connected to the caller.<br>If you are on a call when another call comes in for someone in your Call Pickup group, you must end, park, or transfer the existing call before you can answer the new call. |

**--End--**



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# Call Pickup, Directed

## Contents

This section contains information on the following topics:

“Feature description” (page 255)

“Operating parameters” (page 256)

“Feature interactions” (page 256)

“Feature packaging” (page 256)

“Feature implementation” (page 256)

“Feature operation” (page 258)

## Feature description

Directed Call Pickup (DCP) allows a caller from one Call Pickup group to pick up a ringing call in another Call Pickup group. The ringing call is picked up by dialing either its Call Pickup Group number or the DN on which it is ringing.

Directed Call Pickup adds two new methods of Call Pickup to the existing Call Pickup feature:

- Group Pickup (GPU), and
- DN Pickup (DPU).

Group Pickup lets you pick up any ringing call in your own pickup group, or any pickup group in the system.

DN Pickup allows pickup of a call ringing on a specified DN. If a DN is not assigned to any group, it defaults to Group Zero (0). This prevents any other group from picking up that DN.



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Both GPU and DPU can be activated using programmable keys or Special Prefix (SPRE) code dialing. Each pickup method can be assigned to a telephone independent of the others.

The dialed digits (DN or group number) are displayed on the Digit Display as dialed. Like the Call Pickup feature, the lamp is optional for the Call Pickup and Group Call Pickup keys. No second dial tone is given after the key is pressed, nor is it given after the SPRE code is dialed.

## Operating parameters

Group 0 (zero) is not a valid group number. A telephone that is not part of any group is assigned by default to group 0 (zero).

## Feature interactions

### Automatic Call Distribution

Automatic Call Distribution DNs are not supported by Directed Call Pickup.

### Call Pickup

Call Pickup can be assigned to a telephone independent of Directed Call Pickup (DCP).

### Flexible Feature Code

Flexible Feature Codes are not supported on a Meridian 1 proprietary telephone during an attempt to pick up a Dial Intercom ringing call.

### Multi-Party Operations - Three-Party Service

Users of analog (500/2500 type) telephones involved in a Three-Party Service call cannot pick up another call by dialing the SPRE code.

## Feature packaging

Directed Call Pickup (DCP) is package 115 and has no feature package requirements.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 73 "LD 15 - Define the number of digits dialed for Call Pickup groups." (page 257)

   Define the number of digits dialed for Call Pickup groups.

2. Table 74 "LD 10 - Configure analog (500/2500 type) telephones to allow DCP Class of Service." (page 257)



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Configure analog (500/2500 type) telephones to allow DCP Class of Service.

3. Table 75 "LD 11 - Configure Meridian 1 proprietary telephones to allow Directed Call Pickup Class of Service." (page 258)

   Configure Meridian 1 proprietary telephones to allow Directed Call Pickup Class of Service.

**Table 73**
**LD 15 - Define the number of digits dialed for Call Pickup groups.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | | Options. |
| | (COX)<br>COP | Central Office call No Priority for Ringing (default).<br>Central Office call Priority for Ringing. |
| - PKND | (1)-4 | Number of digits dialed for Group Pickup.<br>Prompted only if DCP is equipped. |

**Table 74**
**LD 10 - Configure analog (500/2500 type) telephones to allow DCP Class of Service.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| RNPG | (0)-4095 | Ringing Number Pickup Group.<br><br>0 = no pickup group. |
| CLS | (GPUD) GPUA<br>(DPUD) DPUA | (Deny) allow Group Pickup.<br>(Deny) allow DN Pickup. |



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**Table 75**
**LD 11 - Configure Meridian 1 proprietary telephones to allow Directed Call Pickup Class of Service.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| RNPG | 0-4095 | Call Pickup Group.<br><br>0 = no pickup group. |
| CLS | (GPUD) GPUA<br>(DPUD) DPUA | (Deny) allow Group Pickup.<br>(Deny) allow DN Pickup. |
| KEY | xx GPU<br>xx DPU | Group Pickup key.<br>DN Pickup key. |

## Feature operation

To answer a call in another Call Pickup group from a Meridian 1 proprietary telephone, follow these steps:

| Step | Action |
|---|---|
| 1 | Lift the handset. |
| 2 | Press **GRP Pickup** or dial SPRE + 94 or PUGR FFC. |
| 3 | Dial the pickup group number. |

**--End--**

To answer a call on a specified DN from a Meridian 1 proprietary telephone:

| Step | Action |
|---|---|
| 1 | Lift the handset. |
| 2 | Press **DN Pickup** or dial SPRE + 95 or PUDN FFC. |



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| | |
|---|---|
| **3** | Dial the extension number. |

**--End--**

To answer a call in another Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

| Step | Action |
|---|---|
| **1** | Lift the handset and dial SPRE + 94 or PUGR FFC. |
| **2** | Dial the pickup group number. |

**--End--**

To answer a call on a specified DN from an analog (500/2500 type) telephone:

| Step | Action |
|---|---|
| **1** | Lift the handset and dial SPRE + 95 or PUDN FFC. |
| **2** | Dial the extension number. |

**--End--**



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# Call Redirection by Day

## Contents

This section contains information on the following topics:

“Feature description” (page 261)

“Operating parameters” (page 262)

“Feature interactions” (page 262)

“Feature packaging” (page 264)

“Feature implementation” (page 264)

“Feature operation” (page 268)

## Feature description

Call Redirection by Day (CRDAY) is an enhancement of the feature Call Redirection by Time of Day (CRTOD). The CRDAY feature allows you to automatically redirect incoming calls on specified days of the week and/or holidays. You can define the number of rings required before a call is redirected, and the Directory Number (DN) to which the call is redirected.

Existing parameters that apply to the operation and redirection of DNs of Call Forward No Answer (CFNA) and Hunting also apply to this feature. The CRDAY feature also uses the alternate DNs introduced by the CRTOD feature.

You can configure up to four alternate day lists, DAY0 – DAY3, for each customer. Each day list can contain one or more days of the week. You can also configure up to four holiday lists, HOLIDAY0 – HOLIDAY3, for each customer. Each holiday list can contain up to 20 dates.

You can assign one alternate day list and/or one alternate holiday list for each telephone. The maximum value of the year in a holiday date is 2104.



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There is a class of service (CLS) for each of CRTOD, CRDAY, and Call Redirection by Holiday (CRHOL). Each CLS can be enabled or disabled separately and are independent of each other.

At the CRDAY prompt, answering “YES” or “NO” does not fully enable or disable the feature. To enable the feature, you must define at least one of the alternate day lists (DAY0 - DAY3)—call redirection to the alternate DN then takes place, even if you enter “NO” at the CRDAY prompt. Similarly, to disable the feature, all alternate day lists must remain undefined—call redirection does not take place, even if you enter “YES” at the CRDAY prompt.

## Operating parameters

CRDAY is not supported on Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) sets.

## Feature interactions

### Call Redirection by Time of Day

The CRTOD and CRDAY features can work together or separately. If all three classes of service are enabled, CRHOL takes precedence over CRDAY and CRTOD. When the CRDAY and CRTOD classes of service are enabled, CRDAY takes precedence.

When incoming calls require redirection, the order of precedence for which the system handles no answer and busy calls, is listed below:

#### Calls to Idle Stations:

Call Forward All Calls

Message Waiting

Call Forward No Answer

Attendant Recall

#### Calls to Busy Stations:

Call Forward All Calls

Hunting

Call Waiting or Camp-On

Message Waiting Forward Busy

Call Forward Busy



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Call Forward, Internal

Call Forward/Hunt Override Via FFC

### Call Forward No Answer

When Call Redirection by Day (CRDAY) is activated, calls unanswered after a specified number of rings are sent to Call Forward No Answer feature (CFNA) and forwarded to the alternate DN based on the alternative days/holidays configured for the set.

### Call Forward All Calls

All unanswered incoming calls are sent to the Call Forward All Calls feature if there is no answer then the call is sent to the alternate CRDAY DN specified for that day/holiday.

### Call Waiting Redirection

When Call Forward No Answer (CFNA) occurs on a waiting call, the Call Waiting Redirection (CWTR) feature redirects the call to a specified DN based upon the alternate days and/or holidays configured for the set. If the current day matches one of the busy set's alternate days or holidays, then the call is redirected to the CRDAY alternate DN.

### Hunting

Hunting allows a call encountering a busy DN to route automatically to another DN. When CRDAY is enabled and an incoming call reaches a busy DN, the current day is checked against the alternate days and holidays specified for that set. If the current day matches one of the alternate days, the call begins the hunting route using the alternate redirection DNs defined for the set.

### Hunting by Call Type

The Hunt by Call Type redirects an incoming call to a HUNT DN. With CRDAY enabled on the called DN, the incoming calls on specified Alternate Days and Holidays are redirected to the assigned alternate HUNT DN.

### Group Hunting

The Group Hunting feature provides a method of hunting DNs in a group. The group is associated with a Pilot DN, that is, a DN with no associated Terminal Number (TN). The hunting is done in the order of entry of DNs in the group. If a set's list of alternate days and/or holidays program matches the current day, incoming calls are directed to Group Hunt. This feature allows an incoming DID call to be redirected to a Hunt DN or External Hunt (EHT) if Call Forward by Call Type (CFCT) is enabled. To activate this feature, the called DN must have the following class of service Hunting Denied HTD with Hunting By Call Type Allowed (HBTA), and package 131 enabled.



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### Multiple Appearance DN, Multiple Appearance Redirection Prime

When a call redirection feature is activated for a Multiple Appearance DN (MADN), the TN information is required. Call redirection always refers to the Multiple Appearance Redirection Prime (MARP) TN to determine the feature operation. The CRDAY feature also uses the MARP TN to get the alternate call redirection DNs.

### Second Level Call Forward No Answer

The Second Level Call Forward No Answer (SFNA) allows unanswered calls to receive Call Forward No Answer (CFNA) treatment twice. The CFNA timer is configured in the customer data block (CDB) for the number of rings before a call is redirected. If SFNA is allowed on the last DN rung, then the incoming call is redirected based on the list of alternate days and/or holidays configured for the set (day/holiday class of service).

### User Selectable Call Redirection

The CRDAY feature does not support User Selectable Call Redirection (USCR). Only the following redirection DNs can be changed from a set:

- CFNA DN (FDN)
- External CFNA DN (EDN)
- Hunt DN (HUNT)
- External Hunt DN (EHT)

The alternate redirection DNs cannot be changed with USCR.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 76 "LD 15 - Configure alternate days/holidays." (page 265)

   Configure alternate days/holidays.

2. Table 77 "LD 10 - Enable call redirection by day/holiday for analog (500/2500-type) telephones." (page 266)

   Enable call redirection by day/holiday for analog (500/2500-type) telephones.

3. Table 78 "LD 11 - Enable call redirection by day/holiday for a digital sets." (page 267)

   Enable call redirection by day/holiday for a digital sets.



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**Table 76**
**LD 15 - Configure alternate days/holidays.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Redirection data |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| CRDAY | YES | Call Redirection by Day.<br>DAY0 is prompted if "YES" is entered.<br>(NO) = default.<br>If you enter "NO" or <CR> at this prompt, then subsequent alternate day list prompts (DAYx) are skipped. |
| - DAY0 | x x...x | List of alternate days in list 0.<br>Where x = 1...7<br>Sunday = 1<br>Monday = 2<br>Tuesday = 3<br>Wednesday = 4<br>Thursday = 5<br>Friday = 6<br>Saturday = 7<br>To remove a day value precede the day number with an X. |
| - DAY1 | x x...x | List of alternate days in list one. |
| - DAY2 | x x...x | List of alternate days in list two. |
| - DAY3 | x x...x | List of alternate days in list three. |
| CRHOL | | Call Redirection by Holiday. |
| | NEW<br>CHG<br>OUT<br>OUT ALL | Add new data.<br>Change existing data.<br>Remove existing data.<br>Delete all holidays in the list.<br>There are a maximum of 20 holidays allowed. The four holiday options lists are created from these original 20 holidays. |
| - DATE | dd mm yyyy | Enter holiday date.<br>dd = day.<br>mm = month.<br>yyyy = year (optional, with maximum year value of 2104).<br>If the year is not entered, the holiday is repeated every year. |
| --HOL_OPT | | Holiday Option List to which entered date applies. |



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**Table 76**
**LD 15 - Configure alternate days/holidays. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | n n n n | Where:<br>n = 0, 1, 2, or 3. |
| | ALL | Select all four holiday option lists.<br><br>Precede the holiday list with X to remove. |
| - DATE | dd mm yyyy | Continue to input holidays to maximum of 20. |
| | <CR> | Stop adding holidays and continue administration. |
| --HOL_OPT | n n n n | Holiday Option List to which entered date applies.<br><br>Where:<br>n = 0, 1, 2, or 3.<br><br>Select all four holiday option lists.<br><br>Precede the holiday list with X to remove. |

**Table 77**
**LD 10 - Enable call redirection by day/holiday for analog (500/2500-type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500<br>2500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| CLS | FNA<br>FBA<br>RBDA<br>RBHA | Call Forward No Answer Allowed.<br>Call Forward Busy Allowed.<br>Redirection By Day Allowed.<br>Redirection By Holiday Allowed. |
| ... | | |



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**Table 77**
**LD 10 - Enable call redirection by day/holiday for analog (500/2500-type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ADAY | (0) - 3 | Alternate days in DAY list 0-3 are selected for the set. Enter the list of alternate days listed in the Customer Data Block. |
| AHOL | (0) - 3 | Enter the list of alternate redirection holidays in Holiday list 0-3 as selected for the set defined in the Customer Data Block. |
| ... | | |
| FTR | AFD x...x | Alternate forward DN to which all internal calls on an alternate day and/or holiday are redirected upon no answer. |
| | AHNT x...x | Alternate hunt DN to which all internal calls on an alternate day and/or holiday are redirected when set is busy or no answer. (CFNA to HUNT). |
| | AEFD x...x | Alternate external forward DN to which all external calls on an alternate day and/or holiday are redirected upon no answer. |
| | AEHT x...x | Alternate external hunt DN to which all external calls on an alternate day and/or holiday are redirected when set is busy or no answer (CFNA to HUNT). |

**Table 78**
**LD 11 - Enable call redirection by day/holiday for a digital sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| CLS | FNA<br>FBA<br>RBDA<br>RBHA | Call Forward No Answer Allowed.<br>Call Forward Busy Allowed.<br>Redirection By Day Allowed.<br>Redirection By Holiday Allowed. |
| ... | | |
| ADAY | (0) - 3 | Alternate days in DAY list 0 - 3 are selected for the DN. |
| AHOL | (0) - 3 | Enter the list of alternate redirection holidays in Holiday list 0-3 as selected for sets defined in the Customer Data Block. |



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**Table 78**
**LD 11 - Enable call redirection by day/holiday for a digital sets. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| AFD | x...x | Alternate forward DN to which all internal call forward DNs on alternate days/and all holidays are redirected upon no answer. |
| AHNT | x...x | When the DN is busy all incoming calls in the HOLIDAY list are redirected to the alternate hunt DN. |
| AEFD | x...x | Alternate external forward DN to which incoming calls are redirected on alternate days. |
| AEHT | x...x | When the DN is busy, all incoming calls for the specified holiday are redirected to the alternate external hunt DN. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Redirection by Time of Day

## Contents

This section contains information on the following topics:

“Feature description” (page 269)

“Operating parameters” (page 270)

“Feature interactions” (page 270)

“Feature packaging” (page 271)

“Feature implementation” (page 272)

“Feature operation” (page 274)

## Feature description

Call Redirection by Time of Day (CRTOD) adds flexibility to the existing operations of Call Forward No Answer, Hunting and Call Forward by Call Type by allowing incoming calls to be automatically redirected to a predefined Directory Number at a specified time of day.

When the Call Redirection by Time of Day (CRTOD) feature is activated, incoming calls are automatically redirected to a Directory Number through Hunting, Flexible Call Forward No Answer, External Hunt or External Call Forward No Answer. Depending on the time of day, an incoming call can also be redirected to an alternate Directory Number using the Hunting, Call Forward No Answer and Call Forward by Call Type operations.

This feature only changes which redirection Directory Number or alternative Directory Number is used to redirect a call when possible.

At the CRTOD prompt, answering “YES” or “NO” does not fully enable or disable the feature. To enable the feature, you must define at least one of the four possible alternate time options (CRT0 - CRT3). Also, the defined CRTx start time must not equal the defined end time. If you define one or



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more CRTx options (at least one with an unequal start and end time), then call redirection to the alternate DN takes place, even when you enter “NO” at the CRTOD prompt. Similarly, to disable the feature, all alternate time options (CRT0 - CRT3) must remain undefined (or, if defined, the CRTx start time must equal the defined end time). If you leave all CRTx options undefined (or with equal start and end times), then call redirection does not take place, even when you enter “YES” at the CRTOD prompt.

## Operating parameters

All existing limitations that apply to the operation and redirection of Directory Numbers of Call Forward No Answer and Hunting also apply to this feature.

Only one alternate time option is allowed per telephone at a given time.

This feature is not supported on Basic Rate Interface (BRI) terminals.

## Feature interactions

When incoming calls require redirection, the order of precedence for which the system handles no answer and busy calls, is listed below:

*Calls to Idle Stations:*

1. Call Forward All Calls
2. Message Waiting
3. Call Forward No Answer
4. Attendant Recall

*Calls to Busy Stations:*

1. Call Forward All Calls
2. Hunting
3. Call Waiting or Camp-On
4. Message Waiting Forward Busy
5. Call Forward Busy

**Call Forward All Calls**
**Call Forward, Internal**
**Call Forward/Hunt Override Via FFC**

These features take precedence over Call Redirection by Time of Day (CRTOD).



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### Call Forward by Call Type
### Hunting by Call Type

If Call Forward by Call Type (CFCT) is enabled with Call Forward No Answer (CFNA) and Call Redirection by Time of Day (CRTOD), unanswered internal calls receiving CFNA are routed to the Flexible CFNA DN, Hunt DN, Alternate Flexible CFNA DN or Alternate Hunt DNs. External calls are routed in the same manner.

If CFNA is enabled with Hunting by Call Type and Call Redirection by Time of Day (CRTOD), unanswered internal calls are redirected to the Hunt DN or Alternate Hunt DN during the alternative time. External calls are routed in the same manner. The alternate time is defined on the called DN's data block.

### Call Forward No Answer

Call redirection parameters for Call Forward No Answer are obtained from the originally dialed Directory Number. When CRTOD is activated, unanswered calls given CRTOD treatment are forwarded with CFNA according to the time of day. No changes are made to the existing CFNA feature.

### Call Forward No Answer, Second Level

Existing Second Level CFNA allows unanswered calls to receive Call Forward No Answer treatment twice. CRTOD parameters are obtained from the last rung Directory Number. A maximum of two levels of CFNA is allowed for an unanswered call.

### Call Waiting Redirection

When Call Forward No Answer occurs on a waiting call, the redirected Directory Number used depends on the time of day if CRTOD is activated.

### Multiple Appearance DN Redirection Prime

When CRTOD and Multiple Appearance DN Redirection Prime (MARP) are activated, Call Forward or Hunt are dependent on the time of day and follows the MARP feature for Call Forward No Answer or Hunt treatment.

### Hunting

When CRTOD is enabled and an incoming call reaches a busy Directory Number, the time is checked against the Alternate Redirection Time Option range defined on the telephone.

### User Selectable Call Redirection

User Selectable Call Redirection is not supported.

## Feature packaging

This feature is included in base system software.



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 79 "LD 15 - Configure Alternative Redirection Time." (page 272)

   Configure Alternative Redirection Time.

2. Table 80 "LD 10 - Configure Terminal Number Block for analog (500/2500 type) telephones." (page 273)

   Configure Terminal Number Block for analog (500/2500 type) telephones.

3. Table 81 "LD 11 - Configure Terminal Number Block for proprietary telephones" (page 274)

   Configure Terminal Number Block for proprietary telephones

**Table 79**
**LD 15 - Configure Alternative Redirection Time.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Change Call Redirection. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| - CRTOD | YES | Call Redirection by Time of Day.<br>Alternate time option prompts are skipped if (NO) or <CR> is entered |
| - - CRT0 | SH SM EH EM | Alternate time option 0, where: SH = start time in hours, SM = start time in minutes, EH = end time in hours and EM = end time in minutes in international time format (hour from 00-23 and minute 00-59).<br><br>Enter "X" to remove current value and reset both the start time and end time equal to 0. |
| - - CRT1 | SH SM EH EM | Alternate time option 1, where: SH = start time in hours, SM = start time in minutes, EH = end time in hours and EM = end time in minutes in international time format (hour from 00-23 and minute 00-59).<br><br>Enter "X" to remove current value and reset both the start time and end time equal to 0. |



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**Table 79**
**LD 15 - Configure Alternative Redirection Time. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - - CRT2 | SH SM EH EM | Alternate time option 2, where: SH = start time in hours, SM = start time in minutes, EH = end time in hours and EM = end time in minutes in international time format (hour from 00-23 and minute 00-59).<br><br>Enter "X" to remove current value and reset both the start time and end time equal to 0. |
| - - CRT3 | SH SM EH EM | Alternate time option 3, where: SH = start time in hours, SM = start time in minutes, EH = end time in hours and EM = end time in minutes in international time format (hour from 00-23 and minute 00-59).<br><br>Enter "X" to remove current value and reset both the start time and end time equal to 0. |

**Table 80**
**LD 10 - Configure Terminal Number Block for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Analog telephone can be defined or modified. |
| TYPE: | 500 | Analog (500/2500 type) telephone data block. |
| ... | | |
| CLS | RTDA | Call Redirection by the Time of Day allowed.<br>If CLS = RTDD (denied) then RTDA, AEFD, AEHT, AFDN, AHNT is removed and ARTO prompt is reset to 0. |
| ... | | |
| ARTO | (0)-3 | Alternate Redirection Time Option for call redirection defined in the Customer Data Block. Only prompted if CLS = RTDA. Default value 0 is entered if request is new. The value is not changed if request is CHG.<br><br><CR> to enter CLS and ARTO data. |
| FTR | xxxx yyyy | Enter Feature Name and Related Data. |
| | AFD | Alternate Call Forward No Answer DN up to 13 digits.<br>Remove by setting CLS = RTDD. |
| | AHNT | Alternate Hunt DN up to 13 digits.<br>Remove by setting CLS = RTDD. |
| | AEFD | Alternate External Call Forward No Answer DN up to 13 digits.<br>Remove by setting CLS = CFTD or RTDD. |
| | AEHT | Alternate External Hunt up to 13 digits.<br>Remove by setting CLS = CFTD or RTDD. |



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**Table 81**
**LD 11 - Configure Terminal Number Block for proprietary telephones**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| ... | | |
| CLS | RTDA | Call Redirection by the Time of Day allowed. |
| ... | | |
| ARTO | (0)-3 | Alternate Redirection Time Option for call redirection defined in the Customer Data Block. Only prompted if CLS = RTDA. Default value 0 is entered if request is new. The value is not changed if the request = CHG.<br><CR> to enter CLS and ARTO data. |
| AFD | xxxx | Alternate Call Forward No Answer DN up to 13 digits. Remove by setting CLS = RTDD. |
| AHNT | xxxx | Alternate Hunt DN up to 13 digits. Remove by setting CLS = RTDD. |
| AEFD | xxxx | Alternate External Call Forward No Answer DN up to 13 digits. Remove by setting CLS = CFTD or RTDD.<br><br>Requires Call Forward by Call Type Allowed (CFTA) Class of Service. |
| AEHT | xxxx | Alternate External Hunt up to 13 digits. Remove by setting CLS = CFTD or RTDD.<br><br>Requires Call Forward by Call Type Allowed (CFTA) Class of Service. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Transfer

## Contents

This section contains information on the following topics:

“Feature description” (page 275)

“Operating parameters” (page 276)

“Feature interactions” (page 276)

“Feature packaging” (page 284)

“Feature implementation” (page 284)

“Feature operation” (page 285)

## Feature description

The Three-Party Service Allowed Class of Service, part of the Multi-Party Operations feature, cannot be used together with the XFR Class of Service.

With the Restricted Call Transfer feature enabled, users of analog (500/2500 type) telephones cannot transfer calls. Attempted call transfers are not routed to the attendant.

Call Transfer allows a telephone user on any two-party call to hold the existing call and originate another call to a third party. The user may consult privately or transfer the original call to the third party. A call is transferred by pressing a dedicated key on Meridian 1 proprietary telephones or by flashing the switchhook on analog (500/2500 type) telephones.

### Restricted Call Transfer

The Restricted Call Transfer feature provides the Call Transfer Restricted (XFR) Class of Service for analog (500/2500 type) telephones. By assigning XFR Class of Service in LD 10, a call transfer attempt will not



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result in action. This is different from the Call Transfer Denied (XFD) Class of Service, which will route the call to the attendant when a transfer is attempted.

## Operating parameters

A separate Call Transfer key/lamp pair must be assigned to Meridian 1 proprietary telephones.

A transfer allowed Class of Service must be specified for analog (500/2500 type) telephones to access this feature.

If trunks are involved, successful completion of a transfer depends on the access limitations assigned to the stations and trunks.

While the originating side of a call is linked to a transfer or conference key (that is, the originator of a transfer/conference call has not yet completed the transfer/conference), the terminating side cannot initiate a transfer or conference. Conference calls cannot be transferred.

## Feature interactions

### Advice of Charge for EuroISDN

When a set is connected to an ISDN CO trunk conveying AOC charging information, the received call charging information is stored against this set.

If the user transfers the call while the dialed set is still ringing, call charging information is stored against the transferring set until the call is either answered or abandoned by the external party. If the user consults with the dialed transfer set, charging information is stored against the transferring set until the call is either answered or abandoned. If the transferred call is redirected by a call redirection feature, the call is charged against the transferring set until the call transfer is completed and the call is answered. In all instances, if the call is answered, new call charging information is stored against the set receiving the transferred call.

### AC15 Recall: Transfer from Norstar

A party involved in a consultation call (an active or held party) cannot initiate a consultation call for preventing call chaining. This principle is maintained in the following cases:

- the party is an AC15 trunk (if it attempts to initiate a consultation call, the recall signal is ignored), and
- the party is a local set, but the consultation call is made by an AC15 trunk.



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### Attendant Break-In

Until a transferred call is connected, the attendant cannot break in to a call that is being transferred.

### Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Call Transfer (TRN) key is ignored.

### Call Forward by Call Type

Calls modified by Call Transfer receive Call Forward by Call Type treatment. If party A (telephone or trunk) calls party B, and B transfers to party C, the forwarding DN and Class of Service are obtained from party C

### Call Forward, Break-In and Hunt Internal/External Network Wide

The treatment of a call following a call transfer (Call Forward/Hunt by Call Type) is based on the transferring set and the call originator's set. The set display on network call modification or redirection does not change.

### Call Forward/Hunt Override Via Flexible Feature Code

A set can activate Call Forward/Hunt Override Via FFC when initiating a transfer. If the transfer is completed while ringing, the Call Forward/Hunt Override will still be active and passed on to the transferred party.

### Call Hold, Deluxe

A consultation call can be placed on Hold.

### Call Page Network Wide

A station set or attendant console that transfers an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

### Call Party Name Display

When the Transfer key is pressed during an active call, the display clears. The call is in a held state. The DN and name of the transferred telephone appear on the display when the DN is dialed. When the transfer is complete, the transferring telephone's display clears because the telephone is now disconnected. The transferred telephone's display changes to show the name of the newly connected party.

### Call Pickup Network Wide

A call may be picked up before or after the transferring party has completed the transfer.

For pickup before transfer completion, the transferring party is displayed updated information by the Call Pickup Network Wide feature when the call is picked up. Then, when the transfer is completed, normal call transfer information is exchanged by each party involved in the final call.



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For pickup after call transfer completion, everything happens as if the call had been made directly from calling to ringing party. After pickup is performed, displays are updated as for normal Call Pickup.

### Call Transfer

Call Completion notification is only presented to the Call Completion originating set. This notification cannot be transferred to another station. Once the second call is completed, the call can be transferred.

If a user encounters a busy or no answer situation during a transfer operation, Call Completion can be activated.

### Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating set. This display is allowed or denied depending on the Class of Service of the calling set and the forwarding/transferring set. The name of the forwarding/transferring set is not displayed on the calling and terminating set.

### Calling Party Privacy

If an incoming non-ISDN call is being transferred or an incoming ISDN call is transferred to a non-ISDN trunk, the Calling Party Name and Number will not be passed on to the terminating set. The CPP feature will not change this operation.

For cases where an incoming call with the Privacy Indicator is transferred over an MCDN trunk, or to a local station, the name and/or number of the originating party will not be displayed on the set of the final terminating party.

### Charge Account and Calling Party Number

A Call Transfer call produces two records: a Call Detail Recording (CDR) start record and a CDR end record.

### Charge Account, Forced

If an FCA code is entered at the beginning of a call, the new unrestricted Class of Service remains in effect for any transfer or conference made during the call. If all FCA criteria are met, an account number entered after activating the Conference key, Call Transfer key, or a switchhook flash is interpreted as an FCA code.

### China - Attendant Monitor

If any party at the customer location involved in a monitored call attempts to activate call transfer, monitoring is immediately deactivated.



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### China - Toll Call Loss Plan

Toll pad switching is also provided after call transfer has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Conference

Conference can be used to transfer calls, eliminating the need for a separate Call Transfer key/lamp pair on Meridian 1 proprietary telephones. Calls in the ringing state cannot be transferred with Conference. The third party must answer before the transfer can be completed.

A conference can also be established after initiating a Call Transfer operation. After the third party answers, pressing the Conference key establishes a three-way conference.

When a switchhook flash transfers calls on analog (500/2500 type) telephones with three-party conference (C6A) Class of Service, the transferring party goes on hook, leaving the other two parties established. Telephones with a C6A Class of Service involved in a conference having more than three parties must add the last party to the conference, then flash the switchhook and go on hook to complete the transfer.

### Dial Intercom

When using Conference or Transfer, the voice option is not provided if the call is terminated before the conference or transfer is completed. If an analog (500/2500 type) telephone is part of a Dial Intercom Group (DIG), the user of the telephone can conference only with another user whose telephone is within the same Dial Intercom Group (DIG).

### Display Calling Party Denied

When a set transfers a call, display information is updated according to the Class of Service of the respective sets. This occurs for both internal and ISDN network calls.

If an unsupervised call transfer occurs on an internal call, the DN of the terminating set is displayed to the calling party regardless of the DPD Class of Service options that are configured on the terminating set.

### Dial Access to Group Calls
### Group Call

Call Transfer cannot be applied to Dial Access to Group Calls or Group Call.



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### Group Hunt

Any call may be transferred to a Group Hunt Pilot DN. If there are no idle sets available for the call transfer, the call is queued to the Pilot DN and the caller receives ring back tone. If the call cannot be queued because the queue threshold has been reached, the caller receives busy tone.

### Group Hunting Queuing Limitation Enhancement

If a call is transferred to the PLDN, and all Group Hunt list members are busy, the call is queued to the PLDN, if the number of queued calls is less than the Group Hunt Threshold limit. If the number of queued calls has reached the Group Hunt Threshold limit, the call is not queued and busy tone is returned to the transferring party.

### Held Call Clearing

Active Call Transfer calls are cleared by either an on-hook or Release key action. Held Call Transfer calls are cleared only by an on-hook action, and not by a Release key action.

### Hold

A consultation call can be placed on Hold.

### In-Band Automatic Number Identification

If an agent transfers an In-Band Automatic Number Identification (IANI) call to another Automatic Call Distribution DN, the ANI number is displayed on the terminating set's display.

### ISDN QSIG/EuroISDN Call Completion

Call Completion notification is only presented to the Call Completion originating set. This notification cannot be transferred to another station. Once the second call is completed, the call can be transferred.

If a user encounters a busy or no answer situation during a transfer operation, Call Completion can be activated.

### ISDN QSIG Name Display

After the completion of a call transfer, an incoming QSIG call with name display presentation allowed has name information displayed on the destination set. If the incoming QSIG call has presentation denied, name information is not displayed to the destination set.

### Loop Start Supervisory Trunks

If an internal station user transfers an answered outgoing call to another station in the ringing state, then any disconnect signal received from the far end causes the trunk to be released and ringing of the internal set to stop. This operation eliminates the problem of holding trunks and extensions due to lack of supervision on Loop Start trunks.



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### Meridian 911

Trunk priority associated with an incoming 911 call is only preserved if blind transfer is used.

### Meridian 911 - Call Abandon

M911 abandoned calls cannot be transferred.

### Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Call Transfer.

### Multi-Party Operations

Analog (500/2500 type) telephones with TSA Class of Service can Call Transfer by going on-hook after establishing a conference. This differs from operation with XFA Class of service, where transfer can be achieved by going on-hook during Consultation connection.

If an analog (500/2500 type) telephone with TSA Class of Service goes on-hook during consultation connection, it is treated as misoperation of All Other Cases and the recovery actions are done based on the CCDO and AOCS options selected in LD 15. If CDOC = NO, an analog (500/2500 type) telephone can achieve a transfer by going on-hook after establishing a conference.

During the Consultation connection, the non-controlling parties are restricted from using Call Transfer, Conference and Three-party Service features.

### Multi-Party Operations Enhancements

A party receiving Patience Tone or recall of misoperation ringback is not able to Call Transfer.

### Music, Enhanced

The held party receives Music when the other party presses the Call Transfer key. The Music connection remains until the Call Transfer key or the DN key is pressed, ending the Consultation Hold state.

### Network Intercom

Hot Type I calls may be transferred to another Hot Line key or to a normal DN key; likewise calls on a normal DN key may be transferred to a Hot Line key.

### Off-Hook Alarm Security

A telephone receives the Off-Hook Alarm Security treatment if the telephone has ASCA Class of Service and attempts to transfer a call and the ASTM expires.



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### On Hold on Loudspeaker

It will not be possible to transfer the loudspeaker call to another party.

### Periodic Pulse Metering

If the user of a station which is connected to a metered trunk transfers an internal call to another internal station while the dialed station is still ringing, the Periodic Pulse Metering (PPM) pulse count is accumulated against the transferring station until the call is answered by the dialed party, or abandoned by the dialing party. When the call is answered, the pulses are counted against the station to which the call has been transferred. If the station user transfers the call after consulting with the dialed station user, then the PPM pulses are counted against the controlling station until the call is transferred. When the call is transferred, the PPM pulses are counted against the station to which the call has been transferred. If the transferred call is redirected using any of the call redirection features such as Call Forward or Hunting, the call is charged against the transferring station until the call is transferred. The pulses are then counted against the answering station. This method ensures that PPM meters are charged in a manner consistent with the printing of CDR records.

### Predictive Dialing

The application sends the Fast Transfer request on behalf of a Meridian 1 proprietary telephone, and then the switch initiates and completes the transfer immediately which is similar to a normal call transfer from a Meridian 1 proprietary telephone.

In a Predictive Dialing scenario where the autodialer (origination DN) is a Meridian 1 proprietary telephone, the Make Call message sent by the application to the switch to make a call on behalf of the Meridian 1 proprietary telephone, and then the call transfer call, will interact with the Meridian 1 proprietary telephone Call Transfer feature. The autodialer is configured with Class of Service TRN so that the switch can transfer the call to the target destination.

The application sends the Fast Transfer request on behalf of an analog (500/2500 type) telephone. The switch will then initiate and complete the transfer in one step.

In a predictive dialing scenario, the application will send the Make Call request on behalf of the autodialer (analog (500/2500 type) telephone) to have the switch make the call, and then transfer the call when the switch receives the Fast Transfer message. The autodialer needs to be configured with Classes of Service Dial Pulse (DIP) and Transfer Allowed (XFA) for 500 sets, or with Classes of Service Digitone (DTN) and XFA for 2500 sets.



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### Privacy Override

Calls in a Privacy Override conference state cannot be transferred.

### Station Activity Records

A Station Activity Record is generated when a set with Class of Service Call Detail Monitoring Allowed (CDMA) transfers a trunk call. CDR "X" record generation is not affected by this development. The set to which the call is transferred also produces a Station Activity Record if it has Class of Service CDMA and answers the call. When the second "D" record is produced (by the set to which the call is transferred), the digits field of the "D" record shows the digits dialed by the transferring set.

### Supervised Analog Lines
### China-Supervised Analog Lines

If more than one active call is extended to an analog line, the call type associated with an analog line is determined by the first active call. The call type is assumed to be incoming and hook flash supervision applies if a terminal device answers an incoming call from an idle state. If the terminal device performs a switch hook flash to put the first party on hold and initiates a consultation call, the Battery Reversal feature is not supported; no battery reversal answer signal is extended to the terminal device when the second party answers.

If the first party disconnects while the terminal device is connected to the second party, no disconnect supervision is extended to the terminal device. However, hook flash disconnect supervision is extended to the terminal device when the second party disconnects (that is, a disconnect supervision signal is sent only when the last party connected to the terminal disconnects).

If a terminal device originates an outgoing call, battery reversal answer supervision is extended when the called party answers. The polarity of the line remains reversed polarity when the terminal device performs a switch hook flash and then initiates a consultation call to a second party. The analog line is reverted to normal polarity when the terminal device completes the transfer and drops out or when the last of either the held party or the consultation party disconnects.

### Three-Party Service

The party receiving the patience tone or the Misoperation ringback is not able to make a call transfer.

### Trunk Barring

The originator of a call transfer, unless otherwise restricted, is able to connect to a denied party on a consultation basis. Operating the Transfer key on a Meridian 1 proprietary telephone or going on hook on an analog (500/2500 type) telephone does not result in a call transfer



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if the Originating Trunk Connection is barred. The user of a Meridian 1 proprietary telephone remains connected to the denied party until releasing the connection and returning to the held Originating Trunk Connection. The user of an analog (500/2500 type) telephone is re-rung by the Originating Trunk Connection when transfer is attempted and denied.

### Trunk to Trunk Connection

To transfer an external trunk on ringing across a supervised analog network TIE trunk, the external trunk and internal TIE line must have both answer and disconnect supervision, and the external call must be established. To transfer one outgoing external trunk to another, both external trunks must have answer and disconnect supervision, and both external calls must be established.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 82 "LD 10 - Configure Call Transfer for analog (500/2500 type) telephones." (page 284)

   Configure Call Transfer for analog (500/2500 type) telephones.

2. Table 83 "LD 11 - Add a Call Transfer key for Meridian 1 proprietary telephones." (page 285)

   Add a Call Transfer key for Meridian 1 proprietary telephones.

3. Table 84 "LD 10 - Restricted Call Transfer for an analog (500/2500 type) telephone." (page 285)

   Restricted Call Transfer for an analog (500/2500 type) telephone.

**Table 82**
**LD 10 - Configure Call Transfer for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (XFD) XFA | (Deny) allow Call Transfer. |



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**Table 83**
**LD 11 - Add a Call Transfer key for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx TRN | Add a Call Transfer key (the M2317 must use key 26). |

**Table 84**
**LD 10 - Restricted Call Transfer for an analog (500/2500 type) telephone.**

| Prompt | Response | Description |
|---|---|---|
| TYPE: | NEW<br>CHG | Add new data.<br>Change existing data. |
| REQ: | 500 | Telephone type. |
| ... | | |
| CLS | XFR | Restrict call transfers and do not recall to attendant. |

## Feature operation

To transfer an active call on a Meridian 1 proprietary telephone, follow these steps:

| Step | Action |
|---|---|
| **1** | Press **Transfer**.<br>The call is on hold. |
| **2** | Dial the number where you want to transfer the call. |
| **3** | Press **Transfer** when you hear ringing or after your call is answered. When your call is answered, you may speak privately with the new party before completing the transfer.<br>To cancel an incomplete transfer, press the key beside the fast flashing indicator and you return to the call you tried to transfer. To conference all three parties, press the Conference key, if equipped. |

**--End--**



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To transfer an active call on an analog (500/2500 type) telephone, follow these steps:

| Step | Action |
|---|---|
| 1 | Flash the switchhook.<br>The call is on hold. |
| 2 | Dial the number where you want to transfer the call. |
| 3 | Flash the switchhook when you hear ringing or after your call is answered.<br><br>When your call is answered, you may speak privately with the new party before completing the transfer. To cancel an incomplete transfer, hang up, then lift the handset and flash the switchhook to return to the call. |

**--End--**



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# Call Waiting Redirection

## Contents

This section contains information on the following topics:

“Feature description” (page 287)

“Operating parameters” (page 288)

“Feature interactions” (page 288)

“Feature packaging” (page 292)

“Feature implementation” (page 292)

“Feature operation” (page 295)

## Feature description

Previously, Call Waiting notified an active set that a second call was waiting to be answered on that Directory Number (DN). For non-attendant extended calls, the incoming call received Call Waiting treatment until the call was answered by the called party or the calling party disconnected. For attendant-extended calls, the incoming call received Call Waiting treatment until the Call Waiting Recall timer timed out, at which time the call was recalled to the attendant. The attendant had to then extend the call to a message center or voice mail. However, since the attendant was given no indication as the reason for the recall (called party busy or not answering), it was difficult for the attendant to redirect the call properly.

The Call Waiting Redirection feature follows the Call Forward No Answer (CFNA) treatment defined for the DN. No modifications have been made; all existing Call Forward No Answer functionality will apply to redirected calls.



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## Operating parameters

The existing Call Waiting and Call Forward No Answer limitations apply to the Call Waiting Redirection feature. The Call Forward No Answer feature is used by the Call Waiting Redirection feature to redirect "no answer" calls given Call Waiting treatment.

Although the Call Waiting treatment is applied to a busy DN, the CFNA call redirection treatment given by the Call Waiting Redirection feature is for a "no answer" presentation. The unanswered Call Waiting call is treated as a call presented to an idle "no answered" DN. Calls redirected to messaging services or sets with displays are provided with the "no answer" call redirection reason.

The existing implementation of Call Forward No Answer is used to select the TN with the CFNA DN for the "no answer" Call Waiting call. Calls are redirected according to the call type (internal or external) as defined at the designated call redirection TN chosen by CFNA.

## Feature interactions

### Automatic Timed Reminders
### Automatic Timed Recalls

When CFNA is active, the Slow Answer Recall timer begins only after the call reaches its final destination. CFNA has precedence over Attendant Recall for attendant-extended calls. Irrespective of the relative timeout intervals for each feature, ringing continues as long as allowed by CFNA for sets with CFNA enabled.

Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call, the Call Waiting Redirection feature also has precedence over the Call Waiting recall timer.

### Basic Rate Interface

The Call Waiting Redirection feature is not applicable to Basic Rate Interface (BRI) terminals. However, an ISDN BRI terminal may redirect a call using hunting or CFNA.

### Call Forward All Calls
### Call Forward, Internal

Call Forward All Calls and Internal Call Forward both have precedence over Call Waiting and the Call Waiting Redirection feature.

### Call Forward and Hunt by Call Type

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, "no answer" internal calls receiving Call Waiting treatment are routed for CFNA treatment to



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the Flexible CFNA DN (FDN) or Hunt DN, and "no answer" external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

### Call Forward/Hunt Override via Flexible Feature Code

There is no interaction with the Call Waiting treatment component of the Call Waiting Redirection feature. However, Call Forward/Hunt Override via Flexible Feature Code does override CFNA, and thus the CFNA treatment given to unanswered Call Waiting calls by the Call Waiting Redirection feature is overridden by the Call Forward/Hunt Override via Flexible Feature Code (CFHO) feature. The incoming call will continue to be given Call Waiting treatment as if the Call Waiting Redirection feature is disabled when the CFHO feature is enabled by the calling party.

### Call Forward No Answer

Per existing Call Forward No Answer (CFNA) feature operation, the call redirection parameters for CFNA are obtained from the originally dialed DN for redirected calls.

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on sets with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.

### Call Forward No Answer, Second Level

The existing Second Level Call Forward No Answer treatment is applicable to Call Waiting calls redirected by CFNA (first level) with the Call Waiting Redirection feature which are still not answered at the last rung DN.

### Call Redirection by Time of Day

When Call Forward No Answer occurs on a waiting call, the redirected Directory Number used depends on the time of day if Call Redirection by Time of Day (CRTOD) is activated.

### Call Pickup Network Wide

A call that is redirected by the Call Waiting Redirection feature to the active set’s Call Forward No Answer DN may be picked up.

### Call Waiting

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.

### Camp-On

There is no interaction as Call Waiting and Camp-On are mutually exclusive.



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### Direct Inward Dialing Call Forward No Answer Timer

The Direct Inward Dialing Call Forward No Answer Timer is applied after the last stage of CFNA or SFNA treatment resulting from the Call Waiting Redirection feature for DID Call Waiting calls.

### Distinctive Ringing/New Distinctive Ringing Call Forward No Answer

The existing Distinctive Ringing Call Forward No Answer feature is applied to calls from a Distinctive Ringing enabled trunk. If such an incoming call is receiving Call Waiting treatment on sets with Distinctive Ringing, Call Forward No Answer (CFNA), and the Call Waiting Redirection feature enabled, the DFNA timer is applied to the call instead of the CFNA timer. The Call Waiting warning tone, if enabled, is not changed by Distinctive Ringing. If that call is not answered before the expiration of the DFNA timer, CFNA treatment is given using the Call Waiting Redirection feature.

### Forward No Answer Call Waiting Direct Inward Dialing

With the Call Waiting Redirection feature also enabled, the Call Waiting Redirection feature takes precedence over Forward No Answer Call Waiting Direct Inward Dialing (FCWD). The existing CFNA also takes precedence over the existing Attendant Recall of Call Waiting calls. Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call while the FCWD feature applies an attendant recall timer, the Call Waiting Redirection feature also has precedence over the FCWD timer.

### Hunting

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, "no answer" internal calls receiving Call Waiting treatment are routed for CFNA treatment to the Flexible CFNA DN (FDN) or Hunt DN, and "no answer" external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

### Internal or Station-to-Station Call Waiting

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.

### Meridian Mail Voice Mailbox Administration

Unanswered calls given Call Waiting treatment may now be allowed to forward to Voice Mail through the activation of the Call Waiting Redirection feature. The greeting given to the caller is for a "no answer" condition.

### Message Center

Unanswered calls given Call Waiting treatment may now be allowed by the Call Waiting Redirection feature to be forwarded to a CFNA DN which may be a Message Center. The call redirection reason is "no answer".



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### Message Waiting

Message Waiting has precedence over CFNA and Attendant Recall for attendant-extended calls. Unanswered calls given Call Waiting treatment are forwarded to the Flexible CFNA DN by the Call Waiting Redirection feature.

### Multi-Party Operations

*Recovery on Misoperation of Call Transfer - Call Transfer with Ring No Answer (RGNA)*

If the transferring party goes on-hook to complete the Call Transfer (that is, blind transfer) before the "transferred to" or called party answers the Call Waiting call, an RGNA Misoperation of Call Transfer is detected by Multi-Party Operations (MPO).

With the Call Waiting Redirection feature enabled, if the blind transfer completes after the CFNA timer applied by Call Waiting Redirection has expired, there is no interaction as the Call Waiting Redirection feature is done and has already redirected the unanswered Call Waiting call to the CFNA DN.

If the blind transfer completes before the Call Waiting Redirection CFNA timer expires and the RGNA option is defined to be:

1. Standard (STD, that is, operation as it was prior to introduction of MPO), there is no interaction, as Call Waiting Redirection will redirect the unanswered Call Waiting call when the CFNA timer expires.
2. Non-STD (that is, ATN, DIS, OVF, AAR, or DAR), the RGNA option has precedence over CFNA and thus has priority over Call Waiting Redirection’s CFNA treatment.

Recovery on Misoperation of Call Transfer – Misoperation of Call Transfer for All Other Cases

This type of misoperation occurs when the transferring party attempts to complete the transfer in several other non-RGNA scenarios. There is no interaction with these Multi-Party Operations scenarios and the Call Waiting Redirection feature.

### Multiple Appearance Directory Number

The Call Waiting Redirection feature applies to unanswered Call Waiting calls which apply to single appearance DNs and primary appearance DNs of Multiple Appearance.



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### Multiple Appearance Directory Number Redirection Prime

If the Multiple Appearance Directory Number Redirection Prime (MARP) feature is activated, the Call Forward No Answer (CFNA) treatment given by Call Waiting Redirection for an unanswered Call Waiting call follows the MARP feature for CFNA treatment of calls to an idle DN.

### Network Call Forward No Answer

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on sets with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.

### Network Call Redirection

Incoming calls receiving Call Waiting Redirection treatment can be redirected over the network only if the trunk-to-trunk connection is already supported per the existing Network Call Redirection feature.

### Night Restriction Classes of Service

The Call Waiting Redirection feature applies to unanswered calls given Call Waiting treatment when the Night Restriction Classes of Service feature allows Call Waiting.

### Night Service
### Night Service Enhancements

Night Service has the same interaction with the Call Waiting Redirection feature as attendant-extended calls. Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call, the Call Waiting Redirection feature also has precedence over the Call Waiting recall timer.

### Voice Mail

Unanswered calls given Call Waiting treatment may now be allowed to forward to Voice Mail through the activation of the Call Waiting Redirection feature. The greeting given to the caller is for a "no answer" condition.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 85 "LD 15 - Configure the CFNA treatment, the number of ringing cycles for CFNA, and the Call Waiting Redirection option." (page 293)



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Configure the CFNA treatment, the number of ringing cycles for CFNA, and the Call Waiting Redirection option.

2. Table 86 "LD 10 - Configure Call Waiting and Call Forward No Answer for analog (500/2500 type) telephones." (page 294)

   Configure Call Waiting and Call Forward No Answer for analog (500/2500 type) telephones.

3. Table 87 "LD 11 - Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones." (page 294)

   Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones.

**Table 85**
**LD 15 - Configure the CFNA treatment, the number of ringing cycles for CFNA, and the Call Waiting Redirection option.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Call Redirection |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | CWRA | Call Waiting Redirection Allowed.<br><br>Allow Call Forward No Answer treatment for unanswered Call Waiting calls on a DN. |
| ... | | |
| FNAD | (HNT) ATT NO FDN | CFNA treatment for DID calls. |
| FNAT | (HNT) ATT NO FDN | CFNA treatment for internal non-Direct Inward Dialing calls. |
| FNAL | (HNT) ATT NO FDN | CFNA treatment for calls when Call Waiting Redirection is enabled. |
| ... | | |
| CFN0 CFN1 CFN2 | 1-(4)-15<br>1-(4)-15<br>1-(4)-15 | CFNA timers; number of normal ringing cycles for CFNA Options 0, 1, and 2. |
| DFN0 DFN1 DFN2 | 1-(4)-15<br>1-(4)-15<br>1-(4)-15 | Distinctive Ringing CFNA timers; number of distinctive ringing cycles for CFNA Options 0, 1, and 2. |



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**Table 86**
**LD 10 - Configure Call Waiting and Call Forward No Answer for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| HUNT | xxx..x | Hunt DN. If the Call Forward No Answer treatments set up in LD 15 are set to HNT, the Hunt DN should be configured. |
| CLS | (CWD) CWA | Call Waiting external (denied) allowed. |
| | (SWD) SWA | Internal (Station-to-Station) Call Waiting (denied) allowed. If SWA is defined, CWA must also be defined. |
| | (WTA) WTD | Warning tone (allowed) denied. |
| | (FND) FNA | Call Forward No Answer (denied) allowed. |
| | FBA | Call Forward Busy Allowed.<br>For customers with the United Kingdom (UK) package 190 configured, CLS must be set to FBA for calls over DASS/DPNSS trunks. |
| RCO | (0)-2 | Ringing cycle option for Call Forward No Answer. Prompted when CLS = FNA, or MWA (or both). RCO must be set to a value other than 0 for Call Waiting Redirection to operate. |
| FTR | aaaa<br>FDN xxx..x | Enter the feature and related data.<br>Flexible CFNA DN. If the CFNA treatments set up in LD 15 are set to FDN, the Flexible CFNA DN should be configured. |

**Table 87**
**LD 11 - Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 87**
**LD 11 - Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| FDN | xxx..x | Flexible CFNA DN. If the Call Forward No Answer treatments set up in LD 15 are set to FDN, the Flexible CFNA DN should be configured. |
| CLS | (SWD) SWA | Internal (Station-to-Station) Call Waiting (denied) allowed. SWA does not need to exist to have external Call Waiting. |
| | (WTA) WTD | Warning tone (allowed) denied. |
| | (FND) FNA | Call Forward No Answer (denied) allowed. |
| | FBA | Call Forward Busy Allowed.<br>For customers with the United Kingdom (UK) package 190 configured, CLS must be set to FBA for calls over DASS/DPNSS trunks. |
| RCO | (0)-2 | Ringing cycle option for Call Forward No Answer. Prompted when CLS = FNA, or MWA (or both). RCO must be set to a value other than 0 for Call Waiting Redirection to operate. |
| HUNT | xxx..x | Hunt DN. If the Call Forward No Answer treatments set up in LD 15 are set to HNT, the Hunt DN should be configured. |
| KEY | xx CWT | xx = key number.<br>Add a Call Waiting key. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Call Waiting/Internal Call Waiting

## Contents

This section contains information on the following topics:

“Feature description” (page 297)

“Operating parameters” (page 298)

“Feature interactions” (page 299)

“Feature packaging” (page 304)

“Feature implementation” (page 304)

“Feature operation” (page 305)

## Feature description

Call Waiting notifies a telephone user on an established call (internal or external) that an external call is waiting to be answered. Meridian 1 proprietary telephones must have a Call Waiting key/lamp pair assigned and a Class of Service that allows a warning tone. Call Waiting is applicable to the Prime DN or any single appearance DN on the telephone. When an external call comes into a Meridian 1 proprietary telephone and the telephone user is on a call, the Call Waiting lamp flashes and a buzz sounds through the telephone’s speaker.

To use Call Waiting, analog (500/2500 type) telephones must have a Class of Service that allows Call Waiting and a warning tone. Two tone bursts are received through the handset to advise an analog (500/2500 type) telephone user of a waiting call. Note that the two calls cannot be conferenced together.



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Call Waiting applies to Direct Inward Dialing (DID), Central Office (CO), Foreign Exchange (FX), and Wide Area Telephone Service (WATS) trunk calls extended to a busy telephone by the attendant. Call Waiting also applies to calls on TIE and Common Control Switching Arrangement (CCSA) trunks.

### Internal Call Waiting

This feature provides Call Waiting for internal calls. This option, defined on a per-telephone basis, allows Call Waiting for calls from other telephones within the customer group. These calls include the following:

- direct telephone-to-telephone calls
- attendant-extended internal calls
- telephone-to-telephone call transfer of all trunk and internal calls

### Call Waiting Flexible Feature Codes

A user may activate Call Waiting from an analog (500/2500 type) telephone with Call Waiting Class of Service by dialing the Call Waiting Activate (CWGA) FFC (defined in LD 57). To deactivate Call Waiting, the user dials either the Call Waiting Deactivate (CWGD) FFC (defined in LD 57) or the general Deactivate (DEAF) FFC (also defined in LD 57).

If Call Waiting is deactivated using FFCs, then station-to-station call waiting is also deactivated at the telephone.

If the Class of Service is CWA, ACTIV or DEACT is printed in brackets when CWT is activated or deactivated.

The CWT FFCs do not affect Precedence Call Waiting.

## Operating parameters

A Meridian 1 proprietary telephone can have only one working Call Waiting key/lamp pair.

Telephones with internal telephone-to-telephone Call Waiting must also have external Call Waiting (CWA) Class of Service.

A Call Waiting indication is not presented to a single-line telephone in the transfer or conference mode.

An analog (500/2500 type) telephone user receiving a second call can connect alternately to the original call and the Call Waiting call by a switchhook flash. The user cannot transfer or conference either call.



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When a second call goes to a telephone that already has a Call Waiting call, the second call is recalled to the attendant if it is not answered by the number of rings defined in the Customer Data Block (RTIM prompt, field zz).

An analog (500/2500 type) telephone user who has received a Call Waiting call routed from the attendant cannot reconnect to the original call until it has been released from the console.

Attendant Administration does not support the Internal Call Waiting feature.

If a call is waiting and Call Waiting is deactivated using the Call Waiting Deactivate (CWGD) FFC, the call that is waiting is allowed to continue waiting while any new calls will not be allowed to wait.

## Feature interactions

### Advice of Charge for EuroISDN

When an Advice of Charge call is transferred to a busy set with Call Waiting Allowed, the transferring station is charged until the call is answered.

### Attendant Blocking of Directory Number

If a set that has the Station-to station Call Waiting feature active (CLS SWA and a Call Waiting (CWT) key for digital sets) is idle when an Attendant Blocking of DN attempt is made, the Attendant Blocking of DN attempt is allowed and processed as normal. If the DN is idle and there is an active call on the Call Waiting key, the Attendant Blocking of DN attempt is allowed.

If a set has the Station-to-station Call Waiting feature active and the DN to be blocked is busy when an Attendant Blocking of DN attempt is made, the Attendant Blocking of DN attempt is canceled and busy tone is returned.

For a set that has the Call Waiting (or Station-to-station Call Waiting) feature active and a DN is blocked due to the Attendant Blocking of DN feature, any incoming call to the blocked DN will receive busy tone.

### Attendant Break-In

If the destination DN has a camped-on incoming trunk call, the attendant cannot extend the urgent incoming call as a Camp-On call.

### Attendant Incoming Call Indicators

The ICI feature is used with the Call Waiting feature to recognize, answer, and process incoming calls.



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### Attendant Queuing

Call Waiting options do not apply to calls queued to a specified attendant. The exception to this is the display call waiting key, which shows the number of calls in the overall attendant queue and the calls in the queue for a specified attendant.

### Automatic Line Selection

A call on the Call Waiting key is not selected.

### Call Forward All Calls
### Call Forward All Calls takes precedence over Call Waiting.
### Call Forward Busy - proprietary telephones

If Class of Service allows Call Forward Busy and Call Waiting Allowed, and the proprietary telephone has a Call Waiting key, calls do not forward to the attendant when the telephone is busy and another call is waiting.

### Call Forward Busy - Analog (500/2500 type) telephones

If a telephone has Call Forward Busy and Call Waiting Allowed Class of Service, calls are forwarded to the attendant when the telephone is busy and has another call waiting.

### Call Forward/Hunt Override Via Flexible Feature Code

Call Waiting can be used even if the Call Forward/Hunt Override Via FFC feature has been activated. When a busy set with Call Waiting configured is encountered, it will terminate on Call Waiting.

### Call Forward, Internal Calls

Internal Call Forward takes precedence over Call Waiting.

### Call Forward No Answer

If a call to a telephone gets Call Forward No Answer treatment to another telephone which is busy, Call Waiting and Camp-On do not apply. The call will attempt to terminate on the original DN again.

### Call Park

A recall of a parked call is not presented in the Call Waiting mode. If an internal telephone is in the parked state, Call Waiting to that telephone is not provided.

### Call Pickup Network Wide

Call Waiting calls cannot be picked up.

### Call Waiting Redirection

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.



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### Camp-On

Call Waiting and Camp-On are mutually exclusive. If a Call Waiting Class of Service or key is defined, Camp-On cannot be provided.

### Camp-on, Station

Call Waiting takes precedence over Station Camp-On.

### China Number 1 Signaling - Called Party Control

An attendant cannot apply Call Waiting on an outgoing call that follows Called Party Control.

### Dial Intercom

Call Waiting does not apply to a Dial Intercom appearance.

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

Executive Intrusion is permitted (consult-only state) into a requested party having call waiting.

### Directory Number Delayed Ringing

Call Waiting tones apply to SCN/MCN keys as per existing operation. The Directory Number Delayed Ringing does not apply, and the user is informed of the incoming call immediately.

### Flexible Feature Code Boss Secretarial Filtering

Call Waiting to a boss set with filtering active is routed to the secretary set.

### Flexible Feature Code enhancement

The Call Waiting Deactivate (CWGD) FFC may be used to deactivate Call Waiting. If a call is waiting when Call Waiting is deactivated, the call is allowed to continue waiting while any new calls will not be allowed to wait.

### Flexible Voice/Data Terminal Number

Call Waiting is not supported on data calls to a dynamic voice/data TN. Call Waiting is supported for voice calls to dynamic voice/data TN.

### Group Hunt

Call Waiting to a Pilot DN will not be supported.

### Hunting

If a call comes into a busy DN, it begins the hunting route defined from the called DN. If there are idle DNs on the hunting route, the call becomes a Call Waiting call on the called DN.

### Idle Extension Notification

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When a busy set is encountered, it is possible to place an IEN request against the set.



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### ISDN Night Service

If a call is diverted to a third-party operator Night DN that is busy, Call Waiting may be activated (if equipped). The call to the third-party operator circuit switched network is released.

### ISDN QSIG/EuroISDN Call Completion

On an Analog (500/2500 type) set, Call Completion notification waits until the set has finished an active call. If Call Waiting is configured on a set, notification is presented after the Call Waiting call. If an additional call is queued while Ring Again free notification is waiting on a set, the waiting call takes precedence over the Call Completion notification. An established Call Completion call is also queued if a set has Call Waiting feature equipped and is occupied on another call.

### Message Center

Call Waiting calls are not forwarded to a Message Center.

### Multi-Party Operations

A user of an analog (500/2500 type) telephone can answer a Call Waiting call, thereby establishing a consultation connection. The user can dial control digits, as normal. To toggle the calls, the toggle control digit must be used rather than a switchhook flash.

### Multi-Party Operations

An analog (500/2500 type) telephone may be assigned both CWA and TSA Classes of Service. The user can establish a Consultation connection by answering Call Waiting during an active established call. If this is done, Control Digit features (CNFD, TGLD, and DISD) are available. Note that Programmable Control Digit TGLD, rather than a switchhook flash, is used to toggle the calls. Operation with XFA Class of Service is unchanged.

The Three-party Service feature changes the operation of Call Waiting for all analog (500/2500 type) telephones as follows (regardless of whether the sets have TSA Class of Service. If an analog (500/2500 type) telephone user activates Waiting during an active call so as to establish a Consultation connection, and if the user goes on-hook during the Consultation connection, the operation is treated as an AOCS misoperation. This recovery of misoperation will take place even if the MPO package is not equipped. In this case, the controlling party is re-rung by the held party regardless of the CCDO and the recovery of misoperation options.

If an analog (500/2500 type) telephone user attempts to set up a Consultation connection by dialing a busy DN and if the Call Waiting conditions are satisfied, the controlling party will hear ringback tone and the active party will hear Call Waiting tone. If the controlling party



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goes on-hook before the active party has answered, the held call is disconnected regardless of the MPO options and Call Waiting tone is removed from the active party.

### Multi-Party Operations - Three-Party Service

An analog (500/2500 type) telephone cannot have Call Waiting during the patience tone.

An analog (500/2500 type) telephone may be assigned both CWA and TSA Classes of Service. The user can establish a Consultation connection by answering Call Waiting during an active established call. If this is done, Control Digit features (CNFD, TGLD, and DISD) are available. Note that Programmable Control Digit TGLD, rather than a switchhook flash, is used to toggle the calls. Operation with XFA Class of Service is unchanged.

The Three-party Service feature changes the operation of Call Waiting for all analog (500/2500 type) telephones as follows (regardless of whether the sets have TSA Class of Service. If an analog (500/2500 type) telephone user activates Waiting during an active call so as to establish a Consultation connection, and if the user goes on-hook during the Consultation connection, the operation is treated as an AOCS misoperation. This recovery of misoperation will take place even if the MPO package is not equipped. In this case, the controlling party is re-rung by the held party regardless of the CCDO and the recovery of misoperation options.

If an analog (500/2500 type) telephone user attempts to set up a Consultation connection by dialing a busy DN and if the Call Waiting conditions are satisfied, the controlling party will hear ringback tone and the active party will hear Call Waiting tone. If the controlling party goes on-hook before the active party has answered, the held call is disconnected regardless of the MPO options and Call Waiting tone is removed from the active party.

### Night Restriction Classes of Service

If Call Waiting and Night Restriction for Call Waiting Class of Service (NRWA) are assigned, Call Waiting is operational for the set only when Night Service is in effect.

### Night Service Enhancements

This feature will terminate incoming Night calls to busy DNs by applying Call Waiting. This is done even if the Night DN is an analog (500/2500 type) telephone with Call Waiting Denied (CWD) Class of Service, or if the Night DN is a Meridian 1 proprietary telephone without a Call Waiting (CWT) key assigned.



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All telephones (analog (500/2500 type) and Meridian 1 proprietary) is given Night Call Waiting tone, if the NWT prompt in LD 15 was responded to with "YES", regardless of the Warning Tone (WTA,WTD) Class of Service setting of the set. Meridian 1 proprietary telephones is given Night Call Waiting tone in the handset instead of the speaker buzz for Call Waiting.

### On Hold on Loudspeaker

Call Waiting can be applied to a busy loudspeaker DN.

### Ring Again

The user is notified that a previously busy line is free only when both the original call and the waiting call have disconnected.

### Station Camp-on

Call Waiting takes precedence over Station Camp-On.

## Feature packaging

Call Waiting/Internal Call Waiting is included in base system software.

For Call Waiting FFCs, the following packages are required:

- Background Terminal Facility (BGD) package 99
- Flexible Feature Codes (FFC) package 139

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 88 "LD 10 - Allow Call Waiting for analog (500/2500 type) telephones." (page 304)

   Allow Call Waiting for analog (500/2500 type) telephones.

2. Table 89 "LD 11 - Allow Call Waiting for Meridian 1 proprietary telephones." (page 305)

   Allow Call Waiting for Meridian 1 proprietary telephones.

**Table 88**
**LD 10 - Allow Call Waiting for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 88**
**LD 10 - Allow Call Waiting for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CWD) CWA<br>(SWD) SWA<br><br>(WTA) WTD | (Deny) allow Call Waiting.<br>(Deny) allow internal Call Waiting (if SWA is defined, CWA must also be defined).<br>(Allow) deny warning tone. |

**Table 89**
**LD 11 - Allow Call Waiting for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | SWA<br>WTD | allow internal Call Waiting.<br>deny warning tone. |
| KEY | xx CWT | Add a Call Waiting key. |

## Feature operation

To answer a Call Waiting call on Meridian 1 proprietary telephones, follow these steps:

| Step | Action |
|---|---|
| **1** | Press **Hold** when you hear a tone during a telephone call. |
| **2** | Press **Call Wait** to answer the waiting call. |

**--End--**

To return to your first call, follow these steps:

| Step | Action |
|---|---|
| **1** | Press **Hold** if you want to put your second call on Hold. |



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2 Press the extension key that has the first call on it.

**--End--**

To answer a Call Waiting call on analog (500/2500 type) telephones, follow these steps:

- Flash the switchhook when you hear a beep during a telephone call. Your current call is on Hold and you are connected to the waiting call.

To return to your first call:

- Flash the switchhook.

The following instructions are for using Call Waiting FFCs:

- Allow – The user must dial the Call Waiting Activate (CWGA) FFC.
- Disallow – The user must dial the Call Waiting Deactivate (ATDD) FFC or the Deactivate (DEAF) FFC.
- Use prerequisites – To set Call Waiting, the telephone must have Call Waiting Allowed (CWA) Class of Service.



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# Called Party Control on Internal Calls

## Contents

This section contains information on the following topics:

“Feature description” (page 307)

“Operating parameters” (page 307)

“Feature interactions” (page 308)

“Feature packaging” (page 308)

“Feature implementation” (page 309)

“Feature operation” (page 310)

## Feature description

The Called Party Control on Internal Calls (CPCI) feature allows the called party with Class of Service Malicious Call Trace Allowed to activate Malicious Call Trace (MCT) even after the calling party goes on-hook. When enabled, the calling party is prevented from releasing a call until the called party has initially released. If the calling party goes on hook, the call is put on hold and both parties are given call hold treatment. When the called party activates the call trace request, the calling party’s information is printed in the call trace record.

This feature builds on the capabilities of the existing Called Party Disconnect Control (CPDC) and Malicious Call Trace (MCT) features. Called Party Control on Internal Calls is applicable on set to set calls and can be activated during or after a malicious call has occurred.

## Operating parameters

The feature is applicable to all systems.



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This feature is designed for stand alone application only and is not supported across a network. On a set to set call, the calling and the called party must belong to the same customer on the same system.

Called Party Control on Internal Calls (CPCI) is not supported on ISDN BRI sets.

If an attendant console is the calling party and involved in a call with a set, the CPCI feature functionality is not provided to the call.

The CPCI feature is not supported with features such as Attendant Recall, Override, Call Park and Privacy Release.

If the system initializes during an established call, the call remains established. Following initialization, the calling party can successfully release from a connected call prior to the called party releasing.

For this feature, the called party must have a Malicious Call Trace Allowed (MCTA) Class of Service configured in the Customer Data Block (LD 15).

The existing limitations of Malicious Call Trace apply to this feature. When MCT is requested, the information is printed in the call trace record.

If the called party does not release the connection, then the calling party remains established until the called party releases.

## Feature interactions

### Automatic Hold

If Called Party Control on Internal Calls is active, an established call is put on hold regardless of the Automatic Hold Class of Service assigned to the set when a second call is originated or answered.

### Call Hold, Deluxe

The calling party and called party can put either party on hold. However, the calling party cannot release the call while the called party is on hold. The called party is permitted to release the call.

### Held Call Clearing

With Called Party Control on Internal Call enabled, a call on hold is not cleared when the calling party releases. This occurs whether or not the Held Call Clearing feature has been activated.

## Feature packaging

Called Party Control on Internal Calls requires the new package Called Party Control on Internal Calls (CPCI) package 310 and also requires Malicious Call Trace (MCT) package 107.



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 90 "LD 15 - Configure Called Party Control on Internal Calls in the Customer Data Block." (page 309)

   Configure Called Party Control on Internal Calls in the Customer Data Block.

2. Table 91 "LD 57 - Configure Malicious Call Trace Flexible Feature Code." (page 309)

   Configure Malicious Call Trace Flexible Feature Code.

3. Table 92 "LD 10 - Enable Malicious Call Trace on Analog (500/2500 type) sets." (page 310)

   Enable Malicious Call Trace on Analog (500/2500 type) sets.

4. Table 93 "LD 11 - Enable Malicious Call Trace on Meridian 1 proprietary sets." (page 310)

   Enable Malicious Call Trace on Meridian 1 proprietary sets.

**Table 90**
**LD 15 - Configure Called Party Control on Internal Calls in the Customer Data Block.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Change Features and options. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| - MCDC | YES | Malicious Call DN/CLID printing allowed. |
| CPCI | YES | Called Party Control on Internal Calls allowed.<br>NO = Called Party Control on Internal Calls denied. |

**Table 91**
**LD 57 - Configure Malicious Call Trace Flexible Feature Code.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Code data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| CODE | MTRC | Malicious Call Trace Flexible Feature Code. |
| MTRC | xxxx | Enter Flexible Feature Code. |



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**Table 92**
**LD 10 - Enable Malicious Call Trace on Analog (500/2500 type) sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Analog Set Type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| CLS | MCTA | Malicious Call Trace allowed.<br>MCTD = Malicious Call Trace denied. |

**Table 93**
**LD 11 - Enable Malicious Call Trace on Meridian 1 proprietary sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| CLS | MCTA | Malicious Call Trace allowed.<br>MCTD = Malicious Call Trace denied. |
| KEY | xxx TRC | Key Number, Malicious Call Trace. |

For information on the implementation of the Malicious Call Trace feature, refer to the Malicious Call Trace feature description in *Features and Services Fundamentals* (NN43001-106), Book 2.

## Feature operation

Feature operation is described in the following scenarios.



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### Simple Call - Meridian 1 Proprietary Sets

Set A, the calling party, initiates a call to Set B, the called party. Set B has Class of Service Malicious Call Trace Allowed (MCTA) configured. With Called Party Control on Internal Calls (CPCI) activated, Set B can activate Malicious Call Trace even after Set A has gone on-hook. This operation is possible because Set A is not idled until Set B has gone on-hook. Depending on the type of telephone, CPCI activation is done by completing the following:

| Step | Action |
|---|---|
| 1 | Enter the SPRE code and "83" access code; |
| 2 | Dial the Malicious Call Trace (MCT) Flexible Feature Code (FFC) or |
| 3 | Activate the Call Trace key. |

**--End--**

With Called Party Control on Internal Calls, Set B can activate the Malicious Call Trace feature during an active call between Set A and Set B as well as after Set A has gone on-hook. Set A is not idled until Set B goes on-hook.

### Simple Call - Analog (500/2500 type) Sets

| Step | Action |
|---|---|
| 1 | Flash the switchhook. A special dial tone is heard that signifies the call is on hold. |
| 2 | Enter the SPRE code and "83" access code. |
| 3 | Dial the Malicious Call Trace Flexible Feature Code. |
| 4 | Go on-hook. |

**--End--**

### Conference Call

When the calling party and the called party both are involved in a conference call then the following operation is observed:

1. A party that called a set with CLS MCTA is only allowed to release if the called party has gone on hook and no other conferee has CLS MCTA or all remaining conferees were originators of a CPCI call.
2. In a three party conference between the called party, calling party and the recorder then the recorder is not considered as a conferee. The



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recorder is treated as a simple call for called party control on internal calls feature.

3. In a set to set call, if the called party establishes a conference with a trunk then the called party control on internal calls feature functionality is provided as long as the last called party (with CLS configured as MCTA) which goes on hook is a set rather than a trunk.

### Transfer Call

If calling party and the called party are both involved in a simple call and either party tries to transfer the call to another set then the following operation is observed:

1. If the called party in a CPCI call attempts to transfer the call to a set with CLS MCTA, it is not allowed to complete its transfer.
2. If the called party transfers the call across the network then the called party is allowed to complete its transfer across the network and the transferred to party does not have any control on the calling party.
3. If the calling party in a CPCI call attempts to transfer the call to another set, it is not allowed to complete its transfer regardless of that set's Class of Service.

### Call on Hold

If calling party and the called party both are involved in a simple call and either party tries to put the call on hold then the following operation is observed:

1. If the calling party tries to release the call then the calling party is not allowed to release from the call.
2. If the called party tries to release the call then the called party is allowed to release from the call.



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# Called Party Disconnect Control

## Content

This section contains information on the following topics:

“Feature description” (page 313)

“Operating parameters” (page 313)

“Feature interactions” (page 314)

“Feature packaging” (page 315)

“Feature implementation” (page 315)

“Feature operation” (page 315)

## Feature description

Called Party Disconnect Control allows the system to control the disconnecting of calls on Central Office (CO), Foreign Exchange (FX), Common Control Switching Arrangement (CCSA), Direct Inward Dialing (DID), TIE, Wide Area telephone Service (WATS), modem, and Centralized Automatic Message Accounting (CAMA) trunks. The trunk route data block has been modified so that a route can be specified for Called Party Disconnect Control.

With Called Party Disconnect Control, an incoming trunk call answered within the system is not disconnected until the system end goes on-hook. If the calling party goes on-hook, the connection is held, allowing the call to be traced in emergency situations. If the calling party goes off-hook again, the call is not reestablished.

## Operating parameters

An incoming call on a trunk route with Called Party Disconnect Control allowed can be transferred to another telephone within the system, but cannot be transferred to a trunk.



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An incoming call with Called Party Disconnect Control can be forwarded to another telephone, but not to another trunk.

Tandem trunk connections are not allowed on incoming calls on trunks with Called Party Disconnect Control allowed.

If Barge-In or Busy Verify is applied to trunks with Called Party Disconnect allowed, the trunk is disconnected.

Force disconnect, through service change and maintenance, overrides Called Party Disconnect Control.

## Feature interactions

### Automatic Answerback

Incoming calls on a trunk with Called Party Disconnect Control allowed that terminate on a telephone with Handsfree Answerback are answered automatically. They are not disconnected automatically, however, when the calling party goes on-hook.

### Conference

Trunks with Called Party Disconnect Control allowed are treated as trunks without disconnect supervision when conferenced.

### Digital Trunk Interface (DTI) - Commonwealth of Independent States (CIS)

Called Party Disconnect Control may not be used in the CIS market because of its signaling requirements.

### Malicious Call Traced - Enhanced

Prior to this feature, the Called Party Control (CDPC) option was not supported for conference calls. The CDPC option is now supported if the conference contains exactly one recording trunk, one MCT activating party and one other trunk. This is done to make the recorder transparent to the user. The CDPC option remains unsupported for all other conference calls.

### Meridian 911

The Called Party Disconnect (CPDC) feature is used to retain a 911 trunk when a 911 call is disconnected by the caller. No modification to the feature is required for Meridian 911, except lifting the CPDC and Automatic Call Distribution (ACD) NCFW limitation. 911 Calls, arriving through trunks with CPDC defined, is allowed to NCFW, unlike non-911 ACD calls.

### Meridian 911 - Call Abandon

There is no interaction with M911 Call Abandon and Called Party Disconnect Control.



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### Periodic Clearing Enhancement

Called Party Disconnect Control can exist on the same system and function on the same route, but is not to be used in conjunction with Periodic Clearing.

### Periodic Clearing on RAN, Meridian Mail, ACD and Music

This feature enhancement is not supported if used together with Toll Operator Break-In.

## Feature packaging

This feature is included in base system software.

## Feature implementation

**Table 94**
**LD 16 - Define Called Party Disconnect Control for a trunk route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | CDB | Customer Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |
| CNTL | (NO) YES | (Do not) change the controls or timers. |
| ... | | |
| CPDC | (NO) YES | (Deny) allow Called Party Disconnect Control for the trunk route. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Calling Party Name Display Denied

## Content

This section contains information on the following topics:

“Feature description” (page 317)

“Operating parameters” (page 319)

“Feature interactions” (page 319)

“Feature packaging” (page 320)

“Feature implementation” (page 320)

“Feature operation” (page 321)

## Feature description

This enhancement to the Calling Party Name Display feature allows a customer to define, on an originating set, whether or not to allow the display of the calling and called party name and/or digits on the terminating set. This option can be defined individually for each customer set, and applies to all Meridian telephone types. The display of digits is controlled by "digit display allowed on other set" (DIGA) or "digit display denied on other set" (DIGD) Class of Service. The name display is controlled by the "name display allowed on other set" (NAMA) or "name display denied on other set" (NAMD) Class of Service.

The following scenarios are possible, where set A is the originating set and set B is the terminating set. DIGA "Allowed" and "Denied" indicates whether or not the called party digits display are allowed or denied on the set. If the display of digits is denied, the digits are replaced by four dashes (for an internal call) or seven dashes (for an external call). If the name display is denied (that is, NAMD), the name is replaced by "XXXX".



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In the following example, originating set A has DIGA and NAMA Class of Service, and terminating set B also has DIGA and NAMA Class of Service. During an established call, the respective displays would be as follows:

**Figure 2**
**Display of Calling Party Denied example**

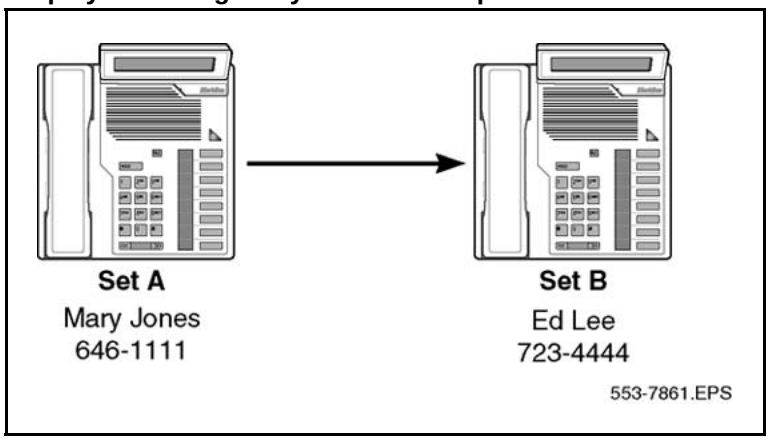
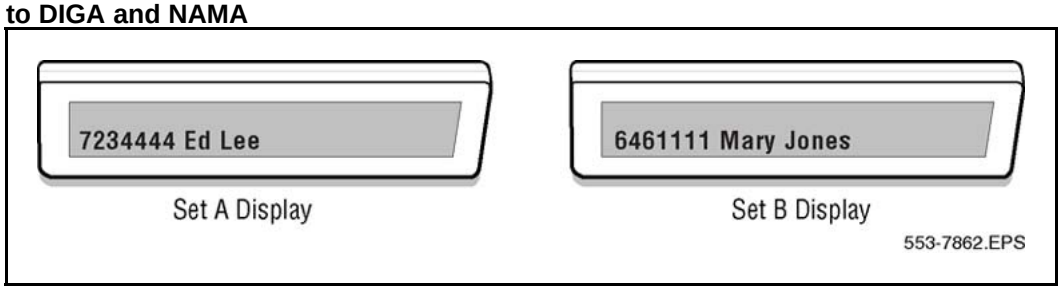
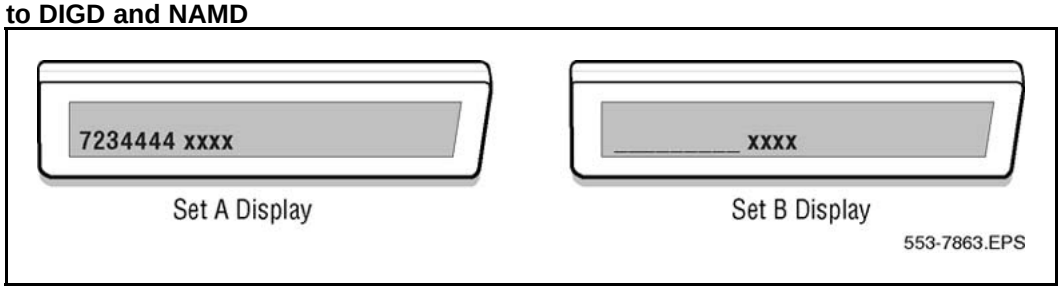



**Figure 3**
**Example of displays when the originating and terminating sets both have Class of Service set to DIGA and NAMA**




If set A has DIGD and NAMD Class of Service, and set B also has DIGD and NAMD Class of Service, the displays would be as follows (keep in mind that set A displays the dialed digits even though set B has DIGD Class of Service).

**Figure 4**
**Example of displays when the originating and terminating sets both have Class of Service set to DIGD and NAMD**



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## Operating parameters

This enhancement pertains to both standalone and network environments.

The called party digits are displayed on the originating set, regardless of the Class of Service of the terminating set.

## Feature interactions

### Attendant Consoles

The Calling Party Name Display Denied enhancement cannot be applied to attendant consoles.

### Call Forward
### Call Transfer

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating set. This display is allowed or denied depending on the Class of Service of the calling set and the forwarding/transferring set. The name of the forwarding/transferring set is not displayed on the calling and terminating set.

### Calling Party Privacy

For outgoing calls, if the Calling Party Privacy (CPP) package is equipped, the CPP feature will take precedence over the Calling Party Name Display Denied feature for restricting the Calling Party Name and Number. For example, if an outgoing ISDN call is marked as a CPP call, the outgoing SETUP message will include the Calling Party Number IE with the Presentation Indicator set to "Presentation Restricted" and the Display IE with the CPND Indicator set to "Presentation Denied", to inhibit both the Calling Party Number and Name being displayed on the terminating set, regardless of whether or not the Calling Party Name Display Denied feature allows the display of the Calling Party Name and/or Number.

The Calling Party Name Display Denied feature takes precedence over the CPP feature for displaying an incoming ISDN call. If International Supplementary Features (SUPP) package 131 is equipped, an incoming ISDN call with the Presentation Indicator set to "Presentation Restricted" in the Calling Party Number IE or the CPND Indicator set to "Presentation Denied" in the Display IE is marked as a CPP call, and will display "ACOD + Member" or "XXXX" as for the Calling Party Name Display Denied feature.

### Conference

Calling Party Name Display Denied does not apply to conference calls.



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### ISDN QSIG Name Display

Call Party Name Display and Calling Party Name Display Denied interact with ISDN Q Interface Signaling Protocol (QSIG) Name Display, depending on the Name Display configuration in LD 16 for BRI or LD 17 for PRI. When a QSIG network is interacting with an Meridian Customer Defined Network (MCDN) network providing network capability ND3, both the MCDN and QSIG Name Display feature function on the same level.

### Multiple Appearance Directory Numbers

For a ringing call to a Multiple Appearance Directory Number (DN), the name on the calling set display can be suppressed by configuring any of the Terminal Numbers with NAMD Class of Service. The digit display on the calling set cannot be suppressed—the called digits are displayed even though the Class of Service on any of the Terminal Numbers is DIGD. The called set display is subject to the Class of Service of the calling party. For an established call to a Multiple Appearance Directory Number (DN), the calling set display is subject to the Class of Service configured for the answering set. The answering set display only is subject to the Class of Service of the calling party—the displays of the other sets in the Multiple-appearance group are blank.

### Office Data Administration System (ODAS)

Depending on the Class of Service of the originating set, the ODAS designator is displayed or replaced by Xs, up to the maximum number of characters that the designator may have.

## Feature packaging

Calling Party Name Display Denied requires International Supplementary Features (SUPP) package 131.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 95 "LD 10 - Configure the Calling Party Name Denied Class of Service for analog (500/2500 type) telephones." (page 321)

   Configure the Calling Party Name Denied Class of Service for analog (500/2500 type) telephones.

2. Table 96 "LD 11 - Configure the Calling Party Name Display Denied Class of Service for proprietary telephones." (page 321)

   Configure the Calling Party Name Display Denied Class of Service for proprietary telephones.



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**Table 95**
**LD 10 - Configure the Calling Party Name Denied Class of Service for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Telephone type. |
| ... | | |
| CLS | (DDGA) DDGD | (Allow) deny DN to be displayed on other set. |
| | (NAMA) NAMD | (Allow) deny name to displayed on other set. |

**Table 96**
**LD 11 - Configure the Calling Party Name Display Denied Class of Service for proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| ... | | |
| CLS | (DDGA) DDGD | (Allow) deny DN to be displayed on other set. |
| | (NAMA) NAMD | (Allow) deny name to be displayed on other set. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Calling Party Privacy

The Calling Party Privacy (CPP) feature enables the system to support the blocking of a Calling Party's Number and Name from being displayed at the terminating set on an individual call basis. Users can dial a Calling Party Privacy code (for example, *67 from a proprietary set or 1167 from an analog (500/2500 type) set) to prevent their telephone number and name from being displayed on a receiving telephone across the Public Switched Telephone Network (PSTN). Internal calls within the system have originating numbers or names displayed, even though the originating call has requested privacy.

This feature also allows a per-line blocking Class of Service to be programmed for station sets for public network calls. This relieves the user from having to dial the Flexible Feature Code (FFC) for every call, but in every other way is equivalent to the per-call blocking.

## Calling Party Privacy enhancement

The Calling Party Privacy Enhancement (CPPE) feature provides a route option to ignore the Calling Party Privacy Indicator for incoming calls received from the North American public ISDN network. The AUXP prompt in overlay 16 selectively allows or rejects sending calling party number to Auxiliary (Aux) applications like Contact Center Manager (CCM) when the calling party number is received with presentation indicator set to restrict.

When the Privacy Indicator Ignore (PII) prompt is set to YES in LD 16, the Calling Line Identification (CLID) Presentation Indicator and the Calling Party Name Display (CPND) Indicator (if it exists) change from restricted or denied to allowed.

If the CLID and CPND information is available, it appears on the terminating phone, and the CLID passes to the Auxiliary processor. Nortel recommends that you configure the PII prompt to YES for 800, 888, 900, and 911 call types. When PII is set to NO (default) in LD 16, the Calling Party Privacy Indicator is honored, and the existing functionality is maintained.



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With Release 6.0 (or later), the CPPE feature (PII prompt) is applicable for incoming routes for all ISDN interfaces, and signaling mechanisms using ISDN between the call server and an additional server (such as the signaling server).

The CPPE feature also introduces a new route option AUXP (for Auxiliary processor applications), in overlay 16 (RDB – Route Data Block) to enhance the ability of the system to honor or ignore the Privacy indicator for a Calling Party Privacy call, on a per incoming route basis. If the AUXP is set to YES, the CLID Presentation Indicator and the CPND Indicator (if it exists) in an incoming SETUP message change from restricted or denied to allowed for auxiliary applications such as Contact Center Manager (CCM). If AUXP is NO, then there is no change to the CLID Presentation Indicator.

If the PII option is set to YES, then the AUXP prompt is automatically set to YES. As long as the PII prompt remains YES, the AUXP prompt will be printed as YES and you cannot modify it. When PII is set as NO, you can modify the AUXP prompt.

CLIDC feature (enhancement of CPPE) extends the PII prompt and functionality to all other ISDN interfaces for PRI and BRI:

- MCDN Enterprise networking variants (including the peer to peer variant- SL1 and the enterprise UNI variant-SL100).
- Euro ISDN (All variants)
- APAC (All variants)
- QSIG (ISO and ETSI)
- H323 and SIP (The new feature supports the H323 and SIP protocols as they use the MCDN peer to peer version SL1 between the call server and the signalling server).

The AUXP route option is applicable to the Calling Line Identification (CLID) Presentation Indicator in the Calling Number IE and the CPND Indicator in the Display IE in the incoming SETUP messages only.

CPPE is supported only on CS 1000 Release 6.0.

For more information about CPPE, see *ISDN Primary Rate Interface Fundamentals* (NN43001-569).



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## Operating parameters

The code to be dialed by the user can be flexibly defined, although *67 will be usual in North America. Multiple codes can be defined allowing a different code (for example, 1167) to be used for rotary phones, across the Public Switched Telephone Network (PSTN) or Meridian Customer Defined Network (MCDN).

The code which is outpulsed on non-ISDN analog or digital trunks can also be flexibly defined on a per-route basis, for station phones for public and private network calls. Different codes can be programmed for routes which mix Digitone (DTN) and Dial Pulse (DIP) Classes of Service.

Frequently, the codes outpulsed on trunks will be the same as those dialed from station phones, but there is no reason why they cannot be different.

A non-ISDN trunk route will not be able to provision the CPP feature if Outpulsing of Asterisk and Octothorpe (OPAO) package 104 is equipped on the switch. During SYSLOAD, the CPP database will be removed from the non-ISDN trunk routes if the OPAO package is equipped.

The CPP feature is not supported on Digital Private Network Signaling System #1 (DPNSS1), Digital Access Signaling System #2 (DASS2) or R2 Multifrequency Compelled Signaling gateways.

The trunk route types that can outpulse the Privacy Indicator for an outgoing non-ISDN call are as follows: Central Office Trunk (COT), Foreign Exchange (FEX), Wide Area Telephone Service (WATS), Direct Inward Dialing (DID), Internal private network trunks

The CPPE feature is supported on the following BRI trunk interfaces:

- MCDN Enterprise networking variants (including the peer to peer variant- SL1 and the enterprise UNI variant- SL100)
- Euro ISDN (All variants)
- APAC (All variants)
- QSIG (ISO and ETSI)

***Note:*** This feature is not supported on BRI lines.

CPP is not formally supported on the International ISDN PRI connectivities, since CPP is primarily a North American feature. However, existing Calling Line Identification (CLID)/Calling Line Identification Restriction (CLIR) operations will continue to work.



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The Privacy Indicator defined for a non-ISDN trunk route (dial pulse or digitone) consists of any arbitrary digit sequence (0-9) up to four digits in length. The asterisk (*) or octothorpe (#) are not allowed in the Privacy Indicator for an outgoing dial pulse trunk route. The asterisk is only allowed as the first digit of the Privacy Indicator (for example, *67) for an outgoing digitone trunk route; the octothorpe is not allowed in any Privacy Indicator on an outgoing digitone trunk route.

If a user requests privacy by dialing the Flexible Feature Code (FFC) defined for the CPP feature, and CPP is not provisioned in the outgoing trunk route, the call will proceed without carrying the Privacy Indicator.

No Privacy Indicator is expected to be received from the Public Exchange/Central Office on non-ISDN DID trunks. This would be treated as a misdial.

The CPP feature will not inhibit the Calling Party Number and Name from being displayed for an internal call within a local system customer group.

A common number defined for the Special Prefix (SPRE) code in the database is "1". Thus, "1167" will not be accepted as an FFC for CPP due to the conflict with existing DNs. The technician should either change the SPRE code, or define a new FFC for CPP to be used by a rotary phone.

## Route configuration for PII and AUXP prompts

You can use the Routes Configuration page in Element Manager to configure the PII and AUXP prompts for the following ISDN interfaces:

- 1TR6
- APAC
- AXEA, AXES
- D70, D100, D250
- EURO, E403
- EGF4, ESIG, ESGF, ESS4, ESS5
- ISGF, ISIG
- JTTC
- NUME
- S100
- SS12
- SWIS
- TCNZ



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The AUXP prompt is dependent on PII prompt. If the PII prompt is selected, then the AUXP prompt is automatically selected and cannot be modified. When PII is not selected, AUXP can be modified.

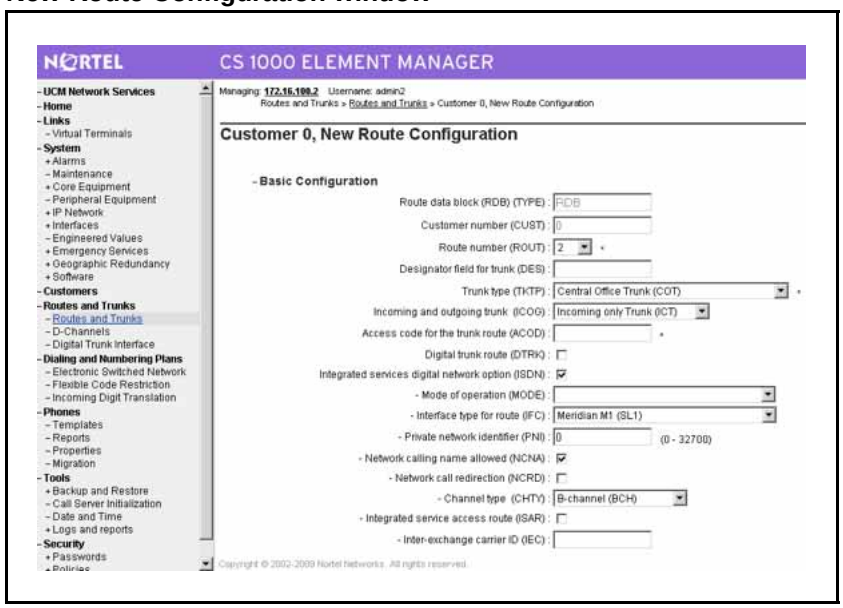
You can enable or disable the PII and AUXP prompts by selected or clearing the check boxes, respectively. By default, both PII and AUXP prompts are not selected.

**ATTENTION**
You must log on to Element Manager with sufficient security access rights to configure the PII and AUXP prompts, and add a new route. For more information about using Element Manager, see *Element Manager System Reference - Administration* (NN43001-632).

**Procedure 2**
**Adding a route using Element Manager**

| Step | Action |
|---|---|
| 1 | In the Element Manager navigator, select **Routes and Trunks**. |
| 2 | Click **Add Route**.<br>The New Route Configuration window appears. |

**Figure 5**
**New Route Configuration window**




| | |
|---|---|
| 3 | From the Trunk Type (TKTP) list, select from one of the following: COT, FEX, WAT, TIE, DID. |
| 4 | From the Incoming and Outgoing trunk (ICOG) list, select any option except OGT. |
| 5 | Select the **ISDN** check box. |



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The PII and AUXP prompts appear under Advanced Configurations.

6 Select the **Privacy Indicator ignored (PII)** check box to activate the feature.

7 Provide valid values for the other required fields on the same page.

8 Click **Save**.

**--End--**

## Feature interactions

### Autodial

An outgoing trunk call initiated by pressing the Autodial key will carry the Privacy Indicator if the Calling Party Privacy (CPP) code followed by the normal dialing sequence is stored against the Autodial key. The CPP code is counted against the maximum number of digits (currently 23) stored against the Autodial key.

A user can also store the CPP code against the Autodial key. An outgoing CPP call can be initiated by pressing the Autodial key, followed by manually dialing the digits.

An outgoing CPP call can also be initiated by dialing the CPP code, followed by pressing the Autodial key against which the normal dialing sequence of digits have been stored.

### Automatic Call Distribution

A call placed by means of Enhanced Automatic Call Distribution (ACD) Routing, Enhanced Interflow, Enhanced Night Call Forward, Enhanced Network Routing, or Network ACD will respect the CPP request of the originator.

### Automatic Call Distribution MAX (ACD MAX)

The Calling Line Identification (CLID) is still included in ACD MAX reports, even if the caller has requested CPP.

### Automatic Redial

The calling party and called party have the same Calling Party Privacy considerations.

### Call Detail Recording

The current Call Detail Recording (CDR) records which include the Calling Party Number will continue to do so even if the caller has requested CPP. The FFC for CPP dialed by the user will be included in the dialed digits field when generating a CDR record.



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An outgoing non-ISDN trunk call outpulsing the Privacy Indicator will include the Privacy Indicator in the outpulsed digits field when generating the CDR records if the outgoing non-ISDN trunk route has Outpulsed Digit Option (DPD) activated.

### Call Forward All Types
### Hunt

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CPP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CPP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding phone (at the tandem node) from being displayed on the terminating phone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

The above scenario also applies to Hunt and Network Hunt.

### Call Hold, Deluxe
### Call Hold, Permanent

When a user takes an incoming trunk call with the Privacy Indicator off of hold, no Calling Party Number or Name will be displayed on the phone.

### Call Pickup

If an incoming trunk call with the Privacy Indicator is picked up locally, the display of the calling Party Number and Name are not displayed on the terminating phone.

### Call Pickup Network Wide

If an incoming trunk call with the Privacy Indicator is picked up by a remote phone (requesting party), the display of the calling Party Number and Name are not displayed on the requesting phone.

### Call Party Name Display (CPND)

In current operations, if the International Supplementary Features (SUPP) package 131 is not equipped in the system, an incoming ISDN call with the Call Party Name Display (CPND) Indicator field set to "Presentation Denied" still displays the Calling Party Name. If package 131 is equipped



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in the system, the current operations will inhibit the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied".

The CPP feature will inhibit the display of the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied" if package 131 is not equipped.

### Call Transfer

If an incoming non-ISDN call is being transferred or an incoming ISDN call is transferred to a non-ISDN trunk, the Calling Party Name and Number will not be passed on to the terminating phone. The CPP feature will not change this operation.

For cases where an incoming call with the Privacy Indicator is transferred over an MCDN trunk, or to a local station, the name and/or number of the originating party will not be displayed on the phone of the final terminating party.

### Calling Line Identification Restriction (CLIR)

The Flexible Feature Code is not supported on BRI phones. Calling Party Privacy can only be requested by setting the soft key "ID PRES" (if it exists) to "Denied" or the "PRES" prompt to "NO" in LD 27. If the Calling Party Number IE with the Presentation Indicator set to "Presentation Allowed" is included in the SETUP message generated by the BRI terminal, this BRI terminal will not allow Calling Party Privacy, as the Presentation Indicator generated by the BRI terminal always overwrites the CLIR service option.

### Conference

The CPP feature will pass the Privacy Indicator to the terminating phone to inhibit the display of the Calling Party Name and Number if the Conference feature is used for the purpose of performing a transfer.

### Calling Party Name Display Denied

For outgoing calls, if the CPP package is equipped, the CPP feature will take precedence over the Calling Party Name Display Denied feature for restricting the Calling Party Name and Number. For example, if an outgoing ISDN call is marked as a CPP call, the outgoing SETUP message will include the Calling Party Number IE with the Presentation Indicator set to "Presentation Restricted" and the Display IE with the CPND Indicator set to "Presentation Denied", to inhibit both the Calling Party Number and Name being displayed on the terminating phone, regardless of whether or not the Calling Party Name Display Denied feature allows the display of the Calling Party Name and/or Number.



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The Calling Party Name Display Denied feature takes precedence over the CPP feature for displaying an incoming ISDN call. If International Supplementary Features (SUPP) package 131 is equipped, an incoming ISDN call with the Presentation Indicator set to "Presentation Restricted" in the Calling Party Number IE will be marked as a CPP call, and will display "ACOD + Member" or "XXXX" as for the Calling Party Name Display Denied feature.

### Display Calling Party Denied

If the Calling Party Privacy (CPP) package is equipped, the CPP feature will take precedence over the Display Calling Party Denied (DPD) feature. The CPP feature also takes precedence over the DPD feature for displaying an incoming ISDN call if the CPP package is equipped. No "----" or "XXX" will be displayed, as for the DPD feature.

### EuroISDN Trunk - Network Side

If a number presentation for a call is blocked by the Calling Party Privacy feature, the Calling Line ID, sent over a EuroISDN Trunk - Network Side connectivity, will have the presentation flagged as restricted.

### Feature Group D

If an incoming Feature Group D (FGD) call terminates at a system switch locally, the received 10-digit Automatic Number Identification (ANI) will be displayed on the terminating phone if the Show ANI Digits on Terminal Displays (SHAN) field is set to "YES" in the FGD data block associated with the incoming trunk route. If the originator requests CPP, the end office will not send the 10-digit ANI to the PBX.

If an incoming FGD call is routed to another switch through ISDN Primary Rate Interface (PRI) or Integrated Service Link (ISL), the outgoing SETUP message will include the 10-digit ANI (if it exists) as the Calling Party Number with the Presentation Indicator set to "Presentation Restricted" if the outgoing trunk route has the TCPP option on. The TCPP option takes precedence over the SHAN field defined in the FGD data block associated with the incoming trunk route to restrict the 10-digit ANI display.

### Hot Line

A Hot Line call will carry the Privacy Indicator if the Calling Party Privacy (CPP) code followed by the normal dialing sequence is stored in the Hot Line DN. The CPP will count against the maximum number of digits (currently 31) allowed for the Hot Line DN.

### Incoming Trunk Programmable CLID

If the incoming trunk route is a non-ISDN route, the billing number assigned by the incoming trunk route will be passed to the Public Exchange/Central Office with the Presentation Indicator field set to "Presentation Restricted" if the outgoing ISDN trunk route has the TCPP



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prompt set to "YES". If the TCPP prompt is set to "NO", the Presentation Indicator is set to "Presentation Restricted" only if the BDSP (Billing Display) prompt in the incoming trunk route is set to "NO".

If the incoming trunk route is an ISDN route, the "Restricted" Presentation Indicator will be tandemed to the outgoing trunk route. If the Presentation Indicator is set to "Presentation Allowed" or no Calling Party Number IE is received in the incoming trunk route, the billing number assigned by the incoming trunk route will be passed to the Public Exchange/Central Office with the Presentation Indicator field set to "Presentation Restricted" only if the incoming trunk route has the BDSP prompt set to "NO".

### ISDN QSIG Name Display

Calling Party Privacy (CPP) takes precedence over the ISDN QSIG Name Display feature.

### Last Number Redial

The Last Number Redial (LNR) feature will store the CPP code in the LNR data space if the CPP code was included in the last number dialed by the user. Any subsequent outgoing redialed call will send the Privacy Indicator to the far end.

### Malicious Call Trace

Incoming calls to stations having the Malicious Call Trace feature enabled will continue to include the Terminal Number (TN) of the calling party in the Malicious Call Trace record, even if the caller has requested CPP.

### Meridian Link

The CLID is still included in the Application Module Link (AML) messages sent to the Meridian Link Module even if the call has requested CPP.

### Meridian Mail

When an incoming ISDN call with the Privacy Indicator terminates on Meridian Mail, the Calling Party Name and Number will not be passed to Meridian Mail to be recorded. When the called party retrieves the messages, no Calling Party Number Name will be played, and the called party will not be able to initiate the Call Sender feature either, since no CLID is recorded.

Calls placed by means of Through Dial will be able to request privacy. These are calls where the person accessing Meridian Mail can dial 0 followed by any phone number. The caller will be able to dial the CPP code as part of the number following 0.

### Meridian MAX

The CLID is still sent to the Meridian MAX even if the caller has requested CPP.



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### Meridian 911

An incoming 911 call with ANI information will always display the ANI digits on the terminating phone or pass the ANI information to the Meridian 911 application.

### Network Message Services

An incoming trunk call with the Privacy Indicator will not display the Calling Party Name and Number on the Message Center operator's terminal.

### Network Ring Again

A call placed by means of the Network Ring Again feature will respect the CPP requested when the call was originally dialed.

### Private Line Service

The Private Line Service feature will outpulse the Privacy Indicator only if it is dialed by the originator. An asterisk will be outpulsed to the far end only if it is an OPAO call, otherwise the asterisk signals a three-second pause.

> ***Note:*** The asterisk (*) used to introduce a pause while outpulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

### R2MFC CNI/CDR Enhancements

If the Calling Line ID is received with presentation denied, it is not mapped to the Call Number Information (CNI). Instead, the CNI is composed of the CNI DN and the Trunk ID. Optionally, the CNI request can set to ECNI (the CNI End-of-CNI R2MFC level 1 forward signal).

### Ring Again - Busy Trunk

A call automatically redialed by the Ring Again – Busy Trunk feature will respect the CPP requested when the call was originally dialed.

### Speed Call

### System Speed Call

An outgoing trunk call initiated by dialing the Speed Call code will carry the Privacy Indicator if the CPP code followed by the normal dialing sequence is stored in the Speed Call Entry represented by the Speed Call code. The CPP code will be counted against the maximum number of digits (currently 31) allowed per Speed Call list entry.

A user can also store the CPP code in the Speed Call Entry (or Speed Call key). An outgoing CPP call can then be initiated by dialing the Speed Call code (or pressing the Speed Call key), followed by manually dialing the digits. However, existing Speed Call limitations do not allow a user to dial *67 (or anything else) before accessing a Speed Call list entry.



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### Stored Number Redial

During Stored Number Redial (SNR) programming, a user can store the CPP code followed by the normal dialing sequence in the SNR data space. Outgoing calls originated by the SNR feature will send the Privacy Indicator to the far end. The CPP code will be counted against the maximum number of digits (currently 31) allowed by the SNR feature.

During an active call on a Meridian 1 Proprietary Phone, the Stored Number Redial feature will store the CPP code in the SNR data space if the CPP code was included in the number dialed by the originator. The outgoing redialed calls will send the Privacy Indicator to the far end.

### Trunk Optimization Before Answer

An optimized call due to Trunk Optimization Before Answer will respect the CPP requested by the originator.

## Feature packaging

This feature requires the following packages:

- Calling Party Privacy (CPP) package 301, which is dependent on
  - Flexible Feature Codes (FFC) package 139.

  ***Note:*** Non ISDN trunks must restrict the Outpulse Asterisk and Octothorpe (OPAO) package 104 to provide for the CPP feature.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 97 "LD 57: Define the FFC for CPP feature" (page 334)
2. Table 98 "LD 16: Define Privacy Indicators" (page 335)
3. Table 99 "LD 10/11: Activate Calling Party per-line blocking" (page 337)

**Table 97**
**LD 57: Define the FFC for CPP feature**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Code. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |



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**Table 97**
**LD 57: Define the FFC for CPP feature (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| FFCT | (NO) YES | Flexible Feature Confirmation Tone. |
| ... | | |
| CODE | CPP | FFC type to be altered.<br><br><CR> means that no FFC types are prompted. |
| ... | | |
| CPP | nnnn | Calling Party Privacy code. CPP is prompted only if the CPP package is equipped. Any arbitrary digit sequence up to four digits can be specified. For Meridian 1 proprietary telephones, an "*" can be entered as the first digit.<br><br>A suggested value is *67.<br><br>CPP will be prompted until a <CR> is entered. |

***Note:*** CPP is only prompted if the CPP package is equipped, the OPAO package 104 is not equipped, the trunk outgoing (OGT) or incoming and outgoing (IAO), non-ISDN option and the trunk route type is COT, DID, FEX, or WAT.

**Table 98**
**LD 16: Define Privacy Indicators**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE | RDB | Route Data Block. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| TKTP | COT | Central Office Trunk data block. |
| | DID | Direct Inward Dialing trunk data block. |
| | FEX | Foreign Exchange trunk data block. |
| | WAT | Wide Area Telephone Service trunk data block. |
| ... | | |
| DTRK | YES | Digital trunk route. |
| DGTP | xx | Digital trunk type. |



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**Table 98**
**LD 16: Define Privacy Indicators (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ISDN | YES | ISDN PRI option. |
| ... | | |
| ACOD | nnnn | Trunk Access Code. |
| CPP | YES | Calling Party Privacy.<br>YES = This trunk route is enabled for the recognition of the Calling Party Privacy feature. CPP is only prompted if the following conditions are met: the CPP package is equipped, the OPAO package is not equipped, OGT (outgoing) or IAO (incoming and outgoing) trunk, non ISDN option and trunk route type is COT/DID/FEX/WAT.<br><br>The default value for the CPP prompt is NO. |
| TCPP | (NO) YES | CPP for an incoming trunk call tandemed to this trunk route.<br><br>YES = An incoming non-ISDN trunk call tandemed to this trunk route will carry the Privacy Indicator.<br><br>The default value for the TCPP is NO. |
| - DTPI | (*67) nnnn | Privacy Indicator for a digitone trunk. DTPI is prompted only if CPP is set to "YES" and the trunk route is non-ISDN. If CPP is changed from NO to YES, the default is *67.<br><br>Any arbitrary digit sequence (0-9) up to four digits can be specified. An asterisk "*" is allowed to be the first digit only if the outgoing call goes to a Public Network. |
| - DPPI | (1167) nnnn | Privacy Indicator for a dial pulse trunk. DPPI is prompted only if CPP is set to "YES" and the trunk route is non-ISDN. If CPP is changed from NO to YES, the default is 1167. |



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**Table 98**
**LD 16: Define Privacy Indicators (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | | Any arbitrary digit sequence (0-9) up to four digits can be specified. |
| - PII | (NO)<br>YES | Calling Party Privacy Indicator is honored.<br>Calling Party Privacy Indicator is ignored.<br><br>***Note:*** PII is prompted only when you install the CPP package; the trunk route type is COT, DID, FEX, TIE, or WAT; the ISDN option is YES; the route is Incoming and Outgoing (IAO) or Incoming Only Trunk (ICT); and on all ISDN interfaces. |
| - AUXP | (NO)<br><br>YES | Calling Party Privacy Indicator is honored for auxiliary applications.<br>Calling Party Privacy Indicator is ignored for auxiliary applications.<br><br>***Note:*** AUXP is prompted only when you install the CPP package; the trunk route type is COT, DID, FEX, TIE, or WAT; the ISDN option is YES; the route is Incoming and Outgoing (IAO) or Incoming Only Trunk (ICT); and on all ISDN interfaces. AUXP is configurable only when PII is NO. |

***Note:*** CLBA Class of Service activates Calling Party per-line blocking. CLBD Class of Service deactivates Calling Party per-line blocking; however, the user can still request Calling Party Privacy by dialing the CPP code.

**Table 99**
**LD 10/11: Activate Calling Party per-line blocking**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE | nnnn | Type of phone. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 99**
**LD 10/11: Activate Calling Party per-line blocking (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| CLS | CLBA | Activate Calling Party per-line blocking.<br><br>Enter CLBD to deactivate Calling Party per-line blocking (default).<br><br>***Note:*** CLBA Class of Service activates Calling Party per-line blocking. CLBD Class of Service deactivates Calling Party per-line blocking; however, the user can still request Calling Party Privacy by dialing the CPP code. |



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# Calling Party Privacy Override

## Content

This section contains information on the following topics:

“Feature description” (page 339)

“Operating parameters” (page 342)

“Feature interactions” (page 343)

“Feature packaging” (page 352)

“Feature implementation” (page 352)

“Feature operation” (page 355)

## Feature description

Calling Party Privacy Override (CPPO) enhances the functionality of the Calling Party Privacy (CPP) feature. With Calling Party Privacy Override, calling party information can be selectively unblocked on a per-call basis.

With the Calling Party Privacy Override feature, a circuit switched network user can selectively unblock calling party information on a per-call basis when Class of Service is set to CLBA. The user unblocks the calling party information by dialing a Calling Party Privacy Override Flexible Feature Code prior to dialing the destination number. When the CPPO Flexible Feature Code is dialed before the destination number, the user’s calling party information is displayed on the terminating set. The default for the Calling Party Privacy Override Flexible Feature Code is "*82" for proprietary sets and "1182" for analog (500/2500 type) sets. The Calling Party Privacy Override Flexible Feature Code is defined in Overlay 57.

CPPO is provisioned on a trunk route basis. Any trunk type that can support an outgoing call can request the CPPO feature (see “Operating parameters” (page 342) for more information).



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When the CPPO Flexible Feature Code is dialed prior to the normal dialing sequence, the call is marked as a CPPO call. The CPPO Flexible Feature Code is then removed from the dialed digits stored in the call register. If the outgoing trunk route provisions CPPO, then the Privacy Override Indicator is sent to the far end, and the Calling Party Number and Name information is displayed on the receiving telephone. If the outgoing trunk route does not provision CPPO, the call does not carry the Privacy Override Indicator.

The following example illustrates Calling Party Privacy Override functionality:

| Step | Action |
|---|---|
| 1 | Set A, a Meridian 1 proprietary set with Class of Service set to CLBA, goes off-hook. |
| 2 | Set A dials the Calling Party Privacy Override Flexible Feature Code, defined in Overlay 57. Calling Party Privacy Override is initiated. |
| 3 | Set A dials the destination number for Set B. |
| 4 | The call rings on Set B. |
| 5 | The calling party information of Set A is presented on the display screen of Set B. |

**--End--**

## Outgoing calls

For an outgoing non-ISDN trunk call, the Privacy Override Indicator is defined on the outgoing trunk route. The CPPO Flexible Feature Code is outpulsed to the far end provided that the outgoing trunk route provisions CPPO. If CPPO is not provisioned on the trunk route, then the call does not carry the Privacy Override Indicator.

For an outgoing ISDN call from one system to another, the Privacy Override Indicator is represented when the Presentation Indicator field is set to "Presentation Allowed" in the Calling Party Number Information Element (IE) and the Call Party Name Display (CPND) Indicator field is set to "Presentation Allowed" in the Display IE.

For an outgoing ISDN call to the Central Office, the Privacy Override Indicator is represented when the Presentation Indicator field is set to "Presentation Allowed" in the Calling Party Number IE and when the CPND information is included in the Display IE.



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## Incoming calls

An incoming ISDN call is recognized as a CPPO call (that is, it carries the Privacy Override Indicator) if the Presentation Indicator field is set to "Presentation Allowed" in the Calling Party Number IE and if the CPND Indicator is set to "Presentation Allowed" in the Display IE (if it exists).

When an incoming call is on a non-ISDN route, the system does not receive the Privacy Override Indicator.

## Tandem Calls

### Incoming ISDN calls

**ISDN to ISDN tandem** For an incoming call tandeming through the system, any incoming Privacy Override Indicator is only repeated to the outgoing trunk route that also has CPPO provisioned.

When an incoming ISDN trunk call is tandemed through an ISDN trunk to a system, the Presentation Indicator or the CPND Indicator, received from the incoming ISDN trunk, is tandemed to the outgoing ISDN trunk.

When an incoming ISDN trunk call is tandemed through an ISDN trunk to a CO, the Presentation Indicator received from the incoming ISDN trunk is tandemed to the outgoing ISDN trunk. If the Display IE with the CPND Indicator set to "Presentation Allowed" is received from an incoming ISDN trunk, the Display IE, containing the Call Party Name, is sent across in the SETUP message tandemed to the outgoing ISDN trunk.

**ISDN to non-ISDN tandem** When an incoming ISDN trunk call is tandemed to a non-ISDN trunk, the incoming call is treated as a CPPO call only if both the CLID and CPND Indicators are set to "Allowed". Otherwise, the call is treated as a CPP call.

### Incoming non-ISDN calls

For incoming non-ISDN calls, the system does not receive the Privacy Override Indicator.

When a call on an incoming non-ISDN route is tandemed on the system, the call is tandemed based on how the CPP flag (TCPP) prompt is defined in the Route Data Block for the outgoing route.

When TCPP is set to YES, an incoming non-ISDN call tandemed to this route is treated as a CPP call.

When TCPP is set to NO, an incoming non-ISDN call tandemed to this route is treated as a CPPO call.

**Non-ISDN to ISDN tandem** Even though a Privacy Override Indicator is not provided for an incoming non-ISDN trunk call, if the outgoing route



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has TCPP set to NO, the Presentation Indicator field in the Calling Party IE is set to "Presentation Allowed".

**Non-ISDN to non-ISDN tandem** A Privacy Override Indicator is not provided for an incoming non-ISDN trunk call. If the outgoing route has TCPP set to NO, the Privacy Override Indicator defined for that route is outpulsed, provided that the outgoing route provisions CPPO.

## Operating parameters

Central Office Trunks (COT), Foreign Exchange (FEX), Wide Area Telephone Service (WATS), and Direct Inward Dial (DID) are the only trunk route types (including ISA service routes) that can out-pulse the Privacy Override Indicator for an outgoing non-ISDN call. All ISDN trunk routes provision the CPPO feature.

A non-ISDN trunk route does not provision the CPPO feature if the out-pulse asterisk and Octothorpe (OPAO) package (package 104) is configured. During SYSLOAD, the CPPO database is removed from the non-ISDN trunk routes if the OPAO package is configured.

The Privacy Override Indicator, defined for a non-ISDN trunk route (dial-pulse or digitone), consists of any four arbitrary digits from 0-9. The asterisk (*) or octothorpe (#) cannot be part of the Privacy Override Indicator for dial-pulse trunks. For digitone trunks, the asterisk (*) can only be the first digit of the Privacy Override Indicator Flexible Feature Code.

The asterisk and octothorpe are not outpulsed if the OPAO package is configured. The asterisk signals a three second pause and the octothorpe indicates end-of-dialing. The octothorpe cannot be used in a Privacy Override Indicator.

The asterisk (*) used to introduce a pause while out-pulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

Privacy Override Indicators are not received from the CO or non-ISDN DID trunks.

The CPPO Flexible Feature Code cannot conflict with any internal DN, including the Special Prefix (SPRE) code.

When a user dials the Flexible Feature Code defined for the CPPO feature and if CPPO is not provisioned on the outgoing trunk route, the call proceeds without carrying the Privacy Override Indicator.



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The CPPO feature does not affect whether or not the Calling Party Number and Name information is displayed for internal calls within the system, even if the originator requests CPPO.

All incoming non-ISDN calls with the Privacy Override Indicator terminate on the system. If the Privacy Override Indicator is not defined in the Flexible Feature Code for CPPO, an overflow tone (unrecognized digits) is provided to the user.

If the Stored Number Redial (SNR)/Last Number Redial (LNR) feature is used by the originator of a CPPO call to store the dialed digits, the CPPO Flexible Feature Code is stored against the SNR/LNR database. If the user removes that CPPO Flexible Feature Code and then the SNR/LNR feature is used to re-initiate the call, overflow tone is returned to the user.

ISDN implementation for this feature includes DMS100/250, SL-100, AT&T4, AT&T5, TR-1268 (NI-2), Meridian Customer Defined Network (MCDN) Private Networks, EuroISDN, QSIG, and BRI trunks.

The CPPO feature is supported on the following International PRI (IPRI) connectivity: Ericsson AXE-10 CO Connectivity (Australia), Ericsson AXE10-CO Connectivity (Sweden), French Numeris CO Connectivity, Japan D70 CO Connectivity, Swissnet 2 CO Connectivity, SYS-12 CO Connectivity, 1TR6 CO Connectivity (Germany), and Asia Pacific ISDN Phase 2.

The CPPO feature supports the following North American connectivity: DMS100/250, S1100, Lucent #4 ESS (ESS4), Lucent #5 EES (ESS5), and TR-1268 (NI-2).

CPPO does not support R2MFC signaling.

## Feature interactions

### Attendant Consoles

A CPPO call can be originated from any Meridian 1 attendant console. Attendant consoles request CPPO by preceding the normal dialing sequence with the Flexible Feature Code for CPPO.

Attendant consoles can also initiate a CPPO call using the Autoline key. An outgoing trunk call, initiated by pressing the Autoline key, carries the Privacy Override Indicator if the CPPO Flexible Feature Code, followed by the normal dialing sequence, is stored against the Autoline key. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) stored against the Autoline key.



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The CPPO Flexible Feature Code can also be stored against the Autoline key. An outgoing CPPO call can then be initiated by pressing the Autoline key followed by manually dialing the destination number.

An outgoing CPPO call can also be initiated by dialing the CPPO Flexible Feature Code followed by pressing the Autoline key, on which the normal dialing sequence of digits for the destination number is stored.

### Autodial

An outgoing trunk call, initiated by pressing the Autodial key, carries the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored against the Autodial key. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) stored against the Autodial key.

The CPPO Flexible Feature Code can be stored against the Autodial key. In this case, an outgoing CPPO call can be initiated by pressing the Autodial key followed by manually dialing the normal sequence of digits for the destination number.

An outgoing CPPO call can also be initiated by dialing the CPPO Flexible Feature Code followed by pressing the Autodial key on which the normal dialing sequence of digits for the destination number is stored.

### Automatic Call Distribution

Calls placed by means of Enhanced Automatic Call Distribution (ACD) Routing, Enhanced Interflow, Enhanced Night Call Forward, Enhanced Network Routing, and Network ACD recognize the originator's CPPO request.

### Automatic Call Distribution MAX

If the CPP package is equipped, ACD MAX reports include the Calling Line Identification (CLID) for incoming ISDN calls that have the CLID Presentation Indicator set to "Allowed".

### Basic Rate Interface

Although Basic Rate Interface (BRI) networking is not supported in North America, CPPO treats BRI trunk calls in the same manner as an ISDN trunk call.

### Call Detail Recording

Call Detail Recording (CDR) records continue to include the Calling Party Number even if the caller has requested CPPO. When the CDR record is generated, the CPPO Flexible Feature Code dialed by the originator is included in the DIGIT field (if it displays the dialed digits).



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The CPPO Flexible Feature Code dialed by the originator is not included in the DIGIT field if it displays the outpulsed digits. The Privacy Override Indicator, outpulsed by an outgoing non-ISDN trunk route that provisions CPPO, is included in the outpulsed digits.

### Call Pickup Network Wide

When an incoming trunk call with the Privacy Override Indicator is picked up by a remote set (the requesting party), the Calling Party Number and Name is displayed on the requesting set.

### Call Hold

When an incoming trunk call with the Privacy Override Indicator is taken off hold, the Calling Party Number and Name information is displayed on the set.

### Call Forward All Types
### Hunt
### Network Hunt

The existing call redirection functionality is not changed by this feature.

When an incoming ISDN trunk call with the Privacy Override Indicator is forwarded into the public or private networks, the Privacy Override Indicator is tandemed to the far end to allow the display of the Calling Party Number and Name, provided that the outgoing trunk route on the tandem node has CPPO provisioned.

When an incoming ISDN call with Calling Party Number and Name set to "Presentation Allowed" is forwarded to a set within the same node, the Calling Party Number and Name is displayed on the terminating set.

When an incoming non-ISDN trunk call is forwarded onto a trunk, the outgoing trunk call from the tandem node carries the Privacy Override Indicator, provided that the outgoing trunk route on the tandem node has CPPO provisioned. Also, the TCPP prompt in the Route Data Block must be set to NO.

The CPPO Flexible Feature Code can be stored on the forwarding Directory Number (DN), including the forwarding DN for Call Forward All Calls, Hunt DN and Flexible Call Forward No Answer DN (FDN).

If CPPO is requested on the forwarding DN and the call is forwarded across an ISDN link, the outgoing SETUP message includes the Redirecting Number IE (if it exists) with the Presentation Indicator set to "Presentation Allowed".



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If CPPO is requested on the forwarding DN and the call is forwarded across a non-ISDN link, no Privacy Override Indicator is outpulsed to the terminating node if the originating set did not request CPPO. This is because no Redirecting Number information is sent across a non-ISDN link.

When an internal call is forwarded into the public or private networks, if the originator requests CPPO and the outgoing trunk route provisions CPPO, the Privacy Override Indicator is sent to the far end to allow the display of the Calling Party Number and Name.

### Call Pickup

With CPPO activated, when an incoming trunk call with the Privacy Override Indicator is picked up locally, the Calling Party Number and Name information is displayed on the terminating set.

### Call Transfer

As per existing operation, if an incoming non-ISDN call is transferred or an incoming ISDN call is transferred to a non-ISDN trunk, the Connect Party Number and Name information is not passed to the terminating node. The CPPO feature does not change this operation.

When an incoming call with the Privacy Override Indicator is transferred across the MCDN network or to a local set, the originator's calling party information is displayed on the final terminating set.

### Calling Line Identification Restriction

Basic Rate Interface (BRI) sets do not support the Flexible Feature Code (FFC) feature. CPPO can only be requested by applying the existing Calling Line Identification Restriction (CLIR) Service option. This is done by setting the soft key "ID PRES" (if it exists) to "Allowed" or the Presentation of CLID to far end on outgoing calls (PRES) prompt to YES in Overlay 27. Then an outgoing ISDN/non-ISDN trunk call carries the Privacy Override Indicator if the outgoing trunk route provisions CPPO. However, if the Calling Party Number Information Element (IE) with the Presentation Indicator set to "Presentation Denied" is included in the SETUP message generated by the Basic Rate Interface (BRI) terminal, then the BRI terminal does not allow CPPO. This is because the Presentation Indicator, generated by the BRI terminal, always overwrites the Calling Line Identification Restriction (CLIR) service option.

### Calling Party Privacy

If the user requests both Calling Party Privacy and Calling Party Privacy Override, then the feature last requested takes precedence. The Flexible Feature Code dialed last determines the type of call.



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If a set with Class of Service set to CLBA requests CPPO by dialing the CPPO Flexible Feature Code, then the call is treated as a CPPO call. If a set with Class of Service set to CLBD requests CPP by dialing the CPP Flexible Feature Code, then the call is treated as a CPP call.

If a user dials the Flexible Feature Code for CPPO followed by the Flexible Feature Code for CPP, then the call is treated as a CPP call. If a user dials the Flexible Feature Code for CPP followed by the Flexible Feature Code for CPPO, then the call is treated as a CPPO call.

*Calling Party Privacy and Call Forward*

Set A, requesting CPPO, calls Set B. Set B Call Forwards All Calls to Set C. The CPP Flexible Feature Code is part of the forwarding DN. Set A's number and name is displayed on Set C as the Calling Party Number and Name; although, no redirecting number is displayed on Set C. The tandem node sends the Display IE with the Presentation Indicator set to "Allowed" and the Redirecting Number IE with the Presentation Indicator set to "Restricted".

Set A, requesting CPP, calls Set B. Set B Call Forwards All Calls to Set C. The CPPO Flexible Feature Code is part of the forwarding DN. Set B's number is displayed on Set C as the Redirecting Number; although, no Calling Party Number and Name is displayed on Set C. The tandem node sends the display IE with the Presentation Indicator set to "Restricted" and the Redirecting Number IE with the Presentation Indicator set to "Allowed".

*Calling Party Privacy and Call Transfer*

Set A, requesting CPPO, calls Set B. Set B answers the call, requests CPP, and initiates a transfer to Set D. After the transfer is complete, Set A's Calling Party Number and Name is displayed on Set D. The request made by the connected party takes precedence over the transferring party while displaying the Connect Party Number and Name.

Set A, requesting CPP, calls Set B. Set B answers the call, requests CPPO, and initiates a transfer to Set D. After the transfer is complete, Set A's Calling Party Number and Name is not displayed on Set D. The request made by the connected party takes precedence over the transferring party while displaying the Connect Party Number and Name.

## Conference

The CPPO feature passes the Privacy Override Indicator to the terminating set in order to display the Calling Party Number and Name, if the Conference feature is used for the purpose of performing a transfer.



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### Display of Calling Party Denied

When the CPP package is equipped, the CPPO feature takes precedence over the Display of Calling Party Denied (DPD) feature for allowing the Calling Party Number and Name to be displayed. For example, when an outgoing ISDN call is marked as a CPPO call, then the outgoing SETUP message includes the Calling Party Number IE with the Presentation Indicator set to "Presentation Allowed" and the Display IE with the CPND Indicator set to "Presentation Allowed". This enables both the Calling Party Number and Name to be displayed on the terminating set, regardless of whether the DPD feature allows or denies the display of the Calling Party Number and/or Name.

### E.164 ESN Numbering Plan Enhancement

CPPO can be requested for ESN calls by preceding the dialing sequence with the Flexible Feature Code defined for the CPPO feature. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed for the destination DN.

### Feature Group D

When an incoming Feature Group D (FGD) call terminates at a system locally, the received 10 digit Automatic Number Identification (ANI) is displayed on the terminating set if the Show ANI Digits on Terminal Displays (SHAN) field is set to YES in the FGD data block that is associated with the incoming trunk route. If the originator requests CPPO, the end office sends the 10 digit ANI to the circuit switched network.

If an incoming FGD call is routed to another switch through ISDN Primary Rate Interface (PRI) or ISDN Signaling Link (ISL), the outgoing SETUP message includes the 10 digit ANI (if it exists) as the Calling Party Number (CLID) with the Presentation Indicator set to "Presentation Allowed". This occurs if the incoming call requests CPPO. CPPO takes precedence over the SHAN field that is defined in the FGD data block and is associated with the incoming trunk route to allow the 10 digit ANI display.

### Hot Line

Hot line calls carry the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored in the Hot Line DN. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed for the Hot Line DN.

### Last Number Redial

The Last Number Redial (LNR) feature stores the CPPO Flexible Feature Code in the LNR database if the CPPO Flexible Feature Code was included in the last number dialed by the user. The outgoing re-dialed calls also send the Privacy Override Indicator to the far end.



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### Incoming Trunk Programmable Calling Line Identification

When the incoming trunk route is a non-ISDN route, the billing number (CLID) assigned by the incoming trunk route is passed to the CO with the Presentation Indicator field set to "Presentation Allowed", if the outgoing ISDN trunk route has the TCPP prompt set to NO.

When the incoming trunk route is an ISDN route, the "Allowed" Presentation Indicator is tandemed to the outgoing trunk route. If the Presentation Indicator is set to "Presentation Allowed" or no Calling Party Number IE is received on the incoming trunk route, the billing number assigned by the incoming trunk route is passed to the CO with the Presentation Indicator field set to "Presentation Allowed", if the incoming trunk route has the Billing Number Display (BDSP) prompt set to YES or NO.

### ISDN Signaling Link

CPPO treats an ISDN Signaling Link (ISL) call in the same manner as an ISDN trunk call.

### Malicious Call Trace

An incoming call to a set with the Malicious Call Trace (MCT) feature activated includes the Terminal Number (TN) of the calling party in the MCT record, whether or not the caller has requested CPPO.

### Meridian 911

An incoming 911 call with Automatic Number Identification (ANI) information always displays the ANI digits on the terminating set or passes the ANI information to the Meridian 911.

### Meridian Interactive Voice Response

An incoming ISDN call with the CLID Presentation Indicator set to "Allowed" sends the CLID to the Meridian Interactive Voice Response (IVR) if the CPP package is equipped.

### Meridian Link

If the CPP package is equipped, an incoming ISDN call with the CLID Presentation Indicator set to "Allowed" includes the CLID in the Application Module Link (AML) messages sent to the Meridian Link module.

### Meridian Mail

When an incoming ISDN call with the CLID Presentation Indicator set to "Allowed" terminates on Meridian Mail, the CLID passed to Meridian Mail is recorded. The call is treated by Meridian Mail as an external call.

Calls placed by means of Through Dial can request Calling Party Privacy Override. These calls involve the person accessing Meridian Mail (mailbox user or incoming caller) dialing 0 followed by any telephone number. The



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caller is able to dial a CPPO Flexible Feature Code plus the normal dialing sequence, following the 0. The asterisk (*) or octothorpe (#), as part of the CPPO Flexible Feature Code, are rejected by Meridian Mail. Therefore, the CPPO Flexible Feature Code can only consist of seven digits (0-9).

### Meridian MAX

If the CPP package is equipped, an incoming ISDN call with the CLID Presentation Indicator set to "Allowed" sends the CLID to Meridian MAX.

### Network Call Redirection

If a set receives a call and is then redirected to the public network on an ISDN trunk that supports call redirection, then the redirecting IE in the outgoing SETUP message has the Presentation Indicator set accordingly. For instance, if the call that had requested CPPO is redirected, the outgoing SETUP message has the Presentation Indicator set to "Allowed".

### Network Message Center

An incoming trunk call with the Privacy Override Indicator displays the Calling Party Number and Name on the Message Center operator’s terminal.

### Network Ring Again

A call placed by means of the Network Ring Again feature recognizes the CPPO request from when the call was originally dialed.

### Nortel Symposium Call Center

As per existing operation, an incoming CPPO call routed to Nortel Symposium Call Center contains the CLID.

### Private Line Service

The Private Line Service feature out-pulses the Privacy Override Indicator only if it is dialed by the originator. The asterisk (*) is outpulsed to the far end only if it is an Out-pulse Asterisk and Octothorpe (OPAO) call. Otherwise, the asterisk (*) signals a three-second pause.

The asterisk (*) used to introduce a pause while out-pulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

### Remote Virtual Queuing

The Remote Virtual Queuing feature has automatic retry capabilities that are used when congestion is encountered within the network. The same Calling Party Privacy Override considerations are provided to the "retries" as were provided to the originally dialed call.



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### Ring Again - Busy Trunk

A call that is automatically re-dialed by the Ring Again - Busy Trunk feature recognizes the CPPO requested when the call is originally dialed.

### Speed Call
### System Speed Call

When an outgoing trunk call is initiated by dialing a Speed Call code, the Speed Call code carries the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored in the Speed Call Entry represented by the Speed Call code. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed per Speed Call list entry.

The user can also store the CPPO Flexible Feature Code in the Speed Call Entry (or Speed Call key). An outgoing CPPO call can be initiated by dialing the Speed Call code (or pressing the Speed Call key), followed by manually dialing the digits.

### Stored Number Redial

In the Stored Number Redial (SNR) programming mode, the user can store the CPPO Flexible Feature Code, followed by the normal dialing sequence in the SNR database. The outgoing calls originated by the Stored Number Redial feature send the Privacy Override Indicator to the far end. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed by the SNR feature.

During an active call on a Meridian 1 proprietary set, the Stored Number Redial feature stores the CPPO Flexible Feature Code in the SNR database if the CPPO Flexible Feature Code is included in the number dialed by the originator. The outgoing re-dialed calls also send the Privacy Override Indicator to the far end.

### Trunk Anti-Tromboning

When trunks are removed, due to the Trunk Anti-Tromboning (TAT) operation, an ISDN call recognizes the CPPO/CPP requested by the originator.

### Trunk Optimization Before Answer

An optimized call, due to Trunk Optimization Before Answer (TRO) operation, recognizes the CPPO/CPP requested by the originator.

### Virtual Network Services

CPPO treats Virtual Network Services (VNS) trunk calls in the same manner as ISDN trunk calls. For instance, CPPO does not affect the existing VNS operation. If CPPO was requested when originating a call, the Presentation Indicator field of CLID is set to "Presentation Allowed".



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### VISIT

The VISIT which connects to a set receives the Calling Party Number or Name, since an incoming CPPO call sends the Calling Party Number or Name to the set for display.

## Feature packaging

The Calling Party Privacy Override feature requires the following package:

- Calling Party Privacy (CPP) package 301, which has the following dependency:
  - Flexible Feature Codes (FFC) package 139.

For Calling Party Name Display, Calling Party Name Display (CPND) package 95 is required. ISDN package 145 is required for ISDN routes.

Non-ISDN trunks must restrict the Outpulse Asterisk and Octothorpe (OPAO) package 104 to provision the Calling Party Privacy Override feature.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 100 "LD 16 - Configure Privacy Override Indicators for a Non-ISDN route." (page 353)

   Configure Privacy Override Indicators for a Non-ISDN route.

2. Table 101 "LD 16 - For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route." (page 353)

   For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route.

3. Table 102 "LD 57 - Define the Flexible Feature Code for the Calling Party Privacy Override feature." (page 354)

   Define the Flexible Feature Code for the Calling Party Privacy Override feature.

4. Table 103 "LD 10/11 - Activate Calling Party Number and Name per-line blocking." (page 355)

   Activate Calling Party Number and Name per-line blocking.

Configuration procedures require that the following conditions are met before you configure Privacy Override Indicators for a Non-ISDN route:

- CPPO is configurable on COT, DID, FEX, WAT and ISA routes.
- OAPO package 104 is restricted or unequipped.
- Route is either OGT (outgoing) or IAO (incoming and outgoing).



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**Table 100**
**LD 16 - Configure Privacy Override Indicators for a Non-ISDN route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | RDB | Route Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ROUT | | Route number |
| | 0-511 | Range for Large System and CS 1000E system. |
| | 0-127 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| CPP | | Calling Party Privacy/Privacy Override (CPP/CPPO) flag. |
| | YES | Enable CPP/CPPO feature and configure parameters. (NO) = CPP/CPPO feature is disabled is the default. |
| - TCPP | | CPP/CPPO flag treatment for an incoming non-ISDN trunk call tandemed to this trunk route. |
| | (NO) | Outgoing call will carry the Privacy Override Indicator (default). |
| | YES | Outgoing call will carry the Privacy Indicator. |
| - DTPI | (*67) nnnn | Digitone Trunk Privacy Indicator nnnn = 0-9999, an asterisk (*) can be entered as the first digit. |
| - DPPI | 0-(1167)-9999 | Dial-pulse Trunk Privacy Indicator |
| - DTPO | (*82) nnnn | Digitone Trunk Privacy Indicator nnnn = 0-9999, an asterisk (*) can be entered as the first digit. |
| - DPPO | 0-(1182)-9999 | Dial-pulse Trunk Privacy Indicator |

Configuration procedures require that the following conditions are met before you set the TCPP flag in RDB to tandem non-ISDN calls on to this route:

- The CPP package 301 is equipped.
- Route is either OGT (outgoing) or IAO (incoming and outgoing).

**Table 101**
**LD 16 - For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | RDB | Route Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ROUT | | Route number |
| | 0-511 | Range for Large System and CS 1000E system. |
| | 0-127 | Range for Small System and Media Gateway 1000B. |



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**Table 101**
**LD 16 - For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | | All ISDN trunk routes are CPPO configurable. |
| ... | | |
| CPP | | Calling Party Privacy/Privacy Override (CPP/CPPO) flag. |
| | YES | Enable CPP/CPPO feature and configure parameters. |
| | | (NO) = CPP/CPPO feature is disabled is the default. |
| - TCPP | | CPP/CPPO flag treatment for an incoming non-ISDN trunk call tandemed to this trunk route. |
| | (NO) | Outgoing call will carry the Privacy Override Indicator (default). |
| | YES | Outgoing call will carry the Privacy Indicator. |

**Table 102**
**LD 57 - Define the Flexible Feature Code for the Calling Party Privacy Override feature.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Code. |
| CUST | xx | Customer number, as defined in LD 15. |
| FFCT | (NO) | Flexible Feature Confirmation Tone denied. |
| | YES | Flexible Feature Confirmation Tone allowed. |
| ... | | |
| CODE | CPP | CPP Flexible Feature Code |
| - CPP | xxxx | Calling Party Privacy code<br>xxxx = 0-9999, an asterisk (*) can be entered as the first digit.<br><br>The Flexible Feature Code may be up to 4 digits, or up to 7 digits with the Directory Number Expansion (DNXP) package (150). |
| - CPP | xxxx | Change the CPP code or enter a <CR> to accept. |
| CODE | CPPO | CPPO Flexible Feature Code |
| - CPPO | xxxx | Calling Party Privacy Override code<br>xxxx = 0-9999, an asterisk (*) can be entered as the first digit.<br><br>The Flexible Feature Code may be up to 4 digits, or up to 7 digits with the Directory Number Expansion (DNXP) package (150). |
| - CPPO | xxxx | Change the CPPO code or enter a <CR> to accept. |



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**Table 103**
**LD 10/11 - Activate Calling Party Number and Name per-line blocking.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| DES | d...d | Designator<br><br>The response d...d represents an Office Data Administration System (ODAS) Station Designator of 1-6 alphanumeric characters. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| CLS | CLBA | Activate Calling Party Number and Name per-line blocking.<br>CLBD = Deactivate Calling Party Number and Name per-line blocking (default). |

## Feature operation

For a user to override the Calling Party Number and Name per-line blocking allowed (CLBA) Class of Service, the following steps must be performed.

| Step | Action |
|---|---|
| **1** | The user goes off hook. |
| **2** | The user initiates a call by dialing the Calling Party Privacy Override Flexible Feature Code, defined in LD 57. |
| **3** | The user dials the destination number. |

**--End--**



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# Camp-On to a Set in Ringback or Dialing

## Contents

This section contains information on the following topics:

“Feature description” (page 357)

“Operating parameters” (page 358)

“Feature interactions” (page 358)

“Feature packaging” (page 359)

“Feature implementation” (page 359)

“Feature operation” (page 359)

## Feature description

This feature allows a station or attendant to Camp-on an external trunk call to another station that is in a ringback or dialing state. If the station on which the call is camped on becomes idle without going into established state, the camped-on call rings the station automatically.

This capability applies to standalone and networking environments. Within a networking environment, the station affecting the Camp-on and the desired party can be anywhere in the network.

If the Flexible Tones and Cadences package is equipped and periodic Camp-on tones and cadences are defined, periodic Camp-on tone is given to the desired station when it goes into established state indicating that a call is camped on. For analog sets, this is in the form of a tone. For digital sets, it is a periodic buzz. The Camp-on tone lasts for the duration of the Camp-on. The desired station receives periodic Camp-on tone, if the



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station has Warning Tone Allowed class of service and the customer has the Camp-on Tone Allowed option. Music is provided to the camped-on station, if the Music package is equipped and defined for the customer.

During Camp-on, as soon as the attendant releases the call or the station completes the transfer, recall timing begins (the Recall Timer is configured in LD 15). If the timer times out, the Camp-on is recalled to the attendant. If the attendant is busy, the recall is queued against the attendant. The call can no longer be camped on to the desired station without affecting another Camp-on. If the attendant is in Night Service, the Camp-on receives night treatment.

If the desired party is on a different node, and Network Attendant Service (NAS) is equipped, the Camp-on is routed according to the NAS routing table. If the Camp-on is recalled to the local attendant, and the local attendant is busy, the recall is queued to the attendant. During this time, the call may still be answered by the desired station (the call remains camped on until the attendant answers the recall). This capability is that of the Slow Camp-on Recall.

## Operating parameters

Only one call at a time can be camped on to a station in dialing or ringback state.

The cadence for Periodic Camp-on can be defined in LD 56. Periodic Camp-on can be allowed or denied on a customer and set basis.

## Feature interactions

### Attendant Forward No Answer

Camp-on recall takes precedence over the Attendant Forward No Answer recall. However, if during the recall the customer goes into Night Service and the recall is not answered by the night DN, the call is disconnected according to the Attendant No Answer feature processing.

### Call Forward All Calls
### Call Waiting

Call Waiting and Call Forward All Calls take precedence over Camp-on.

### First-Second Degree Busy

If the First-Second Degree Busy Indication is equipped, and the attendant attempts to Camp-on a call to a station in the ringing or dialing state, the attendant receives first degree busy indication. If the attendant attempts to Camp-on a call to a station that is second degree busy, Camp-on is not allowed. The attendant receives second degree busy indication.



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### Slow Answer Recall Modification

Slow Answer Recall Modification (SLAM) has an interaction after the attendant answers the recall. If SLAM is configured, then the target set is disconnected after the attendant answers the recall. The call is no longer camped on.

## Feature packaging

Camp-On to a Set in Ringback or Dialing requires Camp-on French Type Approval (FRTA) package 197.

For network routing, the Network Attendant Service (NAS) package 159 is required.

If periodic Camp-on tone is desired, the Flexible Tones and Cadences (FTC) package 125 is required.

If music to the camped-on station is desired, the Music (MUS) package 44 is required.

For a station to Camp-on a trunk, the Station Camp-on (SCMP) package 121 is required.

## Feature implementation

No change to existing configuration is required for the Camp-On to a Set in Ringback or Dialing feature.

## Feature operation

See the Camp-On feature description contained within this document.



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# Camp-On to Multiple Appearance Directory Number

## Contents

This section contains information on the following topics:

“Feature description” (page 361)

“Operating parameters” (page 362)

“Feature interactions” (page 362)

“Feature packaging” (page 363)

“Feature implementation” (page 363)

“Feature operation” (page 363)

## Feature description

The Camp-On to Multiple Appearance DN enhancement allows a call camped on to an Multiple Call Ringing (MCR) or Multiple Call Non-ringing (MCN) Directory Number (DN) to be camped on to all sets with that DN. That is, any set with that MCR or MCN DN can receive the call when it idles. The camped call will Camp-On to each set as allowed for by the existing Camp-On feature. Also, each set with the MCR or MCN DN will receive Camp-On tone as long the camped call is in the Camp-On Queue. Prior to the introduction of the Camp-On to Multiple Appearance DN enhancement Camp-On was applied to the first set in the TN list.

This enhancement applies to Station Camp-On and Network Camp-On (regardless of where in the network the Camp-On originated).

An example of the sequence for multiple Camp-Ons to a single DN follows:



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| Step | Action |
|---|---|
| 1 | Sets A, B, and C are Meridian 1 proprietary telephones with the same MCR or MCN DN. All three sets are busy. |
| 2 | The attendant extends an external call to the busy DN and releases. Sets A, B, and C hear Camp-On tone. |
| 3 | A goes on-hook and camped call is presented to set A. Camp-On tone is removed from B and C. |
| 4 | If B went on-hook in step 3, the call is presented to set B and Camp-On tone is removed from sets A and C. |
| 5 | Similar operations as in step 4 if set C goes on-hook. |

**--End--**

## Operating parameters

The same feature requirements apply as for the Camp-On feature.

This Camp-On enhancement applies to Multiple-appearance Multiple-call Ringing (MCR) or Non-ringing (MCN) DNs; it does not apply to Multiple-appearance Single-call Ringing (SCR) or Non-ringing (SCN) DNs.

## Feature interactions

### Attendant Break-in

Camp-On will not be allowed on a set involved in an Attendant Break-in.

### Centralized Multiline

This feature allows analog (500/2500 type) telephones to appear as MCR DNs. This enhancement should apply to these sets.

### Make Set Busy

Camp-On will not be allowed on a set with Make Set Busy active.

### Network Camp-On

The Camp-On enhancement applies to all Camp-On attempts regardless of where the Camp-On was originated.

### Operator Call Back

Camp-On is not allowed on a set waiting for an Operator Recall signal.

### Single Call Ringing and Non-ringing

Multiple-appearance Single Call Ringing and Non-ringing (SCR and SCN) DNs are not affected by the Camp-On enhancement.



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### Station Camp-On

The Camp-On enhancement applies to Station Camp-On.

## Feature packaging

Camp-On to Multiple Appearance Directory Number requires International Supplementary Features (SUPP) package 131.

## Feature implementation

There are no specific implementation procedures for this feature.

## Feature operation

For operating procedures, see the“Camp-On to Multiple Appearance Directory Number” (page 361) feature description on “Camp-On to Multiple Appearance Directory Number” (page 361).



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# Camp-On

## Content

This section contains information on the following topics:

“Feature description” (page 365)

“Operating parameters” (page 365)

“Feature interactions” (page 366)

“Feature packaging” (page 369)

“Feature implementation” (page 369)

“Feature operation” (page 370)

## Feature description

The Camp-On feature routes one additional external call to a busy Directory Number (DN). When the attendant extends a call to a busy DN, the external call is camped-on to the telephone. If the Class of Service allows a warning tone, the user hears a tone indicating that a call is camped on. If the user frees the line within a specified time, the camped-on call rings the telephone automatically. If not, the call returns to the attendant as a recall.

Camp-On Tone is allowed or denied on a per-customer basis. The time a camped-on call waits is defined in LD 15 from 0 to 510 seconds, in multiples of two seconds. The default is 30 seconds.

## Operating parameters

Camp-On applies to attendant-extended calls only. If the attendant hears a busy tone, another call has already been camped on to the busy telephone.



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## Feature interactions

### Attendant Blocking of Directory Number

Camp-on is denied for a DN that is blocked due to the Attendant Blocking of DN feature.

### Attendant Break-In

If the destination DN has a camped-on incoming trunk call, the attendant cannot extend the urgent incoming call as a Camp-On call.

### Call Forward All Calls
### Call Forward, Internal Call

Call Forward All Calls and Internal Call Forward take precedence over Camp-On.

### Call Forward/Hunt Override Via Flexible Feature Code

When a busy set is encountered, it is possible to Camp-on to the set, even if Call Forward/Hunt Override Via Flexible Feature Code has been activated

### Call Forward No Answer

When the Call Forward No Answer timer expires for a ringing camped-on call, the call is given Attendant Recall treatment instead of Call Forward No Answer treatment.

### Call Park Network Wide

When an attendant attempts to extend a call to a busy station across the network and the busy station returns a Camp-On allow signal, an attendant has the option of camping on a call or continuing with Network Call Park.

### Call Park on Unsupervised Trunks

A Disconnect Timer applies to camped-on calls on all trunks on the route. All answered calls in the camped-on state is disconnected if left in that state for an extended period.

### Call Waiting
### Call Waiting Redirection

If a Call Waiting Class of Service or key is defined, Camp-On cannot be provided.

### Camp-On, Station

With Station Camp-On, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature, attendants were the only parties that could camp calls on to busy internal stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN). For more information, see the Camp-On, Station feature description.



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### China Number 1 Signaling - Called Party Control

A local attendant cannot Camp-on a call to an analog (500/2500 type) set that is on an outgoing trunk call that follows Called Party Control.

### Enhanced Override
### Forced Camp-On
### Priority Override

Station-to-Station Camp-On and Attendant Camp-On are not affected by Forced Camp-On or Priority Override. The new Classes of Service (Camp-On From Another Telephone Allowed [CPFA], Camp-On From Another Telephone Denied [CPFD], Camp-On To Another Telephone Allowed [CPTA], and Camp-On To Another Telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

### Flexible Feature Code Boss Secretarial Filtering

When an attendant is attempting to Camp-on a call to a boss set with filtering active, the call is routed to the secretary set, if the filtering is active for all calls. If filtering is active for external calls only, the call is routed to the secretary set if the call is an external call.

### Flexible Voice/Data Terminal Number

Camp-On is not supported on data calls to a dynamic voice/data TN.

Camp On is supported for voice calls to dynamic voice/data TN. However, no tone is inserted during a Camp On attempt if the Terminal Number is in a busy data mode.

### Generic XFCOT Software Support

The Camp-On feature allows an attendant to route one additional call to a busy DN so it can be rung when it becomes free. If the busy DN is not free after a customer-defined time, the call is recalled to the attendant.

A call from a loopstart disconnect supervised or unsupervised loopstart trunk can be camped on. If a caller on an unsupervised loopstart trunk disconnects while the call is camped on, it is detected when the call is recalled or answered.

Caller disconnection during Camp-On operation is detected by a disconnect-supervised loopstart trunk on an XFCOT card and the camped on call is dropped.

### Group Hunt

Camping an incoming call on to a Pilot DN is not be supported

### Group Hunting Queuing Limitation

No Camp-on tone is provided for Group Hunting Queuing Limitation.



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### Hunting

Hunting takes precedence over Camp-On.

### Idle Extension Notification

When an extension is blocked for receiving calls due to the Idle Extension Notification feature, Camp-on is not possible.

### Multi-Party Operations

Camp-on to a controlling party DN which is involved in a Consultation connection is not permitted. However, Camp-on is allowed at non-controlling parties DN's which are involved in the Consultation connection.

### Multi-Party Operations Enhancements

Camp-on is allowed on a party receiving Patience Tone. Camp-on tone and is not applied to the party during Patience tone. However, Camp-on tone and is applied when the speechpath has been reestablished

### Multi-Party Operations - Three-Party Service

While Camp-On is allowed to the party receiving the patience tone, the Camp-On tone is not applied to the party during the patience tone. The Camp-On tone is applied, however, when the speech path has been reestablished.

### On Hold on Loudspeaker

Camp-On can be applied to a busy loudspeaker DN.

### Override - Forced Camp-On and Priority Override Override, Enhanced

Station-to-Station Camp-On and Attendant Camp-On are not affected by Forced Camp-On or Priority Override. The new Classes of Service (Camp-On From Another Telephone Allowed [CPFA], Camp-On From Another Telephone Denied [CPFD], Camp-On To Another Telephone Allowed [CPTA], and Camp-On To Another Telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

### Periodic Pulse Metering

Metered calls camped-on to a busy station by an attendant are charged against the attendant until the call is answered and the attendant releases.

### Source Included when Attendant Dials

The source remains included while the attendant dials the destination.



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### Uninterrupted Line Connections Warning Tone

Class of Service with warning tone denied allows a call to be camped on, but with no warning tone.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 104 "LD 15 - Enable Camp-On tone for a customer." (page 369)

   Enable Camp-On tone for a customer.

2. Table 105 "LD 10 - Allow warning tone Class of Service for analog (500/2500 type) telephones." (page 370)

   Allow warning tone Class of Service for analog (500/2500 type) telephones.

3. Table 106 "LD 11 - Allow warning tone Class of Service for Meridian 1 proprietary telephones." (page 370)

   Allow warning tone Class of Service for Meridian 1 proprietary telephones.

**Table 104**
**LD 15 - Enable Camp-On tone for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FTR | Features and options data block. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - OPT | CTA | Enable Camp-On tone for the customer. |
| TYPE | TIM | Configure timers data block. |
| - RTIM | xx yy zz | Set recall timers.<br><br>yy = Camp-On recall timer, response is 0-(30)-510. |
| ... | | |
| TYPE | FTR | Features and options |
| - STCB | (NO) YES | Station Camp-On Busy allowed. |
| - NSCP | (NO) YES | Network Station Camp-On to sets on this node allowed. |



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**Table 105**
**LD 10 - Allow warning tone Class of Service for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | WTA | Allow warning tone. |

**Table 106**
**LD 11 - Allow warning tone Class of Service for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | WTA | Allow warning tone. |

## Feature operation

To camp on an external call to a busy destination:

- Press **Rls**.
  The call is camped on to the extension. If you hear a busy tone, a call is already camped on the extension.

  If the call is not answered within a specified time, it recalls to the attendant. Both the Source and Destination indicators flash until the recall is answered. The call can be camped on again or released.

To answer a camped-on call, follows these steps:

| Step | Action |
|---|---|
| **1** | When you hear a short beep indicating a camped-on call, hang up or press **Rls**. |



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2 When the telephone rings, lift the handset.
You are connected to the camped-on call.

**--End--**



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# Camp-On, Forced

## Content

This section contains information on the following topics:

“Feature description” (page 373)

“Operating parameters” (page 374)

“Feature interactions” (page 375)

“Feature packaging” (page 377)

“Feature implementation” (page 377)

“Feature operation” (page 379)

## Feature description

Forced Camp-On differs from normal Camp-On in that both internal and external calls can be camped on, rather than just external calls as with the Camp-On feature. The Forced Camp-On can be automatic or manual. The manual operation requires the use of the Enhanced Override (EOVR) key or Flexible Feature Code (FFC).

Forced Camp-On can be used as a feature by itself or in conjunction with Priority Override. The combination of the two features is referred to as Enhanced Override (EOVR).

For manual Forced Camp-On, an analog (500/2500 type) telephone user has to dial the EOVR Flexible Feature Code (FFC), while a Meridian 1 proprietary telephone user has to use the EOVR key.

A second operation of the EOVR key or FFC executes Enhanced Override.



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Forced Camp-On is similar to station-to-station Camp-On except that Forced Camp-On can be done with either no call on hold or an external or internal call on hold. It can be done automatically or manually; whether it is automatic or manual is determined by the response to the Automatic Forced Camp-On (AFCO) prompt in LD 15.

For manual operation, once a busy telephone has been reached, the first depression of the EOVR key or the first dialing of the EOVR FFC attempts Forced Camp-On. If successful, Forced Camp-On introduces Camp-On tone into the connection. If unsuccessful, overflow (fast busy) tone is returned to the party attempting the Forced Camp-On.

For Forced Camp-On to be attempted, all other methods of call termination must have been tried, the last of which was Camp-On. If station-to-station Camp-On or automatic Forced Camp-On has occurred, or Forced Camp-On has been excluded by the new telephone options, then the first depression of the EOVR key or dialing of the EOVR FFC executes Enhanced Override. If, however, Forced Camp-On is denied due to existing Camp-On limitations, Enhanced Override is also denied.

## Operating parameters

The Flexible Feature Codes (FFC) package (139) must be equipped for Forced Camp-On and Priority Override to be available from analog (500/2500 type) telephones.

For analog (500/2500 type) telephone activation, the Multi-Party Operations (MPO) package (141) must be equipped, with "YES" as the response to the RALL prompt in LD 15 to ensure register recalls are required before dialing control digits. The EOVF FFC defined must not start with the same digit as one of the control digits. The control digits are defined in LD 15 and are printed as part of the Customer Data Block (LD 21).

Telephones or trunks involved in any of the following cannot be camped on to:

- Non established call
- Conference call
- Attendant call
- Attendant call using Centralized Attendant Service (CAS), Primary Rate Interface (PRI), or Integrated Services Digital Network (ISDN) trunk
- Make Set Busy
- Do Not Disturb



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- Automatic Call Distribution (ACD) call
- Operator Call Back
- Hold
- Data call
- Release Link call, and
- Parked call.

Call Forward and Hunting take precedence over Call Waiting. If Call Waiting is allowed, Camp-On is not attempted. If Call Waiting is not allowed, station-to-station Camp-On is automatically attempted. If this succeeds, Enhanced Override can still follow. If Camp-On fails because there is no external call, Forced Camp-On and Enhanced Override may still work. However, if Camp-On fails due to other limitations, Forced Camp-On and Enhanced Override will also not work.

Even though Camp-On will still function when Warning Tone Denied (WTD) Class of Service is defined, Forced Camp-On requires Warning Tone Allowed (WTA) Class of Service.

Camp-On requires an external call on hold. Forced Camp-On can be done without a call on hold, or with both internal and external calls on hold.

Camp-On Classes of Service (Camp-On From another telephone Allowed [CPFA], Camp-On From another telephone Denied [CPFD], Camp-On To another telephone Allowed [CPTA], and Camp-On To another telephone Denied [CPTD]) apply to Forced Camp-On and automatic Forced Camp-On (AFCO) only. They do not apply to Station or attendant Camp-On.

If a telephone is denied Forced Camp-On by Class of Service, Enhanced Override may still be attempted.

## Feature interactions

### Attendant Break-In

Telephones with a toll operator break-in call cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-on.

### Attendant Calls

Telephones involved in attendant calls cannot be camped on to. Overflow (fast busy) tone is returned to telephones on which Forced Camp-On is attempted.



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### Automatic Call Distribution

Telephones involved in Automatic Call Distribution calls cannot be camped on to. Overflow (fast busy) tone is returned to telephones attempting Forced Camp-On.

### Call Hold, Deluxe
### Call Hold, Permanent
### Hold

Neither held calls nor telephones with calls on hold can be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

### Camp-On

Station-to-Station Camp-On and attendant Camp-On are not affected by Forced Camp-On. The Classes of Service (Camp-On From another telephone Allowed [CPFA], Camp-On From another telephone Denied [CPFD], Camp-On To another telephone Allowed [CPTA], and Camp-On To another telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

### Conference calls

Telephones involved in Conference calls cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

### Data calls

Data calls have Warning Tone Denied (WTD) Class of Service and therefore cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

### Do Not Disturb

Telephones with Do Not Disturb enabled cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

### Make Set Busy

Telephones with Make Set Busy active cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On. Voice Call is blocked by Make Set Busy.

### Multi-Party Operations

With Multi-Party Operations (MPO), when a consultation call is made on a set equipped with Priority Override, a control digit has to be dialed from the set to perform a recall and return the call on hold.



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### Night Restriction Classes of Service

If Forced Camp-on and Night Restriction for Forced Camp-on Class of Service (NRCA) are assigned, Forced Camp-on is operational for the set only when Night Service is in effect.

### Operator Call Back

Telephones involved in an Operator Call Back call or Toll Operator Break-In cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

### Override

When Priority Override is activated, it replaces normal override. Once Priority Override has been performed on a set, its Digit Display shows the DN of the overriding set.

## Feature packaging

Forced Camp-On requires the following packages to function as described in this document:

- Station Camp-On (SCMP) package 121
- Flexible Feature Codes (FFC) package 139
- Priority Override/Forced Camp-On (POVR) package 186

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 107 "LD 15 - Configure the customer for Automatic Forced Camp-On and Station Camp-On tone." (page 378)

   Configure the customer for Automatic Forced Camp-On and Station Camp-On tone.

2. Table 108 "LD 57 - Configure Enhanced Override Flexible Feature Codes (FFC)." (page 378)

   Configure Enhanced Override Flexible Feature Codes (FFC).

3. Table 109 "LD 10 - Configure analog (500/2500 type) telephones for Forced Camp-On." (page 378)

   Configure analog (500/2500 type) telephones for Forced Camp-On.

4. Table 110 "LD 11 - Configure Meridian 1 proprietary telephones for Forced Camp-On." (page 379)

   Configure Meridian 1 proprietary telephones for Forced Camp-On.

5. Table 111 "LD 14 - Configure trunks for Forced Camp-On." (page 379)

   Configure trunks for Forced Camp-On.



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**Table 107**
**LD 15 - Configure the customer for Automatic Forced Camp-On and Station Camp-On tone.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | MPO | Multi-Party Options |
| ... | | |
| - AFCO | (NO) YES | Automatic Forced Camp-On.<br>Enter YES if Forced Camp-On is to be applied automatically.<br>Enter NO if Forced Camp-On is to be applied manually. |
| ... | | |
| TYPE: | FTR | Features and options |
| - STCB | (NO) YES | Station Camp-On Busy tone.<br>Enter NO if Busy Tone is not to be given to the transferring (controlling) party when the desired station is busy.<br>Enter YES if Busy Tone is to be given to the transferring (controlling) party when the desired station is busy. |

**Table 108**
**LD 57 - Configure Enhanced Override Flexible Feature Codes (FFC).**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | FFC | Flexible Feature Codes. |
| ... | | |
| CODE | EOVR | Enhanced Override (programmable only when the Priority Override package 186 is equipped). |
| EOVR | y...y | y...y is a one- to seven-character input that the user must dial to use the FFC. Valid inputs are digits 0 through 9, asterisk (*), and octothorpe (#). |

**Table 109**
**LD 10 - Configure analog (500/2500 type) telephones for Forced Camp-On.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Telephone type. |
| CLS | (CPFA) CPFD<br><br>(CPTA) CPTD<br><br>WTA | Forced Camp-On from another telephone to this telephone (Allowed) Denied.<br>Forced Camp-On to another telephone from this telephone (Allowed) Denied.<br>Warning Tone Allowed. |



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**Table 110**
**LD 11 - Configure Meridian 1 proprietary telephones for Forced Camp-On.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal Number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CPFA) CPFD | Forced Camp-On from another telephone to this telephone (Allowed) Denied. |
| | (CPTA) CPTD | Forced Camp-On to another telephone from this telephone (Allowed) Denied. |
| | WTA | Warning Tone Allowed. |
| ... | | |
| KEY | xx EOVR | Add an Enhanced Override key, where;<br>xx = the key number (allowed to be programmed only if Priority Override package 186 is equipped). |

**Table 111**
**LD 14 - Configure trunks for Forced Camp-On.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| ... | | |
| CLS | WTA | Warning Tone Allowed. |

## Feature operation

Forced Camp-On can be used when making either a simple or consultation call (that is, having a call on hold while calling another party). The following feature operation descriptions use telephone A (an analog (500/2500 type) telephone) or telephone E (a Meridian 1 proprietary telephone) to call telephone B, which is connected to party C.

The telephones are configured as follows:

1. Telephone A is an analog (500/2500 type) telephone with Warning Tone Allowed (WTA) Class of Service.
2. Telephone B has Warning Tone Allowed (WTA) Class of Service.



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3. Party C has Warning Tone Allowed (WTA) Class of Service and can be any telephone type or a Direct Inward Dial (DID), TIE, or Central Office (Public Exchange) (COT) trunk.
4. Telephone E is a Meridian 1 proprietary telephone with Warning Tone Allowed (WTA) Class of Service and an Enhanced Override (EOVR) key equipped.

For the following examples:

1. Telephones A and E both have Camp-On From another telephone Allowed (CPFA) Class of Service.
2. Both telephone B and telephone C are involved in a simple call, not a conference call.
3. Telephone B has Camp-On To another telephone Allowed (CPTA) Class of Service.
4. Call Forward, Hunting, and Call Waiting are not in use.

In the following feature operation descriptions, the term "recall" refers to performing a register recall, which can be performed in a number of different ways. Some typical examples are:

- Flash the switchhook. (This is the equivalent of hanging up the handset and picking it back up. This on hook, off hook is performed in a time period that is less than what the system would consider to be a valid disconnect.)
- Press the flash or LINK button if equipped.

The Camp-On tone is always provided for Forced Camp-On since Warning Tone Allowed (WTA) Class of Service is a prerequisite. This tone can be a buzz for Meridian 1 proprietary telephones or a single burst of tone for analog (500/2500 type) telephones if the customer (LD 15) option Periodic Camp-On Tone Denied (CTD) is selected. If the customer (LD 15) option Periodic Camp-On Tone Allowed (CTA) is selected, the Camp-On Tone as defined in the Flexible Tones and Cadences (FTC) (LD 56) in response to the CAMP prompt is used.

While camping on, the party attempting the Camp-On, either telephone A or E, receives ringback if the Station Camp-On (SCMP) package (121) is not equipped, or either ringback or busy tone, as defined by the response to the Station Camp-On Busy tone (STCB) prompt in LD 15, if the SCMP package is equipped.

### Forced Camp-On with an analog (500/2500 type) telephone

With automatic Forced Camp-On turned off; response to AFCO in LD 15 was "NO":



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| | ACTION | RESPONSE |
|---|---|---|
| 1 | B and C are connected in a simple call. | |
| 2 | A dials B. | A receives busy tone. |
| 3 | A performs a recall. | A receives special dial tone (SDT). |
| 4 | A dials EOVR FFC to attempt Forced Camp-On. | If telephone B or C has disconnected, telephone A receives overflow (fast busy) tone. Otherwise B receives Camp-On tone and A receives ringback or busy tone depending on the options equipped. A is manually Forced Camp-On to B. |
| 5 | B disconnects from the call. | Telephone A rings telephone B. |

With automatic Forced Camp-On turned on; response to AFCO in LD 15 was "YES":

| | ACTION | RESPONSE |
|---|---|---|
| 1 | B and C are connected in a simple call. | |
| 2 | A dials B. | A attempts Forced Camp-On to B. |
| 3 | If Forced Camp-On was successful. | A receives ringback or busy tone depending on the options equipped. A is automatically Forced Camp-On to B. |
| 4 | B disconnects. | A rings B. |

## Forced Camp-On with a Meridian 1 proprietary telephone

With automatic Forced Camp-On turned off; response to AFCO in LD 15 was "NO":

| | ACTION | RESPONSE |
|---|---|---|
| 1 | B and C are connected in a simple call. | |
| 2 | E dials B. | E receives busy tone. |



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| | ACTION | RESPONSE |
|---|---|---|
| **3** | E presses EOVR key to attempt Forced Camp-On. | If telephone B or C has disconnected, telephone E receives overflow (fast busy) tone. Otherwise B receives Camp-On tone and E receives ringback or busy tone depending on the options equipped. E is manually Forced Camp-On to B. |
| **4** | B disconnects from the call. | Telephone E rings telephone B. |

With automatic Forced Camp-On turned on; response to AFCO in LD 15 was "YES":

| | ACTION | RESPONSE |
|---|---|---|
| **1** | B and C are connected in a simple call. | |
| **2** | E dials B. | E attempts Forced Camp-On to B. |
| **3** | If Forced Camp-On was successful. | E receives ringback or busy tone depending on the options equipped. E is automatically Forced Camp-On to B. |
| **4** | B disconnects. | E rings B. |



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# Camp-On, Station

## Contents

This section contains information on the following topics:

“Feature description” (page 383)

“Operating parameters” (page 384)

“Feature interactions” (page 384)

“Feature packaging” (page 385)

“Feature implementation” (page 385)

“Feature operation” (page 386)

## Feature description

With this feature, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature attendants were the only parties that could camp calls on to busy internal stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN).

When a transferring party reaches a busy internal party, the transferring telephone will receive Ringback tone (providing certain conditions are met). When the transferring party completes the transfer, the external (calling) party will Camp-On to the desired party and the external party (an external party is any CO, DID, FEX, or WATS call) will receive ringback tone or music.

This feature applies to both standalone and network environments.

Within a network environment, the transferring and camped on to stations may be on the same or different nodes, as long as all nodes are configured with Network Station Camp-On.



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## Operating parameters

The limitations that currently apply to the operation of the Camp-On feature from an attendant console also apply to Station Camp-On.

These limitations are:

- Camp-On is not permitted if the desired station is in a state other than established (that is, ringing, dialing).
- Only one call at a time can Camp-On to a busy station.
- Calls cannot Camp-On to a station with the Call Waiting feature configured.
- The station camped on to is given Warning tone only if the customer has Camp-On Tone Allowed (CTA) in the Customer Data Block (LD 15) and the station has Warning Tone Allowed (WTA) Class of Service assigned. If the station has Warning Tone Denied (WTD) Class of Service assigned, the Camp-On will take effect without giving any Camp-On tone to the camped on to (desired) party.
- The transferring station will receive Busy tone only if the response to the STCB prompt in the Customer Data Block (LD 15) of the camped on to (desired) telephone is YES. Otherwise, the transferring station will receive Ringback tone.

### Camp-On indication

When a call is extended from an attendant to a busy station there is a specific combination of tones and indicator states to identify the Camp-On state.

When an inquiry call is made from a station, there is only one way for the user to distinguish between a busy telephone and an idle ringing telephone. That way is to ensure that the response to the STCB prompt in the Customer Data Block (LD 15) of the camped on to (desired) telephone is YES. Otherwise, Ringback tone is provided in both cases.

## Feature interactions

### Call Forward All Calls, Call Forward Busy, Call Waiting and Hunting

Call Waiting, Call Forward Busy (for DID calls only), Call Forward All Calls, Call Waiting and Hunting all take precedence over Station Camp-On.

### Camp-On

With Station Camp-On, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature, attendants were the only parties that could camp calls on to busy internal



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stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN). For more information, see the Camp-On, Station feature description.

### Dial Impulse Set

A Dial Impulse (DIP Class of Service) station must have TSA Class of Service to perform a Station Camp-On.

### Network Attendant Service

For network-wide Station Camp-On, NAS must be equipped at each node of the network.

## Feature packaging

For standalone environments, the Station Camp-On (SCMP) package 121 is required.

For network environments, the Station Camp-On (SCMP) package 121 and the Network Attendant Service (NAS) package 159 are required.

For Music (MUS), package 44 is required.

## Feature implementation

**Table 112**
**LD 15 - Configure Station Camp-On for both standalone and network environments.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | FTR | Features and options |
| ... | | |
| - STCB | (NO) YES | Station Camp-On Busy tone.<br><br>Enter NO if Busy tone is not to be given to the transferring (controlling) party when the desired station is busy.<br><br>Enter YES if Busy tone is to be given to the transferring (controlling) party when the desired station is busy. |
| - NSCP | (NO) YES | Network Station Camp-On.<br><br>Enter NO if telephones on this node are not allowed to have calls camped on by telephones in other nodes.<br><br>Enter YES if telephones on this node are allowed to have calls camped on by telephones in other nodes. |



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# Feature operation

## Standalone case

Any station, not necessarily the Night DN, attempting to transfer an external call may, during the associated inquiry call, camp the trunk on to a busy station.

The Camp-On will take effect from the moment the transferring station has completed the transfer to the desired DN.

The transferring station will hear Ringback tone or Busy tone depending on the option entered in response to the STCB prompt in the Customer Data Block (LD 15). This prompt applies to any telephone, not just the Night DN. By default (STCB is set to NO), the transferring party will hear Ringback tone.

The desired station will hear Camp-On tone if it has WTA Class of Service assigned. Otherwise, if it has WTD Class of Service, the Camp-On will take effect without the desired party being informed a call is camped on.

When the transfer is completed, the external party is camped on to the desired station and receives either Ringback tone or an announcement.

## Network case

Any station, not necessarily the Night DN, attempting to transfer an external call across an MCDN network may, during the associated inquiry call, Camp-On the trunk to a busy station.

The location of the transferring party has no effect on the Station Camp-On capability.

The Camp-On will take effect from the moment the transferring station has completed the transfer to the desired DN.

The transferring station will hear Ringback tone or Busy tone depending on the option entered in response to the STCB prompt in the Customer Data Block (LD 15). This prompt applies to any telephone, not just the Night DN. By default (STCB is set to NO), the transferring party will hear Ringback tone. The tone given, either ringback tone or Busy tone, is determined by the node in which the desired (camped on to) party resides.

The desired station will hear Camp-On tone if it has WTA Class of Service assigned. If it has WTD Class of Service, the Camp-On will take effect without the desired party being informed a call is camped on.

When the transfer is completed, the external party is camped on to the desired station and receives either Ringback tone or an announcement.



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## Recall timing on Camp-On calls

When any station extends an external call, recall timing is initiated if the call is camped on to a busy station.

The recall timing will start from the moment that the extending station "releases" the call. The value of the recall timer is set by the prompt RTIM in the Customer Data Block (LD 15).

At the recall, the camped on call is routed to the attendant. If the attendant is in Night Service, Night treatment is given; if NAS routing is active, the call is routed according to the NAS configuration.

### Standalone case

When the recall to the attendant occurs, the Camp-On is canceled. If the attendant is busy during the recall, the recall is queued.

### Network case

When the recall occurs and the attendant has answered the recall, the call will still be camped on to the desired party. If during the recall the attendant is busy, the recall is queued.



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# Card LED Status

## Contents

This section contains information on the following topics:

“Feature description” (page 389)

“Operating parameters” (page 389)

“Feature interactions” (page 390)

“Feature packaging” (page 390)

“Feature implementation” (page 390)

“Feature operation” (page 391)

## Feature description

This feature allows the use of Swedish Televerket (TVT) Intelligent Peripheral Equipment on the system. This is accomplished by defining individual terminal loops as TVT type in LD 17. The system software is modified to allow the status (on/off) of the LED on the faceplate of the TVT cards to be opposite of the LED on NT cards. The TVT peripheral cards (standard extension line, off-premises extension and Multi Frequency Receiver [MFR]) are equivalent to the NT 500-type line card and Digitone Receiver (DTR). Since the TVT off-premises extension line card must be treated as a local extension by the system, the OPX Class of Service is prohibited for this card in LD 10.

## Operating parameters

The system software supports the following TVT cards:

- single-density standard extension line card (TPC60)
- dual-density extension line card (TPC451)
- two-wire Off-premise Extension (OPX) line card (TPC22)



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- four-wire Off-premise Extension (OPX) line card (TPC23), and
- multi-frequency receiver (MFR) card (TPC15).

## Feature interactions

Card LED Status does not interact with other features.

## Feature packaging

Card LED Status requires International Supplementary Features (SUPP) package 131.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 113 "LD 17 - Configure the system hardware and software parameters." (page 390)

   Configure the system hardware and software parameters.

2. Table 114 "LD 10 - Create or modify data blocks for analog (500/2500 type) telephones." (page 390)

   Create or modify data blocks for analog (500/2500 type) telephones.

**Table 113**
**LD 17 - Configure the system hardware and software parameters.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | CEQU | Common Equipment parameters |
| ... | | |
| CEQU | (NO) YES | Change CE parameters. |
| TERM | T0-T159 | TVT single density local terminal loops. |

**Table 114**
**LD 10 - Create or modify data blocks for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Telephone type. |
| ... | | |
| CLS | OPN | Allows Swedish TVT off-premise line card to be treated as a local extension by the system. |



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## Feature operation

No specific operating procedures are required to use this feature.



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# Centralized Multiple Line Emulation

## Contents

This section contains information on the following topics:

“Feature description” (page 393)

“Operating parameters” (page 393)

“Feature interactions” (page 394)

“Feature packaging” (page 394)

“Feature implementation” (page 394)

“Feature operation” (page 395)

## Feature description

The Centralized Multiple Line Emulation (CML) feature allows a mixed group of telephones (analog (500/2500 type) telephones, or Meridian 1 proprietary telephones) to answer calls ringing at a central DN (referred to as the CML DN). This function is provided by using the Automatic Call Distribution (ACD) and Multiple Appearance Directory Number (MADN) features, and making modifications to the Call Pick-up feature.

Large queues to the CML DN (up to 15 calls) are handled by the ACD feature, which distributes the calls to members of the CML group.

Small queues to the CML DN (one or two calls) are handled using MADNs configured on a Meridian 1 proprietary telephone.

## Operating parameters

The Centralized Multiple Line Emulation feature is not supported by Attendant Administration.



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Call Pick-up groups assigned at the key level cannot be given a group number containing ACD DNs, since calls ringing in an ACD queue cannot be picked up.

Calls cannot be picked up from a station having direct-termination-denied Class of Service.

Normal tenant-service calling limitations apply. If a station cannot receive a ringing call, then the call cannot be picked up for that station. A station that cannot direct dial another station cannot pick up a call from that station.

Calls ringing on the CML priority station are picked up before ringing Central Office trunk calls in the same Call Pick-up group.

## Feature interactions

### Digit Display

The digit display of the station picking up a parked call recall shows the parked call's access code followed by the parked call's access-identification code. If the picked-up call is a group member call, the display shows the group number of the picked-up station.

## Feature packaging

Centralized Multiple Line Emulation requires International Supplementary Features (SUPP) package 131.

The following packages are also required:

- Basic Automatic Call Distribution (BACD) package 40
- Network Priority Queuing (PQUE) package 60

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 115 "LD 10 - Configure the Required Classes of Service." (page 395)

   Configure the Required Classes of Service.

2. Table 116 "LD 11 - Assign ringing number pickup groups to keys." (page 395)

   Assign ringing number pickup groups to keys.



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**Table 115**
**LD 10 - Configure the Required Classes of Service.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Telephone type. |
| ... | | |
| CLS | (PRSD) PRSA | Priority Call Pick-up station (denied) allowed. |
| | (CRD) CRA | Continuous Ringing (denied) allowed. |
| | (MCRD) MCRA | Multiple Call Arrangement (denied) allowed. |

**Table 116**
**LD 11 - Assign ringing number pickup groups to keys.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| ... | | |
| RNPG | (0)-4095 | Ringing Number Pick-up Group. Respond with the number of the Ringing Number Pick-up group for which the set is to be assigned.<br><br>To remove a telephone from a group, enter 0 in response to the RNPG prompt. |
| ... | | |
| CLS | (PRSD) PRSA | Priority Call Pick-up station (denied) allowed. |
| ... | | |
| KEY | xx RNP yyyy | xx = Key number<br>RNP = Ringing Number Pick-up<br>yyyy = Ringing Number Pick-up group number (optional).<br><br>If the group number is not entered, the key will pick-up the group number assigned to the station. If the group number is entered, the key will pick-up calls in the specified group yyyy. |

## Feature operation

The ability to notify a large group that a CML is ringing is provided through modification of the Call Pick-up feature. A ringer, centrally mounted on a wall, rings whenever a call comes into the CML DN, and continues to ring



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until the call is answered. The ringer is configured as a priority 500-type set, which ensures that a call ringing on the CML DN is answered before any other station ringing in the Call Pick-up group.

| Step | Action |
|---|---|
| 1 | To answer a CML call using a Meridian 1 proprietary telephone, press the **RNP** key. |

**--End--**

To answer a call in your Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

| Step | Action |
|---|---|
| 1 | Lift the handset. |
| 2 | Dial the PURN FCC. |

**--End--**



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# Centrex Switchhook Flash

## Contents

This section contains information on the following topics:

"Feature description" (page 397)

"Operating parameters" (page 398)

"Feature interactions" (page 399)

"Feature packaging" (page 400)

"Feature implementation" (page 400)

"Feature operation" (page 403)

## Feature description

Centrex Switchhook Flash (THF) permits the user to signal the Central Office (CO)/Public Exchange during an established CO call, requesting activation of a Central Office based service. Such services can include Call Transfer, Three-way Calling, Malicious Call Trace, Conference, or Autodial Tandem Transfer. For more information about these services, see the feature descriptions in this document.

The feature is useful when Centrex is the backbone of the service network. Centrex Switchhook Flash (THF) is supported by the following trunk types:

- Automatic Identification of Outward Dialing (AIOD)
- Common Control Switching Arrangement, Automatic Number Identification (CCSA ANI)
- Centralized Automatic Message Accounting (CAMA)
- Central Office (CO)
- Common Control Switching Arrangement (CCSA)
- Direct Inward Dial (DID)



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- Foreign Exchange (FX)
- Wide Area Telephone Service (WATS)
- CO trunks located at a remote node connected via ISDN Meridian Customer Defined Network (MCDN) TIE trunks, and
- Analog, Digital Trunk Interface (DTI), and DT12 CO trunks.

Whenever Centrex Switchhook Flash (THF) is invoked, the system checks for the following:

- With analog (500/2500 type) telephones, that the Class of Service supports THF. With Meridian 1 proprietary telephones, the feature cannot be activated if a corresponding key is not equipped.
- That the telephone is on an active two-way trunk call.
- That THF is enabled in the trunk's Class of Service.

If any of the above checks fails, the user hears an overflow tone. After the tone times out, the original connection resumes.

## Operating parameters

This feature is not supported on Basic Rate Interface (BRI) telephones.

THF is not supported on Primary Rate Interface (PRI) or BRI Central Office trunks.

On Meridian 1 proprietary telephones, once the THF key has been pressed, all other function keys are blocked. While waiting for the Centrex connection, only the RLS key or on-hook connection is operative. Pressing the RLS key or hanging up terminates the original connection as well as the THF message.

For the analog (500/2500 type) telephones, another switchhook flash is not allowed once THF has been invoked. A second switchhook flash is treated as an on hook disconnection.

Only voice calls are supported on THF.

In Italy the DTI2 register recall signal is currently only supported for Type Approval and is not commercially available.

The 1.5 or 2 Mbit Digital Trunks Interface pack is required.



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Because the software cannot recognize which type of Intelligent Peripheral Equipment (IPE) CO line card (for example, XCOT, or XFCOT) is in use, CO trunks belonging to different card types should not coexist on the same Route Data Block (RDB).

- The minimum value of the range for the Flash-length (FLH) timer for a Centrex Switchhook Flash, defined in LD 16 in response to the TIMR prompt, is 60-1536 milliseconds.
- Attendant consoles can activate the feature.
- The THF feature can be activated on DTI2 Central Office trunks and Intelligent Peripheral Equipment (IPE) Central Office trunks.
- The Centrex Switchhook timing on the Extended Flexible Universal Trunk (EXUT) is performed using firmware, offering a significant improvement in trunk timing accuracy.

## Feature interactions

### Autodial Tandem Transfer

Because Autodial Tandem Transfer uses Centrex Switchhook Flash (THF), it is affected by any modification to the THF enhancement feature.

### China - Attendant Monitor

If any set at the customer location involved in the monitored call switchhook flashes or performs a Centrex switchhook flash, Attendant Monitor is immediately deactivated.

### Collect Call Blocking

A Centrex Switchhook Flash cannot be invoked by another feature while the Collect Call Blocking answer signal is being sent.

### Conference

THF allows conference calls through the CO. It can be invoked only if there is an established call connected to an outside trunk. If the telephone is engaged in internal conference calls, THF cannot be used.

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

If an analog (500/2500 type) telephone is part of an Executive Intrusion conference, any Switchhook Flash is ignored.

### Malicious Call Trace - Enhanced

Interaction with the Centrex switchhook flash results because the flash range is changed for this feature. Communication to the CO (trunk hook flash) is performed by using the Centrex switchhook flash feature base code. The enhanced range is available for the Centrex switchhook flash.



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### Periodic Clearing on RAN, Meridian Mail, ACD and Music

This feature enhancement is not supported if used together with Centrex Switchhook flash.

### Secrecy

If secrecy is not allowed in LD 15 (OPT = SYD), the attendant must use the EXCL DEST or EXCL SRC keys to select the Central Office trunk on which the THF has to be sent. The THF is not activated when both SRC and DEST are included.

## Feature packaging

This feature is included in base system software. Centrex Switchhook Flash (THF) package 157 has no package dependencies. The End-to-End Signaling (EES) package 10 is recommended for users with Meridian 1 proprietary telephones, and attendant consoles.

If both THF and the 2 Mbit Digital Trunk Interface (DTI2) package 129 are present, this feature can also be applied to digital Central Office trunk connections.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 117 "LD 10 - Enable Centrex Switchhook flash for analog (500/2500 type) telephones." (page 401)

   Enable Centrex Switchhook flash for analog (500/2500 type) telephones.

2. Table 118 "LD 11 - Enable Centrex Switchhook Flash for Meridian 1 proprietary telephones." (page 401)

   Enable Centrex Switchhook Flash for Meridian 1 proprietary telephones.

3. Table 119 "LD 12 - Enable Centrex Switchhook Flash for attendant consoles." (page 401)

   Enable Centrex Switchhook Flash for attendant consoles.

4. Table 120 "LD 14 - Enable Centrex Switchhook Flash for each trunk." (page 402)

   Enable Centrex Switchhook Flash for each trunk.

5. Table 121 "LD 16 - Enable Centrex Switchhook Flash for each trunk route." (page 402)

   Enable Centrex Switchhook Flash for each trunk route.

6. Table 122 "LD 73 - Activate the THF on digital trunks for incoming and outgoing calls." (page 403)



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Activate the THF on digital trunks for incoming and outgoing calls.

**Table 117**
**LD 10 - Enable Centrex Switchhook flash for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | THFA<br>THFD | Allow Centrex Switchhook Flash.<br>THFD = Default |

**Table 118**
**LD 11 - Enable Centrex Switchhook Flash for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx THF | Add a Centrex Switchhook Flash key; xx is the key number. |

**Table 119**
**LD 12 - Enable Centrex Switchhook Flash for attendant consoles.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | 2250 | Attendant console type. |
| ... | | |
| KEY | xx THF | Add a Centrex Switchhook Flash key; xx is the key number. |



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**Table 120**
**LD 14 - Enable Centrex Switchhook Flash for each trunk.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | AID | Automatic Identification of Outward Dialing (AIOD) trunk data block. |
| | CAA | Common Control Switching Arrangement Automatic Number Identification (CCSA ANI) trunk data block. |
| | CAM | Centralized Automatic Message Accounting (CAMA) trunk data block. |
| | COT | Central Office (CO) trunk data block. |
| | CSA | Common Control Switching Arrangement access line data block. |
| | DID | Direct Inward Dialing (DID) trunk data block. |
| | FEX | Foreign Exchange trunk data block. |
| | WAT | Wide Area Telephone Service trunk data block. |
| CLS | THFA<br>THFD | Allow Centrex Switchhook Flash.<br>THFD = Default |

**Table 121**
**LD 16 - Enable Centrex Switchhook Flash for each trunk route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | RDB | Route Data Block. |
| CNTL | YES | Change controls or timers |
| - TIMR | FLH <space><br>60-(510)-1536 | Flash timer in msec.<br>The range of the Centrex switchhook flash timer is 60-(510)-1536. The FLH value is rounded down to the nearest 10 msec. tick. If the value entered is 128 or 129, then it is set to 130 msec.<br><br>*Software controlled flash*<br>60-127 msec. Digit 1 is sent.<br>128-1536 msec. software controlled switchhook flash.<br><br>A FLH timer value of 127 msec. or less is not supported by the XFCOT card. The firmware controlled flash must be used. |



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**Table 121**
**LD 16 - Enable Centrex Switchhook Flash for each trunk route. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | | *Firmware controlled flash*<br>The user can enter any value from 60 to 1536 msec. 90 msec. is the hard coded firmware flash for an XFCOT card; the technician should enter 90 msec.<br><br>The FWTM prompt must be set to YES for the trunk associated with this route in LD 14, if firmware timing is to be used. |

**Table 122**
**LD 73 - Activate the THF on digital trunks for incoming and outgoing calls.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | New<br>Change |
| TYPE | DTI2 | 2 Mbits DTI |
| FEAT | ABCD | Digital signaling category. |
| SICA | XX | Signaling category table. |
| ... | | |
| ... | | |
| P RRC(S) | ABCD | Register Recall signal. |
| TIME | 10-(100)-630 | Duration of RRC Pulse in msec. |

# Feature operation

## Analog (500/2500 type) telephones

To use Centrex Switchhook Flash (THF) from an analog (500/2500 type) telephone, follow these steps:

| Step | Action |
|---|---|
| **1** | Flash the switchhook to receive a special dial tone. |
| **2** | Enter the Special Prefix (SPRE) code, then the THF feature access code (96). Alternatively, the appropriate Flexible Feature Code (FFC) should be used. |

**--End--**

To reestablish a connection before the overflow tone ends, flash the switchhook.



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### Meridian 1 proprietary telephones

To use Centrex Switchhook Flash (THF) from a Meridian 1 proprietary telephone, press the key configured for THF.

To reestablish a connection before the overflow tone ends, press the DN key or the key establishing the original call.

### Attendant Consoles

Attendant consoles must use the THF key. Dial access is not supported on these consoles.

To reestablish a connection before the overflow tone ends, press the DN key or the key establishing the original call.



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# Charge Account and Calling Party Number

## Contents

This section contains information on the following topics:

“Feature description” (page 405)

“Operating parameters” (page 406)

“Feature interactions” (page 407)

“Feature packaging” (page 408)

“Feature implementation” (page 409)

“Feature operation” (page 411)

## Feature description

Used in conjunction with Call Detail Recording (CDR), Charge Account bills calls directly to specific accounts or charge numbers instead of Directory Numbers (DN).

Charge Account supports fixed-length numbers of 0 to 23 digits (default is 0), specified on a per-customer basis. The charge account number is validated by the system for length only. Verification of the actual digits entered is part of CDR downstream processing.

On Meridian 1 proprietary telephones, this feature can be activated by a separate Charge key/lamp pair, or dial accessed. On attendant consoles, it is activated by a separate key/lamp pair. On single-line telephones, it is dial-accessed.

When a Charge Account number is used, the entire call is billed to that number. The number can be entered either before or during a call, or when Consultation Hold, Call Transfer, or Conference is activated.



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The Charge Account feature is not supported for internal calls. A Charge Account number entered through the Charge key/lamp pair is blocked for established internal calls.

Charge Account can be used to charge an entire conference call or portions of the call. Portions of the call are assigned to different accounts by entering the account number when adding trunks to a conference, before the conference is completed.

- When using analog (500/2500 type) telephones, enter the account information immediately after the switchhook flash, before the new trunk is dialed.
- When using Meridian 1 proprietary telephones, enter the number after pressing the Conference key the first time, and before dialing.

The charge record shows the identity of the user who made the entry and the trunk that was added to the call. If the new call is not added to the conference, the record shows a simple two-party call.

An entire call is charged to the same account by entering the charge number while active on the conference. When using Meridian 1 proprietary telephones, press the Charge key and enter the number in the usual manner. When using analog (500/2500 type) telephones, enter the number after a switchhook flash.

The call is reestablished without dialing additional trunks; a record is produced for each trunk involved in the conference. In all these records, the telephone user entering the number is considered the originating party. When an entire call is charged to only one account number, it must be entered while all trunks are connected to the conference.

Calling Party Number (CPN) is an extension of Charge Account that allows entry of the calling party's number on collect calls. Meridian 1 proprietary telephones are assigned a separate Calling Party Number (CPN) key/lamp pair to activate this feature. When the calling party's number is entered, a Calling Party Number (CPN) record is produced. This record may be compared to a telephone company billing for collect calls. Calling party numbers can be up to 23 digits, and may include an asterisk (*) and octothorpe (#). A CPN record is generated on the Call Detail Recording (CDR) device similar to a normal Charge record.

## Operating parameters

A valid charge account number is recognized when the number of dialed digits matches the account length, or when the octothorpe (#) indicates end of dialing. After a valid charge account number has been entered, the system returns a dial tone.



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If too few digits are dialed, no response is given until the interdigit timeout occurs. Overflow tone is returned for 15 seconds after timeout; then the user is locked out.

If Call Transfer or Conference is used to consult with a third party and returns to the original call without completing the transfer or conference, the charge account number is applied to the Consultation call only.

Attendant use of Charge or CPN is restricted to situations in which there is only one account party involved in the call (source side). When the calling party number is used, the attendant must transfer the call, or the Call Detail Recording (CDR) record does not reflect it.

## Feature interactions

### Attendant Barge-In
### Attendant Busy Verify

A charge account number cannot be entered when Barge-In or Busy Verify is active. Barge-In cannot be used to connect to a trunk after an account number has been entered.

### Call Transfer

A Call Transfer call produces two records: a Call Detail Recording (CDR) start record and a CDR end record.

### China - Flexible Feature Codes - Outgoing Call Barring

Digits dialed after a charge account are checked against the active Outgoing Call Barring level.

### Conference

Conference calls produce multiple Call Detail Recording (CDR) records. Whenever a new trunk is added to a conference, the connection between the connected telephone and the trunk is recorded, and a connection to the conference loop is established. This causes CDR to generate a start record with the telephone and trunk identified as the involved parties. As trunks are removed from a conference, CDR end records are produced. These records may identify different telephones or conferences as the local parties.

### Music, Enhanced

The Charge Account (CHG) and Calling Party Number (CPN) keys place the far end party on Hold while a charge number is entered. The held party receives Music during this period.

### Override

When Charge Account is used during active Override, some digits may be lost. When entered with Override in conference, a Charge Account number is accepted and no digits are lost.



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### Ring Again

When Ring Again is activated, no charge record is generated, but the information is stored for future use. If Ring Again is canceled before a trunk is seized, the charge number is deleted and no record is produced. If a trunk is seized later by Ring Again, the charge record is generated in the usual manner. The use of Ring Again with Charge Account ties up system resources because an auxiliary call register must be maintained in the Ring Again queue.

### Speed Call

Charge account numbers, including the Charge Account access Special Prefix (SPRE) code, can be stored as Speed Call or Autodial numbers. All current limitations of these features apply, such as a maximum of 23 digits per entry, including the access code. An Autodial number or dialed digits can follow, but not precede, a Speed Call number. The digits generated by an Autodial key during feature operation are accepted as Charge Account digits.

### Telephone keys

A Charge Account entry is aborted with any of the following keys:

- DN
- Page
- Voice Call
- In-Calls
- Call Waiting
- Call Pickup
- Release
- Not Ready
- a loop key
- Release Destination, and
- Release Source.

## Feature packaging

CDR with Charge Account (CHG) package 23 requires:

- Call Detail Recording (CDR) package 4
- Charge Account/Authorization Code Base (CAB) package 24



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 123 "LD 15 - Add or modify the customer Charge Account." (page 409)

   Add or modify the customer Charge Account.

2. Table 124 "LD 10 - Allow analog (500/2500 type) telephone access to Charge Account." (page 410)

   Allow analog (500/2500 type) telephone access to Charge Account.

3. Table 125 "LD 11 - Allow Meridian 1 proprietary telephone access to Charge Account." (page 410)

   Allow Meridian 1 proprietary telephone access to Charge Account.

4. Table 126 "LD 12 - Allow attendant console access to Charge Account." (page 410)

   Allow attendant console access to Charge Account.

5. Table 123 "LD 15 - Add or modify the customer Charge Account." (page 409)
6. Table 124 "LD 10 - Allow analog (500/2500 type) telephone access to Charge Account." (page 410)
7. Table 125 "LD 11 - Allow Meridian 1 proprietary telephone access to Charge Account." (page 410)
8. Table 126 "LD 12 - Allow attendant console access to Charge Account." (page 410)

**Table 123**
**LD 15 - Add or modify the customer Charge Account.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | CDR | Call Detail Recording Gate Opener. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - CHLN | (0)-23 | Maximum number of digits that can be entered as a charge account number. |



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**Table 124**
**LD 10 - Allow analog (500/2500 type) telephone access to Charge Account.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (XFD) XFA | (Deny) allow call transfer. |

**Table 125**
**LD 11 - Allow Meridian 1 proprietary telephone access to Charge Account.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx CPN | Add a Calling Party Number key (must be key 24 for the M2317). |
| | xx CHG | Add a Charge key (must be key 25 for the M2317). |

**Table 126**
**LD 12 - Allow attendant console access to Charge Account.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | 2250 | Attendant console type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| KEY | 0-9 CPN<br>0-9 CHG | Add a Calling Party Number key.<br>Add a Charge key. |



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# Feature operation

This section explains Charge Account feature and Calling Party Number feature operation for Meridian 1 proprietary telephones, analog (500/2500 type) telephones, and attendant console.

## Meridian 1 proprietary telephones

To charge a call to an account before dialing, follow these steps:

| Step | Action |
|---|---|
| 1 | Select a free extension. |
| 2 | Press **Charge** or dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | When you have a dial tone, dial the telephone number. |

**--End--**

To charge during a call in progress, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Charge**. |
| 2 | Dial the Charge Account number. |
| 3 | Press the extension key to return to your call. |

**--End--**

To use a SPRE code to charge a call in progress, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Transfer** or **Conference**. |
| 2 | Dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | Press the extension key to return to your call. |

**--End--**

To charge a call to an account when you transfer a call, follow these steps:



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| Step | Action |
|---|---|
| 1 | Press **Transfer**. |
| | The call is on hold. |
| 2 | Press **Charge** or dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | Dial the number where the call is to be transferred. |
| 5 | Press **Transfer**. |

**--End--**

To charge a call to an account when adding a party to a conference call, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Conference**. |
| | The call is on hold. |
| 2 | Press **Charge** or dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | Call the party that you want to add to the conference. |
| 5 | Press **Conference**. |

**--End--**

To record a caller's number for accounting purposes, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **Calling No**. |
| | The other party is on hold. |
| 2 | Dial a Charge Account number or the caller's number. |
| 3 | Press **Calling No.** again to return to the call. |

**--End--**

### Analog (500/2500 type) telephones

To charge a call to an account before dialing, follow these steps:



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| Step | Action |
|---|---|
| 1 | Select a free extension. |
| 2 | Dial SPRE + 5. |
| 3 | Dial the charge account number. |
| 4 | When you have a dial tone, dial the telephone number. |

**--End--**

To charge during a call in progress, follow these steps:

| Step | Action |
|---|---|
| 1 | Flash the switchhook or link. |
| 2 | Dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | Flash the switchhook or link to return to the call in progress. |

**--End--**

To charge a call to an account when adding a party to a conference call, follow these steps:

| Step | Action |
|---|---|
| 1 | Flash the switchhook or link. |
| 2 | Dial SPRE + 5. |
| 3 | Dial the Charge Account number. |
| 4 | Call the party that you want to add to the conference. |
| 5 | Flash the switchhook or link. |

**--End--**

### Attendant Consoles

To charge a call to an account before dialing, follow these steps:

| Step | Action |
|---|---|
| 1 | Press the **loop** key. |



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2 Press **Charge**.

3 Dial the Charge Account number.

4 When you have a dial tone, dial the telephone number.

**--End--**

To charge during a call in progress, follow these steps:

| Step | Action |
|---|---|
| 1 | While the source call is active on a loop key, press **Charge**. |
| 2 | Dial the Charge Account number.<br>The voice connection remains active. |
| 3 | Flash the switchhook or link to return to the call in progress. |

**--End--**

To record a caller's number for accounting purposes, follow these steps:

| Step | Action |
|---|---|
| 1 | While the source call is active on a loop key, press **Calling No.**<br>The other party is on hold. |
| 2 | Dial a Charge Account number or the caller's number. |
| 3 | Press **Calling No.** again to return to the call. |

**--End--**



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# Charge Account, Forced

## Contents

This section contains information on the following topics:

“Feature description” (page 415)

“Operating parameters” (page 416)

“Feature interactions” (page 417)

“Feature packaging” (page 418)

“Feature implementation” (page 418)

“Feature operation” (page 420)

## Feature description

Forced Charge Account (FCA) temporarily overrides Class of Service limitations for toll-denied users. Use Forced Charge Account long distance calls to an account number when calling from a telephone that is restricted from making long distance calls. The unrestricted Class of Service provided by FCA applies for the duration of the call.

When the account number is entered, a charge record is produced on a Call Detail Recording (CDR) device.

FCA supports variable-length numbers of 1 to 23 digits. The minimum value for the account number is specified at the customer level.

A valid account number equals or exceeds the minimum value defined, and is validated by the system for length only. Verification of the actual digits entered is part of Call Detail Recording (CDR) downstream processing.



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FCA can be allowed or denied at both customer and user levels. Users include any station or TIE and Common Control Switching Arrangement (CCSA) type trunks assigned a Toll-Denied (TLD), Conditionally Toll-Denied (CTD), or Conditionally Unrestricted (CUN) Class of Service.

Meridian 1 proprietary telephones activate this feature by using a separate Charge key/lamp pair. Any user can access this feature by dialing SPRE + 5.

A distinction is made between normal CDR Charge Account processing and FCA. If all the following conditions are met, the account number is treated as an FCA code:

- The telephone from which the number is entered has a TLD, CTD, or CUN Class of Service.
- The station or trunk from which the number is entered is in a state to originate a call (press a Directory Number [DN] key or flash the switchhook).
- FCA is enabled at the customer level.
- FCA is allowed for the station or trunk from which the number is entered.
- A valid account number is entered at the beginning of the call.

The unrestricted Class of Service provided by FCA, as described above, applies for the duration of the call only. The account number must be reentered for each successive toll call placed by the station or trunk.

## Operating parameters

An octothorpe (#) dialed after the account number indicates that the subsequent digits are part of the dialed number.

CDR charge account numbers are fixed-length codes for which a maximum value is specified by the customer. This is also the maximum allowed for the FCA account number.

Because 500 telephones cannot dial an octothorpe (#), they are restricted to fixed-length account numbers.

FCA does not apply to attendant calls.



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# Feature interactions

### Autodial
### Speed Call

FCA numbers (including the SPRE code and the Charge Account access code) can be entered in Speed Call lists or stored as Autodial numbers. The digits can also be stored, provided that the account number, regardless of its length, is followed directly by an octothorpe (#).

### Authorization Code Security Enhancement

If the Authorization Code is used to change the Class of Service of the user, the new Class of Service must be TLD, CTD, or CUN. If an Authorization Code entered after FCA has altered the Class of Service to unrestricted (UNR), the change made by the Authorization Code still comes into effect.

If the originator's Network Class of Service (NCOS) has been changed by an Authorization Code prior to an applicable FCA entry, the new NCOS is replaced by the FCA NCOS, provided the new Facility Restriction Level (FRL) is not lower than the existing FRL. Similarly, if the originator's NCOS has been changed by an FCA entry, the NCOS is changed again by a valid Authorization Code entry.

### Basic Alternate Route Selection (BARS)
### Network Alternate Route Selection (NARS)

If BARS or NARS is equipped, a Network Class of Service (NCOS) associated with FCA must be defined in the Customer Data Block.

### Call Detail Recording

Normal Call Detail Recording (CDR) charge account numbers can still be entered before or after an FCA code. If the criteria for an FCA call are not met, (CDR) charge account numbers function in the normal manner.

### Call Transfer
### Conference

If an FCA code is entered at the beginning of a call, the new unrestricted Class of Service remains in effect for any transfer or conference made during the call. If all FCA criteria are met, an account number entered after activating the Conference key, Call Transfer key, or a switchhook flash is interpreted as an FCA code.

### Last Number Redial

These codes are not stored in Last Number Redial (LNR). To use these features when calling the number stored in LNR, the code must first be dialed manually. When dial tone is returned, LNR can be used to complete the dialing.



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### Pre-translation

The first digit dialed after a valid Charge Account Code is sent to the pre-translator.

### Scheduled Access Restrictions

FCA can be used to override Scheduled Access Restrictions (SAR) on a per-call basis, provided the current Class of Service (COS) of the telephone or trunk is CUN, TLD, or CTD. The current COS is the COS in force according to the SAR schedule. If an Authorization Code that sets the COS to CUN, TLD, or CTD is dialed before the FCA, the call is allowed. FCA sets the COS to UNR and the Network COS (NCOS) to the NCOS defined in LD 15, provided that FCA is enabled on both a customer and telephone/trunk basis.

### Stored Number Redial

The Forced Charge Account code is not stored. To store a code, dial the code prior to using Stored Number Redial to dial the call.

### Trunk Group Access Restrictions (TGAR)

Trunk Group Access Restrictions apply to the telephone or trunk entering the account number.

## Feature packaging

This feature is included in base system software. Forced Charge Account (FCA) package 52 requires:

- Charge Account/Authorization Code Base (CAB) package 24
- Charge Account (CHG) package 23

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 127 "LD 15 - Enable Forced Charge Account for a customer." (page 419)

   Enable Forced Charge Account for a customer.

2. Table 128 "LD 10 - Enable Forced Charge Account for analog (500/2500 type) telephones." (page 419)

   Enable Forced Charge Account for analog (500/2500 type) telephones.

3. Table 129 "LD 11 - Enable Forced Charge Account for Meridian 1 proprietary telephones." (page 419)

   Enable Forced Charge Account for Meridian 1 proprietary telephones.

4. Table 130 "LD 14 - Enable Forced Charge Account for each incoming TIE or CCSA trunk." (page 420)



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Enable Forced Charge Account for each incoming TIE or CCSA trunk.

**Table 127**
**LD 15 - Enable Forced Charge Account for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | CDR | Call Detail Recording. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - CHLN | (0)-23 | Maximum number of digits that can be in an FCA code (default is 0). |
| - FCAF | (NO) YES | (Disable) enable FCA for the customer. |
| - CHMN | xx | Minimum number of digits that can be in an FCA code (must be less than CHLN). |
| - FCNC | xx | NCOS to be assigned to FCA codes. |

**Table 128**
**LD 10 - Enable Forced Charge Account for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FCAR | (NO)<br>YES | FCA can be used by this telephone.<br>FCA is restricted from use by this telephone. |

**Table 129**
**LD 11 - Enable Forced Charge Account for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 129**
**LD 11 - Enable Forced Charge Account for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FCAR | (NO)<br>YES | FCA can be used by this telephone.<br>FCA is restricted from use by this telephone. |

**Table 130**
**LD 14 - Enable Forced Charge Account for each incoming TIE or CCSA trunk.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | TIE CAA | Trunk type (must be TIE or CCSA). |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FCAR | (NO)<br>YES | FCA can be used by this trunk.<br>FCA is restricted from use by this trunk. |

## Feature operation

To use FCA, follow these steps:

| Step | Action |
|---|---|
| **1** | Select a free extension. |
| **2** | Press **Charge** or dial SPRE + 5. |
| **3** | Dial the Charge Account number. |
| **4** | When you have a dial tone, dial the long distance number. |

**--End--**

For operating procedures from particular telephones or consoles, see the Charge Account and Calling Party Number module in this document.



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# Charge Display at End of Call

## Contents

This section contains information on the following topics:

“Feature description” (page 421)

“Operating parameters” (page 422)

“Feature interactions” (page 422)

“Feature packaging” (page 422)

“Feature implementation” (page 423)

“Feature operation” (page 423)

## Feature description

This feature allows the set display of a charged party to show the charged amount of a metered call, along with the normal call-display information. To give you time to read and transcribe the charges, the feature maintains this display for ten seconds after call completion, unless you do something with the set such as make another call or use another feature.

The currency (for instance, pound sterling, mark, and dollar) displayed is the currency specified in the feature configuration (LD 15 and LD 16). The charge information is received from the Central Office (generated from a Periodic Pulse Metering trunk or an Integrated Services Digital Network (ISDN) trunk).

This feature is operational in a standalone environment, and is available on modular digital sets and M2317 sets. For M2317 sets, the charge information is appended to the standard call-display information. On modular sets, the charge information is scrolled to the second line (there are two lines of display on these sets).



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When a call is transferred, the Advice of Charge display appears on the set to which the call is transferred. It does not appear on the display of the set that transferred the call.

### M2317 charge display

For M2317 sets, the charge information is appended to the standard call-display information. In the example below, the dialed DN (90113145078400) is displayed followed by the cost charged to the call ($22.45).

```
90113145078400          2245
= = = = =>
```

### Modular Set charge display

On modular sets, which have two lines of display, the charge information is scrolled to the second line. In the example below, the name of the caller is displayed on the first line. The dialed DN (90113145078400), followed by the cost charged to the call ($12.75), is displayed on line two.

```
LOIS  LANE
90113145078400          1275
```

## Operating parameters

The charge is displayed only if all of the following conditions are met:

- the customer to which the set belongs has the Charge Display at End of Call (CHDA) option defined
- the set has a display with Message Registration Allowed Class of Service.
- the trunk is configured with buffered or non-buffered Periodic Pulse Metering.

## Feature interactions

There are no feature interactions associated with this feature.

## Feature packaging

This feature is included in base system software.

The following packages are required for Charge Display at End of Call:

- International Supplementary Features (SUPP) package 131
- Periodic Pulse Metering/Message Registration (MR) package 101



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 131 "LD 17 - Implement Periodic Pulse Metering (PPM)." (page 423)

   Implement Periodic Pulse Metering (PPM).

2. Table 132 "LD 15 - Allow or deny Charge Display at End of Call for a customer." (page 423)

   Allow or deny Charge Display at End of Call for a customer.

**Table 131**
**LD 17 - Implement Periodic Pulse Metering (PPM).**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | PARM | System Parameters. |
| ... | | |
| MTRO | PPM | Periodic Pulse Metering |

**Table 132**
**LD 15 - Allow or deny Charge Display at End of Call for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | FTR | Features and options. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| OPT | CHDA<br>CHDD | Enter CHDA to allow Charge Display at End of Call. CHDD = Default |

# Feature operation

No specific operating procedures are required to use this feature.



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# China - Attendant Monitor

## Contents

This section contains information on the following topics:

“Feature description” (page 425)

“Operating parameters” (page 426)

“Feature interactions” (page 426)

“Feature packaging” (page 429)

“Feature implementation” (page 429)

“Feature operation” (page 430)

## Feature description

### Attendant Monitor Function

Attendant Monitor is a customer defined option which allows the attendant to monitor, in listen only mode, any established call involving a set or trunk on the customer’s switch with or without the connected parties being aware that monitoring is taking place (depends on the configuration of the customer tone option).

The differences between the existing Busy Verify and Barge-In features and the Attendant Monitor feature are the following:

- Attendant Monitor provides a listen only path for the attendant.
- There is no click sound given to the connected parties upon attendant connection when the no tone option is configured.
- The tone to the connected parties may or may not be given depending on the new customer tone option for Attendant Monitor.
- The display (if there is one) on any parties involved in the call does not indicate that the attendant is monitoring.



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## Operating parameters

Since Attendant Monitor is based on Busy Verify and Barge-In, it has the same limitations which apply to Busy Verify and Barge-in unless otherwise stated in this feature description.

This feature has been developed exclusively for use in China.

Attendant Monitor is strictly a standalone, same-customer feature which is not supported over networks. A customer equipped with the Attendant Monitor feature can only monitor a DN or trunk defined for that customer without going over the network.

The toggle function between having a one-way speechpath and a two-way speechpath during monitoring is not supported.

This feature is not supported for attendants monitoring other attendants.

Monitoring an M2216 or M5317 is not supported.

The attendant may be blocked from monitoring a DN or trunk due to a limit on the number of conference time slots.

## Feature interactions

### Attendant Barge-In

When China (CHINA) package 285 is equipped, the normal operation of Barge-In changes slightly. The repeatable tone is now configurable with the (TOA)/TOD option in LD 15.

If an attendant is monitoring a trunk, a second attendant defined at the same customer location is blocked from Barging In to any trunk involved in the monitored call.

If an attendant is Barged-In with a trunk, a second attendant defined at the same customer location is blocked from monitoring any party involved in the monitored call.

### Attendant Break-In

If an attendant is monitoring a DN, a second attendant defined at the same customer site is blocked from Breaking In to any party involved in the monitored call.

If an attendant is in a Break-In situation with a DN, a second attendant defined at the same customer site is blocked from monitoring any party involved in the monitored call.



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### Attendant Busy Verify

When China (CHINA) package 285 is equipped, the normal operation of Busy Verify changes. The repeatable tone is now configurable with the (TOA)/TOD option in LD 15.

If an attendant is monitoring a DN, a second attendant defined for the same customer is blocked from Busy Verifying any party involved in the monitored call.

If an attendant is Busy Verifying a DN, a second attendant defined for the same customer is blocked from monitoring any party involved in the monitored call.

### Automatic Call Distribution

The attendant cannot monitor a call in which an Automatic Call Distribution (ACD) DN is involved.

### Call Forward All Calls
### Call Forward Busy
### Call Forward, Internal Calls
### Call Forward No Answer

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

### Call Hold, Permanent

Monitoring is not affected if anybody involved in the monitor's call activates hold, except for the case of a simple call. For a monitored simple call, activating hold deactivates monitoring. In all cases, activation of music on hold deactivates monitoring.

An attendant monitoring a call cannot put the monitored DN on hold. The attendant pressing the hold key has no effect while monitoring is enabled.

### Call Park

If a DN being monitored becomes parked by another party, the Attendant Monitor feature is deactivated.

### Call Trace

If a Call Trace is performed on the attendant, the output will consist of the existing Call Trace information elements for an attendant loop. In addition, "MON" is printed immediately after "ATTN" to indicate that this attendant is monitoring.

If a Call Trace is performed on any other party involved in the monitored call, the output will consist of the existing information elements for a DN or trunk, as well as "MON" being printed immediately before "ACTIVE".



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### Call Transfer

If any party at the customer location involved in a monitored call attempts to activate call transfer, monitoring is immediately deactivated.

### Centrex Switchhook Flash

If any set at the customer location involved in the monitored call switchhook flashes or performs a Centrex switchhook flash, Attendant Monitor is immediately deactivated.

### Conference

If any party involved in a monitored call attempts to activate conference, monitoring is immediately deactivated. With Attendant Monitor active, the attendant cannot create a conference without first disabling the Attendant Monitor feature.

### Do Not Disturb

If an attendant attempts to monitor a DN which has Do Not Disturb activated and is idle, idle DN treatment is given.

### Make Set Busy

If an attendant attempts to monitor a DN which has Make Set Busy activated and is idle, idle DN treatment is given.

### Malicious Call Trace

If a party involved in a monitored call activates the TRC key, monitoring is immediately deactivated.

### Multiple Appearance DN

If Attendant Monitor is attempted on a Multiple Appearance DN, the Multiple Appearance Redirection Prime (MARP) TN becomes the desired party.

### Override

A set may operate override to join into a desired call. If the desired call is being Attendant Monitored at the time, one of the following occurs:

- If the desired call is a conference call, the override attempt is blocked as per existing operation.
- If the call is a simple one with the Attendant Monitoring with no tone, the override attempt is successful and Attendant Monitor is deactivated.
- If the call is a simple one with the Attendant Monitoring with tone, the override attempt is blocked.



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### Override, Enhanced

A set may operate enhanced override on a desired call. If the desired call is being Attendant Monitored at the time, existing operation occurs for the first time the Enhanced Override key is pressed. The second time the key is pressed, the interaction with Attendant Monitor is the same as with regular override.

### Privacy Release

If Privacy Release is activated on a set that is involved in a monitored call, Attendant Monitor is deactivated.

### Private Line

Attendant Monitor is blocked from monitoring a Private DN.

## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 133 "LD 15 - Enable the Attendant Monitor option for a customer, and then either allow or deny the tone option." (page 429)

   Enable the Attendant Monitor option for a customer, and then either allow or deny the tone option.

2. Table 134 "LD 12 - Define the Barge-In/Attendant Monitor key and the Busy Verify/Attendant Monitor key on an attendant console." (page 430)

   Define the Barge-In/Attendant Monitor key and the Busy Verify/Attendant Monitor key on an attendant console.

**Table 133**
**LD 15 - Enable the Attendant Monitor option for a customer, and then either allow or deny the tone option.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | ATT_DATA | Attendant console options |
| - OPT | (AMD) AMA | (Deny) allow Attendant Monitor. |
| | (TOA) TOD | (Allow) deny Attendant Monitor Tone. |



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**Table 134**
**LD 12 - Define the Barge-In/Attendant Monitor key and the Busy Verify/Attendant Monitor key on an attendant console.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | 2250 | Attendant console type. |
| ... | | |
| KEY | 00 BVR | Allow both Busy Verify and Attendant Monitor on key 00. |
| | 01 BIN | Allow both Barge-In and Attendant Monitor on key 01. |

# Feature operation

## Monitor a DN

| Step | Action |
|---|---|
| **1** | Press an idle Loop key on the attendant console. The Loop indicator is lit. |
| **2** | Press the Busy Verify key. The Busy Verify lamp is lit. |
| **3** | Press the Busy Verify key again to enable Attendant Monitor. The Busy Verify lamp is in the flashing state indicating that the Attendant Monitor option is enabled. |
| **4** | Dial the extension desired to be monitored. One of the following happens:<br>• Attendant Monitor is blocked when the extension is maintenance busy or disabled.<br>• Attendant Monitor is blocked when the extension is vacant.<br>• Attendant Monitor is blocked when the extension is in some transient state (for example, Conference or Transfer)<br>• Attendant Monitor is blocked when the extension is idle, receiving busy tone, or receiving overflow tone.<br>• Attendant Monitor is blocked when the extension is involved with another attendant.<br>• Attendant Monitor is blocked when the extension has activated the Hold key.<br>• Attendant Monitor is blocked when the extension is already involved in a monitored call by another attendant.<br>• Attendant Monitor is active when the extension is busy. The attendant is able to listen to all connected parties. If the Attendant Monitor Customer tone is denied (TOD), there is no indication given to the connected parties that the |



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attendant is monitoring. If the Attendant Monitor Customer Tone is allowed (TOA), a burst of tone is sent to the connected parties every 16 seconds. When the monitored DN disconnects from the call, Attendant Monitor is deactivated.

In all of the above situations, the display on the parties involved in the call does not indicate that the attendant has attempted to monitor. With TOD configured, upon the attendant successfully joining the connection there is no click sound given to the monitored parties that could indicate that the attendant has joined in.

**5** When Attendant Monitor is deactivated, the attendant is released from monitoring and is free to process calls. Deactivation occurs due to the following:

- The RLS key on the attendant console is pressed.
- Any DN involved in the monitored call disconnects.
- Any DN involved in the monitored call at the customer location activates some form of call modification.

**--End--**

## Monitor a Trunk

| Step | Action |
|---|---|
| **1** | Press an idle Loop key on the attendant console. The Loop indicator is lit. |
| **2** | Press the Barge-In key. The Barge-In lamp is lit. |
| **3** | Press the Barge-In key again to enable Attendant Monitor. The Barge-In lamp is in the flashing state indicating that the Attendant Monitor option is enabled. |
| **4** | Dial the trunk access code and the route member number, then press (#). One of the following happens:<br>• Attendant Monitor is blocked when the trunk is disabled.<br>• Attendant Monitor is blocked when the trunk is idle.<br>• Attendant Monitor is blocked when the trunk is not assigned.<br>• Attendant Monitor is blocked when the trunk is already being monitored by another attendant.<br>• Attendant Monitor is active when the trunk is busy. The attendant is able to listen to all parties on the trunk. If the Attendant Monitor Customer tone is denied (TOD), there is no indication given to the connected parties that the attendant is |



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monitoring. If the Attendant Monitor Customer tone is allowed (TOA), a burst of tone is sent every 16 seconds.

**5** When Attendant Monitor is deactivated, the attendant is released from monitoring and is free to process calls. Deactivation occurs due to the following:

- The RLS key on the attendant console is pressed.
- The trunk disconnects.
- Any party at the customer location performs some form of call modification or activates hold.
- Any party at the customer location disconnects.
- Any trunk involved in the monitored call disconnects.

**--End--**



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# China - Busy Tone Detection

## Contents

This section contains information on the following topics:

“Feature description” (page 433)

“Operating parameters” (page 433)

“Feature interactions” (page 434)

“Feature packaging” (page 434)

“Feature implementation” (page 434)

“Feature operation” (page 436)

## Feature description

In many countries, loop start trunks are not supervised. Therefore, many Public Exchanges/Central Offices send a busy tone to the system when the external party has disconnected. A tone detector must be used to detect this tone.

The China - Busy Tone Detection (BTD) feature allows a technician to enter the characteristics of the busy tone to be detected in overlay 97. This information is downloaded to the system trunk for use during call processing. Once the busy tone is detected, the trunk sends a message to the system software, which then disconnects the call, and the trunk is free for other uses.

An option is provided to allow Busy Tone Disconnect to occur only for incoming calls. This option is also programmed in LD 97. Cadence information is downloaded on a card basis.

## Operating parameters

The Busy Tone Detection functionality is implemented on the Enhanced Extended Universal Trunk Card for China (NTRA10AA).



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The system will disconnect any call once busy tone is detected on the incoming side of the trunk. If the user on the far end causes busy tone to be generated by any means, the call is disconnected whether or not that was the intention.

The BTD characteristics are downloaded on a card basis only (not on a unit basis) and thus all units on the trunk card must go to Public Exchanges that produce the same busy tone cadence.

Busy Tone Detection may not work with conference bridges in certain situations. This is due to the nature of conference bridges in such that all of the trunks are incoming. In the situation where two or more loop start trunks with BTD disconnect simultaneously, the resulting busy tone from each trunk may be detected by the BTD inhibitors of the other trunks. The result would be a stalemate where all trunks remain connected.

If a trunk card is not designed to support the Busy Tone Detection feature (for example, for future BTD hardware implementation), the functionality can still be configured in software.

To change Busy Tone Detection assigned to a trunk card, all trunks on the card must first be removed using LD 14.

## Feature interactions

### Loop Start Supervisory Trunks

The interaction with Intelligent Peripheral Equipment (IPE) trunks occurs because Busy Tone Supervision (BTS) can be configured in conjunction with any existing supervision type. For the EXUT, BTS can now be configured with a supervision type of BST (both incoming and outgoing battery reversal) and Polarity Insensitive (PIP). These supervision type's call processing methods are not changed, except that now the first type of supervision received is the one acted upon.

## Feature packaging

China - Busy Tone Detection requires Busy Tone Detection (BTD) package 294, which depends upon Intelligent Peripheral Equipment (XPE) package 203.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

- Table 135 "LD 97 - Busy Tone table configuration." (page 435)

  Busy Tone table configuration.

- Table 136 "LD 14 - Busy Tone Detection Table and Busy Tone Supervision assignment." (page 435)



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Busy Tone Detection Table and Busy Tone Supervision assignment.

For China, the BTD table and its assignment to the various routes is automatic and does not require configuration in LD 97 or LD 14, as long as the BTD package is equipped. Only the configuration of Busy Tone Supervision in LD 14 is required.

LD 97 need only be changed if the values other than the default are required. If table 0 is modified, rather than creating a new one, the assignment to the trunk in LD 14 is not required. After the BTD table is created, or changed, the data must be dumped and the system reloaded for the information to be downloaded.

**Table 135**
**LD 97 - Busy Tone table configuration.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | BTD | Busy Tone Detection. |
| BTDT | (0)-7<br>X1-X7 | Busy Tone Detection Table. |
| BCAD | Ph1 Ph2<br>(350 350) | Busy Tone Cadence. The input values are rounded to the nearest multiple of 25 ms. |
| BTDD | (BOTH) | Busy Tone Detection allowed on both incoming and outgoing calls. |
| | INC | Busy Tone Detection allowed on incoming calls only. |

**Table 136**
**LD 14 - Busy Tone Detection Table and Busy Tone Supervision assignment.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Create or change a route. |
| TYPE | COT | Central Office trunk. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| XTRK | EXUT | Extended Universal Trunk. |
| ... | | |
| SIGL | LOP | Loop Start signaling. |
| ... | | |
| SUPN | (NO) YES | Supervision. |



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**Table 136**
**LD 14 - Busy Tone Detection Table and Busy Tone Supervision assignment. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| STYP | | Supervision type, where: |
| | (PIP)<br>BTS<br>BST | PIP = Polarity Insensitive<br>BTS = Busy Tone Supervision<br>BST = Both way Supervision Trunk (BST) (that is, PIP on both incoming and outgoing calls) PIP |
| | PIP BTS<br>BST BTS | BTS = PIP and BTS, and<br>BST BTS = BST and BTS. |
| BTDT | (0)-7 | Busy Tone Detection Table number. |

## Feature operation

No specific operating procedures are required to use this feature.



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# China - Flexible Feature Codes

## Contents

This section contains information on the following topics:

“Feature description” (page 437)

“Operating parameters” (page 438)

“Feature interactions” (page 439)

“Feature packaging” (page 442)

“Feature implementation” (page 442)

“Feature operation” (page 449)

## Feature description

Three Flexible Feature Code (FFC) features have been developed to meet the requirements of the Chinese Ministry of Posts and Telecommunications for the rural switch market in China, these features can be used in other markets. The three features are Busy Number Redial (BNR), Customer Call Forward (CCFW), and Outgoing Call Barring (OCB). With all three of these features, there is an option to provide a confirmation tone upon feature activation.

### Busy Number Redial

Busy Number Redial enables a user of an analog (500/2500 type) telephone encountering a busy condition to automatically re-dial the busy number by performing a switchhook flash and dialing the Busy Number Redial FFC. When the user goes off-hook next without dialing any digit, the busy number is automatically re-dialed. This feature remains in effect until the desired Directory Number (DN) is reached, up to a maximum of 20 minutes.



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### Customer Call Forward

Customer Call Forward allows users of analog (500/2500 type) telephones to forward their telephones to a central answering position by dialing the Customer Call Forward FFC. This feature activates the Call Forward All Calls function without having to specify the forward DN.

### Outgoing Call Barring

Outgoing Call Barring allows a set to be blocked from making some or all outgoing calls. Three levels of barring are available which can be selected by dialing the Outgoing Call Barring FFC, the barring level desired, and the Station Control Password (SCPW).

The three levels are each associated with a New Flexible Code Restriction (NFCR) tree in the Customer Data Block. When a DN is dialed, the digits dialed are compared to the associated NFCR tree and busy tone is given if the call is barred. An FFC is also available to verify that the feature is active.

The active level cannot be changed without first deactivating the feature and reactivating it with a new level.

## Operating parameters

Although designed for China, the China – Flexible Feature Codes feature can be used in other markets.

Busy Number Redial is only available for internal calls and for trunk calls that provide a busy signal when busy tone is given.

Busy Number Redial and Customer Call Forward are only available for analog (500/2500 type) telephones.

Outgoing Call Barring does not apply to BRI sets.

The Reply DN for CCFW is limited to 16 digits.

OCB will only process asterisk (*) and octothorpe (#) according to the active NFCR tree if the digits are to be outpulsed on a route with OPR active (including all necessary conditions for OPR). If they are dialed as part of an FFC, the call is allowed; otherwise, an octothorpe will cause the call to be blocked. An asterisk (*) is ignored, except during digit counting. Thus, FFCs containing an asterisk (*) or an octothorpe (#) cannot be blocked by this feature.

OCB will not prevent calls from terminating when there are too few dialed digits to traverse the full NCFR tree (for example, if the active tree is set up to bar 2001, but a DN of 200 exists, calls to 200 is allowed with no error message).



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The maximum number of digits that is processed by OCB is 32. If the call is not allowed or denied by that point, the call is barred.

OCB can bar feature access codes such as Special Prefix (SPRE) codes and numeric FFCs. It will not bar the digits dialed after a feature access code.

# Feature interactions

## Busy Number Redial

### Autodial

Activation of Busy Number Redial changes the activation of Autodial. The DN that is auto dialed becomes the DN that was busy. When the BNR activation timer expires or the busy DN is re-dialed when it is idle, the autodial capability is deactivated, but the number saved is not cleared. If Autodial is then activated without entering a DN, the number used is the formerly busy DN.

Activation of Autodial when BNR is active deactivates BNR.

### Automatic Set Relocation

Busy Number Redial is deactivated when a set is relocated.

### Deactivate Feature FFC

The Deactivate Feature (DEAF) FFC deactivates Busy Number Redial.

### Hot Line

Busy Number Redial cannot be used on Flexible Hot Line or Enhanced Hot Line sets.

### Off-Hook Alarm Security

Busy Number Redial cannot be used on a set with Off-Hook Alarm Security Allowed, since autodial cannot be configured on these sets.

### 16-Button Dual-tone Multifrequency (DTMF) Sets

Busy Number Redial (BNR) activate can be a post-dial function, and BNR deactivate can be a pre-dial function. Both FFCs may be dialed normally from a 16-button DTMF telephone.

## Customer Call Forward

Customer Call Forward (CCFW) is another way of activating Call Forward All Calls (CFWAC), therefore all interactions with CCFW not specified below are the same as with CFWAC.

### Call Forward All Calls

When CCFW is active Call Forward All Calls (CFWAC) cannot be activated by Flexible Feature Code, but can be activated by SPRE. When CFWAC is active, CCFW cannot be activated.



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CCFW can be deactivated by deactivating CFWAC. CFWAC can only be deactivated by the CCFD FFC if the current CFW DN is the same as the current CCFW DN.

### Deactivate Feature FFC

The Deactivate Feature FFC deactivates Customer Call Forward.

### Make Set Busy

Customer Call Forward takes precedence over Make Set Busy if both are active.

16-Button Dual-tone Multifrequency (DTMF) Sets

CCFA and CCFD are allowed as predial ABCD functions. They may also be dialed normally from 16-Button DTMF telephones.

## Outgoing Call Barring

Outgoing Call Barring is an additional feature that may block a call. All other call blocking features still apply as usual.

### Authorization Code Security Enhancement

Digits dialed after an Authorization Code are checked against the active OCB level.

### Call Forward All Calls

When a set with Outgoing Call Barring active activates CFWAC with a new CFW DN, the CFW DN is checked against the current barring level. If the DN is not allowed to be dialed, it can also not be used as a Call Forward DN. This is to prevent a set from forwarding to a barred DN and then dialing its own DN to bypass the limitations.

### Charge Account and Calling Party Number

Digits dialed after a charge account are checked against the active OCB level.

### Digit Display

Meridian 1 proprietary telephones with displays do not display the OCB level and the Station Control Password (SCPW) when OCB FFCs are dialed. This protects the security of the SCPW.

### Flexible Feature Codes

Flexible Feature Codes containing an asterisk (*) or an octothorpe (#) will always be allowed by OCB. Therefore, FFCs which can be used to make a call should be entirely numeric if barring of them is required.



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Some FFCs are equivalent to Special Prefix functions and these is subject to barring based on the equivalent Special Prefix codes, even if the FFC is entirely numeric.

### Last Number Redial

Barred DNs is stored by Last Number Redial (LNR). DNs re-dialed using LNR are checked against the active OCB level.

OCB Flexible Feature Codes are not stored as the last number dialed.

### Network Alternate Route Selection (NARS)/Basic Alternate Route Selection (BARS)

Calls made through NARS or BARS that result in local termination may not be barred based on the full dialed digits. They is barred based on the resulting local digits. Calls to a Local Steering Code will use the full dialed digits, as well as the resulting termination. Calls to the Home Location Code (HLOC) is barred based on the AC1 and HLOC, and then barred separately based on the local DN. Other local terminations include calls to an Numbering Plan Area (NPA) or Home Numbering Plan Area (HNPA) that use Supplemental Digit Restriction and Recognition to recognize a Local Direct Inward Dialing (DID) number, and calls using a Route List Block which terminate using the LTER option.

### New Flexible Code Restriction

Outgoing Call Barring uses New Flexible Code Restriction (NFCR) trees to define the digit sequences that are not allowed for each level of barring. However, OCB analyses all dialed digits, whereas NFCR only analyses digits outpulsed on trunks. This means that the same tree will not normally be usable for both features, unless only Coordinated Dialing Plan trunk calls are to be blocked for both features and no digit manipulation is done.

### Outpulsing of Asterisks and Octothorpes

The NFCR trees used for Outgoing Call Barring are allowed to contain asterisks and octothorpes when the Outpulsing of Asterisk and Octothorpe (OPAO) package 104 is equipped. These special digits will only be used for processing dialed digits on routes with OPAO allowed.

### Remote Call Forward

Activation of CFW to a barred DN by Remote Call Forward is permitted, since the user has had to dial the Station Control Password, which could also have been used to deactivate OCB.

### Ring Again

Ring Again cannot be activated after a call is barred by Outgoing Call Barring. Sets with display will not offer Ring Again.



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### Saved Number Redial

DNs re-dialed using Saved Number Redial (SNR) are checked against the active OCB level.

M2317 sets will offer a "Save #" after a call to a barred DN.

### Speed Call

Digits dialed using Speed Call are checked against the active OCB level. This includes calls made using the Dial Access to Speed Call feature (that is, using Pilot DNs).

### Speed Call, System

Digits dialed using System Speed Call are checked against the active OCB level.

### 16-Button Dual-tone Multifrequency (DTMF) Sets

The Outgoing Call Barring FFCs are not allowed as ABCD functions. They may be dialed normally from 16-Button DTMF telephones.

## Feature packaging

China – Flexible Feature Codes is contained in base system software. The following packages are required for feature activation:

- Flexible Feature Codes (FFC) package 139
- Busy Number Redial also requires the Autodial functionality that is contained in Optional Features (OPT) package 1
- Customer Call Forward also requires the Call Forward All Calls functionality contained in Optional Features (OPT) package 1 and Special Service for 2500 Sets (SS25) package 18
- Outgoing Call Barring also requires the New Flexible Feature Code Restriction (NFCR) package 49

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 137 "LD 15 - Define the basic setup for all three of the FFC-based features." (page 443)

   Define the basic setup for all three of the FFC-based features.

2. Table 138 "LD 56 - Define Confirmation Tone." (page 443)

   Define Confirmation Tone.



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**Table 137**
**LD 15 - Define the basic setup for all three of the FFC-based features.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FFC | Flexible Feature Codes |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - FFCS | (NO) YES | (Do not) change Flexible Feature Code end-of-dialing indicator. |
| - STRL | 1-3 | String Length of end-of-dial indicator. |
| - STRG | xxx | String to indicate end-of-dialing. Up to three digits as defined by STRL. Digits 0-9 and "#" are valid entries. |
| REQ | CHG | Change. |
| TYPE | FTR | Features and options. |
| - SPRE | nnnn | Special Function Prefix (required for FFCs to operate). |

**Table 138**
**LD 56 - Define Confirmation Tone.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FTC | Flexible Tones and Cadences. |
| TABL | 0-31 | FTC Table Number. |
| HCCT | YES | Hardware controlled cadences and tones. |
| ... | | |
| - FFCT | | Configure Confirmation Tone. |
| - - XTON | 0-(4)-255 | XCT (NT8D17 Conference/TDS) Tone code. |
| - - XCAD | (0)-255 | XCT (NT8D17 Conference/TDS) Cadence number (FCAD cadence number). |

## Busy Number Redial

### Task Summary List

Complete the following steps to configure the Busy Number Redial feature:

1. Table 139 "LD 57 - Configure Flexible Feature Codes for Busy Number Redial." (page 444)

   Configure Flexible Feature Codes for Busy Number Redial.

2. Table 140 "LD 15 - Set the Autodial Delay time used by Busy Number Redial." (page 444)



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Set the Autodial Delay time used by Busy Number Redial.

3. Table 141 "LD 10 - Allow Busy Number Redial for analog (500/2500 type) telephones." (page 444)

   Allow Busy Number Redial for analog (500/2500 type) telephones.

**Table 139**
**LD 57 - Configure Flexible Feature Codes for Busy Number Redial.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Codes. |
| CUST | xx | Customer number, as defined in LD 15 |
| FFCT | (NO) YES | Flexible Feature Confirmation Tone. |
| CODE | | Change code. |
| - DEAF | xxxx | Deactivate Feature. |
| - BNRA | xxxx | Busy Number Redial activation code. |
| - BNRD | xxxx | Busy Number Redial deactivation code. |

**Table 140**
**LD 15 - Set the Autodial Delay time used by Busy Number Redial.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FFC | Flexible Feature Codes |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - ADLD | (0)-20 | Number of seconds to delay before auto-dialing the saved busy number (0 will make the feature unavailable). Odd entries are rounded up to the next even number. |

**Table 141**
**LD 10 - Allow Busy Number Redial for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 141**
**LD 10 - Allow Busy Number Redial for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CLS | (BNRD) BNRA | (Deny) allow Busy Number Redial for this telephone. |
| FTR | ADL xx | Autodial, where:<br>xx = the maximum number of digits that can be stored. |

## Customer Call Forward

### Task summary list

The following is a summary of the tasks in this section:

1. Table 142 "LD 57 - Configure Flexible Feature Codes for Customer Call Forward." (page 445)

   Configure Flexible Feature Codes for Customer Call Forward.

2. Table 143 "LD 15 - Add or change the Reply DN for Customer Call Forward." (page 445)

   Add or change the Reply DN for Customer Call Forward.

3. Table 144 "LD 10 - Configure the Call Forward feature to allow Customer Call Forward for analog (500/2500 type) telephones." (page 446)

   Configure the Call Forward feature to allow Customer Call Forward for analog (500/2500 type) telephones.

**Table 142**
**LD 57 - Configure Flexible Feature Codes for Customer Call Forward.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Codes. |
| CUST | xx | Customer number, as defined in LD 15 |
| FFCT | (NO) YES | Flexible Feature Confirmation Tone. |
| CODE | | Change code. |
| - DEAF | xxxx | Deactivate Feature. |
| - CCFA | xxxx | Customer Call Forward activation code. |
| - CCFD | xxxx | Customer Call Forward deactivation code. |

**Table 143**
**LD 15 - Add or change the Reply DN for Customer Call Forward.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | RDR | Call Redirection |



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**Table 143**
**LD 15 - Add or change the Reply DN for Customer Call Forward. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - CCFWDN | dd..dd X | Customer Call Forward DN (maximum of 16 digits). X to delete. |

**Table 144**
**LD 10 - Configure the Call Forward feature to allow Customer Call Forward for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| FTR | CFW nn | Call Forward (nn must be the same number of digits as the CCFW DN). |

## Outgoing Call Barring

### Task summary list

The following is a summary of the tasks in this section:

1. Table 145 "LD 57 - Configure the Flexible Feature Codes for Outgoing Call Barring." (page 447)

   Configure the Flexible Feature Codes for Outgoing Call Barring.

2. Table 146 "LD 15 - Specify NFCR trees and Station Control Password length for Outgoing Call Barring." (page 447)

   Specify NFCR trees and Station Control Password length for Outgoing Call Barring.

3. Table 147 "LD 49 - Create NFCR trees for Outgoing Call Barring." (page 448)

   Create NFCR trees for Outgoing Call Barring.

4. Table 148 "LD 10 - Allow Outgoing Call Barring for analog (500/2500 type) telephones." (page 448)



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Allow Outgoing Call Barring for analog (500/2500 type) telephones.

5. Table 149 "LD 11 - Allow Outgoing Call Barring for Meridian 1 proprietary telephones." (page 448)

   Allow Outgoing Call Barring for Meridian 1 proprietary telephones.

**Table 145**
**LD 57 - Configure the Flexible Feature Codes for Outgoing Call Barring.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | FFC | Flexible Feature Codes. |
| CUST | xx | Customer number, as defined in LD 15 |
| FFCT | (NO) YES | Flexible Feature Confirmation Tone. |
| CODE | | Change code |
| - OCBA | xxxx | Outgoing Call Barring activation code. |
| - OCBD | xxxx | Outgoing Call Barring deactivation code. |
| - OCBV | xxxx | Outgoing Call Barring verification code. |

**Table 146**
**LD 15 - Specify NFCR trees and Station Control Password length for Outgoing Call Barring.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | FCR | New Flexible Code Restriction options |
| NFCR | (NO) YES | (Disable) enable New Flexible Code Restriction. |
| - MAXT | 1-255 | Maximum number of NFCR trees. |
| - OCB1 | 0-MAXT | NFCR tree for Outgoing Call Barring level 1. Enter 255 to deactivate. |
| - OCB2 | 0-MAXT | NFCR tree for Outgoing Call Barring level 2. Enter 255 to deactivate. |
| - OCB3 | 0-MAXT | NFCR tree for Outgoing Call Barring level 3. Enter 255 to deactivate. |
| TYPE | FFC | Flexible Feature Codes |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - SCPL | 0-8 | Station Control Password Length. |



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**Table 147**
**LD 49 - Create NFCR trees for Outgoing Call Barring.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| TYPE | FCR | Flexible Code Restriction. |
| CUST | xx | Customer number, as defined in LD 15 |
| CRNO | (0)-254 | New Flexible Code Restriction tree number. |
| INIT | ALOW DENY | Allow or deny digit strings not in tree. |
| ALOW | xxxx | Digit sequence to be allowed unconditionally. |
| | xxxx y...y | Digit sequence to be conditionally allowed and maximum number of digits that can follow. |
| UPDT | (YES), NO | Data is correct and NFCR tree can be updated. |
| DENY | xxxx | Digit sequence to be denied unconditionally. |
| | xxxx y...y | Digit sequence to be conditionally denied and maximum number of digits that can follow. |
| UPDT | (YES) NO | Data is correct and NFCR tree can be updated. |

**Table 148**
**LD 10 - Allow Outgoing Call Barring for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| SCPW | xxxx | Station Control Password. Length must match SCPL in LD 15. |
| CLS | (OCBD) OCBA | (Deny) allow Outgoing Call Barring. |

**Table 149**
**LD 11 - Allow Outgoing Call Barring for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |



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**Table 149**
**LD 11 - Allow Outgoing Call Barring for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| SCPW | xxxx | Station Control Password. Length must match SCPL in LD 15. |
| CLS | (OCBD) OCBA | (Deny) allow Outgoing Call Barring. |

# Feature operation

## Busy Number Redial

To activate Busy Number Redial, a switchhook flash is done, and the BNRA FFC is dialed. The number to be re-dialed is stored in the set's storage area for Autodial. Confirmation tone is given if configured.

When the user goes off-hook and does not dial within the number of seconds configured for the Autodial Delay timer (ADLD) the busy number is automatically re-dialed. If the DN is idle when retailed, the feature is deactivated, otherwise it remains available for 20 minutes. The feature can be deactivated manually by dialing the BNRD FFC, or the Deactivate Feature FFC. The user again hears confirmation tone. Deactivating the feature when it is not active will still cause confirmation tone to be heard, since the feature may have just timed out when going off-hook to dial the deactivation code.

## Customer Call Forward

Customer Call Forward is activated by dialing the CCFA FFC. Confirmation tone is given if activation is successful. When Customer Call Forward is activated, the CFWAC feature is activated with the CFW DN set to the Reply DN.

CCFW is deactivated by dialing the Customer Call Forward Deactivate FFC, or the Deactivate Feature FFC (it will also be deactivated by the activation of certain other features, see the Feature interactions section of this description).

## Outgoing Call Barring

Outgoing Call Barring can be activated from a set with OCBA Class of Service. To activate OCB, the subscriber dials the OCBA FFC, the barring level desired, and the Station Control Password. An octothorpe must also be dialed from Meridian 1 proprietary telephones and analog (500/2500 type) telephones. If activation is successful confirmation tone is given. If the feature is not activated overflow tone is given.



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The feature is deactivated by dialing the OCBD FFC, then the active level, and the Station Control Password. An octothorpe must also be dialed from Meridian 1 proprietary telephones and analog (500/2500 type) telephones. The subscriber may dial the OCBV FFC to verify that OCB is active. Confirmation tone is heard if OCB is active, otherwise overflow tone is heard.



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# China - Supervised Analog Lines

## Contents

This section contains information on the following topics:

“Feature description” (page 451)

“Operating parameters” (page 452)

“Feature interactions” (page 453)

“Feature packaging” (page 454)

“Feature implementation” (page 454)

“Feature operation” (page 456)

## Feature description

The China - Supervised Analog Lines feature provides two types of call supervision signaling capabilities: battery reversal answer/disconnect supervision and hook flash disconnect supervision. These forms of supervision are provided to terminal devices connected to analog ports in the system.

### Battery Reversal Supervision

Battery reversal answer and disconnect supervision signaling is used for calls originating from the terminal device. It provides both far-end (the called party) answer supervision and far-end disconnect supervision signals to the terminal device. It does not apply to incoming calls terminating at the terminal device.

In the idle state, the analog port in the system provides ground signal on the tip lead and battery on the ring lead. This polarity is maintained during dialing and ringing at the far end. When the far end answers, the battery and ground connections are reversed. The reverse battery is maintained while the call is established. When the far end disconnects, the battery and ground connections are reverted to the idle state to signal that the far



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end has disconnected. If the terminal device disconnects first, the system sends the Deactivate Battery Reversal Scan Signal Distribution (SSD) message to the firmware after receiving the on-hook status to revert the polarity to its idle state.

Two types of battery reversal are supported. Battery Reversal for Absolute Answer Only provides an answer supervision signal to the terminal device only when the system detects an absolute answer. Battery Reversal for Absolute and Assumed Answer provides an answer supervision signal to the terminal device even when an assumed answer is detected and the far end is not capable of indicating definite answer (for example, an outgoing call on an unsupervised loop start trunk).

### Hook Flash Disconnect Supervision

Hook flash disconnect supervision is used for incoming calls terminating at the terminal device. The disconnect signal is indicated by the removal of the ground connection to the tip lead for a specific period of time, which is provided by firmware ranging from a minimum of 10 milliseconds to a maximum of 2.55 seconds. The analog port is held busy for incoming calls while hook flash is in progress.

## Operating parameters

This feature applies to Intelligent Peripheral Equipment that support the Supervised Analog Line feature only.

Disconnect supervision is not provided to the terminal device if the system does not receive any indication of the far end releasing.

If the system does not receive any answer indication, and answer supervision is not extended to the terminal device following an assumed answer condition, disconnect supervision cannot be extended when the far end disconnects.

If the Battery Reversal Supervision feature is configured for an analog line on an analog card that does not support battery reversal, the battery reversal SSD messages from the system software are ignored by the analog card firmware. In this case, no battery reversal signal is extended to the terminal device.

If the Hook Flash Disconnect Supervision feature is configured for an analog line on an analog card that does not support hook flash, the hook flash SSD messages from the system software are ignored by the analog line card firmware. In this case, no hook flash signal is extended to the terminal device.



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If the system initializes while an outgoing call originating from an analog line is established and battery reversal is activated, unprotected data for the call is lost. In this case, battery reversal remains activated when the call is cleared down by either party. However, the line status is reverted to normal when the next outgoing call is answered and then cleared down.

If the hook flash timer is set equal to or greater than the on-hook timer, activation of the hook flash disconnect signal also causes the card to send an on-hook message and then an off-hook message to the system. In this case, if the user remains off-hook after the far end disconnects, dial tone is received and an outgoing call can be initiated.

Battery reversal supervision is supported on the following cards:

- The Enhanced Extended Analog Line Card for China NTRA08AA or later vintage.
- The Off-Premise Station Line Card NT1R20AB or later vintage, and
- The Off-Premise Station Line Card for China NTRA06AB or later vintage.

Hook flash disconnect supervision is supported on the following cards:

- The Off-Premise Station Line Card NT1R20AB or later vintage, and
- The Off-Premise Station Line Card for China NTRA06AB or later vintage.

## Feature interactions

### Call Transfer

If more than one active call is extended to an analog line, the call type associated with an analog line is determined by the first active call. The call type is assumed to be incoming and hook flash supervision applies if a terminal device answers an incoming call from an idle state. If the terminal device performs a switch hook flash to put the first party on hold and initiates a consultation call, the Battery Reversal feature is not supported; no battery reversal answer signal is extended to the terminal device when the second party answers.

If the first party disconnects while the terminal device is connected to the second party, no disconnect supervision is extended to the terminal device. However, hook flash disconnect supervision is extended to the terminal device when the second party disconnects (that is, a disconnect supervision signal is sent only when the last party connected to the terminal disconnects).



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If a terminal device originates an outgoing call, battery reversal answer supervision is extended when the called party answers. The polarity of the line remains reversed when the terminal device performs a switch hook flash and then initiates a consultation call to a second party. The analog line is reverted to normal polarity when the terminal device completes the transfer and drops out or when the last of either the held party or the consultation party disconnects.

### Conference

If a terminal device answers an incoming call and then initiates a conference, no battery reversal answer supervision signal is extended to the terminal device when new parties of the conference answer. However, a hook flash disconnect supervision signal is extended to the terminal device when the last party in the conference disconnects.

If a terminal device initiates a conference, battery reversal answer supervision is extended to the terminal device when the first party answers. No polarity change is made when additional parties are added to the conference. The polarity is reverted to normal when the terminal device disconnects or when the last party in the conference disconnects.

### Multi-Party Operations

As in the cases with Call Transfer and Conference, the call type of the first active call determines whether battery reversal or hook flash supervision applies. Also, supervision signaling is not supported for the second call. A disconnect supervision signal is extended only when the last party disconnects.

## Feature packaging

This feature is included in base system software

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 150 "LD 10 - Enable battery reversal supervision." (page 454)

   Enable battery reversal supervision.

2. Table 151 "LD 10 - Enable hook flash disconnect supervision." (page 455)

   Enable hook flash disconnect supervision.

**Table 150**
**LD 10 - Enable battery reversal supervision.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add, or change. |



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**Table 150**
**LD 10 - Enable battery reversal supervision. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| FTR | OSP (1) | Outgoing call supervision. Answer and disconnect supervision for outgoing calls with absolute and assumed answer indication. If the numeric parameter is not entered and the saved value is null, it is defaulted to 1. Otherwise it remains unchanged. |
| | OSP 2 | Answer and disconnect supervision for outgoing calls with absolute answer supervision only. |
| | XOSP | Enter XOSP to disable battery reversal answer and disconnect supervision. |

**Table 151**
**LD 10 - Enable hook flash disconnect supervision.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add, or change. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| FTR | ISP 1...(75)...255 | Enable hook flash disconnect supervision with flash timer in 10 millisecond units. If the numeric parameter is not entered and the saved value is null, it is defaulted to 75. Otherwise it remains unchanged. |
| | XISP | Enter XISP to disable hook flash disconnect supervision. |

Respond to the FTR prompt in LD 10 with OSP 1, and then with ISP 1...(75)...255 to enable both battery reversal supervision and hook flash disconnect supervision.



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## Feature operation

No specific operating procedures are required to use this feature.



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# China - Toll Call Loss Plan

## Contents

This section contains information on the following topics:

“Feature description” (page 457)

“Operating parameters” (page 458)

“Feature interactions” (page 458)

“Feature packaging” (page 459)

“Feature implementation” (page 459)

“Feature operation” (page 461)

## Feature description

The China – Toll Call Loss Plan feature provides the requirement of 7 dB loss for 2.0 Mbps Digital Trunk Interface (DTI2) toll calls from a system, acting as a Class 5 (C5) office. It is only applicable for a DTI2 trunk connection using MFC signaling to an analog (500/2500 type) telephone.

Feature specific losses on the DTI2 card and 500/2500 line card are provided if the call is recognized as a toll call and the local party is using an analog (500/2500 type) telephone. The loss levels for toll calls are configured in LD 73 by using the TOLT and TOLL prompts.

With this feature, when a toll condition is detected, loss levels are sent to the ONS line card. When the call is terminated, the original loss levels are sent to the ONS line card.

The outgoing toll call is recognized by defining the toll digits as a Special Service List number in LD 18 and specifying it in the DTI2 Route Data Block. For incoming calls, the toll status is provided by the Multifrequency Compelled (MFC) signaling. When the toll status is determined, the appropriate pad values are used on the DTI2 card and 500/2500 line card.



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## Operating parameters

The Toll Loss Plan is only supported when a pure Intelligent Peripheral Equipment (IPE) Loss Plan for China is used. Existing pad levels for DTI2 toll calls with Hybrid Loss Plan for China are unchanged.

This feature is only supported for a Class 5 system.

The Toll Loss Plan is only supported on DTI2 MFC trunks.

If an initialization occurs, the toll call stays connected, but the toll status is lost. The pad levels are reinserted as if it is for a non-toll call.

The Toll Loss Plan is not supported when a conference call is in progress.

China specific IPE 500/2500, DTI2, and MFC line cards are required.

## Feature interactions

### Call Diversion (Call Transfer, Call Forward All Calls, Call Forward Busy, Call Forward, Internal Calls, Call Forward No Answer, Hunting)

Toll pad switching is also provided after call diversion has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

### Conference

Toll Loss Plan is not supported when a conference is in progress. When a local party connecting to a toll call makes a conference call, the pad levels on the ONS line card are switched back to their original (non-toll call) values. Then, the existing Conference algorithm takes care of the necessary pad switching. This would not alter the existing conference call in terms of loss levels.

When a conference call joins in a toll call, the Toll Loss Plan is not effective.

When a conference call involving a toll call becomes a two-party call, the Toll Loss Plan is applied on the set and DTI2 trunk.

The conference pad switching algorithm is not changed for the Toll Loss Plan, since the 7 db requirement does not apply to a Conference call.



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### Digitone Receiver Pads

When a Digitone Receiver (DTR) is connected to the DTI2 call (receive only), the pad value to be used on the DTI2 pack is defined in LD 73. There is no interaction with this since the Toll Loss Plan is only supported on a DTI2 trunk with MFC signaling.

### Multifrequency Compelled Signaling Pads

There is no interaction with this operation, since the Toll pad switching is only performed when the call is established and the Multifrequency Compelled signaling has terminated.

### Multi-Party Operations

When a user toggles between one party and another, the Toll Loss Plan is inserted on the active call if it is a toll call. If the user toggles to a non-toll call, the Toll Loss Plan is removed.

## Feature packaging

The China Toll (CHTL) package 292 must be provisioned to activate this feature.

In addition the China – Toll Call Loss Plan feature requires:

- Multifrequency Compelled Signaling (MFC) package 128
- 2 Mbps Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131 for the Special Service List functionality.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 152 "LD 18 - Define toll digits for China." (page 460)

   Define toll digits for China.

2. Table 153 "LD 16 - Enter the SSL number (defined in LD 18) in the Route Data Block of the DTI2 trunk." (page 460)

   Enter the SSL number (defined in LD 18) in the Route Data Block of the DTI2 trunk.

3. Table 154 "LD 73 - Enter the pad codes for a toll call on DTI2." (page 460)

   Enter the pad codes for a toll call on DTI2.



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**Table 152**
**LD 18 - Define toll digits for China.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG | Add, or change. |
| TYPE | SSL | Special Service List. |
| SSL | 1-15 | Enter Special Service List number. |
| SSDG | 0 | China national toll call. |
| - TOLL | YES | The SSDG entry is a toll number. |
| ... | | |
| SSDG | 00 | China international toll call. |
| - TOLL N | YES | The SSDG entry is a toll number. |
| ... | | |
| SSDG | <CR> | End entry. |

**Table 153**
**LD 16 - Enter the SSL number (defined in LD 18) in the Route Data Block of the DTI2 trunk.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG | Add, or change. |
| TYPE | RDB | Route Data Block |
| ... | | |
| SSL | 1-15 | Enter the SSL number defined in LD 18. |

**Table 154**
**LD 73 - Enter the pad codes for a toll call on DTI2.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG PRT | Add, change, or print. |
| TYPE | DTI2 | 2.0 Mbps DTI data block. |
| FEAT | PAD | Pad category. |
| PDCA | 1-16 | Pad category table. |
| TNLS | (NO) YES | Terminal Number list. |
| DFLT | (1)-16 | Default table. |
| ... | | |



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**Table 154**
**LD 73 - Enter the pad codes for a toll call on DTI2. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TOLT | Rx Tx<br>(0) (0) | Toll call pad data on DTI2 card, where:<br>Rx = Receive, and<br>Tx = Transmit.<br><br>The default values are 0 dB receive, and 0 dB transmit. |
| TOLL | Rx Tx<br>(16) (30) | Toll call pad data on line card, where:<br>Rx = Receive, and<br>Tx = Transmit.<br><br>The default values are 0 dB receive, and 7 dB transmit. |

## Feature operation

No specific operating procedures are required to use this feature.



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# CIS ANI Digits Manipulation and Gateways Enhancements

## Contents

This section contains information on the following topics:

“Feature description” (page 463)

“Operating parameters” (page 473)

“Feature interactions” (page 475)

“Feature packaging” (page 476)

“Feature implementation” (page 476)

“Feature operation” (page 490)

## Feature description

This chapter describes the Commonwealth of Independent States (CIS) Automatic Number Identification (ANI) Digits Manipulation and Gateways Enhancements features. The features are presented together because they share many common characteristics.

CIS ANI Digits Manipulation and Gateways Enhancements features allow the ANI to be built in a more flexible way when the call is originated from a set and from a route.

### ANI Definition

The Automatic Number Identification (ANI) information is a string of digits sent to the Central Office (CO), which it uses to identify the calling subscriber for billing purposes, Malicious Call Trace (MCT) purposes, and for immediate information about the subscriber when reaching some vital service such as fire brigade, emergency medical care, or law enforcement officials. The ANI information is sent over the speech path whenever the CO requests it.



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ANI is sent on the following CIS trunks on the system:

- CIS three-wire analog trunk
- CIS digital trunk interface Dial Pulse (DP) and Multi-Frequency Shuttle (MFS)

### Shared functionality

When configuring outgoing CIS routes, the feature is activated using the prompt ANIC to enable composition of a new ANI.

Two similar ANI tables are configured in the customer data block. One is used when call is originated from a set. The second table is used when call is originated from a route.

Up to 2000 entries can be configured in the ANI table for sets. Up to 512 entries can be configured in the ANI table for routes.

An ANI entry contains the following data:

- DNLG (DN Length): it gives the number of digits of the calling number that is used for building the ANI DN (for example calling party DN = 342390 and DNLG = 4 will give an ANI DN = 2390).
- LEC: Local Exchange Code.
- ANDN: used as ANI DN if DNLG=0.
- ADDG: additional digits.

## CIS ANI Digits Manipulation introduction

The CIS ANI Digits Manipulation feature enhances the system CIS ANI digits manipulation capabilities by increasing flexibility and ensuring greater accuracy. The feature modifies the length of outgoing ANI and it allows the building of outgoing ANI using the table configured in customer data block.

## CIS Gateway Enhancements introduction

The purpose of the gateways enhancement feature is to enhance several gateways with Commonwealth of Independent States (CIS) trunks.

CIS gateways considered are with all route types with an emphasis on connectivity that can receive a Calling Number: R2MFC, ISDN interfaces and incoming CIS DTI2.



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### ANI Digits Manipulation feature functionality

The ANI may be built in two ways with the enhancements introduced by the CIS ANI Digits Manipulation feature as described in the list below (see Figure 6 "Example of how ANI is built in call originating from a set (using enhanced functionality)" (page 466))

1. The ANI may be built with the following modifications:
   - The length of the ANI information built by the software is configurable on a per route basis and may reach 15 digits (for LEC+ANI DN).
   - The part of the ANI DN to be truncated (in case the truncation can't be avoided) is the beginning (that is the most significant digits).
   - The system has the option to work without LEC, that is the response to the prompt LEC in LD 16 is not mandatory anymore.
   - In the case of LEC+ANI DN smaller than the programmed length, additional digit(s) (ADDG) is (are) added at the beginning of the ANI DN (between the ANI DN and the LEC), in compliance with the CIS standards. ADDG can be more than one digit long.
2. Optionally, the ANI data may be retrieved from entries configured in LD 15. It provides much more flexibility in building the ANI. An ANI entry number can be assigned to each circuit switched network set, BRI set and BCS DN key.



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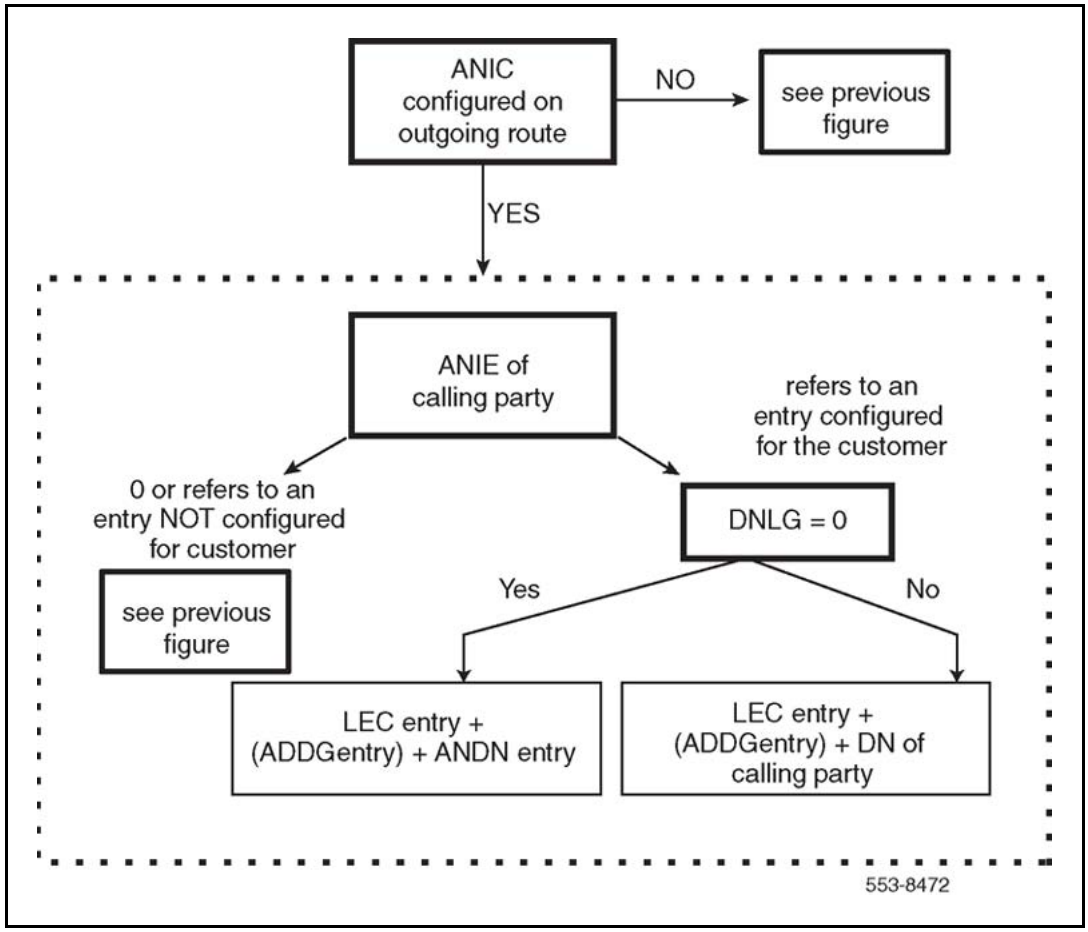
**Figure 6**
**Example of how ANI is built in call originating from a set (using enhanced functionality)**




## CIS ANI Digits Manipulation examples

This section provides diagrams and tables that show how CIS ANI Digits Manipulation feature operates. Example 1 is presented in Table 155 "DN on key 1 is to be used in ANI" (page 466). Example 2 is shown in "Example 2 - DN on key 1 is not to be used in ANI" (page 467).

## Example 1 - DN on key 1 is to be used in ANI

**Table 155**
**DN on key 1 is to be used in ANI**

| ANI entry | Entry X | Entry Y |
|---|---|---|
| DNLG, length of DN to use in ANI | 4 | 0 |
| LEC, Local Exchange Code | 940 | 940 |
| ADDG, additional digits | 89 | 8 |
| ANDN, used as ANI DN if DNLG is 0 | | 7676 |



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### Example 2 - DN on key 1 is not to be used in ANI

**Table 156**
**DN on key 1 is not to be used in ANI**

| ANI entry | Entry X | Entry Y |
|---|---|---|
| DNLG, length of DN to use in ANI | 4 | 0 |
| LEC, Local Exchange Code | 940 | 940 |
| ADDG, additional digits | 89 | 8 |
| ANDN, used as ANI DN if DNLG is 0 | | 7676 |

## Gateways Enhancement feature functionality

The gateway enhancements are composed of the following new functionality, described in this section:

- Mapping of the received calling number to ANI:
  - Mapping CNI to ANI, ANI to CNI
  - Mapping CLID to ANI and OLI to ANI
  - Mapping ANI to ANI in gateway CIS to CIS
- Building ANI for interfaces without calling number

**Mapping of the received calling number to ANI** To map any Calling number to ANI the idea is to be able to manipulate the received Calling Number when tandeming it into ANI. In a gateway situation the incoming trunk is the originator of the outgoing call. So the Calling Number is manipulated by assigning an ANI table entry to the incoming route. An ANI table entry is also assigned to route types whose connectivity does not give the possibility to receive a Calling Number. For these routes, the ANI table entry allows to build the outgoing ANI using only information pertaining to the incoming route.

CIS Gateway Enhancement introduces a list of ANI entries applicable to incoming route considered for the gateway with CIS, or incoming and outgoing route. When package CIST is equipped, an ANI entry is attached to each applicable route. An entry for routes is configured with prompt: R_ENTRY.

Some of the fields defined in ANI table entry were already existing in route configuration. ANI table entry fields that were already existing on route (RDNL, ANDN) are suppressed from the route. It must be noticed that prompt RDNL of Route Data Block is replaced by prompt DNLG in ANI table entry. A new prompt is added on Route data configuration to defined



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ANI table entry: ANIE. During upgrades, former Route Data Block prompt values are moved into an ANI table entry and this table entry is assigned to the route.

Several routes can have the same tandeming information configured. The data has been moved from Route Data Block to Customer Data Block. In case no ANI table entry is configured, the default table entry (0) is used.

ANI is built as follows:

If outgoing route does not allow use of ANI table entry assigned on incoming route (ANIC prompt of outgoing CIS route is set to NO), Calling number is built as before. Notice that part of the received Calling Number (DNLG) and ANDN INC route are configured in ANI table entry of the incoming route.

1. If outgoing route allows to use ANI table entry assigned on incoming route (ANIC is set to yes on CIS outgoing route), ANI is built as LEC inc route + ADDG inc route + (part of) received Calling Number or, when calling Number not available.

   With new implementation "part of received calling Number" indicates N least significant digits of received Calling Number, where N is the value configured against prompt DNLG in the ANI table entry associated to the incoming Route Data Block.

2. LEC inc route + ADDG inc route + ANDN inc. route

ANI has a predetermined size, configured on outgoing CIS route. It can happen that ANI built is smaller or longer than the ANI configured size. This is handled the same way as for ANI built when call originator is a set.

When the ANIC of the outgoing route is set to yes, data from the ANI table entry configured for the incoming route is used, even if empty. Thus it is up to the craftsman to ensure that the ANI built using the ANI table entry is correct.

**Mapping CNI to ANI, ANI to CNI** On MFC routes, prompt ANDN is currently defined. This prompt is removed and replaced by prompt ANIE which allows configuring the ANI table entry number.

Both CNI and ANI contain a CAC field. The value and meaning of the field in both cases are not the same.

On the gateway side of the R2MFC to CIS, the purpose of this mapping is to convert the 10 MFC CAC meanings into CIS CAC meanings, or to define a default CIS CAC value. For this, a conversion table is defined. Conversion tables are defined in LD 15. Up to 32 tables can be configured. A conversion table can be assigned on each MFC route.



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For this, the prompt CAC_CONV is added to the MFC incoming route configuration. If no CAC conversion table is configured on the MFC route, default table (number 0) will apply to the MFC incoming route.

A CAC conversion entry contains the following data:

- CAC0 to CAC9: against CAC0 prompt is configured the CIS CAC value to be sent if an R2MFC CAC of value 0 has been received.
- DFLT: against this prompt is configured the CIS CAC value to be sent if the R2MFC CAC has not been received or is not in the correct range.

When CNI has not been received at the time ANI is built, a default value must also be used. This default value is defined in the CAC Conversion table. On CIS trunks, 10 CAC values can be sent, from 0 to 9. Each one has a particular meaning (see Table 157 "CAC conversion table entry 0 for R2MFC route" (page 469)).

Default table is number zero and is configurable. After upgrade this table is defined in memory as shown in table below. The craftsman must be aware that modifying this default table after conversion will modify the CAC generated for all gateway cases where the incoming route had a CAC set to three (before upgrade).

In this default table all fields are set to three, as it is the current CIS CAC default value. A value of three for CIS Category Code means the caller is residential, business or hotel subset with the access to local network and without access to automatic regional, toll, international network and to chargeable service numbers.

**Table 157**
**CAC conversion table entry 0 for R2MFC route**

| MFC CAC | CIS CAC | CIS CAC description |
|---|---|---|
| CAC0 | 3 | CIS value corresponding to MFC CAC DGT0 |
| CAC1 | 3 | CIS value corresponding to MFC CAC DGT1 |
| .... | 3 | |
| CAC8 | 3 | CIS value corresponding to MFC CAC DGT8 |
| CAC9 | 3 | CIS value corresponding to MFC CAC DGT9 |
| Default | 3 | CIS value used when MFC CAC has not been received, or MFC CAC received is not in the MFC CAC list of this table |

MFC routes were given a CAC prompt on which was configured the CAC value of incoming route when tandeming to CIS. This data has no more utility on incoming MFC route as a CAC conversion table is configured



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against prompt CAC_CONV. Thus, CAC prompt is removed from MFC incoming routes. On upgrade, former CAC prompt value is moved into a CAC conversion table, and this table is assigned to the route.

In the gateway side CIS to R2MFC, the purpose of this mapping is to convert the 10 CIS CAC meanings into R2MFC CAC value. For this, a conversion table is defined.

Prior to upgrading, the CAC sent was defined in the R2MFC table (LD 94). In this R2MFC table, it is the same value for all non-tie incoming trunks. In LD 15, for CAC conversion table, the same range (1-10) and default value (6) than in LD 94 are used. The value 0 is also allowed, it means that the value defined in R2MFC table for incoming non-Tie trunk has to be used.

CAC conversion tables must be defined by the craftsperson in LD 15. Up to 32 tables can be configured. Then a configured conversion table entry can be assigned on each incoming DTI2 CIS route. For this, new prompt CAC_CONV is added to the CIS incoming route configuration. If no CAC conversion table is configured on the CIS route, the default table entry number 0 will apply on CIS incoming routes.

Default table entry is number 0 and is configurable. During upgrades, this table is defined in memory as shown in Table 158 "CAC Conversion table entry 0 for CIS incoming DTI2 route" (page 470). As all values of default tables are set to 0, the R2MFC table is used until default table number 0 is configured.

**Table 158**
**CAC Conversion table entry 0 for CIS incoming DTI2 route**

| CIS CAC | MFC CAC | Description and CIS CAC meaning |
|---|---|---|
| CAC0 | 0 | MFC value corresponding to CIS CAC 0<br><br>"Reserved" |
| CAC1 | 0 | MFC value corresponding to CIS CAC 1<br><br>"Residential or business subset with the access to automatic regional, toll and international network" |
| CAC2 | 0 | MFC value corresponding to CIS CAC 2<br><br>"Hotel subset with the access to automatic regional, toll international network" |



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**Table 158**
**CAC Conversion table entry 0 for CIS incoming DTI2 route (cont'd.)**

| CIS CAC | MFC CAC | Description and CIS CAC meaning |
|---|---|---|
| CAC3 | 0 | MFC value corresponding to CIS CAC 3<br><br>"Residential, business or Hotel subset with the access to local network only" |
| CAC4 | 0 | MFC value corresponding to CIS CAC 4<br><br>"Business subset with the access to regional, toll, international network and to special service numbers; preferential access to regional and toll network" |
| CAC5 | 0 | MFC value corresponding to CIS CAC 5<br><br>"Business subset of telecommunications administration with the access to automatic regional, toll, international network and to special service numbers free of charge" |
| CAC6 | 0 | MFC value corresponding to CIS CAC 6<br><br>"Toll Coin box and public call paystation with the access to automatic regional and toll network also the general purpose coin box with the access to local and toll network (paying in cash) and the coin box with access to special services only" |
| CAC7 | 0 | MFC value corresponding to CIS CAC 7<br><br>"Business or residential subset with automatic access to regional, toll and international network plus to chargeable service numbers" |
| CAC8 | 0 | MFC value corresponding to CIS CAC 8<br><br>"Business subset for data, facsimile and electronic mail with automatic access to regional, toll and international network." |
| CAC9 | 0 | MFC value corresponding to CIS CAC 9<br><br>"Local call coin box" |
| DFLT | 0 | MFC value corresponding to CIS CAC 0<br><br>"Reserved" |



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**Mapping CLID to ANI and OLI to ANI** The feature implements mapping of CLID on Euro-ISDN and enhances it on other ISDN interfaces.

The ANIE prompt in LD 16 configures an ANI table entry for the trunk route.

**Building ANI for interfaces without calling number** The title of this subsection refers to routes whose connectivity does not give the possibility to receive a calling number (DTI2, Analog,...).

This case is similar to the situation where an Incoming route with calling number does not receive the calling number.

**Mapping ANI to ANI in gateway CIS DTI2 to CIS** The feature CIS ANI Reception is developed concurrently to this one for incoming CIS DTI2 routes (see CIS ANI Reception in this document). For the gateway DTI2 CIS to CIS, on the outgoing CIS route the ANI is built using the ANI received on incoming route. The received ANI can be manipulated using ANI table entry configured on incoming CIS route.

The CAC used on outgoing route is the one received in incoming ANI. This CAC is copied into outgoing ANI without any modifications. If no ANI has been received on incoming CIS route. The CAC used is the one configured against CAC_CIS prompt on incoming CIS route.

## Examples of Gateways Enhancements

The following pages contain examples of how to implement gateways enhancements.

**Table 159**
**CAC conversion table, entry 1 content**

| MFC CAC | CIS CAC |
|---|---|
| CAC0 | 9 |
| CAC1 | 8 |
| CAC2 | 7 |
| CAC3 | 6 |
| CAC4 | 5 |
| CAC5 | 4 |
| CAC6 | 3 |
| CAC7 | 2 |
| CAC8 | 1 |
| CAC9 | 0 |
| Default | 3 |



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**Example 1 - Gateway call through node 3 to CO C** In this example, Received CNI on route 320 is 1234, with CAC translated to DGT5. Outgoing ANI is 555 1 7476 4.

**Table 160**
**Example 1 - Detail of built CAC**

| LEC Outgoing | Additional Digit | ANI DN Incoming | Category Code |
|---|---|---|---|
| 555 | 1 | 7476 | 4 |

**Example 2 - Gateway call through node 2 to CO B** In this example, received CNI on route 230 is 647678, with CAC translated to DGT 8. Outgoing ANI is 555 123 7678 1.

**Table 161**
**Example 2 - Detail of built CAC**

| LEC Incoming | Additional digit | DNLG*CNI | Category Code |
|---|---|---|---|
| 555 | 123 | 7678 | 1 |

**Example 3 - Gateway call through node 1 to CO A** In this example, received CLID on route 120 is 25. Outgoing ANI is 444 123456123 25 5.

**Table 162**
**Example 3 - Detail of built CAC**

| LEC Incoming | Additional digit | DNLG*CLID | Category Code |
|---|---|---|---|
| 444 | 123456123 | 25 | 5 |

# Operating parameters

This section lists the operating parameters for CIS ANI Digits Manipulation and CIS Gateways Enhancements.

## CIS ANI Digits Manipulation operating parameters

The data in ANI is built only once at the beginning of the call. The data is not changed or re-downloaded for any kind of operation during a call. Therefore, if the call goes through any type of modification such as a transfer or call forward for instance, the ANI information sent when requested is of the original originator of the call.

This feature does not allow the user to associate ANI entry to attendant consoles. When an outgoing call is originated by an attendant, the ANI message is built using the old mechanism.



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The ANI size flexibility is not supported by the analog trunks (E3W, X3W). For these type of trunks, the prompt ANSZ (LD 16) must be answered with seven. CIS standards recommend setting ANSZ to seven for CIS DTI2 ANSZ prompt.

### CIS Gateways Enhancements operating parameters

ANI is downloaded to the card only once and immediately after trunk seizure. Thus calling number can be tandemed into ANI only if received before trunk is seized. That means that the calling number must be received at the same time that the called number or before enough digits of the called number are received to seize the CIS trunk. In case of gateway ISDN interface/CIS calling number (CLID) is always received before or at the same time as the called number. In case of gateway R2MFC/CIS calling number (CNI) can be received after trunk has been seized. Then incoming MFC route must be configured to request CNI before enough digits of called number are received to seize CIS trunk.

There is no cross checking of the ANI R_ENTRY associated with the route against the ANI R_ENTRY in the customer Data Block. If an ANI R_ENTRY is removed from the ANI table and the ANI R_ENTRY is stilled assigned to a route, ANI in this case is built using the default R_ENTRY, R_ENTRY number 0 and ERR9044 message is issued at call processing time.

While default R_ENTRY number 0 has not been configured, all its fields are empty except ADDG whose default value is 8. Thus the ANI built using this table is a repetition of 8. It is strongly recommended to configure this default table as soon as ANIC prompt is set to yes on an outgoing CIS route.

It is possible to associate an undefined ANI R_ENTRY to a route. Then, when constructing ANI if R_ENTRY is still undefined, default R_ENTRY number zero is used and ERR9044 message is issued at call processing time.

Due to the independence between ANI table and outgoing CIS route, it is possible to define a LEC, or ANDN greater than ANI size configured on outgoing route. Then most significant digits is truncated. The way it is done is similar in case of call originated from a set or a trunk.

There is no cross checking of the CAC Conversion table entries associated with a CIS or R2MFC route against the CAC Conversion table in the customer Data Block. If a CAC Conversion table entry is removed from the CAC Conversion table and this entry is still assigned to a route, CAC in this case is built using the default CAC Conversion table entry, CIS_ENT



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number 0 for an incoming CIS route and MFC_ENT number 0 for an incoming MFC route. Additionally ERR9051 message is issued at call processing time.

It is possible to associate an undefined CIS_ENT or MFC_ENT to a route. Then, when constructing CAC if CIS_ENT or MFC_ENT is still undefined, default CIS_ENT or MFC_ENT (number 0) is used and ERR9051 message is issued at call processing time.

## Feature interactions

This section identifies feature interactions for CIS ANI Digits Manipulation and Gateways Enhancements.

### CIS ANI Digits Manipulation feature interactions

#### CIS Three Wire Analog Trunk

CIS ANI digits manipulation feature modifies Automatic Number Identification.

#### CIS Digital Trunk Interface

CIS ANI digits manipulation feature modifies Automatic Number Identification.

#### CIS MF Shuttle

CIS ANI digits manipulation feature modifies Automatic Number Identification.

#### CIS Gateways Enhancements

Some changes introduced in CIS ANI digits manipulation feature will impact on CIS Gateways Enhancements feature. These changes are listed below:

- The size of the ANI is configurable on a per outgoing CIS route basis.
- Valid responses for LEC, ADDG and ANDN programmed on the outgoing CIS route are modified.
- The additional digit(s) is/are inserted between LEC and ANI DN when necessary to complete the ANI DN.
- Prompt ANIC (ANI Composing) added in LD 16 is also used in CIS Gateways Enhancements.

### CIS Gateways Enhancements feature interactions

#### CIS Three Wire Trunk Analog

This development interacts with the feature CIS Three Wire Trunk Analog by changing how ANI is built in case of gateway from ISDN/DPNSS/R2MFC to CIS Analog.



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### CIS Digital Trunk Interface

The CIS Gateways Enhancements feature interacts with CIS Digital Trunk Interface by changing how ANI is built in case of gateway from ISDN/DPNSS/R2MFC to CIS Digital.

### CIS ANI Digits manipulation interaction

These interactions are already described in “CIS ANI Digits Manipulation feature interactions” (page 475).

## Feature packaging

No new packages are introduced for these features.

The existing Commonwealth of Independent States Trunks (CIST) package 221 is required for these features to be operable.

CIS Multi Frequency Shuttle package is required if MF Shuttle signaling is to be used but is not mandatory for the CIS ANI digits manipulation and Gateways Enhancements functions.

The CIS DTI2 feature (including MF Shuttle) requires:

- Flexible Tones and Cadences (FTC) package 125
- International Supplementary Features (SUPP) package 131
- 2 Mbit Digital Trunk Interface (DTI2) package 129
- Flexible Numbering Plan (FNP) package 160

CIS Analog Three Wire Trunks feature requires:

- International Supplementary Features (SUPP) package 131
- Flexible Numbering Plan (FNP) package 160
- Flexible Tones and Cadences (FTC) package 125
- Trunk Fail Monitor (TFM) package 182
- IPE package (XPE) package 203 (required for outgoing X3W packs)
- Fast Tone and Digit Switch (FAST_TDS) package 87 (required for outgoing E3W package)

## Feature implementation

### CIS ANI Digits Manipulation feature

This section contains the overlay procedures required to configure the CIS ANI Digits Manipulation feature. The “CIS Gateways Enhancements feature implementation” (page 485) section begins on “CIS Gateways Enhancements feature implementation” (page 485).



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### Task summary list

The following is a summary of the tasks in this section:

1. Table 163 "LD 15 - Configure ANI Table for telephones" (page 478)

   Configure ANI Table for telephones.

2. Table 164 "LD 16 - Create or modify outgoing CIS route data block." (page 479)

   Create or modify outgoing CIS route data block.

3. Table 165 "LD 10 - Define ANI entry for analog (500/2500) sets." (page 481)

   Define ANI entry for analog (500/2500) sets.

4. Table 166 "LD 10 - Configure the CAC for CIS and MFC signaling for analog 500/2500 sets." (page 482)

   Configure the CAC for CIS and MFC signaling for analog 500/2500 sets.

5. Table 167 "LD 11 - Configure ANI entry for Meridian 1 proprietary sets." (page 483)

   Configure ANI entry for Meridian 1 proprietary sets.

6. Table 168 "LD 11 - Configure the CAC for CIS and MFC signaling for digital sets." (page 484)

   Configure the CAC for CIS and MFC signaling for digital sets.

7. Table 169 "LD 27 - Configure ANI entry for Basic Rate Interface (BRI) lines." (page 484)

   Configure ANI entry for Basic Rate Interface (BRI) lines.

8. Table 170 "LD 27 - Configure the CAC for CIS and MFC signaling for BRI sets." (page 485)

   Configure the CAC for CIS and MFC signaling for BRI sets.

9. Table 171 "LD 15 - Configure the ANI route table and CAC conversion table." (page 486)

   Configure the ANI route table and CAC conversion table.

10. Table 172 "LD 16 - Configure the ANI table entry in the Route Data Block for incoming R2MFC route." (page 488)

    Configure the ANI table entry in the Route Data Block for incoming R2MFC route.

11. Table 173 "LD 16 - Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route." (page 488)

    Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route.



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12. Table 174 "LD 16 - Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS)." (page 489)

    Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS).

13. Table 175 "LD 88 - Configure the CAC for CIS signaling." (page 490)

    Configure the CAC for CIS signaling.

**Table 163**
**LD 15 - Configure ANI Table for telephones**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data |
| TYPE: | ANI | Automatic Number Identification |
| ... | ... | ... |
| ANLD | xx...xx | ANI listed directory number (for North American trunk) |
| CIS_ANI | YES (NO) | CIS ANI option.<br><br>If CIS_ANI=YES, the next sub-prompts is prompted, allowing the configuration of ANI entries for CIS ANI message composing.<br><br>If CIS_ANI=NO, the following sequence of subprompts is skipped. |
| - S_SIZE | (0)-2000 | Maximum number of ANI entries for sets that can be configured.<br><br>If S_SIZE=0, next prompts are skipped.<br><br>If <CR> is entered when REQ=NEW, it defaults to 0 and next prompts are skipped.<br><br>The S_SIZE can’t be decreased if the entries between the old size and the new one are not empty. |



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**Table 163**
**LD 15 - Configure ANI Table for telephones (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - S_ENTRY | aa | ANI entry for a set to be created or modified. |
| | Xaa | ANI entry for a set to be deleted. |
| | Xaa Xbb | ANI entries (aa-bb) for a set to be deleted.<br><br>Prompted only if S_SIZE is greater than 0.<br><br>ANI entries must be between 1 and S_SIZE.<br><br>If REQ=NEW, this prompt and its subprompts are given only once. If REQ=CHG, they are repeated until S_ENTRY is answered with <CR>. |
| - - DNLG | 0-(4)-15 | Directory Number Length. |
| - - LEC | 0-99...99 | Local Exchange Carrier. |
| | X | Delete LEC. |
| - - ADDG | 0-(8)-99...99 | Additional digits, 1 to 15 digits long. |
| - - ANDN | 0-99...99 | Used as ANI DN if DN Length = 0. |
| | X | Delete ANDN. |
| ... | ... | ... |

**Table 164**
**LD 16 - Create or modify outgoing CIS route data block.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE | RDB | Route Data Block |
| TKTP | DID | Direct Inward Dial. |
| | COT | Central Office Trunk. |
| ICOG | OGT | Outgoing Route. |
| ... | ... | ... |
| CCBA | (NO) YES | Deny/Allow collect call blocking. |
| CISR | YES (NO) | CIS Route |



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**Table 164**
**LD 16 - Create or modify outgoing CIS route data block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - ANSZ | (7)-15 | ANI information size. Response is length of LEC+ANI DN.<br><br>For analog routes, the only valid response is seven (7). |
| - ANIC | (NO) YES | ANI Composing<br>Prompted for outgoing CIS route.<br><br>If ANIC=NO, old ANI composing is used: if the originator of the call is a set, ANI message will consist of the CAC of the originator + the LEC of the outgoing route + the DN of the originator or the ANDN of the outgoing CIS route, depending on the class of service (DNAA/DNAD) of the set. If the originator of the call is an incoming route, the components of the ANI message are retrieved from default ANI entries and/or from the data block of the outgoing CIS route ("CIS Gateways Enhancements feature implementation" (page 485))<br><br>If the outgoing CIS route requires new ANI composing to be used (prompt ANIC=YES), the following is done:<br><br>If no entry is associated to the calling set (ANIE=0), then old ANI composing is used.<br><br>If an ANI entry is associated to the calling set (ANIE has a non-zero value), but the associated ANI entry is not configured, then old ANI composing is used.<br><br>If an ANI entry is associated to the calling set (ANIE has a non-zero value), and the associated ANI entry is configured, then ANI table is used for building the ANI message: none of the components of the ANI message is retrieved from the data block of the outgoing CIS route. |
| - LEC | 0-99...99 | Local Exchange Code of the route. It can be from 0 digit long up to ANSZ digit long. Prompted for outgoing CIS route. Used for building ANI message if ANIC is NO or if ANIC=YES but the ANI entry associated with the originator of the call is not configured. |
| | X | Remove LEC. |



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**Table 164**
**LD 16 - Create or modify outgoing CIS route data block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - ADDG | 0-(8)-99...99 | Additional digits used in ANI message if ANIC is NO or if ANIC=YES but the ANI entry associated with the originator of the call is not configured.<br>It is used to complete ANI DN if LEC+ANI DN consists of less than ANSZ digits.<br><br>Prompted for outgoing CIS route.<br><br>It can be from 1 digit long up to ANSZ digit long. |
| - ANDN | 0-99...99 | Default ANI DN. It can be from 0 digit long up to ANSZ digit long.<br>Prompted for outgoing CIS route.<br><br>Used for building ANI message if ANIC=NO and DN of set is not allowed to be sent (CLS DNAD).<br>Also used if ANIC=YES but the ANI entry associated with the originator of the call is not configured, and DN of set is not allowed to be sent (CLS DNAD). |
| | X | Remove ANDN. |

**Table 165**
**LD 10 - Define ANI entry for analog (500/2500) sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE: | 500 | 500 set. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system,<br>where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | ... | ... |
| DN | xxxx ccc | Directory Number, CLID entry. |
| - MARP | (NO) YES | Deny/Allow Multi Appearance Redirection Prime. |
| - CPND | aaaa | Calling Party Name Display. |
| - VMB | aaaa | Voice Mailbox. |



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**Table 165**
**LD 10 - Define ANI entry for analog (500/2500) sets. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - ANIE | (0)-N | ANI Entry: it is of (0)-N where N=S_SIZE in customer data block.<br><br>If ANIE=0, no entry is associated with the set. The old mechanism is used for building the ANI message.<br><br>If ANIE is of 1-N:<br><br>• If ANIC = YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured.<br>• If the given ANI Entry is not configured, or if ANIC = NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message. |
| ... | ... | ... |

**Table 166**
**LD 10 - Configure the CAC for CIS and MFC signaling for analog 500/2500 sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | 500 | Type of data block for analog (500/2500) set. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | ... | |
| SFLT | a..a | Secretarial Filtering. |
| CAC_CIS | 0-(3)-9 | CIS ANI Category Code. |
| CAC_MFC | (0)-10 | MFC CNI Category Code. |



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**Table 167**
**LD 11 - Configure ANI entry for Meridian 1 proprietary sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | ... | ... |
| KEY | xx AAA yyyy... ccc | xx = key number.<br><br>AAA = Key Function.<br><br>yyyy = DN or other data related to key function.<br><br>ccc = CLID entry. |
| - MARP | (NO) YES | Deny/Allow Multi Appearance Redirection Prime. |
| - CPND | aaaa | Calling Party Name Display. |
| - VMB | aaaa | Voice Mailbox. |
| - ANIE | (0)-N | ANI Entry:<br><br>It is of (0)-N where N=S_SIZE in customer data block.<br><br>If ANIE=0, no entry is associated with the DN key. The old mechanism is used for building the ANI message.<br><br>If ANIE is of 1-N:.<br><br>• If ANIC=YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured.<br>• If the given ANI Entry is not configured, or if ANIC=NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message. |



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**Table 168**
**LD 11 - Configure the CAC for CIS and MFC signaling for digital sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | ... | |
| CAC_CIS | 0-(3)-9 | CIS ANI Category Code. |
| CAC_MFC | (0)-10 | MFC CNI Category Code. |

**Table 169**
**LD 27 - Configure ANI entry for Basic Rate Interface (BRI) lines.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| | CHG | Change existing data. |
| TYPE | TSP | Administer Terminal Service Profile on Digital Subscriber Loop. |
| ... | ... | ... |
| SPID | xxxx | Service Profile ID. |
| DN | xxxx ccc | Directory Number (DN) and Calling Line Identification (CLID) entry.<br>xxxx = DN<br>ccc = CLID |
| - CT | aaaa | Call Types for DN<br>aaaa = VCE or DTA. |
| - MCAL | 1-(4)-8 | Maximum Calls allowed per DN |
| - CLIP | (YES) NO | Allow/Deny Calling Line Identification Presentation for incoming calls. |



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**Table 169**
**LD 27 - Configure ANI entry for Basic Rate Interface (BRI) lines. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - PRES | (YES) NO | Allow/Deny Presentation of CLID to far end on outgoing calls. |
| - ANIE | (0)-N | ANI entry. It is of (0)-N where N=S_SIZE in customer data block.<br><br>If ANIE=0, no entry is associated with the DN key. The old mechanism is used for building the ANI message.<br><br>If ANIE is 1-N:<br><br>• If ANIC=YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured.<br>• If the given ANI Entry is not configured, or if ANIC=NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message. |

**Table 170**
**LD 27 - Configure the CAC for CIS and MFC signaling for BRI sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | DSL | Digital Subscriber Loop. |
| DSL | <br>l s c dsl<br>c u dsl | Digital Subscriber Loop<br>For Large Systems<br>For Small Systems |
| ... | ... | |
| CAC_CIS | 0-(3)-9 | CIS ANI category code. |
| CAC_MFC | (0)-10 | MFC CNI category code. |

## CIS Gateways Enhancements feature implementation

This section contains the overlay procedures required to configure the CIS Gateways Enhancements feature.

### Feature implementation for R2MFC route

In case of gateway R2MFC/CIS it must be noticed that to be tandemed CNI must be received on R2MFC route before outgoing CIS trunk is seized. This is possible using an up-front CNI request. Up-front CNI request is defined on R2MFC route by giving a non zero value to prompt NCNI. Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route using LD 16.



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**Table 171**
**LD 15 - Configure the ANI route table and CAC conversion table.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add new data.<br>Change existing data.<br>REQ = NEW, default table R_SIZE (0) is created.<br>REQ = NEW, default table CACC(0) is created.<br>REQ = NEW, R_SIZE defaults to number of ANI entries.<br>for incoming route created during conversion. |
| TYPE: | ANI | Automatic Number Identification |
| .... | ... | .... |
| ANLD | xx...x | ANI Listed Directory Number. Only included here for clarification if this prompt appears. Only applies to North American ANI. |
| CIS_ANI | (NO) YES | Deny/Allow configuration of ANI entries for CIS ANI message. |
| ... | ... | |
| - R_ SIZE | (1)-512 | Maximum number of ANI entries that can be configured for incoming routes.<br><br>This maximum number is limited to 512 as it is the maximum number of routes. Entries must be empty to decrease R_SIZE. |
| - R_ENTRY | aa | ANI entry for an incoming route to be created or modified. |
| | Xaa | ANI entry for an incoming route to be deleted. |
| | Xaa Xbb | ANI entries for an incoming route between aa and bb to be deleted. |
| | <CR> | Exit.<br><br>R_ENTRY is repeated until <CR> is entered. ANI entries must be between 0 and (R_SIZE-1). For REQ=NEW, only default table 0 is configurable. An R_ENTRY can be deleted even if still assigned on an incoming route. |
| - - DNLG | 0-(4)-15 | DN Length<br><br>Number of digits of the Calling Line ID (CLID), Originating Line Identifier (OLI), Calling Number Identification (CNI) to use in the ANI message, starting with the less significant digits. |
| - - LEC | 0-99..99 | Local Exchange Code, 1 to 15 digits. |
| | X | Remove LEC. |



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**Table 171**
**LD 15 - Configure the ANI route table and CAC conversion table. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - - ADDG | 0-(8)-99...99 | Additional digits, 1 to 15 digits. Used to complete ANI Directory Number (ANDN) if Local Exchange Carrier (LEC)+ANDN is less than ANSZ digits defined in LD 16. |
| - - ANDN | 0-99...99 | Used as ANI DN if calling number is not available or DNLG=0. Up to 15 digits may be entered. |
| | X | Remove ANDN. |
| CACC | (NO) YES | Deny/Allow Calling Party Category Code (CAC) Conversion table option. |
| -MFC_ENT | <CR> | CAC conversion table to convert MFC CAC into CIS CAC<br><br>for use on R2MFC routes. |
| | aa | CAC conversion table entry to be created or modified. |
| | Xaa | CAC conversion table entry to be deleted. |
| | Xaa Xbb | CAC conversion table entries between aa and bb to be<br><br>deleted. |
| | <CR> | Exit MFC CAC conversion table, gives CIS_ENT prompt.<br><br>This prompt is repeated until <CR> is entered.<br><br>It is prompted if CACC=YES.<br><br>CAC conversion table entries must be between 0 and 31.<br><br>For REQ=NEW, only default table 0 is configurable.<br><br>An ENTRY can be deleted even if still assigned on an incoming route. |
| -- CAC0 | 0-(3)-9 | CIS value corresponding to MFC DGT0 |
| -- CAC1 | 0-(3)-9 | CIS value corresponding to MFC DGT1 |
| -- CAC2 | 0-(3)-9 | CIS value corresponding to MFC DGT2 |
| -- CAC3 | 0-(3)-9 | CIS value corresponding to MFC DGT3 |
| -- CAC4 | 0-(3)-9 | CIS value corresponding to MFC DGT4 |
| -- CAC5 | 0-(3)-9 | CIS value corresponding to MFC DGT5 |
| -- CAC6 | 0-(3)-9 | CIS value corresponding to MFC DGT6 |



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**Table 171**
**LD 15 - Configure the ANI route table and CAC conversion table. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| -- CAC7 | 0-(3)-9 | CIS value corresponding to MFC DGT7 |
| -- CAC8 | 0-(3)-9 | CIS value corresponding to MFC DGT8 |
| -- CAC9 | 0-(3)-9 | CIS value corresponding to MFC DGT9 |
| -- DFLT | 0-(3)-9 | CIS value used when MFC CAC has not been received, or MFC CAC received is not in the MFC CAC list of this table |

**Table 172**
**LD 16 - Configure the ANI table entry in the Route Data Block for incoming R2MFC route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| TYPE | RDB | Route Data Block. |
| ... | ... | ... |
| MFC | YES | Configure Multifrequency Compelled signaling. |
| - MFCI | x | MFC Incoming Table. |
| - MFCO | x | MFC Outgoing Table. |
| ... | ... | |
| ICOG | IAO | Incoming and Outgoing. |
| | INC | Incoming. |
| NCNI | 1 | Request CNI after the defined number of digits are received. CNI is requested during incoming MFC call after the first digit of dialed number has been received. |
| ANIE | (0)-x | ANI table Entry for Route (configured under prompt R_ENTRY, OVL 15).<br><br>x = R_SIZE-1.<br><br>R_Size is the maximum table entry number that can be configured. (R-SIZE is defined in LD 15). |
| CAC_CONV | (0)-31 | CAC conversion table number for CIS Gateway. Configured against MFC_ENT in LD 15.<br><br>Prompted only for non "outgoing only" R2MFC route. |

**Table 173**
**LD 16 - Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |



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**Table 173**
**LD 16 - Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE | RDB | Route data block |
| ... | ... | ... |
| DGTP | DTI2 | 2 Mbit Digital Trunk Interface. |
| ... | ... | |
| ICOG | INC | Incoming route. |
| ... | ... | ... |
| ANIE | (0)-x | ANI table Entry for Route (configured under prompt R_ENTRY, OVL 15).<br><br>x = R_SIZE-1.<br><br>R_Size is the maximum table entry number that can be configured. (R-SIZE is defined in OVL 15).<br><br>Default table entry is number 0. |
| CISR | YES | CIS Route |
| ... | ... | ... |
| - CAC_CONV | (0)-31 | CAC conversion table number for CIS-to-R2MFC gateway, configured against CIS_ENT in CDB.<br><br>Prompted only for incoming CIS DTI2 route. |
| CAC_CIS | 0-(3)-9 | CIS ANI Category Code |

**Table 174**
**LD 16 - Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS).**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Add new data. |
| TYPE | RDB | Route Data Block. |
| ... | ... | |
| ISDN | YES | Enable ISDN |
| ... | ... | ... |
| ICOG | IAO | Incoming and outgoing. |
| | ICT | Incoming. |
| ... | ... | |



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**Table 174**
**LD 16 - Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS). (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ANIE | (0)-x | ANI table Entry for Route (configured under prompt R_ENTRY, LD 15).<br><br>x= R_SIZE-1.<br><br>R_Size is the maximum table entry number that can be configured. |
| ... | ... | ... |
| CAC_CIS | 0-(3)-9 | CIS ANI Category Code |

**Table 175**
**LD 88 - Configure the CAC for CIS signaling.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | AUB | Authcode Data Block |
| ... | ... | ... |
| CLAS | (0)-115 | Classcode value assigned to authcode (NAUT). |
| ... | ... | ... |
| NCOS | (0)-99 | Network Class of Service group number. |
| CAC_CIS | 0-(3)-9 | CIS ANI category code. |

## Feature operation

No specific operating procedures are required to use this feature.



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# CIS ANI Reception

## Contents

This section contains information on the following topics:

“Feature description” (page 491)

“Operating parameters” (page 498)

“Feature interactions” (page 498)

“Feature packaging” (page 498)

“Feature implementation” (page 499)

“Feature operation” (page 503)

## Feature description

The Commonwealth of Independent States (CIS) Automatic Number Identification (ANI) Reception feature allows the system to receive the Automatic Number Information from the CIS Central Office (CO) calling party on incoming local calls. The CIS Public Telephone Network does not provide ANI information on the incoming toll calls.

The CIS ANI Reception feature works on the CIS Digital Trunk Interface (DTI) feature. It requires CIS DTI2 card, vintage NTCG01AC (Large Systems) or NTCG02AC (Small Systems).

The ANI digits received from the CIS CO are used by the system as the R2MFC Calling Number Identification (CNI) digits. A list of uses for the ANI digits is found on "page 1104" (page 492) . The ANI digits are also displayed on the display of the proprietary set or on the attendant console display.



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ANI Reception is performed in one of two ways:

- ANI request is issued automatically by the incoming local CIS DTI2 trunk during the call setup.
- ANI request is issued by the incoming local CIS DTI2 trunk upon a manually solicited request from the proprietary set with display or from the attendant console. The request to receive the ANI information is invoked by pressing a calling number display key on the attendant console source key or on the proprietary set by pressing the display key followed by the trace key. Press trace key for active call for Proprietary sets and attendant consoles. The trace key can be used instead of the source key for Malicious Call Trace (MCT) for sets and consoles. An ANI request can also be made by 500/2500 sets by entering the Flexible Feature Code (FFC) assigned for MTRC in LD 57.

## Automatic ANI request

The automatic ANI request is sent by the CDTI2 card to the CIS CO before the incoming local call is answered. If the incoming trunk operates in the decadic, or Dial Pulse (DP) mode, the ANI request is sent to the CIS CO after all dialed digits have been collected from the CIS CO (see Figure 7 "Automatic ANI request for incoming local call (decadic dial pulse mode)" (page 494)). If the trunk operates in the MF Shuttle mode, the ANI request is sent after the end of the MF Shuttle dialing (see Figure 8 "Automatic ANI request for the MF shuttle call" (page 495) on Figure 8 "Automatic ANI request for the MF shuttle call" (page 495)). The ANI digits are uploaded to the system.

The Automatic ANI request option may be used only in conjunction with the DN Size Feature. The DN Size Flexible (using the SSL tables) or Fixed should be defined for the incoming CIS DTI2 DID route before setting the automatic ANI option to "Yes".

The ANI digits are used in the following way:

- They are tandemed as the Calling Line Identification (CLID) Originating Line Identifier on DPNSS (OLI) to the (ISDN) Integrated Services Digital Network/Digital Private Network Signalling System (DPNSS) gateways, Basic Rate Interface (BRI) gateways
- They are mapped into the Multifrequency Compelled Signaling complying with CCITT R2 specification (R2MFC) Calling Number Identification R2MFC (CNI)
- They are displayed on the display of the proprietary sets and on the attendant consoles



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- They are stored in the Call Detail Recorder
- They are sent through the Meridian Link and the ICCM link using the fields dedicated for the R2MFC CNI digits

  The translation of the dialed number which is received from the CIS CO is postponed until the CDTI2 card informs the system that the ANI digits have been received. If the ANI reception report does not arrive from the card, the call is treated after the ANI timer expires. The treatment for the call that failed to provide the automatic ANI is configured on the route data block level.

### Solicited ANI request

The solicited ANI request is issued upon a manual request from the Meridian 1 proprietary set using the display key or from the attendant console using the trace key. The received ANI information is displayed on the display of the proprietary set or attendant console and it is also used for the CDR, call trace. If the request is performed using the Trace key, the MCT record is printed also on the MCT TTY. The system sends the ANI request message to the CDTI2 card when a user presses the DN key after the set has entered display mode using the Digit Display key or after the Trace key was pressed. The CDTI2 card performs the ANI interaction and uploads the received ANI to the system (see Figure 9 "Manually solicited ANI request" (page 496)).

The ANI is stored in the unprotected trunk data block. The solicited ANI request may be performed an unlimited number of times during a single call. Each time, the new ANI replaces the previously received ANI (if there is one).

When solicited ANI request is initiated using the Trace key, the Malicious Call Trace feature functionality remains unchanged, the ANI request is sent in addition to the normal MCT activities. The ANI information, when received from the card, is also printed on the MCT TTY as MCT ticket.



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**Figure 7**
**Automatic ANI request for incoming local call (decadic dial pulse mode)**

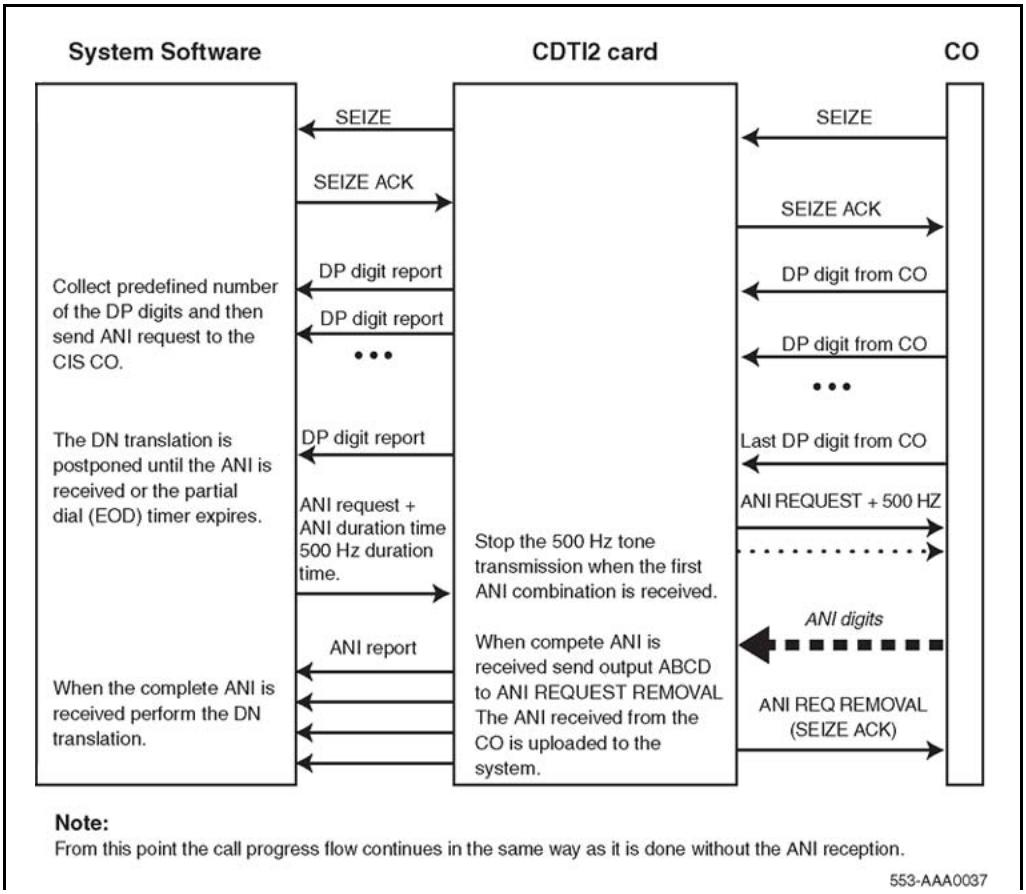




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**Figure 8**
**Automatic ANI request for the MF shuttle call**

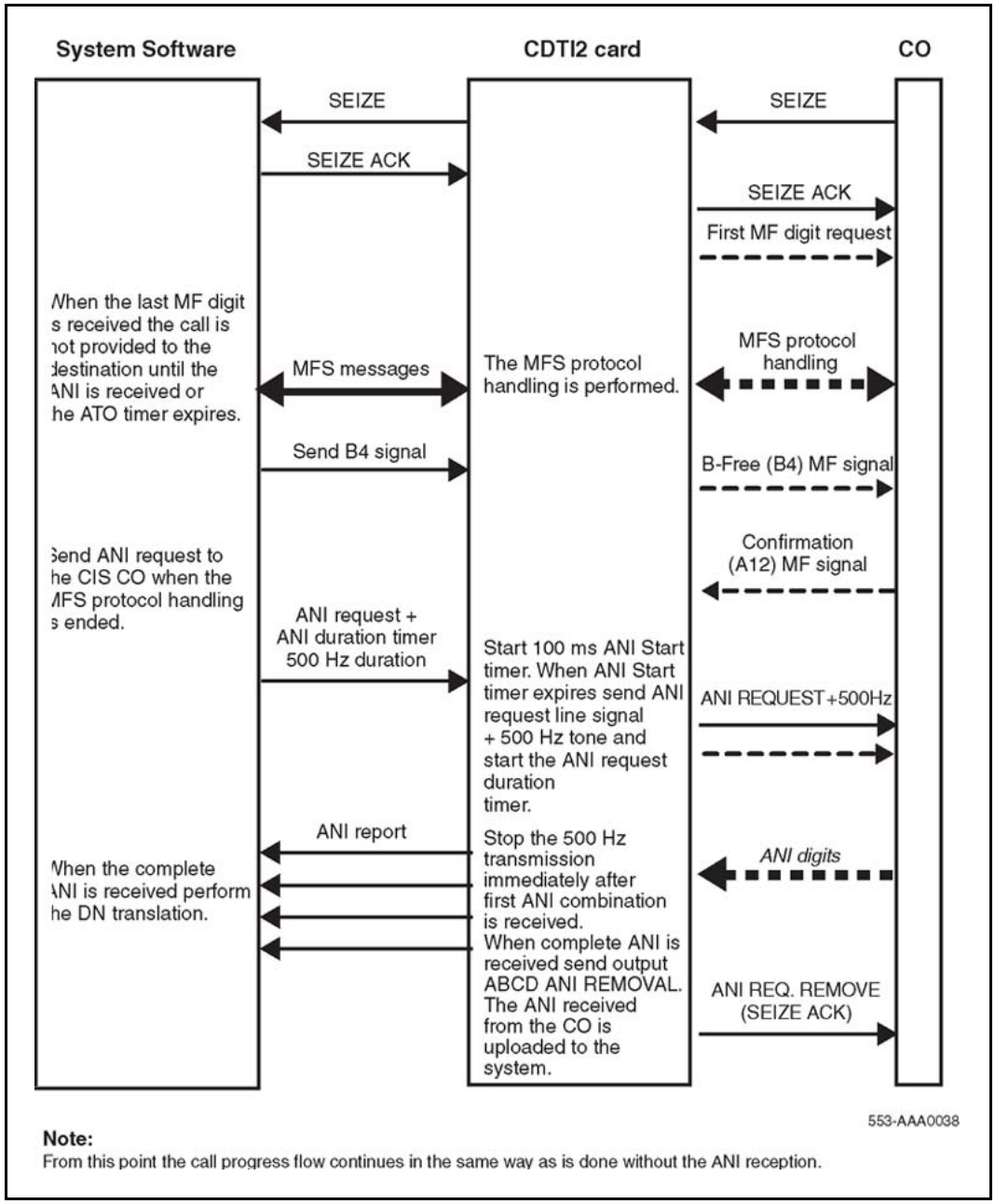




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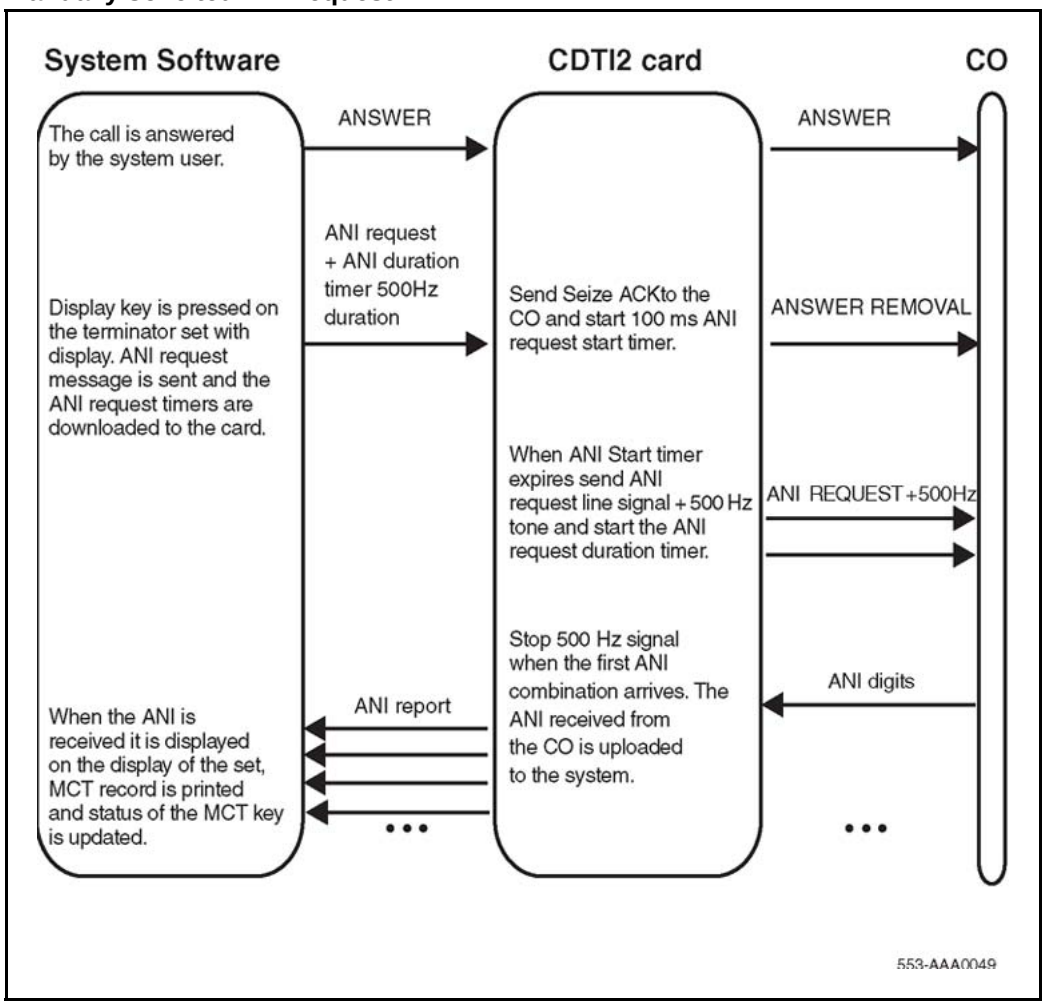
**Figure 9**
**Manually solicited ANI request**




## ANI Gateways

The ANI digits which are received from the CIS CO party as a response to the automatic ANI request are propagated to the system terminating party if it is capable of receiving the CNI digits.

The ANI digits are propagated to the following terminating types:

- R2MFC trunks - the ANI to R2MFC CNI mapping is performed in the following way: all the ANI digits except for the ANI Calling Party Category Code (CAC) are used for the CNI composition, the ANI CAC is converted to the Multifrequency Compelled (MFC) CNI CAC according to the CAC conversion tables.
- ISDN trunks - Meridian Customer Defined Integrated Services Digital Network (MCDN), EuroISDN: European Integrated Services Digital



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Network (EURO), Q Signaling (QSIG), DPNSS - the ANI to CLID/OLI mapping is based on the R2MFC CNI to CLID mapping.

- CIS trunks - the ANI to ANI mapping is implemented in the framework of the CIS ANI Digits Manipulation and Gateways Enhancements feature described in this document. The ANI information that is received from the incoming CIS DTI2 trunks is used by the CIS Gateways Enhancements feature to compose the ANI information to be downloaded to the outgoing CIS trunks.

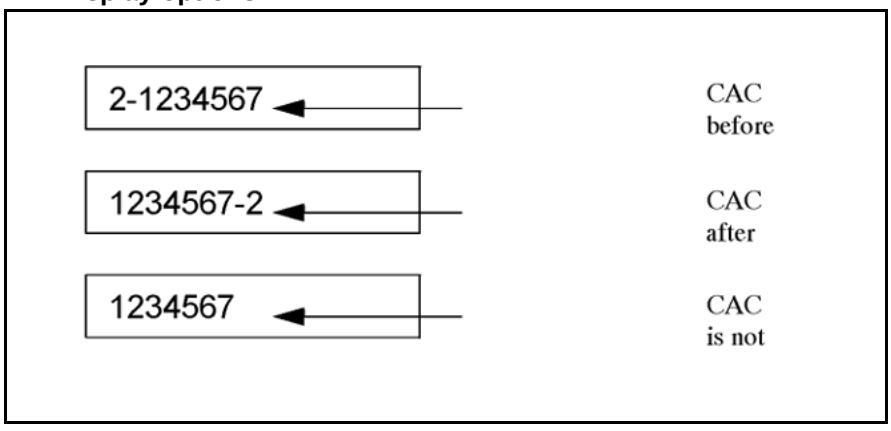
## ANI Digits Display

The ANI digits are displayed on the display of the proprietary set or of the attendant console. The ANI digits are displayed starting from the left side of the display. The CAC display option is configured on the route data block level and it may be set to one of the following options (see Figure 10 "ANI Display options" (page 497)):

- display CAC before the ANI number
- display CAC after the ANI number
- do not display CAC

The CAC digit is separated from the ANI number by the minus sign. When displaying ANI, there are several options available for CAC display. If ANI request is repeated several times during a single call, each time new ANI digits overwrite old ANI digits on the display. If the DN key that requested the ANI information is placed on hold when the ANI digits arrive from the CDTI2 card, the ANI digits are not displayed. In this case, when the call is returned from hold, the ANI digits are displayed.

**Figure 10**
**ANI Display options**



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### ANI Digits in CDR

The ANI digits are placed in the CDR at the place intended for the R2MFC CNI digits. The CAC may be stored in the CDR together with the ANI digits. The presentation of the CAC in the CDR is configured at the route data block level as shown in the dash list below. The CAC may be either:

- placed before the ANI digits
- placed after the ANI digits
- not placed in the CDR

The CDR records containing ANI are generated only if the CDR options are configured in the customer data block (LD 15) as described in the CDR technical document.

The feature does not change the CDR output formats. The ANI digits are stored in the CDR in the same way as the R2MFC CNI digits.

## Operating parameters

This feature requires the CIS DTI2 card NTCG01 vintage AC for Large Systems, and the CIS DTI2 card NTCG02 vintage AC for Small Systems.

## Feature interactions

### CIS Digital Trunk Interface and CIS Multifrequency Shuttle (MFS)

The feature is based on the CIS DTI2 interface features. The feature enhances the capabilities of CIS DTI2 but does not change previous functionality.

### Malicous Call Trace (MCT)

The feature allows MCT to receive ANI digits on incoming local CIS DTI2 calls. There is no MCT feature that can be activated from the system on the CIS CO. When the ANI digits are received from the CO, they are printed on the MCT TTY and displayed on the display of the set or console that activated the MCT feature.

## Feature packaging

No new package is introduced for this feature. The following packages are required:

- 2 Mbit Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131
- Commonwealth of Independent States Trunks (CIST) package 221
- Optional - Malicous Call Trace (MCT) package 107



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## Feature implementation

This section contains the overlay procedures required to configure the ANI Reception feature.

If Malicious Call Trace is used, turn to the Software Features Guide for detailed MCT implementation instructions.

- **LD 73** - The response MFA - Multifrequency Advanced has been added to the CISFW prompt to support the ANI Reception and the Firmware Dial Tone Detection features on the NTCK01AC and NTCK02AC cards. When operating in the CIS mode, the NTCG01AA/02AA cards should be configured as DP, and the NTCG01AB/02AB cards should be configured as MFS.
- **LD 14** - The CNA may be defined for the incoming DID DTI2 trunk if it is configured on the CDTI2 loop with the CIS Firmware version set to MultiFrequency Advanced in LD 73.
- **LD 16** - Set the prompt CISR to YES to allow access to the CIS Route prompts.

The following options are added for the CIS DTI2 routes:

- The Automatic ANI (AANI) option determines if the automatic ANI request should be sent to the CIS CO party at the end of dialing on incoming local calls. If the ANI information is required for gateway calls this option should be set to YES.
- The ANI Failure Treatment (ANFT) option defines the treatment for incoming calls which failed to provide ANI (see Note). The possible options are:
  - to provide the call to the required destination using the alternative ANI to indicate the ANI Reception failure
  - to drop the call
  - to transfer the call to the predefined intercept DN using the Alternative ANI to indicate the ANI Reception failure
- The Intercept DN (ITDN) prompt defines the intercept DN if the intercept treatment option is selected.

  The Alternative ANI is composed from the access code of the incoming CIS DTI2 DID route and the number of the incoming trunk within the route.
- The ANI TimeOut (ATO) timer which was used only for Outgoing CIS trunks is now also used for incoming CIS trunks to define timeout for the automatic ANI digits reception. The termination of the incoming call is delayed until either the ANI digits are received from the CDTI2 card, the ANI failure report is received from the CDTI2 card or the ATO



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expires. The ATO timer should be set at least twice as large as the following ARD timer.

- ANI Request Duration (ARD) timer is added to the route timers, the timer defines how long the CDTI2 card waits for the ANI information after sending the ANI REQUEST line signal. When the ARD timer expires for the first time the CDTI2 card performs an additional attempt to request the ANI information from the CIS CO. If the timer expires after the second attempt the ANI reception failure is reported to the system. The ARD timer is downloaded to the CDTI2 firmware. The timer should not exceed half of the ATO timer.
- CAC Display (CACD) option defines how the Category Access Code (CAC) is displayed on the proprietary set or attendant console. The possible options are:
  - to display CAC before the ANI
  - to display CAC after the ANI or
  - not to display CAC
- CAC in CDR (CACC) option defines how the Category Access Code (CAC) is stored in the CDR. The possible options are to:
  - store CAC before the ANI
  - store CAC after the ANI
  - not store CAC.

## Task summary list

The following is a summary of the tasks in this section:

1. Table 176 "LD 73 - Define Multifrequency Advanced (MFA) as firmware type definition." (page 500)

   Define Multifrequency Advanced (MFA) as firmware type definition.

2. Table 177 "LD 14 - Add Calling Number Identification Allowed (CNA) as a class of service for incoming Direct Inward Dial (DID) CIS DTI2 trunks." (page 501)

   Add Calling Number Identification Allowed (CNA) as a class of service for incoming Direct Inward Dial (DID) CIS DTI2 trunks.

3. Table 178 "LD 16 - Define the CIS Route." (page 502)

   Define the CIS Route.

**Table 176**
**LD 73 - Define Multifrequency Advanced (MFA) as firmware type definition.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |



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**Table 176**
**LD 73 - Define Multifrequency Advanced (MFA) as firmware type definition. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE | DTI2 | Digital Trunk Interface loops. |
| FEAT | LPTI | Loop Timers and additional definitions. |
| CDTI2 | YES | CDTI2/CSDTI2 card |
| ... | ... | |
| CISFW | MFA | Multifrequency Shuttle protocol handling + ANI Reception + Firmware Dial Tone Detection capabilities are supported by the card. |
| - MFSL | (0)-3 | The MFS signals transmission level. The prompt appears when CISFW is set to MFS or MFA and the CISMFS package is equipped.<br><br>The transmission level may be set to the following values:<br><br>0 = -7.3 dB<br>1 = -5.0 dB<br>2 = -3.5 dB<br>3 = 0 dB |
| - 500L | (0)-1 | ANI request tone (500 Hz) transmission level. The prompt appears when CISFW is set to MFA.<br><br>The transmission level may be set to the following values:<br><br>0 = -7.3 dB<br>1 = -3.5 dB |

**Table 177**
**LD 14 - Add Calling Number Identification Allowed (CNA) as a class of service for incoming Direct Inward Dial (DID) CIS DTI2 trunks.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | DID | Direct Inward Dial trunks. |
| ... | ... | ... |
| CLS | CNA | Class of Service.<br><br>Allow Calling Number Identification for incoming CIS DTI2 DID trunks. |



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**Table 178**
**LD 16 - Define the CIS Route.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | RDB | Route Data Block. |
| TKTP | DID | Direct Inward Dial. |
| ... | ... | ... |
| DTRK | YES | Digital Trunk Route |
| - DGTP | DTI2 | Digital Trunk Type |
| ... | ... | ... |
| ICOG | ICT | Incoming Trunk. |
| ... | ... | ... |
| CNTL | YES | Allows change to controls or timers. |
| TIMR | ARD<br><br>512-(1024)-2048 | ANI Request Duration timer, defines duration of the ANI request signal. The timer is stored as increments of the 256 ms. |
| TIMR | ATO<br><br>2048-(2560)-5120 | ANI Timeout timer. Defines how long the system waits for the ANI information from the CIS CO. If timer expires before the ANI is uploaded from the CDTI2 card, the system treats the call as it is defined in the ANI Failure Treatment option.<br><br>The ATO should be at least twice as large as the ARD. |
| CISR | YES | CIS Route |
| - CACD | | The option defines how the CAC is displayed on the display of the set or console. The option also controls presentation of the CAC in the messages to the auxiliary processors. The options are: |
| | (NO)<br>BEF<br>AFT | NO = do not display CAC.<br>BEF= display CAC before ANI.<br>AFT= display CAC after ANI. |
| - CACC | | Defines how CAC is stored in CDR. |
| | (NO) | NO = do not store CAC |
| | BEF | BEF = store CAC before ANI |
| | AFT | AFT = store CAC after ANI |
| - AANI | | The option defines if the Automatic ANI request should be sent to the CIS CO when the incoming calls are originated from the CIS CO to the trunks within this route. |



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**Table 178**
**LD 16 - Define the CIS Route. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | (NO) | NO = do not send automatic request. |
| | YES | YES = send automatic request. |
| - ANFT | | The prompt defines the ANI Failure Treatment option. It is prompted only if the AANI is set to YES. The possible options are: |
| | (CONT) | Provide call to the required destination. |
| | FAIL | Drop call. |
| | ITDN | Transfer call to intercept DN. |
| - - ITDN | <DN> | Intercept DN (up to 8 digits) defines the DN to transfer the incoming calls which failed to provide ANI. The prompt appears if the ANFT option is set to ITDN. |

## Feature operation

Manual ANI request is made by pressing a calling number display key on the attendant console or on the proprietary set followed by pressing the SCR key or by pressing the TRC key on the proprietary set or attendant console.



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# CIS Toll Dial Tone Detection

## Contents

This section contains information on the following topics:

“Feature description” (page 505)

“Operating parameters” (page 508)

“Feature interactions” (page 508)

“Feature packaging” (page 509)

“Feature implementation” (page 509)

“Feature operation” (page 510)

## Feature description

The Commonwealth of Independent states (CIS) Toll Dial Tone Detection feature allows the system to detect a dial tone from a CIS Toll Central Office (CO) on outgoing toll calls. When received, the tone indicates that the CIS CO is prepared to collect dial pulse (decadic) digits from system for outgoing toll calls. The feature is implemented only for CIS DTI2 trunks.

The CIS DTD feature introduces CIS toll out-pulsing criteria, which are terms that define conditions that need to be satisfied to allow the system to start the out-pulsing of the decadic digits on the outgoing Toll CIS DTI2 calls (see Figure 11 "CIS network block diagram" (page 506)).

The criteria is composed as a combination of two events: dial tone detection and ANI interaction. It may include only dial tone detection, only ANI Interaction, dial tone or ANI, dial tone and ANI. The criteria is defined at the route data block level. The detection is performed by the CIS DTI2 cards (NTCG01AC and NTCG02 AC) and when the criteria is satisfied the system receives a report from the card. The system postpones the



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out-pulsing of the digits until the report. If the report does not arrive before the ATO timer expiration, defined in LD 16, the out-pulsing may continue, or the call may be disconnected and busy tone provided to customer.

Outgoing toll CIS DTI2 calls can be made using the indirect or direct connection method (see Figure 12 "Indirect outgoing toll call with dial tone detection" (page 507) and Figure 13 "Direct toll call with dial tone detection" (page 508)).

**Figure 11**
**CIS network block diagram**

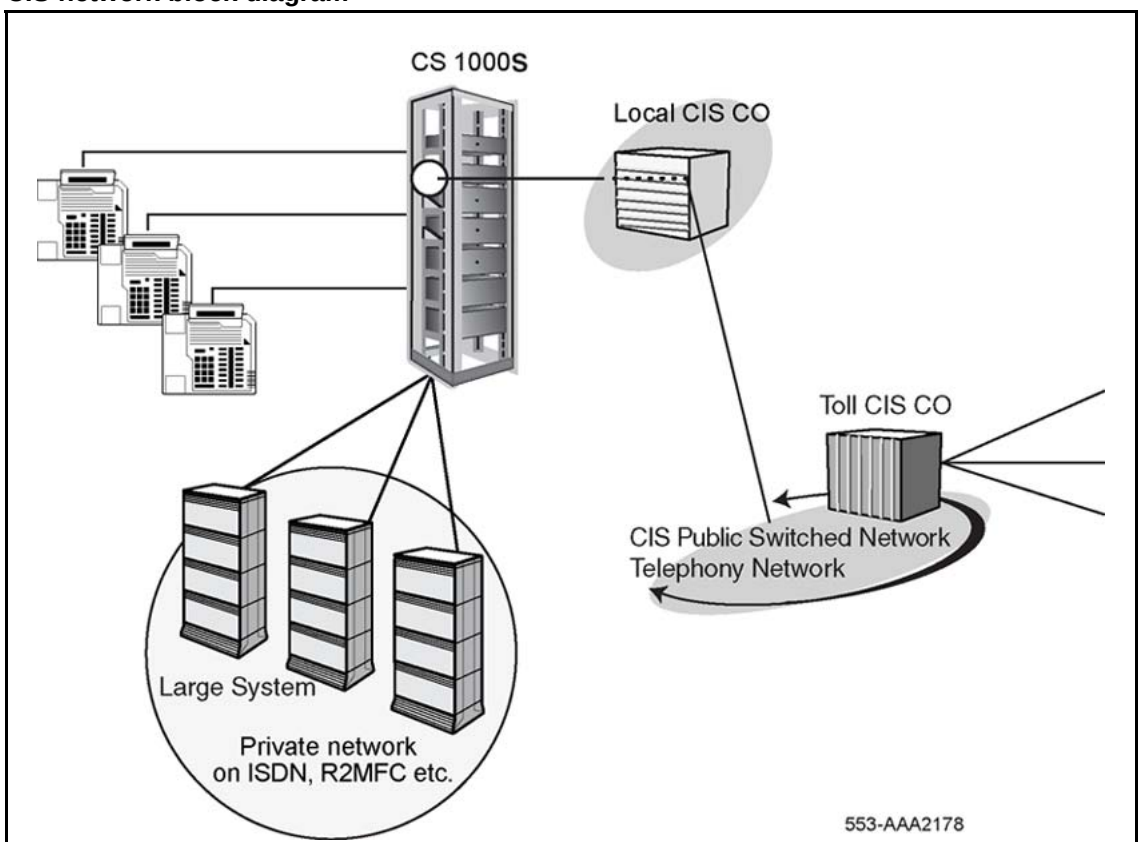




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**Figure 12**
**Indirect outgoing toll call with dial tone detection**

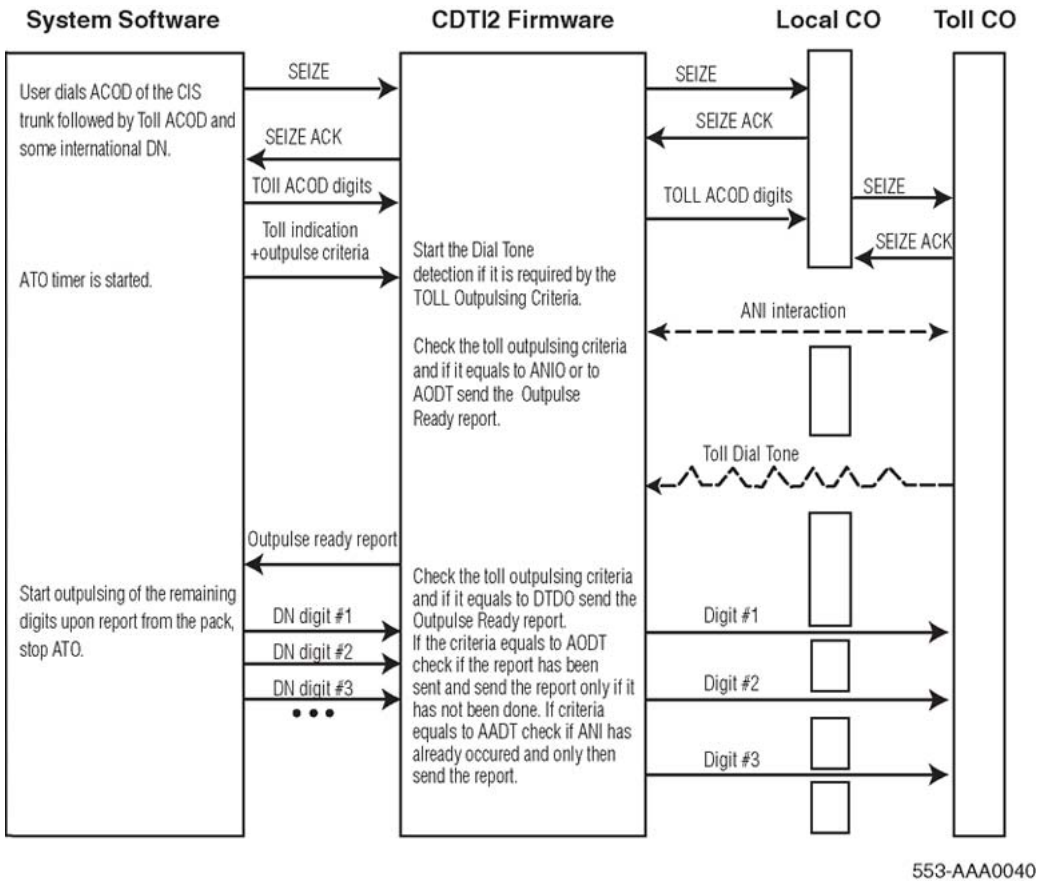




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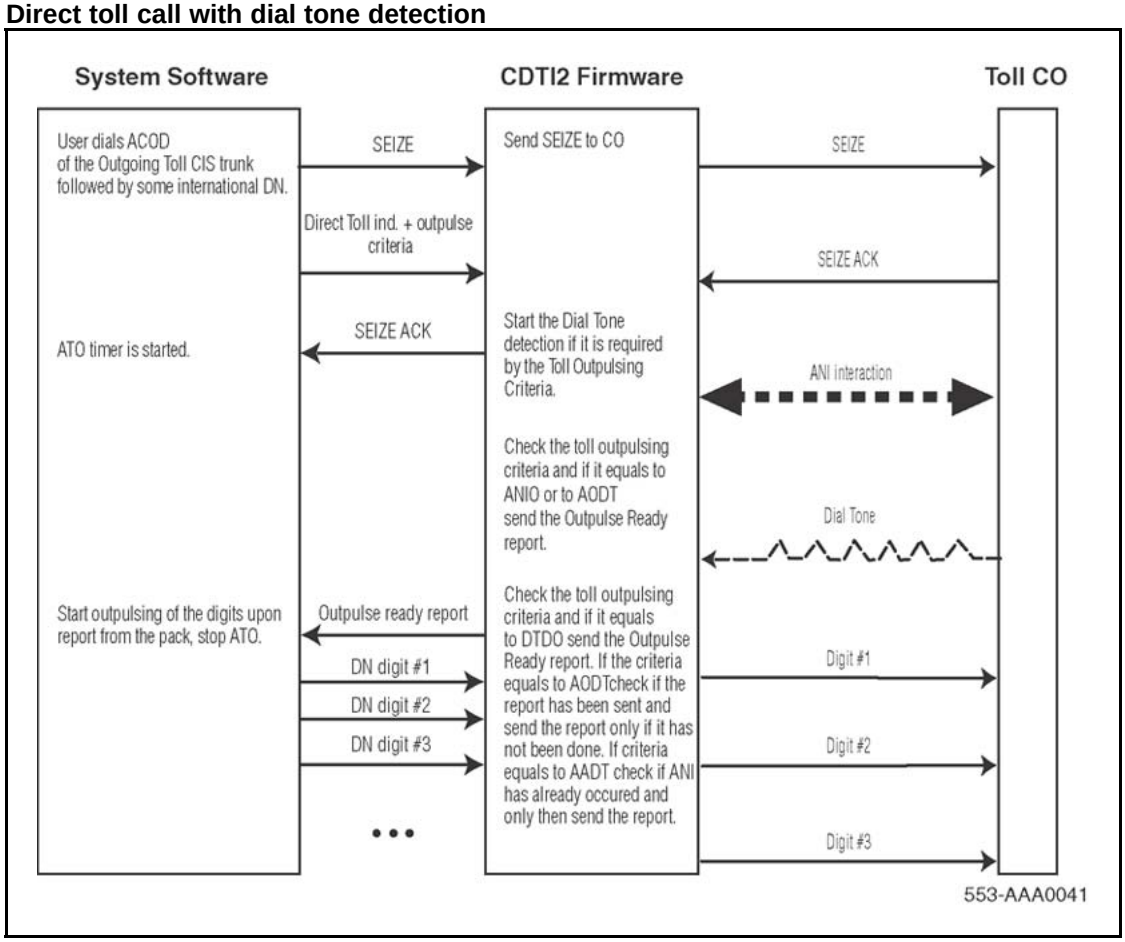
**Figure 13**
**Direct toll call with dial tone detection**




## Operating parameters

This feature requires the CIS DTI2 card NTCG01AC for Large Systems. Card NTCG02AC is used in Small Systems. These CIS DTI2 cards have increased functionality that allows detection of the CIS toll dial tone.

## Feature interactions

### CIS 2 Mbit Digital Trunk Interface (CIS DTI2)

CIS DTD feature improves the reliability of outgoing CIS DTI2 toll calls by adding the ability to use the dial tone provided by the CIS CO as criteria to start out-pulsing the decadic digits to the toll CIS CO.



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## Feature packaging

No new package is introduced for this feature. The following packages are required:

- 2 Mbit Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131
- Commonwealth of Independent States Trunks (CIST) package 221

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 179 "LD 73 - Add Multifrequency Advanced (MFA) as a CIS firmware type." (page 509)

   Add Multifrequency Advanced (MFA) as a CIS firmware type.

2. Table 180 "LD 16 - Specify CIS route information." (page 509)

   Specify CIS route information.

**Table 179**
**LD 73 - Add Multifrequency Advanced (MFA) as a CIS firmware type.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change existing data. |
| TYPE | DTI2 | Digital Trunk Interface loops. |
| FEAT | LPTI | Loop timers and additional definitions. |
| CDTI2 | YES | CDTI2/CSDTI2 card |
| ... | ... | |
| CISFW | MFA | Multifrequency Shuttle protocol handling + ANI Reception + firmware dial tone detection capabilities are supported. MFA capabilities are supported by CIS CDTI2 card (NTCG01AC for Large Systems, or NTCG02AC for Small Systems). |

**Table 180**
**LD 16 - Specify CIS route information.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data.<br>Change existing data. |
| TYPE | RDB | Route Data Block. |
| TKTP | COT | Central Office Trunk |
| ... | ... | ... |
| ICOG | OGT | Outgoing only trunk. |



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**Table 180**
**LD 16 - Specify CIS route information. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | ... | ... |
| CNTL | (NO) YES | Deny/Allow changes to controls or timers. |
| - TIMR | ATO 128-(4992)-65408 | ANI timeout timer in milliseconds. For CIS outgoing trunk routes this defines the time delay performed after the out-pulsing of the toll access code. During this delay further out-pulsing is temporarily halted until the special message from the card firmware confirms the satisfaction of the CIS Toll out-pulsing criteria. If the timer expires before satisfaction the behavior of the system depends on the COAT prompt. If COAT is set to YES the out-pulsing continues on timeout. If COAT is set to NO the call is dropped. |
| ... | ... | ... |
| CISR | YES | CIS Route |
| - DTOC | (NO) YES | Deny/Allow Direct Toll Connection. |
| - CTOC | (DTDO)<br>AADT<br>ANIO<br>AODT | CIS Toll Outpulsing Criteria.<br>DTD Only.<br>ANI And DTD.<br>ANI Only.<br>ANI Or DTD. |
| - COAT | (NO) YES | NO = Drop Call when ATO timer expires.<br><br>YES = Continue Outpulsing when ATO timer expires. |

## Feature operation

No specific operating procedures are required to use this feature.



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# CLASS: Calling Number and Name Delivery

## Contents

This section contains information on the following topics:

“Feature description” (page 511)

“Operating parameters” (page 531)

“Feature interactions” (page 532)

“Feature packaging” (page 536)

“Feature implementation” (page 537)

“Feature operation” (page 540)

## Feature description

The Custom Local Area Signaling Service (CLASS) Calling Number and Name Delivery (CND) feature enables the system to send the calling number and/or calling name to a CLASS set when a call is presented to it, per the Bellcore CLASS CND standard. Once the system delivers the CLASS CND information, it is completely up to the CLASS set to determine how the information is to be displayed. The CLASS set can even choose to ignore certain information by not displaying it.

A CLASS set is, by definition, any non-proprietary analog set with an integrated display and a Frequency Shift Key (FSK) modem receiver, or with a FSK modem receiver built-in display attachment. The CLASS sets are configured on the system as analog (500/2500 type) sets using LD 10, and are supported by the existing 500/2500 type peripheral line cards.



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The calling number and/or calling name data is delivered from the system to the CLASS sets using FSK signaling by a CLASS modem (CMOD) unit. The CMOD units are configured using LD 13. They are supported by an Extended CLASS Modem (XCMC) IPE line card, the NT5D60AA.

Up to 255 CMOD units may be configured on a system that is equipped with the CLASS CND feature. Once configured, the CMODs are shared throughout a multi-customer system. When a call is presented to a CLASS set, an available CMOD is automatically allocated.

Upon reaching the CND delivery interval, the appropriate CND information is delivered to the CLASS set. The CND delivery interval is the first silent interval, after ringing has been applied for a new call, that is greater than two seconds. The allocated CMOD unit is released when ringing resumes on the CLASS set after the CND delivery interval, or when the call is disconnected, answered, or redirected. If the call is disconnected, answered, or redirected before the CND delivery interval has been reached, then no CND information is delivered. If the call is disconnected, answered, or redirected while the CND information is being delivered, the CND delivery is immediately terminated. Figure 14 "System allocation when a CLASS set is idle" (page 512) to Figure 17 "System resource allocation after the CND delivery interval" (page 514) depict a typical call processing and system resource allocation scenario for a new call being presented on a CLASS set.

**Figure 14**
**System allocation when a CLASS set is idle**

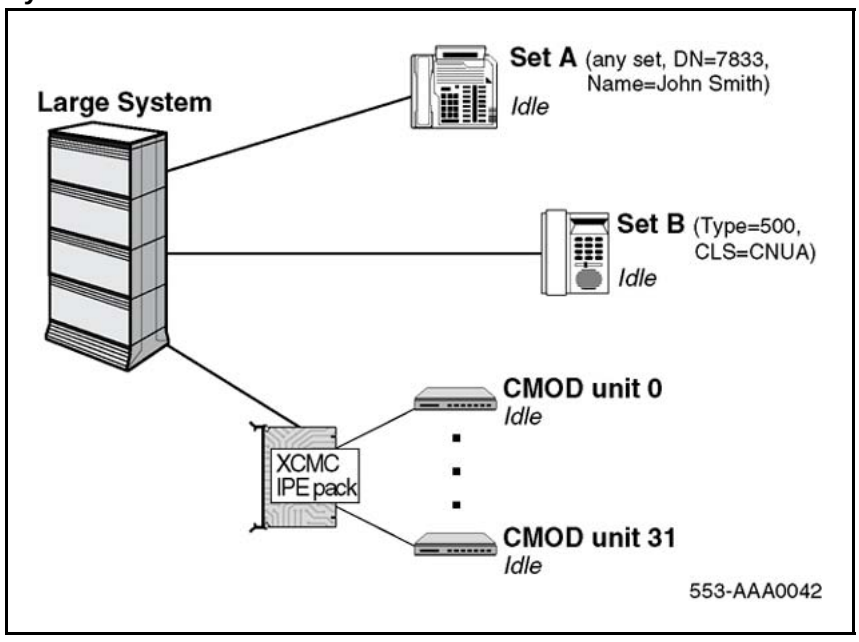




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**Figure 15**
**System resource allocation when a new call begins to ring on the CLASS set**

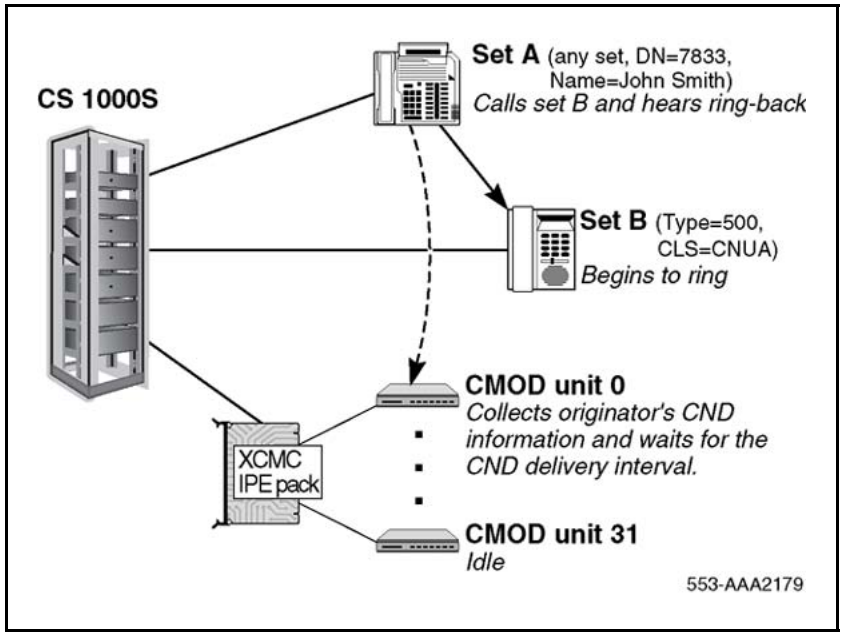


**Figure 16**
**System resource allocation during the CND delivery interval**

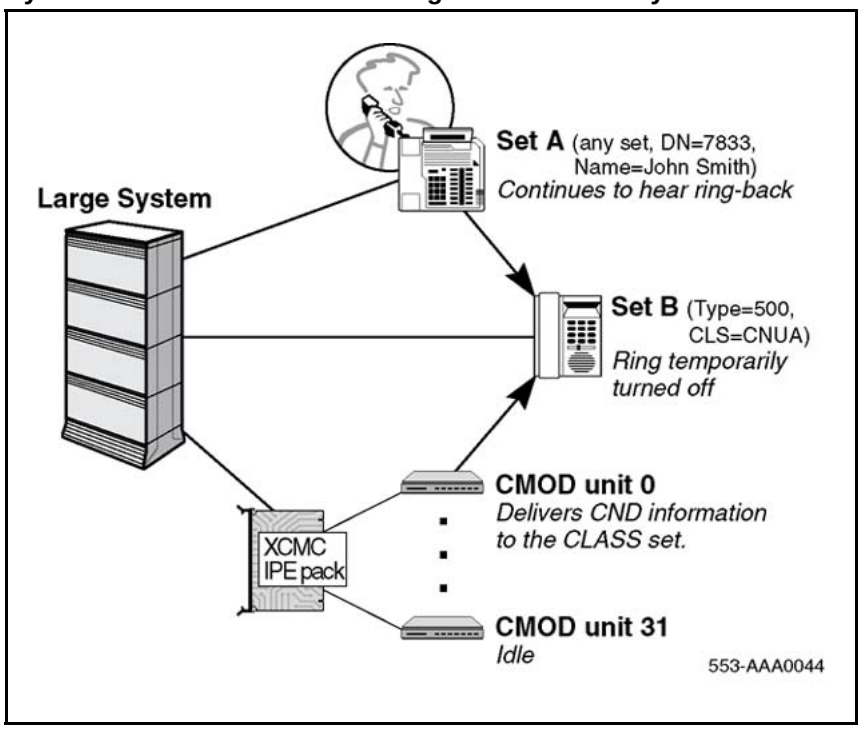




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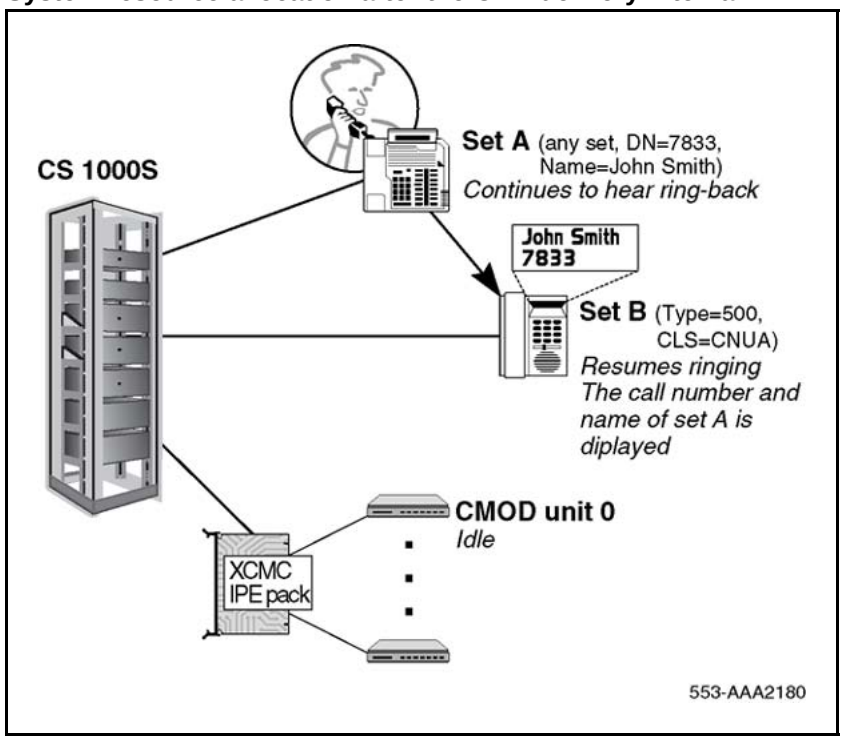
**Figure 17**
**System resource allocation after the CND delivery interval**




## Configure CND Class of Service on CLASS sets

In LD 10, the system administrator may configure a CLASS set to deliver both Calling Number Delivery, Calling Name Delivery, or both.

To activate only Calling Number Delivery, the station set is to be configured with one of the following class of service:

- CLASS Calling Number Single Data Message Format Allow (CNUS) or
- CLASS Calling Number Multiple Data Message Format Allow (CNUA)

Subsequently, whenever a call is presented to that set, the software will deliver the date and time stamp information (see the “Date and time stamp information” (page 515) section which follows below) and the calling number information (see the “Calling number information” (page 515) section which follows on “Calling number information” (page 515)) per the Bellcore CLASS CND delivery standard.

To activate only Calling Name Delivery, the station set is to be configured with the Calling Name Multiple Data Message Format Allow (CNAA) class of service. Subsequently, whenever a call is presented to that set, the system software will deliver the date and time stamp information and



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the calling name information (see the “Calling name information” (page 517) section on “Calling name information” (page 517)) per the Bellcore CLASS CND delivery standard.

To activate both Calling Number Delivery and Calling Name Delivery, the station set is to be configured with both the CLASS Calling Number Multiple Data Message Format Allow (CNUA) and the CLASS Calling Name Multiple Data Message Format Allow (CNAA) class of service. Subsequently, whenever a call is presented to that set, the system software will deliver the date and time stamp information, the calling number information, and the calling name information, per the Bellcore CLASS CND delivery standard.

### Date and time stamp information

The date and time stamp information delivered to a CLASS set is in the format ***mm dd hh mm***, where ***mm*** is a two-digit number for the month, ***dd*** is a two-digit number for the day of the month, ***hh*** is a two-digit number for the military hour of the day, and ***mm*** is a two-digit number for the minute of the hour. It is up to the CLASS set to display the date and time stamp information.

### Calling number information

When configuring the xcmc card for the CLID display you must set DRNG to NO. Due to distinctive ringing it will not display the CLID number on the set.

For a non-ISDN trunk-to-CLASS set call, the calling number delivered to the CLASS set is the incoming In-Band ANI, or if no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number. The calling number unknown indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "O" that is sent in place of the calling number.

For an ISDN trunk-to-CLASS set call, the calling number delivered to the CLASS set is the CLID received from the incoming ISDN trunk (if the CLID is longer than 10 digits, only the first 10 is delivered). If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered instead of the calling number, or, if no CLID is passed on by the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number. The calling number privacy indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "P" that is sent in place of the calling number.



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For a station (set)-to-CLASS set call, the calling number delivered to the CLASS set is one of the following:

- If the originating set has Display Digit Denied active (CLS = DDGD in LD 10 or 11), then the calling number privacy indicator is delivered in place of the calling number.
- If the CLID entry of the originating DN specifies that it is to be identified by its internal DN (CLASS_FMT = DN in LD 15), then the originating DN is delivered.
- If the CLID entry of the originating DN specifies that it is to be identified by its local number (CLASS_FMT = LCL in LD 15), then the local public number associated with the originating DN is delivered, (if the CLID is longer than 10 digits, only the first 10 is delivered). The local public number is composed by the ISDN CLID Enhancements feature, which forms the calling number by concatenating the customer defined home local number (HLCL in LD 15) and the originating DN.
- If the CLID entry of the originating DN specifies that it is to be identified by its national number (CLASS_FMT = NTN in LD 15), then the national public number associated with the originating DN is delivered (if the number is longer than 10 digits, only the first 10 is delivered). The national public number is composed by the ISDN CLID Enhancements feature, which forms the calling number by concatenating the customer defined home national number (entered using prompt HNTN and HLCL in LD 15) and the originating DN.
- If the originating set is assigned with an undefined CLID entry, then the originating DN is delivered.

For a station (attendant)-to-CLASS set call, the calling number delivered to the CLASS set is one of the following:

- If CLID entry 0 specifies that it is to be identified by its internal DN (CLASS_FMT = DN in LD 15), then the customer's attendant DN (the ATDN in LD 15) is delivered.
- If CLID entry 0 specifies that it is to be identified by its local number (CLASS_FMT = LCL in LD 15), then the local public number associated with the customer's Listed Directory Number 0 (the LDN0 in LD 15) is delivered (if the number is longer than 10 digits, only the first 10 is delivered).
- If CLID entry 0 specifies that it is to be identified by its national number (CLASS_FMT = NTN in LD 15), then the national public number associated with the customer's Listed Directory Number 0 (the LDN0



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DN in LD Overlay) is delivered (if the number is longer than 10 digits, only the first 10 is delivered).

- If CLID entry 0 is not configured, then the customer's attendant DN (the ATDN in LD Overlay) is delivered. The calling number for calls originated by an attendant is composed using CLID entry 0, as per the ISDN CLID Enhancements feature.

## Calling name information

For a non-ISDN trunk-to-CLASS set call, the calling name unknown indicator is delivered to the CLASS set in place of the calling name. The calling name unknown indicator, per Bellcore CLASS CND delivery standard, refers to the ASCI "O" that is sent in place of the calling name.

For an ISDN trunk-to-CLASS set call, the calling name delivered to the CLASS set is the calling name received from the incoming ISDN trunk (if the calling name is longer than 15 characters, only the first 15 is delivered). If the calling name is defined as presentation denied (the originating set has Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered in place of the calling number, or, if no calling number is passed on by the incoming trunk, then the calling name unknown indicator is delivered in place of the calling name. The calling name privacy indicator, per Bellcore CLASS CND delivery standard, refers to the ASCI "P" that is sent in place of the calling name.

For a station (set)-to-CLASS set call, the calling name delivered to the CLASS set is one of the following:

- The calling name associated with the originating DN (if the calling name is longer than 15 characters, only the first 15 is delivered).
- If no name is defined with the originating DN, then the calling name unknown indicator is delivered in place of the calling name.
- If the originating set has Display Name Deny Class of Service (CLS=NAMD in LD 10 or 11), then the calling name privacy indicator is delivered in place of the calling name.

For a station (attendant)-to-CLASS set call, the calling number delivered to the CLASS set is one of the following:

- The calling name associated with the customer's attendant DN (if the calling name is longer than 15 characters, only the first 15 is delivered).
- If no name is associated with the customer's attendant DN, then calling name unknown indicator is delivered in place of the calling name.



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## Network engineering for CLASS sets

In a system with a single group network, the network internal blocking is determined by the concentration ratio of equipped ports on Intelligent Peripheral Equipment and the number of interfaced loops or superloops. Depending on traffic engineering, a non-blocking network is achievable.

In a multi-group system, intergroup junctors are required to switch calls between two network groups. Due to the concentration of time slots from a network group to that of intergroup junctors, blocking may occur. This is true for a multi-group system with or without CLASS sets. However, since the CLASS feature depends on a voice path to deliver Calling Name and Number Delivery (CND) to a set, excessive congestion at the intergroup junctor could block the delivery of CND and diminish the usefulness of the feature, as well as impact the grade of service of the existing equipment on the system.

This engineering section examines the inter-group junctor blocking issue and provides recommend engineering rules to alleviate potential network congestion problems.

In general, the engineering effort for CLASS feature can be classified into three categories:

A new site following engineering rules (see “General engineering guidelines for non-Call Center applications” (page 523)) requires no inter group junctor traffic check-off.

An existing or new site with relatively low intergroup junctor traffic, will require only one XCMC (Extended CLASS Modem Card) IPE pack that can serve all CLASS sets in a multi-group system.

An existing site with heavy intergroup junctor traffic will require either moving trunks/sets around between network groups when only one XCMC pack is equipped or providing an XCMC pack (or packs) for each group.

### System multi-group network

This section is only relevant to a system multi-group network. A single group system does not have intergroup junctors. Therefore, special engineering on the junctor is not applicable. The Cabinet systemhave network architectures that are different from other systems.

It has a non-blocking network and does not require any network engineering, except to use Table 182 "CMOD unit capacity" (page 523) CMOD (Class MODem) capacity table to find the number of modems needed.



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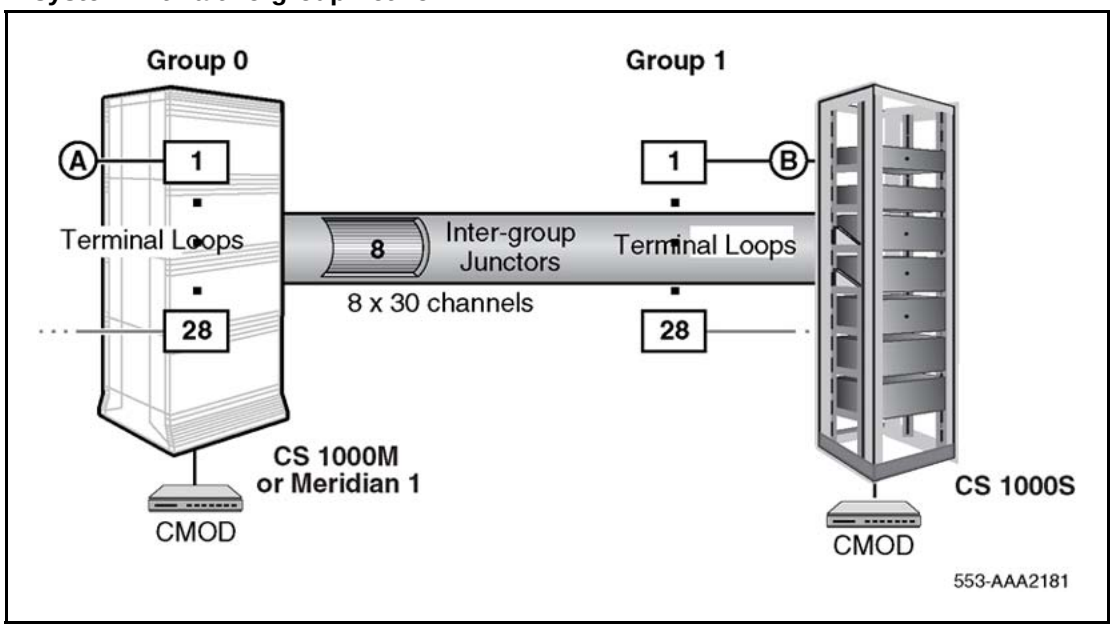
In general, intergroup junctor blocking is most severe when there are only two groups, since under typical traffic distribution assumptions, 50% of calls will stay in the originating group and 50% will terminate on the second group through junctors, unless a Community Of Interest (COI) is known and taken into consideration in engineering to minimize intergroup traffic.

Under the assumption of even distribution of traffic, the percentage of traffic to an intergroup junctor will drop to 33.3% of the total group traffic for a three-group system. Similarly, the junctor traffic is 25% of group traffic for a four-group system and 20% for a five-group system.

A simplified system with two-group network and CLASS sets is shown by Figure 18 "A system with a two-group network" (page 519).

**Figure 18**
**A system with a two-group network**




Note that traffic to a CLASS set can be originated from a non-CLASS set, another CLASS set or an incoming trunk. Since trunks have more traffic impact on junctor blocking, they are used to illustrate the feature operation, however, both sets and trunks can be traffic sources to CLASS sets.

The maximum size system comprises of 5 network groups. Each group has 32 loops of which 28 can be terminal loops, the rest are service loops (TDS loops for tones, conference and music).

From Group 0 to Group 1, as shown in Figure 18 "A system with a two-group network" (page 519), there are 8 one-way junctors. Similarly, there are another 8 one way junctors from Group 1 to Group 0. For practical purposes, they can be treated as 8 two-way junctors. A two-way



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path is equal to a voice channel. A junctor has 30 voice traffic channels as on a loop. Each two-way channel represents a conversation path. A channel is also used to deliver the CND from the CMOD to a CLASS set.

### CLASS feature operation

A call originated from Set A (or trunk A) seeks to terminate on a CLASS set B. When B starts to ring, A will hear ringback. A unit in CMOD (CLASS Modem) is assigned to collect originator's CND information and waits for the CND delivery interval. After the first ring at B, a silence period (deliver interval) ensues, the CMOD unit begins to deliver CND information to the CLASS set.

The CND information of a traffic source (A) is a system information, which is obtained by the system when a call is originated. During the two-second ringing period of the CLASS set B, A's CND is delivered to CMOD through SSD messages (using a signaling channel only). When the CND information is sent from CMOD to CLASS set B, it is delivered through a voice path during the four-second silence cycle of set B. The CMOD unit is held for a duration of six seconds.

If the XCMC (Extended CLASS Modem Card) IPE pack, which provides up to 32 CMOD units, is located in the IPE of Group 0, the CMOD unit in the pack will receive CND data through the SSD messages and use one of the voice channels of the intergroup junctor to deliver it to CLASS set B in Group 1.

If the XCMC IPE pack is located in Group 1, the system will deliver SSD messages containing CND information to CMOD and then send it to Set B during the delivery interval through a voice path, which is an intragroup channel not involving an intergroup junctor.

When CMOD units and CLASS sets are co-located in the same network group, there are no voice paths on the intergroup junctor required to deliver CND information; when they are equipped on different groups, intergroup junctors must carry CND traffic. The resource allocation algorithm will search for a CMOD unit located in the same group as the terminating CLASS set first before it attempts to use a CMOD unit from a different group.

### Intergroup junctor capacity

The time slot allocation algorithm for intergroup junctors is somewhat different from regular network loops, however, it is a close approximation to use the network loop capacity for junctor capacity, since they each have 30 traffic channels.



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In order for the connection between a CMOD unit and the remote set (on a different group) to meet the Grade Of Service (GOS) of the system for internal call setup, traffic on the loop and intergroup junctor should meet normal GOS requirements, that is 660 CCS per loop or junctor.

If we let an intergroup junctor be loaded to 660 CCS like a loop, the total allowed traffic at eight junctors is 5280 CCS (=660x8). At 6 CCS per CLASS set, the allowed number of sets generating intergroup traffic is 880 (=5280/6). If half of set traffic is intra-group, and the other half inter-group, the allowed number of CLASS sets in Group 1 is 1,760 (=880/0.5). On per loop basis, each loop can be equipped with 62 (=1760/28) CLASS sets.

Similarly, a 3-group network is likely to have 1/3 of traffic remaining in the group, 1/3 of traffic going to the next group, and another 1/3 of calls going to the third group. By using this inverse proportion approach to breakdown traffic flow at junctors, the capacity of a network group in terms of CLASS sets is summarized in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522). The entry in the Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) is the threshold for inter-group junctor traffic check-off.

The table entry indicates that in a two group system, the second group is allowed to have 1760 CLASS sets or a combination of CLASS and equivalent sets without a need to move sets or trunks around to reduce inter-group junctor traffic. Due to higher traffic, an agent set or a trunk is counted to be equal to four regular sets. The conversion needs to be done before using Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522).

If the number of equipped sets (CLASS or otherwise) or equivalent sets (sets converted from trunks and agent sets) is less than the threshold, the junctor traffic is expected to be low. There is no special engineering necessary for CLASS sets (other than providing required modems).

Note that the junctor traffic issue can be ignored if each group is fully equipped with sufficient CMOD units to handle CLASS sets within the group. It is the attempt to use one XCMC pack to serve multiple groups that requires special attention to inter-group traffic. As long as CLASS service is not impacted by a traffic in-balance already existed in the system, it is not the objective of this engineering guideline to solve that problem.

Once the threshold is exceeded, re-configuration of the system is necessary to reduce junctor congestion. The detailed engineering rules are given later in this document.



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**Table 181**
**Maximum CLASS sets per group (based on inter-group junctor capacity limitation)**

| No. of Groups | Sets/Group |
|---|---|
| 2 | 1760 |
| 3 | 2933 |
| 4 | 3520 |
| 5 | 4080 |

Convert a trunk or an agent set to four equivalent sets before applying Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522)

A single group system can have as many CLASS sets as each loop allows. The engineering of the system is not different from that of non-CLASS sets, since there is no intergroup junctor involved. The only engineering required is to find the required number of CMOD units from Table 182 "CMOD unit capacity" (page 523) to serve a given number of CLASS sets.

Note that the capacity per group for multi-group systems assumes no trunking in that particular group (or trunks have been converted to equivalent sets). Therefore, the total system capacity, by taking into account trunks, agent sets and service circuits, will not be as large as a straight multiple of number of groups by the number of sets per group.

The number of allowed CLASS sets per group in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) is strictly a function of intergroup traffic (except for five-group systems). When a system becomes five-group, the junctor capacity is no longer a bottleneck under the assumption of even traffic distribution. The system capacity iscome unrealistic if it is purely based on the intergroup junctor capacity, therefore, other system resources, particularly the system CPU, need to be checked. The number 4080 is based on loop traffic (28 loops/7 superloops), not junctor capacity.

If a group comprises of both regular sets and CLASS sets, the total number of sets in the group should not exceed the quoted number in the table. If trunks and agent sets are included in the group, convert them to "equivalent sets" before using Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522). More details are described in the engineering guide.



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Table 182 "CMOD unit capacity" (page 523) shows the CMOD capacity. It provides the number of CMOD units required to serve a given number of CLASS sets with the desired grade of service. The required number of CMOD units should have a capacity range whose upper limit is greater than the number of CLASS sets equipped in a given configuration.

The procedure to use Table 182 "CMOD unit capacity" (page 523) is further illustrated in engineering examples starting on “Engineering examples for non-Call Center applications” (page 525).

**Table 182**
**CMOD unit capacity**

| CLASS Set | 1-2 | 3-7 | 8-27 | 28-59 | 60- 100 | 101-150 | 151-200 | 207- 267 |
|---|---|---|---|---|---|---|---|---|
| CMOD Unit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| CLASS Set | 268-332 | 333-401 | 402-473 | 474-548 | 549-625 | 626-704 | 705-785 | 786- 868 |
| CMOD Unit | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| CLASS Set | 869-953 | 954-1039 | 1040-1126 | 1127-1214 | 1215-1298 | 1299-1388 | 1389-1480 | 1481-1572 |
| CMOD Unit | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| CLASS Set | 1573-1665 | 1666-1759 | 1760-1854 | 1855-1949 | 1950-2046 | 2047-2142 | 2143-2240 | 2241-2338 |
| CMOD Unit | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| CLASS Set | 2339-2436 | 2437-2535 | 2536-2635 | 2637-2735 | 2736-2835 | 2836-2936 | 2937-3037 | 3038-3139 |
| CMOD Unit | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| CLASS Set | 3140-3241 | 3242-3344 | 3345-3447 | 3448-3550 | 3551-3653 | 3654-3757 | 3768-3861 | 3862-3966 |
| CMOD Unit | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| CLASS Set | 3967-4070 | 4071-4175 | 4176-4281 | 4282-4386 | 4387-4492 | 4493-4598 | 4599-4704 | 4705-4811 |
| CMOD Unit | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
| CLASS Set | 4812-4918 | 4919-5025 | 5026-5132 | 5133-5239 | 5240-5347 | 5348-5455 | 5456-5563 | 5564-5671 |
| CMOD Unit | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |

### General engineering guidelines for non-Call Center applications

In a non-call center application, there is no significant number of agent sets. Therefore, no agent set to regular set conversion is needed. The only type of port requiring special treatment is trunk.



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**Configurations following engineering rules (no re-configuration required)** The following engineering rules should be followed to avoid the need to re-configure a switch to accommodate the CLASS feature.

1. Provide the number of CMOD units serving all CLASS sets in the system based on the capacity table (Table 182 "CMOD unit capacity" (page 523)).
2. Equip all CLASS sets in one network group.
3. Equip the XCMC IPE pack on the network group with CLASS sets.

If the system is a single group system, or if above rules are fully met, no further engineering is necessary. However, in case of an existing multi-group site upgrading to provide CLASS feature, we may need to re-configure the system in order to satisfy rule (2).

When the above rules are not fully met, continue the system engineering by following the procedure in the next subsection.

**Re-configuration may be required (when engineering rules are not fully followed)** When above rule (2) can not be satisfied in a new site or an existing one, the following guidelines are designed to minimize network blocking, and to determine whether a re-configuration (to move trunks and sets around) or to provide an XCMC pack per group is necessary.

- To use Table 182 "CMOD unit capacity" (page 523) to estimate CMOD unit requirements, consider only CLASS sets (no trunks or non-CLASS sets).
- If CLASS sets are equipped in more than one group, locate the XCMC IPE pack in the group with most CLASS sets.
- Use Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) to decide whether re-configuration is required. For a network group with trunks, regular sets and CLASS sets, convert trunks to sets by using the formula: 1 trunk = 4 sets (called equivalent sets), and then add up the total.

  Check threshold in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522), if the number of equivalent sets is less than 1760 (for example, for a two-group system), there is no need to re-configure the system.

  If the number is greater than 1760, we need to move some of the CMOD units to a second XCMC IPE pack on another group (when CLASS sets are scattered in two groups), or move some sets or trunks from one group to another group to satisfy the threshold.

The following examples will show some of the engineering details of dealing with various alternatives.



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To simplify discussion, the network group 0 has minor number of CLASS sets. The majority of CLASS sets are in group 1 (refer to Figure 18 "A system with a two-group network" (page 519)).

### Engineering examples for non-Call Center applications

**One XCMC pack serving a single group system** No special engineering rule is needed for a single or half group system (CS 1000M SG, Meridian 1 PBX 61C, and CS 1000M HG). Look up Table 182 "CMOD unit capacity" (page 523) to find the required number of CMOD units to serve the given CLASS sets. For example, to serve a CS 1000M SGwith 400 CLASS sets, use Table 182 "CMOD unit capacity" (page 523) to find the number of CMOD units serving a range including 400 sets. The result is 10 units which can serve 333 to 401 CLASS sets.

1. **Example 1:** No re-configuration

   A 2-group system serving an office is expected to convert 400 analog sets to CLASS sets. Currently, 100 of them are located in group 0, where all incoming trunks are located, and the remaining 300 sets are in group 1. Assume that group 1 is also equipped with 800 non-CLASS sets. How many CMOD units are needed to serve this application and does the customer need to re-configure the switch (move sets and trunks between group 0 and group 1) to do the upgrade?

   Solution:

   The table lookup indicates that 400 CLASS sets need 10 CMOD units. Since one pack provides 32 units, one XCMC pack is sufficient for this customer.

   Group 1 is equipped with 300 CLASS sets which is greater than the 100 sets in group 0, the pack should be installed in group 1.

   The total equipped ports in group 1 is 1100 (=800+300). For a 2-group system, the second group is allowed to have 1760 sets (from Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522)) without junctor traffic concerns, therefore, there is no need for the customer to re-configure the switch.

2. **Example 2:** Re-configuration

   A similar application as in the last example, except that there are 1600 non-CLASS sets and 100 trunks in group 1.

   Solution:

   The same number of CMOD units (10), since the number of CLASS sets in the system is the same.

   The number of total equivalent sets in group 1 is 2300 (=1600 +300 +100x4) which is greater than the 1760 threshold in the Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) for a 2-group system.



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The customer will have a number of alternatives to resolve the junctor blocking issue, depending on the situation:

(1) move the 100 CLASS sets from group 0 to group 1, so all CLASS sets are served by the XCMC pack in group 1, or

(2) move the 300 CLASS sets and the XCMC pack to group 0, or

(3) move 540 non-CLASS sets (=2300-1760) from group 1 to group 0, or

(4) move 100 CLASS sets from group 1 to group 0 and split the 10 CMOD units to 5 for group 0 and 5 for group 1. However, this will require another XCMC pack to be equipped in group 0. The cost of this approach is not trivial. It can be justified only when growth plan indicates a need for a second pack in the near future anyway.

The final decision depends on the specific situation of a site.

## General engineering guidelines for Call Center applications

**Configurations following engineering rules (no re-configuration required)** The following engineering rules should be followed to avoid the need to re-configure a switch to accommodate the CLASS feature for call center environment.

1. Convert an agent set to regular set by using 1 agent CLASS set = 4 sets (called equivalent sets)
2. Sum up the total number of regular CLASS sets and equivalent CLASS sets and find the number of CMOD units required based on the capacity table (Table 182 "CMOD unit capacity" (page 523)).
3. Equip CLASS agent sets in the group where trunks carrying incoming traffic to agent sets are located.
4. Equip non-agent CLASS sets in the same group as the agent CLASS sets.
5. Equip the XCMC IPE pack on the network group with CLASS sets.

If the system is a single group system, or if above rules are fully met, no further engineering is necessary.

In case of an existing multi-group site upgrading to provide CLASS feature, re-configuring the system may be necessary to satisfy rules (3) and (4).

When above rules are not fully met, continue the system engineering by following the procedure in the next subsection.

**Configurations do not fully meet engineering rules (re-configuration may be required)** When above rules can not be satisfied in a new site or an existing one, the following guidelines are designed to (1) minimize



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network blocking, (2) determine whether a re-configuration (to move trunks and sets around) is necessary, or (3) whether separate XCMC packs are necessary to serve the multi-group system.

1. Convert an agent set to regular set by using 1 agent CLASS set = 4 sets.
2. Sum up the total number of equivalent CLASS sets and find the number of CMOD units required based on the capacity table (Table 182 "CMOD unit capacity" (page 523)).
3. Equip the XCMC IPE pack on the network group with most CLASS sets (or equivalent sets).
4. Limit the number of agent CLASS sets to be 200 or less per group.
5. Limit the number of regular CLASS sets in a group without XCMC pack to be 100 or less.
6. Convert trunks (1 trunk = 4 sets), and agent set (1 agent set = 4 sets) to equivalent sets before using Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) to find junctor traffic threshold.
7. If the threshold in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) is greater than the total number of equivalent sets, traffic in the system is balanced, there is no need for further network engineering.
8. If the number of equivalent set is greater than the threshold, one or all of the following engineering rules should be followed to reduce junctor traffic:
   a. Move sets (CLASS or non-CLASS) or trunks to another group to satisfy the above engineering rules.
   b. Equip XCMC pack in more than one group to serve local CLASS set traffic.
9. When a trunk route is known to serve only agent sets, and these trunks and agent sets are in the same group, exclude them from the set count in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) threshold (for example, do not include trunks and agent sets with known COI to use Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522); they do not generate traffic to junctors).

The following examples will show some of the engineering details of dealing with various alternatives.



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To simplify discussion, the network group with most trunks is called group 0, consequently, a majority of CLASS sets, if not all, are in group 1. If most agent CLASS sets and XCMC pack are in group 0, there is no need for further engineering.

### Engineering examples for Call Center applications

**One XCMC pack serving a single group system** No special engineering rule is needed for a single group system. Look up Table 182 "CMOD unit capacity" (page 523) to find the required number of CMOD units to serve the given CLASS sets. For example, to serve a CS 1000M SGor Meridian 1 PBX 61Cwith 300 agent CLASS sets, use Table 182 "CMOD unit capacity" (page 523) to find the CMOD units that can serve 1200 equivalent sets (=300x4). The result is 20 units.

1. **Example 1:** No re-configuration required

   A two-group system serving a call center is expected to upgrade 300 analog sets (100 administrative sets and 200 agent sets) to CLASS sets. The 100 administrative sets are located in group 0, where are also located all incoming trunks. The 200 agent sets are in group 1, which will continue to be used as agent sets after upgrading. Assume that group 1 is also equipped with 500 non-CLASS sets. How many CMOD units are needed to serve this application and does the customer need to re-configure the switch (move sets and trunks between group 0 and group 1) to do the CLASS feature upgrade?

   Solution:

   The table lookup indicates that 900 equivalent CLASS sets (=100+200x4) need 17 CMOD units. Since one pack provides 32 units, one XCMC pack is sufficient for this customer.

   Group 1 is equipped with 200 agent CLASS sets or 800 equivalent sets which is greater than the 100 sets in group 0, the pack should be installed in group 1.

   The total equipped ports in group 1 is 1300 (=200x4+500). For a 2-group system, the second group is allowed to have 1760 sets (from Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522)) without junctor traffic concerns, therefore, there is no need for the customer to re-configure the switch.

   In addition, both "100 CLASS sets in a group without CMOD units (group 0)", and" 200 agent CLASS sets in a group separate from incoming trunks (group 1)" statements are within engineering rules, therefore, no re-configuration is necessary.

2. **Example 2:** Re-configuration required

   A similar application as in the last example, but there are 1600 non-CLASS sets in group 1.

   Solution:



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The same number of CMOD units (17) is required, since the number of equivalent CLASS sets (900) in the system is the same.

Equip the 17 CMOD units in group 1, since the XCMC pack should be equipped in the group with most CLASS (equivalent) sets.

The number of total equivalent sets in group 1 is 2400 (=1600+200x4) which is greater than the 1760 threshold in Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) for a two-group system.

The customer will have a number of alternatives to resolve the junctor blocking issue, depending on the situation:

Move the 100 CLASS sets from group 0 to group 1, or

Equip the 200 CLASS agent sets and the XCMC pack in group 0, or

Move 640 non-CLASS sets (=2400-1760) from group 1 to group 0 to avoid threshold violation, or

Move 100 CLASS sets from group 1 to group 0 and split the 17 CMOD units to 10 for group 0 and 7 for group 1; however, this will require another XCMC pack to be equipped in group 0, or

Move 160 trunks with COI to agent sets from group 0 to group 1, so that the total equivalent sets in group 1 iscome 1760 (=1600+(200-160)x4), since this way the 160 trunks and an equal number of agent sets will not generate traffic to junctors.

The final decision depends on the specific situation of a site.

3. **Example 3:** Mixed sets, trunks in both groups and re-configuration required

   A two-group system serving a call center is expected to equip 200 administrative CLASS sets in group 0 and 400 CLASS agent sets in group 1. 500 trunks carrying incoming traffic to agents are located in group 0, 60 trunks serving local CO non-ACD traffic are equipped in group 1. Assume that group 1 is also equipped with 300 non-CLASS sets. Can this configuration meet engineering rules? How many CMOD units are needed?

   Solution:

   The equivalent CLASS sets in system = 200 + 400x4 = 1800. From Table 182 "CMOD unit capacity" (page 523), 27 CMOD units are needed. It requires the XCMC pack to be equipped in group 1.

   When we equip the XCMC pack in group 1, there are three violation of rules: (1) the number of CLASS sets in the group without CMOD units (group 0) is greater than 100, (2) the number of agent sets in a group without incoming trunks (group 1) is 400 which exceeds the 200 per group limit, and (3) the violation of threshold in Table 181 "Maximum



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CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522) for group 1 (=400x4+60x4+300=2140>1760). Several alternatives are available to make this configuration meeting engineering rules:

Move 100 CLASS sets and 400 incoming trunks from group 0 to group 1; all above 3 violations are removed by this re-configuration: (1) CLASS sets in group 0 is 100, (2) 400 CLASS agent sets and 400 incoming trunks with COI are in the same group (group 1), (3) the number of equivalent sets in group 1 for threshold check-off is reduced to 640 (=100+60x4+300=640) which is certainly within the limit (1760).

However, it is impractical to put almost all trunks and agent sets in one group (group 1). With so many rule violations, the most realistic approach is to move 200 CLASS agent sets to group 0 and equip approximately 15 CMOD units in group 0 and 12 units in group 1.

**One XCMC pack serving a 3-5 group system** Chances of groups larger than three requiring special engineering are slim, since the threshold (Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522)) limiting the number of sets per group is much higher.

If the rule of co-locating CLASS sets and CMOD units in the same group is not fully met, as long as basic rule like putting XCMC pack in the group with most CLASS sets is followed, perhaps, no re-configuration between any two groups is necessary.

However, if in doubt, isolate any two groups at one time, and go through the two-group engineering procedure to re-configure the system two groups at a time. Ignore the rest of system during the engineering process, except for calculating the total number of CMOD units, which should cover the need of all CLASS sets in the system. However, during a two-group engineering, only the number of CMOD units attributable to the two-group at hand should be used in calculations.

Also remember to use 2933 (equivalent) sets per group for threshold check-off for the three-group system, and their respective number for four- and five-group systems (Table 181 "Maximum CLASS sets per group (based on inter-group junctor capacity limitation)" (page 522)).

The complete check-off of set threshold between any two groups in a multi-group system can be represented by the following combinations (a number denotes the group number: for example, 1-2 represents group one-group 2):



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three-group: 1-2, 1-3, 2-3.

four-group: 1-2, 1-3, 1-4, 2-3, 2-4, 3-4.

five-group: 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, 4-5.

It should be noted that although CMOD units are equipped according to the traffic requirement of CLASS sets in a network group for the intergroup junctor traffic consideration, they are a system resource shared by the whole system.

## Operating parameters

Dialed Number Identification System (DNIS) is not supported by the CLASS feature.

This feature has been developed for the North American residential market, as well as for the small business, hospitality, schools and universities, nursing homes and hospitals, and mobile home markets.

This feature applies to a standalone environment, and to an ISDN networking environment supporting CLID and a non-ISDN networking environment with or without In-Band Automatic Number Identification (ANI).

If the CLASS Calling Number Delivery and CLASS Calling Name Delivery data to a CLASS set is lost, there is no indication, such as an error message, provided. The call is presented in the normal manner, as if the CLASS CND function has not been activated.

A maximum of 10 digits can be delivered as the calling number, and a maximum of 15 characters can be delivered as the calling name. These are Bellcore limitations.

The 16 port Analog Message Waiting line card (QPC789A) is not supported for CLASS: Calling Number and Name Delivery.

Up to 255 CLASS modems can be configured on a system, and up to 32 CLASS modem units can be configured on any Extended CLASS Modem card.

No CLASS CND traffic measurement is supported.

The CND delivery interval is the first silent interval, after ringing has been applied for a new call, that is greater than two seconds. If the ringing applied to the CLASS set uses a cadence with a ring-off cycle that is more



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than four seconds in duration, then the CLASS set might view the call as having been disconnected and might clear the CND display as a result. This is a CLASS set firmware limitation.

Due to firmware limitations on some types of CLASS sets, after a call has been disconnected, the CND information associated with the disconnected call may still appear on the CLASS set's display for several seconds. During this time, the CLASS set cannot display new CND information. Though the system delivers the CND information pertaining to a new call, there is no guarantee that the CLASS set will display the delivered information.

## Feature interactions

### Attendant Call Extension

When an attendant extends a call to a CLASS set, the Calling Name and Number of the attendant is delivered to the CLASS set, and not that of the extended station.

### Automatic Wake Up

When an Automatic Wake Up call is presented to a CLASS set with Calling Name Delivery activated, then the calling name unknown indicator is delivered in place of the calling number.

### Blind Transfer

When a Meridian 1 proprietary set completes a Blind Transfer to a CLASS set, the Calling Name and Number of the transferring set is delivered to the CLASS set, and not that of the set being transferred. When an analog (500/2500 type) set completes a Blind Transfer to a CLASS set, the transfer is presented as a new call to the CLASS set. Therefore, the Calling Name and Number of the transferred set is delivered to the CLASS set.

### Call Forward All Calls

When a call is redirected to a CLASS set using Call Forward All Calls, the Calling Name and Number of originating set, and not that of the forwarding set, is delivered to the CLASS set.

### Call Forward, Internal

When a call is redirected to a CLASS set using Internal Call Forward, the Calling Name and Number of originating set, and not that of the forwarding set, is delivered to the CLASS set.

### Call Transfer

When a Call Transfer has been completed, the Calling Name and Number of the transferred party will not be delivered.



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### Calling Line Identification Restriction for ISDN BRI sets

When an ISDN BRI set, with Calling Line Identification Restriction active, makes a nodal call to a CLASS set with Calling Name Delivery active, the calling name privacy indicator is delivered as the calling name.

### Conference/No Hold Conference

When a set initiates a conference call to a CLASS set, the Calling Name and Number of the initiating set is delivered to the CLASS set.

### Dial Intercom

The CLASS Calling Name and Number class of service cannot be configured on Dial Intercom Group sets.

### Direct Inward System Access (DISA)

If a call is made to a CLASS set using DISA dialing, then the Calling Name and Number delivered to the CLASS set is that of the incoming trunk and not the DISA DN. This is consistent with the normal display function for DISA calls.

### Display of Calling Party Denied

When a set with Display of Calling Party Denied active makes a nodal call to a CLASS set with Calling Number Delivery active, then the calling name privacy indicator is delivered in place of the calling name.

### Distinctive Ringing

The normal delivery cycle for Calling Name and Number Delivery applies to calls presented to a CLASS set with distinctive ringing, that is, the Calling Name and Number Delivery information is delivered during the first silent period that is longer than two seconds.

### Flexible Numbering Plan (FNP) Enhancement

For a customer equipped with the FNP package 160, the calling number delivered to the CLASS set can be of any length, up to 10 digits.

For a customer not equipped with FNP, the following apply:

- For a station (set or attendant) making a call to a CLASS set, if the local public number is to be delivered to the CLASS set as the calling number of the calling station, then the system software will pad or truncate the calling number to be exactly seven digits long.
- For a station (set or attendant) making a call to a CLASS set, if the national number is to be delivered to the CLASS set as the calling number of the calling station, then the system software will pad or truncate the calling number to be exactly 10 digits long.
- For an incoming trunk call to a CLASS set, the incoming Calling Number Identification/Automatic Number Identification that is passed to the CLASS set be of any length, up to 10 digits.



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### Group Call

When a set makes a Group Call to a CLASS set with Calling Number Delivery active, the calling number unknown indicator is delivered in place of the calling number.

When a set makes a Group Call to a CLASS set with Calling Name Delivery active, the calling name unknown indicator is delivered in place of the calling name.

### Hotline

When a Hotline call is made to a CLASS, then the Calling Name and Number is delivered in the same manner as when a call is presented to the CLASS set using normal dialing.

### Hunt

When a call is redirected to a CLASS set using Hunt, the Calling Name and Number of originating set, and not that of the redirecting set, is delivered to the CLASS set.

### Incremental Software Management

While no new License limit is introduced by the CLASS feature, each CLASS modem unit TN is counted against the system TN limit and is reflected in the overlay banner.

### Feature Group D

When an incoming Feature Group D trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set is one of the following:

- If the Feature Group D trunk route is configured so as to not show the incoming ANI (SHAN = NO in LD 19), the calling number privacy indicator is delivered in place of the calling number.
- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming Feature Group D trunk ANI is directly delivered.

### In-Band ANI

When an incoming In-Band ANI trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set is one of the following:

- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming In-Band ANI is directly delivered.



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### Integrated Services Digital Network

When an incoming Integrated Services Digital Network (ISDN) trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set is one of the following:

- If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered in place of the calling number, or, if no CLID is passed in from the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number.
- If no CLID is passed on by the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the CLID received from the incoming ISDN trunk is directly delivered. If the CLID is longer than 10 digits, only the first 10 is delivered.

When an incoming ISDN trunk call is presented to a CLASS set with Calling Name Delivery active, the calling name delivered to the CLASS set is one of the following:

- If the calling name is defined as presentation denied (the originating set has a Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered instead of the calling name.
- If no calling name is passed on by the incoming trunk, then the calling name unknown indicator is delivered in place of the calling name.
- Otherwise, the calling name received from the incoming ISDN trunk is directly delivered. If the calling name is longer than 15 characters, only the first 15 is delivered.

### Meridian 911

When an incoming M911 trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set is one of the following:

- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming ANI is directly delivered.

### Private Line Service

When a Private Line Service call is made to a CLASS, then the Calling Name and Number is delivered in the same manner as when a call is presented to the CLASS set using normal dialing.



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### VIP Automatic Wakeup

When an attendant makes a VIP Automatic Wakeup call to a CLASS, then the Calling Name and Number is delivered in the same manner as when the attendant makes a call to the CLASS set using normal dialing.

### Virtual Network Services (VNS)

When an incoming VNS trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set is one of the following:

- If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered in place of the calling number.
- If no CLID is passed on by the incoming VNS trunk, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the CLID received from the incoming VNS trunk is directly delivered. If the CLID is longer than 10 digits, only the first 10 is delivered.

When an incoming VNS trunk call is presented to a CLASS set with Calling Name Delivery active, the calling name delivered to the CLASS set is one of the following:

- If the calling name is defined as presentation denied (the originating set has a Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered in place of the calling name.
- If no calling name is passed on by the incoming VNS trunk, then the calling name unknown indicator is delivered in place of the calling name.
- Otherwise, the calling name received from the incoming VNS trunk is directly delivered. If the calling name is longer than 15 characters, only the first 15 is delivered.

## Feature packaging

The following packages are required for the CLASS Calling Name and Number Delivery feature:

- Calling Party Name Display (CPND) package 95
- CLASS Calling Number Delivery (CNUMB) package 332
- CLASS Calling Name Delivery (CNAME) package 333 and



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 183 "LD 15 - Configure the CLASS CLID parameters in the Customer Data Block." (page 537)

   Configure the CLASS CLID parameters in the Customer Data Block.

2. Table 184 "**LD 10** - Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets." (page 538)

   Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets.

3. Table 185 "LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system)." (page 539)

   Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

**Table 183**
**LD 15 - Configure the CLASS CLID parameters in the Customer Data Block.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change or delete existing data. |
| TYPE: | NET | Networking data. |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| ... | | |
| CLID | | CLID option. |
| | (NO) | NO = (the default) do not configure a CLID table. In this case, the remaining prompts are not generated, and no CLID is sent for the customer. |
| | YES | YES = configure a CLID table for the customer. |
| - SIZE | 0-(256)-4000 | Number of CLID entries required. |
| ... | | |



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**Table 183**
**LD 15 - Configure the CLASS CLID parameters in the Customer Data Block. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| - ENTRY | aaaa<br>Xaaaa<br>Xaaaa Xbbbb<br><CR> | aaaa = CLID entry to be configured.<br>Xaaaa = CLID entry to be deleted.<br>Xaaaa Xbbbb = CLID entries to be deleted.<br><br>aaaa and bbbb must be a value between 0 and (SIZE-1).<br><br>The action for the entry is saved to system memory after the CLID entry has been completely configured. If an existing CLID entry is changed, the message "ENTRY aaaa SAVED" is displayed. If a CLID entry or CLID entries is/are deleted, the message "ENTRY aaaa DELETED" or "ENTRIES aaaa-bbbb DELETED" is displayed. |
| ... | | |
| - LSC | 0-9999999<br>X | Local steering code, 1-7 digits.<br>X = delete digits. |
| - - CLASS_FMT | (DN)<br>LCL<br><br>NTN | Send internal DN to a CLASS set as the calling number.<br>Send local number to a CLASS set as the calling number.<br><br>Send National Number to a CLASS set as the calling number. |
| ENTRY aaaa SAVED<br>ENTRY aaaa DELETED<br>ENTRIES aaaa-bbbb DELETED | | Displayed message. Refer to the ENTRY prompt description. |
| ... | | |

You may print the CLASS_FMT information included in the CLID using LD 21.

You may print or count the station sets class of service using LD 81. This information would typically be used for billing purposes, to bill set users for calls according to the assigned class of service.

**Table 184**
**LD 10 - Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 184**
**LD 10 - Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| DN | x..x yyyy | Directory Number for this set (x..x) and CLID entry associated with this set (ENTRY configured in LD 15). |
| | (CNUD)<br>CNUA<br>CNUS<br>(CNAD)<br>CNAA | CLASS Calling Number Delivery Denied.<br>CLASS Calling Number Multiple Data Format Allowed.<br>CLASS Calling Number Single Data Format Allowed.<br>CLASS Calling Name Delivery Denied.<br>CLASS Calling Name Multiple Data Format Allowed.<br><br>Refer to the section "Configure CND Class of Service on CLASS sets" (page 514) for details.<br><br>*These Class of Service entries are not valid for a Dial Intercom Group (DIG) set* |
| CLS | | |
| ... | | |

**Table 185**
**LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data<br>Change existing data. |
| TYPE | CMOD | CLASS modem unit. |
| DMOD | 1-127 | Default Model number for this route for Small System and Media Gateway 1000B. |
| TN | | Terminal number<br><br>***Note:*** *Since the CLASS modem unit uses the octal-density Extended CLASS Modem Card (XCMC), up to 32 units can be configured on any XCMC card*. |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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While no new License limit is introduced by the CLASS feature, each CLASS modem unit TN is counted against the system TN limit and is reflected in the overlay banner.

You can print the CMOD unit information using LD 20.

## Feature operation

No specific operating procedures are required to use this feature.



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# CLASS: Visual Message Waiting Indicator

## Contents

This section contains information on the following topics:

“Feature description” (page 541)

“Operating parameters” (page 545)

“Feature interactions” (page 546)

“Feature packaging” (page 547)

“Feature implementation” (page 547)

“Feature operation” (page 549)

## Feature description

The Custom Local Area Signaling Service (CLASS) Visual Message Waiting Indicator (VMWI) feature allows a CLASS set to receive a visual indication that messages are waiting. The visual indicator may be in the form of a lighting or flashing Light Emitting Diode (LED), or a special message on a liquid crystal display, or both. The type of visual indicator depends on the firmware of the CLASS set being used.

For a non-Class set, lighting the Message Waiting Lamp through a high voltage message (Voltage Message Waiting) is still supported and operates in the same way as it did before.

The visual indication message (an "ON/OFF" CLASS VMWI specific message) is delivered from the system to the CLASS sets using Frequency Shift Keying (FSK) signaling based on Bellcore specifications, using a CLASS modem (CMOD) unit. The CMOD units are configured



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using LD 13. Once configured, the CMOD units are shared throughout a multi-customer system. When an FSK message is presented to a CLASS set, an available CMOD unit is automatically allocated.

After all messages are retrieved, the visual indicator is cleared. The CLASS VMWI feature will not be able to turn off the message waiting indicator until the CLASS set has returned to the idle state, even though all of the messages have been retrieved by the user.

The CLASS VMWI feature supports the Bellcore Single Data Message Format (SDMF) and Multiple Data Message Format (MDMF) messaging. These formats are configured in the system database using LD 10. To use SDMF, a Class of Service of CNUS is required. For MDMF, a Class of Service of CNUA and/or CNAA is required.

The following description outlines the general functionality of the CLASS VMWI feature.

The following scenarios affect the sending of an ON or OFF message indicator to a CLASS set.

If the CLASS set is idle:

- the ON/OFF message is sent immediately to the set.

If the CLASS set is busy:

- as soon as the CLASS set becomes idle (goes on-hook), the system immediately sends the VMWI message to the set.

If the CLASS set or CMOD unit is disabled (using LD 32 or 30), or no CMOD unit is available:

- the CLASS VMWI feature will automatically abort the VMWI message. The CLASS set is then checked every 10 seconds, for up to 2 1/2 hours, until the set is detected to be idle. At that time, the system will immediately deliver the VMWI message.

If a CLASS set is in the middle of receiving a VMWI message, and the CLASS set goes off-hook:

- the VMWI message is aborted. The CLASS set is checked every 10 seconds, for up to 2 1/2 hours, until the set is detected to be idle. At that time, the system will immediately deliver the VMWI message.

Note that, if the CLASS VMWI feature is waiting to send an "ON/OFF" message and another "ON/OFF" message is requested, only the last "ON/OFF" message is actually sent to the CLASS set.



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The CLASS VMWI feature supports Nortel and third party CLASS sets, if these sets are Bellcore VWMI compliant.

The following figures depict a typical feature operation and system resource allocation scenario for a CLASS Visual Message Waiting Indication being presented to a CLASS set. Note that the representation is for an ON message being delivered to the CLASS set. The same operation and system resource allocation applies for an OFF message being sent, except that the contents of the message would be different.

**Figure 19**
**CLASS set is in idle state**

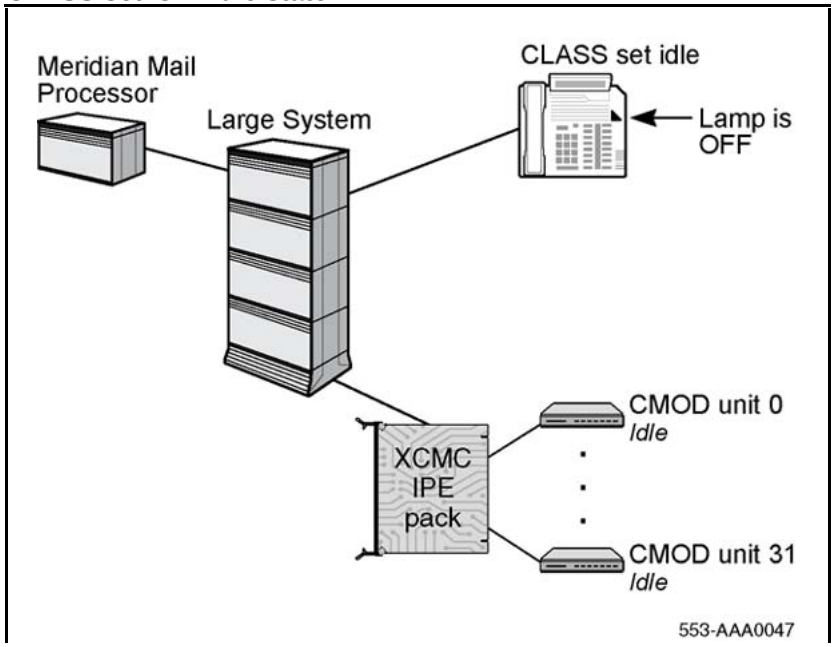




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**Figure 20**
**CLASS VMWI ON message in the process of being delivered to the CLASS set**

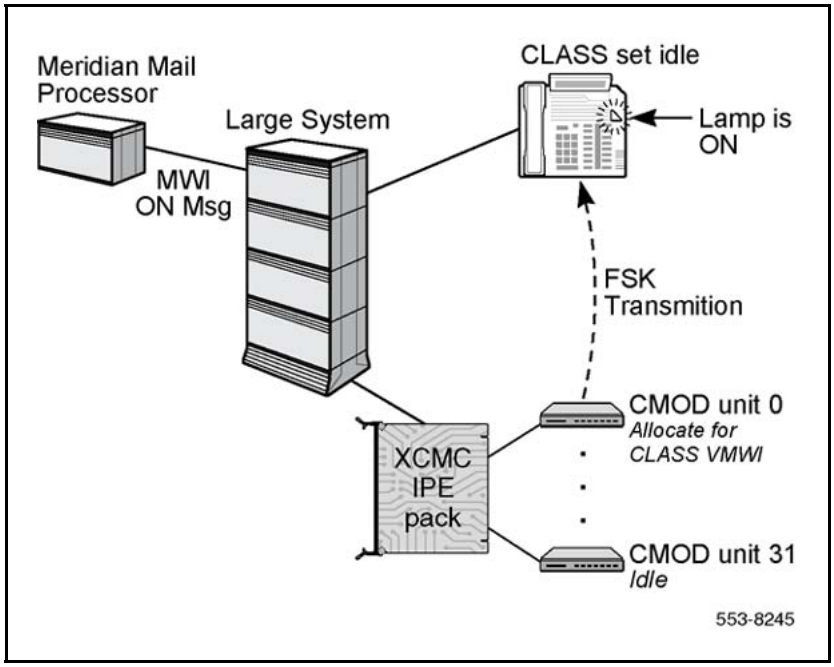
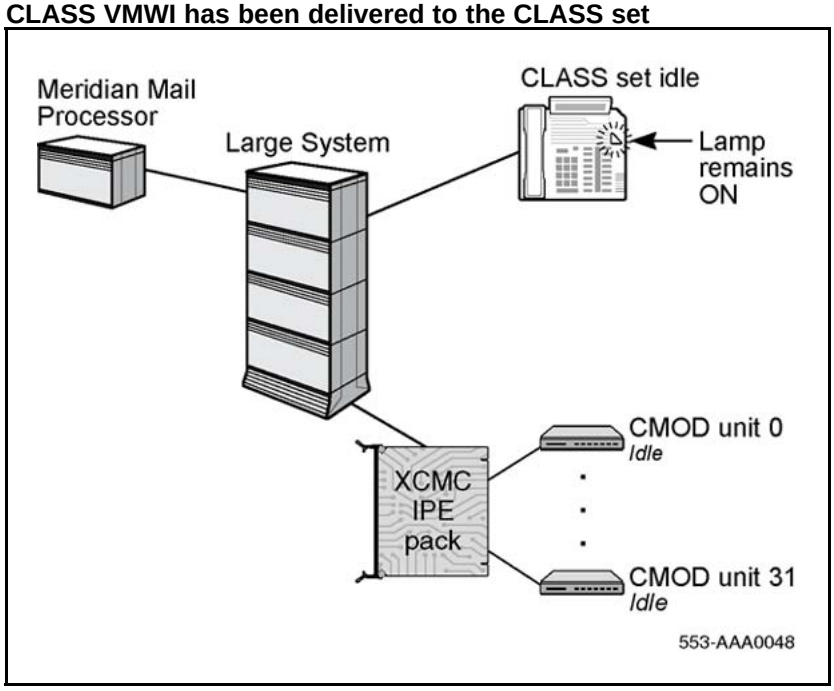



**Figure 21**
**CLASS VMWI has been delivered to the CLASS set**



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## Operating parameters

This feature has been developed for the North American residential market, as well as for the small business, hospitality, schools and universities, nursing homes and hospitals, and mobile home markets.

When a craftsperson uses LD 10 to administer a service change to a CLASS set, if the system software identifies, during overlay wrap-up, that the CLASS VMWI feature is waiting to send a visual indication to the set being serviced, a SCH1099 message is generated, indicating that the VMWI pending message is lost and no retry is attempted. The service change itself does not trigger any messages to the set.

Some CLASS sets, like Nortel's M9000 series of sets, support both voltage and CLASS (FSK) Message Waiting. However, once the CLASS set is configured in LD 10, then the system will no longer send voltage messages to the set.

If a CLASS set that previously used FSK messaging to receive Visual Message Waiting Indication has the Class of Service changed to be a non-CLASS set that uses Voltage Message Waiting, the visual indicator will not operate correctly. The following will occur:

- Voltage Message Waiting will work if the set is returned to the no message waiting state (visual indicator is dark) before switching over from FSK to voltage.
- Voltage message waiting will not work if the set is left at the message waiting state (visual indicator is lit) before switching from FSK to voltage.

It is up to the craftsperson to ensure that a CLASS set is correctly configured to support the CLASS VMWI feature.

Up to 255 CMOD units may be configured on a system. Once configured, the CMOD units are shared throughout a multi-customer system. When an FSK message is transmitted to a CLASS set, an available CMOD unit is automatically allocated.

If a CLASS set with a lit message waiting indicator retrieves all of its messages, the CLASS VMWI feature will not be able to turn off the message waiting indicator until the CLASS set has returned to the idle state.

Lamp audit does not apply to the CLASS VMWI feature.

There is a 2 1/2 hours time limit for a retry in the case of a pending message.



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Up to 255 CLASS modem units can be configured on a system, and up to 32 CLASS modem units can be configured on any Extended CLASS Modem card.

## Feature interactions

### Attendant Console

When a CLASS set that is on a call with the attendant goes on-hook, the call will not be released until the attendant releases the call. The CLASS VMWI feature will wait until the call is actually disconnected before sending the VMWI message to the CLASS set that had already gone on-hook

### Call Party Control Incoming

When a CLASS set on an active call is placed in Call Party Control Incoming (CPCI) state, the set will not be presented with any other incoming call. The CLASS VMWI feature will not send the VMWI message to the CLASS set to turn the visual indication ON or OFF, until the set releases the active call.

### Make Set Busy

When a CLASS set is in the Make Set Busy state, the set will not be presented with incoming calls. Although no incoming calls are presented to the set, VMWI message can still be sent to the CLASS set to turn the visual indication ON or OFF, as long as the set is in the idle and on-hook state.

### Meridian Mail

The CLASS VMWI feature makes use of Meridian Mail by having the Meridian Mail functionality communicate with the system to inform the CLASS set to turn the visual message waiting indicator ON or OFF. The system software determines the appropriate type of protocol based on the configuration of the CLASS set, and sends it to the set to turn the visual message waiting indicator ON or OFF.

### Message Waiting

In order to support the CLASS VMWI functionality on a CLASS set, the Message Waiting feature has been enhanced to turn the message waiting indicator ON or OFF on the CLASS set through FSK signalling.

In addition, the CLASS VMWI feature can interwork with Stuttered Dial Tone. The Stuttered Dial Tone functionality (which is part of the Flexible Tones and Cadences feature) provides an audible indication, rather than a visual one, that a message is waiting. It is configured separately from the CLASS VMWI feature, using the Class of Service (CLS) prompt in LD 10. If the LPA (Lamp Allowed) response is entered, then a CLASS visual indication is sent. If the LPD (Lamp Denied) response is entered, then Stuttered Dial Tone is sent instead. Note that the Stuttered Dial Tone and



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CLASS visual indication are mutually exclusive. A CLASS set may receive either Visual or Stuttered Dial Tone as a message waiting indicator, but not both.

### Permanent Hold

When a CLASS set is placed on permanent hold, the set is still treated as though it is presented with a telephone call. The CLASS VMWI feature will not send the VMWI message to the CLASS set to turn the visual indication ON or OFF, until the set actually goes on-hook or the call is not presented to the set. At this time, VMWI message is sent to the CLASS set to update the visual message waiting status.

### Set Relocation

When a CLASS set is relocated, the CLASS VMWI feature will lose the message when the set finishes the relocation. An SCH1099 error message is printed to indicate that the CLASS VMWI message is lost and no automatic retry is attempted.

## Feature packaging

The following packages are required for the CLASS VMWI feature:

- Message Waiting Center (MWC) package 46
- CLASS Calling Number Delivery (CNUMB) package 332, or
- CLASS Calling Name Delivery (CNAME) package 333, and

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 186 "LD 10 - Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set." (page 547)

   Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set.

2. Table 187 "LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system)." (page 548)

   Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

**Table 186**
**LD 10 - Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change existing data. |



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**Table 186**
**LD 10 - Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE: | 500 | Telephone type |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| DN | xxxx | Directory Number for the set |
| ... | | |
| CLS | | Class of Service for the CLASS set |
| | MWA<br>LPD | Message Waiting Allowed.<br>Visual Indication (Lamp) Denied.<br>At least one of the following CLASS CLS must be allowed. |
| | CNUA<br>CNUS<br>CNAA | CLASS Calling Number Multiple Data Format Allowed.<br>CLASS Calling Number Single Data Format Allowed.<br>CLASS Calling Name Multiple Data Format Allowed. |
| ... | | |

**Table 187**
**LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add new data<br>Change existing data. |
| TYPE | CMOD | CLASS modem unit. |
| DMOD | 1-127 | Default Model number for this route for Small System and Media Gateway 1000B. |
| TN | | Terminal number<br><br>*Since the CLASS modem unit uses the octal-density Extended CLASS Modem Card (XCMC), up to 32 units can be configured on any XCMC card* |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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You may print the CMOD unit information using LD 20.

### Feature maintenance and diagnostics

#### LD 30 and LD 32

LD 30 and LD 32 handle CLASS VMWI messaging, in the case that a CMOD unit or a CLASS set is in the state of being disabled. Any CLASS VMWI message that is in progress is aborted. A check every 10 seconds, for up to 2 1/2 hours, is done on the CLASS set until another CMOD unit is found or the CLASS set is enabled, before a VMWI message is actually sent to the set to perform visual indication.

#### LD 77

LD 77 is used to monitor CLASS VMWI messaging.

## Feature operation

No specific operating procedures are required to use this feature.



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# CLID Name Enhancement and CLID B

## Feature description

The Calling Line Identification (CLID) name enhancement introduces an enhancement to the existing functionality of name delivery for off-net calls. The CLID Name Enhancement feature provides an option for configuring and sending a group name when the calling party makes a call to the public network.

With this feature, different main numbers with different company names can be sent from the same PBX for some selected calls going over a public network (off-net calls). The name and extension of the user can be sent on calls going over a private network (on-net calls). As well, all the users of a single node can be grouped under one or more common groups and the group name is sent to the called node.

The group name is configured in the customer data block of the user and the group name of the caller is sent over public networks.

Before the enhancement, the Directory Number (DN) of the caller had a name attached to it and this name and number was sent with all calls, whether the call was on-net or off-net. With this feature enhancement, if the user makes an off-net call, the configured group name is sent. If the user is making a call on-net, the private name and number of the caller is sent.

With the CLID Name Enhancement feature, the following can be sent:

- different main numbers with different company names from the same PBX for selected off-net calls
- the name and extension of a user who is calling on-net.

This feature enhancement is particularly useful for the grouping of all users of a single node under a common group. The group name is sent to the called node.



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The CLID Name Enhancement feature is applicable for Integrated Services Digital Network (ISDN) trunks that support name display. This feature is also applicable for Internet Protocol (IP) and Basic Rate Interface (BRI) trunks.

## Feature restrictions

The feature enhancement depends upon the:

- Type of Number (TON)
- Numbering Plan Indicator (NPI) of the telephone making the call
- Capability of the telephone receiving the call

SL1, QSIG, EURO, NI2, D100, D250, and SL100 are the applicable interfaces that support name display, based on the TON and the NPI. All the privacy options available for the private name are supported for group name as well. This enhancement is a global feature that supports all ISDN interfaces that support name display. CLID Name Enhancement is not packaged.

Group name is not supported for originally called name and redirecting name.

CDP and UDP dialing plans continue to support private names with default CTYP in the DMI table and are, therefore, not supported.

If the originating call between two private networks is transferred over the public network, the final call does not involve any group names.

This table explains the TON and the NPI combinations that support group name. All other combinations of TON and NPI do not support group name.

**Table 188**
**TON and NPI combinations that support group name**

| TON | NPI |
|---|---|
| International | E.164/E.163 |
| National | E.164/E.163 |
| Local | E.164/E.163 |
| SPN | Private |

Hardware and firmware are not affected by this feature enhancement. The following software components are affected:

- Service LD 95 Calling Party Name Display (CPND)
- Call-control modules for building the group name



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- Conversion that allows sites to be upgraded to the new software release without manual service change and also maintain existing CLID capabilities
- Date required for the CLID table and the CLID entries

The CLID Name Enhancement feature handles the storage, building, and transportation of the caller's group name over a public network where TON and NPI are International /National and E.164/E.163, or SPN and Private.

The feature is operational for calling, connected, and alert or redirection of names only.

The feature works when public calls originate using SL1, QSIG, EURO, NI2, D100, D250, and SL100 interfaces using the National Numbering Plan (NPA) or the Central Office Code (NXX) or SPN dialing plans based on the TON and NPI values that support the group name.

The name presentation indicator of the group name is based on the class of service, Name Presentation Denied (NAMD) or Name Presentation Allowed (NAMA), configured for the associated DN.

Group level options are allowed with this feature enhancement. A group name can be configured and sent as a generic name instead of sending a DN-based name during public calls. The group name is defined in the CLID entry associated with the DN. If there is no entry, the default CLID entry value zero is associated to the DN and the corresponding group name, if configured, is sent, or else the private name is sent.

## Sample Scenarios

The tables in this section describe sample scenarios and the effect of the feature enhancement on the calls. Unless indicated, all nodes are CS 1000. The full capability of the sample scenarios can only be reached if CS 1000 is in use by both the telephone used in making the call and the telephone receiving the call.



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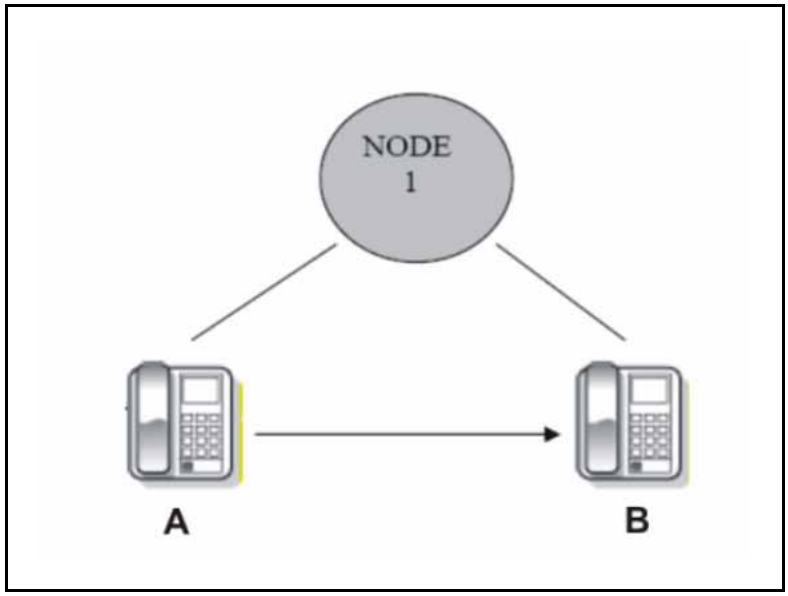
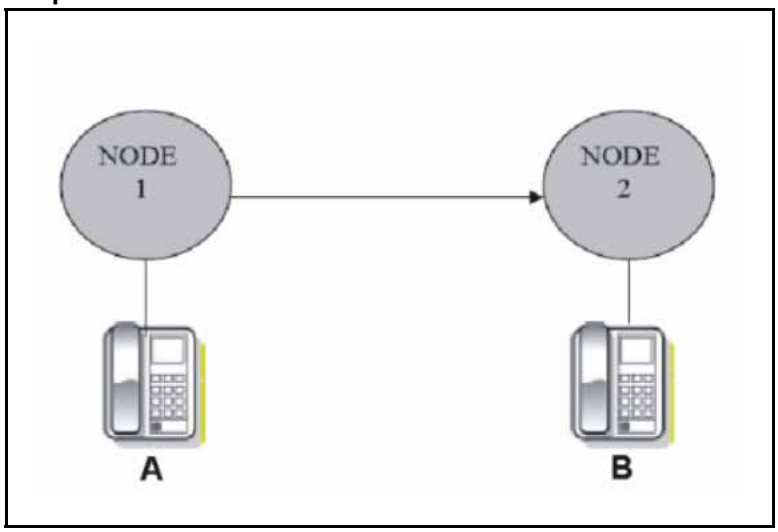
**Figure 22**
**General setup: One node, two telephones, A and B.**




| Type of call | Previous configuration | Previous scenario | Change in configuration with CLID name enhancement | Change in outcome of scenario with CLID Name Enhancement |
|---|---|---|---|---|
| On-net | The feature enhancement does not affect on-net calls. The same number is sent as before the CLID Name Enhancement. | | | |

**Figure 23**
**General setup: Two nodes, two telephones, A and B. Telephone A is on one node and telephone B is on the other node.**



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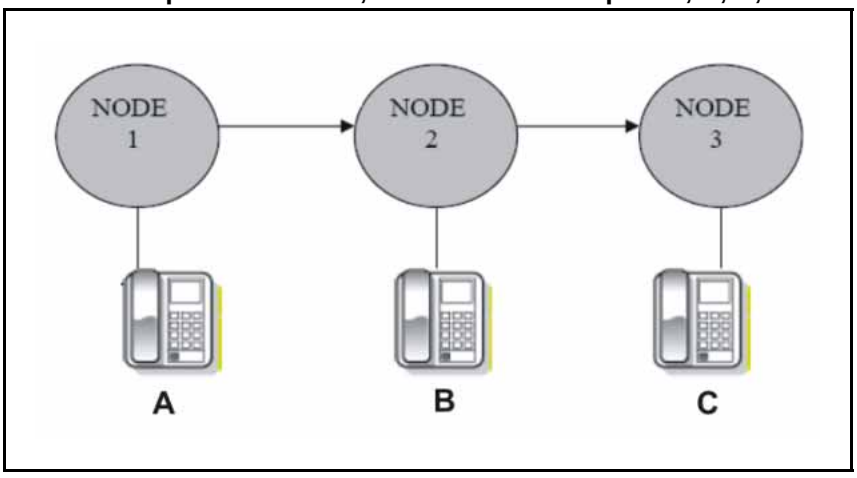
| Type of call | Previous configuration | Previous scenario | Change in configuration with CLID name enhancement | Change in outcome of scenario with CLID Name Enhancement |
|---|---|---|---|---|
| Outgoing, off-net. Two nodes connected over a public network, over an interface that supports name display. | LD 11 or LD 95: CPND-NAME for each telephone | Telephone A (private name A) calls B (private name B). Telephone A sends its private name (A) to telephone B. | Same as before, except in LD 95 add group name for telephone A (ABC Company). | Telephone A sends its group name (ABC Company) to telephone B. |
| Incoming, off-net. Two nodes connected over a public network, over an interface that supports name display. | LD 11 or LD 95: CPND-NAME for each telephone | Telephone A (private name A) calls B (private name B). Telephone A sends its private name (A) to telephone B. | Same as before, except in LD 95 add group name for telephone A (ABC Company). | Telephone A sends the name associated with its CLID entry, or group name (ABC Company), to telephone B. |
| On-net Two nodes over a private network. | The feature enhancement does not affect on-net calls. The same number is sent as before the CLID Name Enhancement. | | | |

**Figure 24**
**General setup: Three nodes, each with one telephone, A, B, and C.**



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| Type of call | Previous configuration | Previous scenario | Change in configuration with CLID name enhancement | Change in outcome of scenario with CLID Name Enhancement |
|---|---|---|---|---|
| Tandem call on two private networks. Three nodes, each with one telephone, connected over private network links. | The feature enhancement does not affect calls going over a private network link. The same number is sent as before the CLID Name Enhancement. | | | |
| Tandem call on a private-public network. Three nodes and each node has one telephone. Nodes 1 and 2 are connected over a private network link and Node 2 and 3 are connected over a public network. | LD 11 or LD 95: CPND NAME for each of the three telephones. | Telephone A (private name A) calls telephone B over a private network. The call is placed tandem by telephone B over a public network to telephone C. Node 1 sends the name provisioned for the DN to node 2, which is tandem to node 3. | Same as before, except in LD 95 add group name for telephone A (ABC Company). | Node 1 sends the name associated with its CLID entry, or its group name (ABC Company), to node 2, which is tandem to Node 3. |
| Transferred call over private-public network (public protocol supports name display). Three nodes, each with one telephone. Node 1 is connected to Node 2 over a private network link, and node 2 is connected to node 3 over a public network. | LD 11 or LD 95: CPND-NAME for each telephone. | Telephone A (private name: A) calls telephone B over a private network, and a call transfer is completed by telephone B over a public network to telephone C. The transferring node, telephone B, sends the name of telephone C to telephone A and the name of | Same as before, except in LD 95 add group name for telephone B (ABC Company). | As the call is transferred from telephone B to C, telephone B sends the name associated with its CLID entry to telephone C. Once the transfer is complete from B to C, telephone A sends the name associated with its CLID entry to telephone C |



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| | | | | |
|---|---|---|---|---|
| In this scenario, the public network protocol supports updating name and number after transfer and this feature is enabled. | | telephone A to telephone C. | | and telephone C sends its private name (C) to telephone A. |
| Transferred call over private-public network (public network does not support updating name display) Three nodes connected in a combination of a private network and a public network. Node 1 is connected to node 2 over a private network link and node 2 and 3 are connected over a public network. | LD 11 or LD 95: CPND-NAME for each telephone. | Telephone A calls telephone B over a private network and the call transfer is completed by telephone B over a public network to telephone C. The transferring node, telephone B sends the name of telephone C to telephone A and the name of telephone A to telephone C. | Same as before, except in LD 95 add group name for telephone B (ABC Company). | As the call is transferred from telephone B to C, telephone B sends its group name (ABC Company) to telephone C. Since in this scenario, the public network protocol does not support updating name and number after transfer, there is no change in the number sent after transfer is completed. |
| Redirection over a private-public network. Three nodes connected over a combination of private and public networks. Nodes 1 and 2 are connected over a private network link and node 2 is connected to node 3 over a public network. | The feature enhancement does not affect calls going over a private network link. The same number is sent as before the CLID Name Enhancement. | | | |



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| | | | | |
|---|---|---|---|---|
| Tandem call over a public-private network.<br>Three nodes over a combination of private and public networks. Nodes 1 and 2 are connected over a public network and node 2 is connected to node 3 over a private network link. | LD 11 or LD 95: CPND-NAME for each telephone | Telephone A calls telephone B over a public network. The call is placed in tandem on a private network through telephone B to telephone C. Telephone A sends the name associated with its DN. | Same as before, except add a group name for telephone for C (XYZ Company) in LD 95. | Telephone C sends its group name (XYZ Company) to telephone A. Note that the call is from a public network to a private network, so group name is displayed only if name display is supported by the tandem node. |
| Transfer over a public-private network (public protocol supports name display update)<br>Three nodes connected in a combination of a public network and a private network. Nodes 1 and 2 are connected over a public network and Nodes 2 and 3 over a private network link.<br><br>For this scenario, the public network protocol supports updating name and number after transfer. | LD 11 or LD 95: CPND-NAME for each telephone. | Telephone A calls B over a public network and the call is transferred by telephone B over a private network to telephone C. Telephone A sends its private name to telephone C. | Same as before, except in LD 95, add group name for telephone A (ABC Company) and a group name for telephone C (XYZ Company). | Telephone A calls B over a public network and the call is transferred by telephone B over a private network to telephone C. With the enhancement, as telephone B transfers the call to telephone C, it sends its private name to C. When the transfer is complete, telephone A sends its private name to telephone C. |
| Redirection over public-private network.<br>Three nodes, 1 (CO), 2, and 3 with three | The feature enhancement does not affect calls going over a private network link. The same number is sent as before the CLID Name Enhancement. | | | |



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| | |
|---|---|
| telephones, A, B, and C. Nodes 1 and 2 are connected over a public network and Nodes 2 and 3 over a private network link. | |

## Operating Parameters

If the DN for which the group name has to be sent does not have an associated CLID entry configured, the group name configured for the default entry, (for example, CLID entry zero is sent).

If a valid terminating terminal number is not available, then the group name configured for the default entry, (for example CLID entry zero, is sent).

If a call from the public network arrives with a truncated digit interface, the TON is usually mapped to unknown or the call type changes to abbreviated. Therefore, after an incoming call to the CS 1000 uses this truncated number, no group name can be sent back to the PSTN.

### Privacy and security

#### Conditions under which a name is transported

The following table lists the only ISDN protocols over which CS 1000 supports name transport. The Remote Capabilities (RCAP) value is to be configured as ND2. If RCAP is already configured as ND1, ND1 has to be removed from a Meridian Customer Defined Network (MCDN) (SL1) interface to allow RCAP modification to ND2.

**Table 189**
**The RCAP value of the interface**

| INTERFACE | RCAP |
|---|---|
| SL1 | ND1/ND2/ND3 |
| QSIG | ND1/NDO |
| EURO | UUSI |
| NI2 | NDS |
| SL100,D100 | ND2 |



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### Conditions under which a name is displayed

The presentation indicators for a telephone are determined by the Class of Service (CLS) value of the user. This CLS can be any of the following values:

- NAMA/NAMD
- Calling Name Display Allowed (CNDA) or Calling Name Display Denied (CNDD)
- Diverting Name Display Allowed (DNDA) or Diverting Name Display Denied (DNDD)

For these CLS values, it is the display that is affected. There is no change in the way the name is exchanged between two users.

The following are the indicators for the presentation of the name of a user:

- Connected Name Identification Presentation (CNIP): CNIP is a service offered to the called user and provides that user with the calling user's name. This service is permanent and based on the class of service NAMA defined (LD 10, LD 11) in the set originating the call.
- Connected Name Identification Presentation (CONP): CONP is a service offered to the calling user and provides that user with the name of the alerting, called, or connected user. This service is permanent and based on the class of service NAMA defined (LD 10, LD 11) on the set answering the call.
- Calling/Connected Name Identification Restriction (CNIR): CNIR is a service that prevents the served user's name from being presented to another user. This service is either activated for all calls (class of service NAMD) or activated on a per-call basis for preventing presentation of the calling name information (class of service NAMA and Calling Party Privacy Flexible Feature Code dialed before initiating a call).

## Error handling

Two new SCH error messages (SCH2204 and SCH2205) are introduced. Element Manager is updated to support the new error messages. The SCH error message is printed if the CLID entry input is invalid. A null input to the ENTR prompt results in a prompt for the next prompt.



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# Feature interactions

## Call transfer

The changes in the display of a transferred call depend on whether the call goes over a public network or a private network link.

- If the call originates in a private network link, the private name of the caller is sent to the other end. The private or group name of the connected user is sent, depending on whether the call lands on a public or a private network link.
- If the call originates in a public network, the group name of the caller is sent to the other end. The private or group name of the connected user is sent, depending on whether the call lands on a public or a private network link.

### ISDN CLID Enhancement

The CLID Name Enhancement feature interacts with the ISDN CLID Enhancement. The ISDN CLID Enhancement feature is useful in situations where it is important to see the originator's number and name at the terminating telephone instead of that of the transferring party in a call transferred across an SL1 trunk interface.

If the ISDN CLID feature is turned on, when the transferring party initiates the call transfer across the network (SL1 interface), the CLID information of the original caller is sent to the other node in the setup message. The original caller's name displayed after the transferring party initiates the call transfer is dependent on the name sent across the network where the call originated.

If the ISDN CLID Enhancement feature is turned on and if the call originated within the same node, the private name of the originating party is displayed (if configured). If the call originated across a public network, then the group name is displayed (if configured).

## Call forward all calls, hunt, no answer, and busy

Using call forward all calls, call forward no answer, call forward busy, or hunt allows callers to manually forward, or forward on a no answer, or forward on busy, to any other station on the ISDN network. The receiving location is provided with the dialed number, the calling number, and if CPND is provisioned, the name of the caller and the reason for redirection.

- Call forward all calls: The originating and the terminating ends can have a change in their displays depending on the networks. The call forwarding node does not have any display involved. The originating



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node and the connected node send their public or private names depending on whether it is an off-net call or on-net call.

- Call forward no answer, call forward busy, and Hunt: The originating and the terminating ends can have a change in their name, depending on the networks. If the call is off-net, the call forwarding node has the group name of the originating node while that telephone is ringing. If the call is an on-net call, the private name is sent.

### Connected number

If there is call modification such as call transfer, a connected number and its name are sent in the ISDN Notify/Connect message for the MCDN peer-to-peer networks or in the facility message for UIPE networks. The connected name is obtained from the CPND name that is stored along with the source key for the telephone. If possible, the CLID Name Enhancement feature uses the group name stored in the CLID entry associated with the active DN key if the call is over a public network. If the active DN does not have any entry number associated, the group name to be displayed is taken from CLID entry 0, the default CLID entry, if group name is configured.

### Calling party name display

Currently, Calling Party Name is constructed using the DN of the active DN key. With this feature, the construction of the Calling Party Name depends on the network on which the call originates. If the call is over a private network link or if there is no other name associated with the DN, the CPND name associated with the source key of the DN is used for name display. Alternately, if the call is on a public network and has a CLID entry associated with the DN, the group name is taken from the associated CLID entry of that DN. If the active DN does not have entry number associated, the name configured for the default CLID entry, if configured, is sent.

### Network call redirection

The originating and terminating parties names are interchanged. If a group name is configured, that group name is sent. The CLID Name Enhancement feature works for network redirection only when NCRD is turned on.

### Numbering plan interactions

If the call redirected within a private network link has the TON and the Numbering Plan of the originally called number is public, group name is displayed.

### Trunks involved

The CLID Name Enhancement feature has functionality for PRI and PRI2 trunk types. The changes are not applicable for DTI or DTI2.



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## Feature packaging

The CLID Name Enhancement feature requires the following packaging:

- Calling Party Name Display (CPND) package 95
- Integrated Services Digital Network (ISDN) package 145
- Integrated Services Digital Network Supplementary services (ISDNS) package 161
- Call Identification (CALL ID) package 247
- Digit Display (DIGDSP) package 19

## Feature implementation

### Implementation using overlays

The ENTR prompt allows group name configuration for an entry number to a CLID data block defined in LD 15. The overlay confirms that the ENTR value entered is valid, and a new SCH error message is printed whenever the CLID entry value is invalid.

The ENTR prompt takes a numeric value as input. If the CLID entry is configured for the customer in the Customer Data Block (CDB), the group name is taken as input for that entry. If a NULL input is entered for the ENTR prompt, the overlay prompt moves to the next prompt. This group name is associated to the DN, based on the CLID entry configured for the DN, while the key name or the key function and the DN are configured as the telephones are configured. If a valid ENTR number is entered, the overlay prompts for the group name associated with this CLID entry block, the expected length, and the display format. Following the entry of these fields, the overlay re-prompts ENTR. This continues until “NULL” is entered.

### Task summary list

The following is a summary of the tasks in this section:

- LD 95—Configure CPND name
- LD 95—Configure group name
- LD 11—Configure group name

**Table 190**
**LD 95—Configure CPND name**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW, CHG | Req = NEW or CHG to change an existing Customer Data Block) |
| TYPE | NAME | Type = Name of data block |



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| | | |
|---|---|---|
| CUST | xx | Customer number associated with this telephone |
| ... | | |
| ENTR | x | Entry number |
| NAME | xxx | Group name in calling party name display |
| - DISPLAY_FMT | aaaa.bbbb | Display format for calling party name display |
| ENTR | | Entry number |

Two new warning messages are introduced to indicate that the:

- the input CLID entry number is not configured for the customer in CDB
- the input value entered is greater than the default maximum-allowed CLID entry

The print routine for LD 95 is modified to print the new prompt value of Name in the Customer Data Block (CDB).

This feature enhancement retains all the conditions necessary for the transport of name to the next user and also for the display of the received name of any user. A protected variable CLID_NAMEP is added in the CDB CLID entry blocks in the unprotected data store. The feature enhancement is applicable for all digital telephones and analog telephones that have name display.

The function of the CLID Name Enhancement during a call transfer depends on whether a call takes place over a public network or a private network link.

This feature enhancement has interactions with another CLID feature enhancement called ISDN CLID Enhancement. The ISDN CLID Enhancement comes into play in cases when it is important that a terminating telephone display the name and number of an originating telephone during a call transfer, instead of the name and number of the telephone performing the transfer.

The common name in the NAME prompt in LD 95 must be configured at both the nodes. This is configurable as a string of characters.

The CLID entry for which the group name is configured is associated to the DN while configuring the set in LD 11 or in LD 10.



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**Table 191**
**LD 11 - Configure group name**

| PROMPT | RESPONSE | DESCRIPTION |
|---|---|---|
| REQ | NEW | Configure a new telephone |
| TYPE | xxx | Type of telephone |
| CUST | xx | Customer number |
| ... | | |
| ... | | |
| KEY | x aaa yyy (cccc or D) | xx = Key number<br>aaa = Key name or function (SCR/MCR/PVN/PVR/SCN)<br><br>yyyy = DN<br><br>cccc = CLID table entry of (0)-N, where N = the value entered at the SIZE prompt in LD 15 minus 1.<br><br>D = the character D. After the character D is entered, the system searches the DN keys from key 0 and up to find a DN key with a CLID table entry. The CLID associated with the found DN key is then used. |
| ... | | |

## Implementation using Element Manager

A new prompt ENTR is added in LD 95 to allow group name configuration for each entry number of a CLID data block, defined in LD 15.

Use the following procedure to configure Group CLID Name for a new customer.

**Configuring Group CLID Name**

| Step | Action |
|---|---|
| **1** | Log on to Element Manager using a valid user account. |
| **2** | Go to the **Customers** page. |
| **3** | Click **Add...** to load the **Basic Configuration** page. |
| **4** | Enter valid values for parameters in the **Basic Configuration** page and click **SAVE**.<br>The Edit page displays. |



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5 Click the **ISDN and Electronic Switched Network (ESN)** link on the Edit page.

The **ISDN and ESN** page displays.

6 Click the **Calling Line Identification Entries** link.

7 Click **Add...** in the **Calling Line Identification Entries** table to load the **New Calling Line Identification** page.

If the CPND is not already configured, a popup appears stating, "Group Names require CPND to be configured. Click OK to configure CPND for the customer."

New input fields appear in the New Calling Line Identification page (the Roman characters block and the Katakana characters block, each containing group name, Expected length, and Display format fields).

8 Enter valid values in the fields on the **New Calling Line Identification** page and click **Save**.

Note: The Expected length field value is context-sensitive and cannot exceed the maximum-length (MXLN) value configured for the Customers > Call Party Name Display section. The value entered for group name cannot exceed the value specified in the Expected length field.

Calling Line Identification entries are displayed with the new values updated. The new values are updated to the specified customer data block and CPND block.

**--End--**

Use the following procedure to create a Group CLID Name for an existing CLID entry.

**Configuring Group CLID Name for an existing CLID entry**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table that has the CLID entry already configured to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the Edit page to load the ISDN and ESN page. |
| 5 | Click the **Calling Line Identification Entries** link. |
| 6 | Click any of the listed CLID entries from the **Calling Line Identification Entries** table to load the **Edit Calling Line Identification (##)** page. |



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New input fields for CPND Language (the Roman characters block and the Katakana characters block, each containing Group name, Expected length, and Display format fields), are displayed on the Edit Calling Line Identification (##) page. The Expected length field value is context-sensitive and cannot exceed the maximum-length (MXLN) value configured for the Customers > Call Party Name Display section. The value entered for group name field cannot exceed the value specified in the Expected length field.

7 Enter valid values for the fields and click **Save**.

Calling Line Identification Entries are displayed with the new values updated. The new values are updated to the specified customer data block and CPND block.

**--End--**

Use the following procedure to edit an existing CLID group name.

**Editing an existing CLID group name**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table that has the CLID entry already configured to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the **Edit** page to load the ISDN and ESN page. |
| 5 | Click the **Calling Line Identification Entries** link. |
| 6 | Click any of the listed CLID entries from the **Calling Line Identification** Entries table to load the**Edit Calling Line Identification (##)** page.<br>Under the CPND Language section, the Expected length field must be non-editable for the existing group name. |
| 7 | Edit the group name or the display format field, or both, and click **Save**.<br>Calling Line Identification Entries are displayed with the new values updated. The new values are updated to the specified customer data block and CPND block. |

**--End--**

Use the following procedure to configure the ISDN and ESN page layout.



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**Configuring the ISDN and ESN page layout**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the **Edit** page to load the **ISDN and ESN** page. |

**--End--**

Use the following procedure to configure the Calling Line Identification Entries page layout.

**Configuring the Calling Line Identification Entries page layout**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the Edit page to load the **ISDN and ESN** page. |
| 5 | Click the **Calling Line Identification Entries** link to load the **ISDN and ESN (Calling Line Identification Entries)** page. |

**--End--**

Use the following procedure to configure the New Calling Line Identification page layout.

**Configuring the New Calling Line Identification page layout**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the **Edit** page to load the **ISDN and ESN** page. |



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5 Click the **Calling Line Identification Entries** link to load the **ISDN and ESN (Calling Line Identification Entries)** page.

6 Click **Add...** in the **Calling Line Identification Entries** table to load the**New Calling Line Identification (##)** page.

**--End--**

Use the following procedure to configure the Edit Calling Line Identification page layout.

**Configuring the Edit Calling Line Identification page layout**

| Step | Action |
|---|---|
| 1 | Log on to Element Manager with a valid user account. |
| 2 | Go to the **Customers** page. |
| 3 | Click the listed customer number in the table to display the **Edit** page. |
| 4 | Click the **ISDN and ESN** link on the Edit page to load the ISDN and ESN page. |
| 5 | Click the **Calling Line Identification Entries** link to load the ISDN and ESN (Calling Line Identification Entries) page. |
| 6 | Click any of the listed CLID entries from the **Calling Line Identification Entries** table to load the **Edit Calling Line Identification (##)** page. |

**--End--**



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# CLID on Analog Trunks for Hong Kong (A-CLID)

## Contents

This section contains information on the following topics:

“Feature description” (page 571)

“Operating parameters” (page 574)

“Feature interactions” (page 575)

“Feature packaging” (page 576)

“Feature implementation” (page 576)

“Feature operation” (page 577)

## Feature description

With the Calling Line Identification on Analog Trunks (A-CLID) feature and the DXUT-A card (NTRB37AA), on an incoming Central Office (CO) call, the system can extract information such as:

- Calling Party Number
- Calling Party Name
- Reason for absence of Calling Party Number or Name (if necessary)

The A-CLID information is treated similar to ISDN CLID for delivery to other modules and applications in the system, including the display on digital telephones and consoles at the local node and other network nodes (if any).

You can enable or disable A-CLID on an individual trunk port basis.

The A-CLID information passes to the terminating party, which includes:



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- Trunks — ISDN (PRI/BRI/QSIG), R2MFC (DTI/DTI2, Analog)
  - — Calling Party Number information can be tandemed over all ISDN and R2MFC interfaces
  - — Calling Party Name information can be tandemed only on SL1 and QSIG ISDN interfaces. R2MFC does not support name information.
- Terminals — attendant consoles, telephones (CLASS, 2208 with display, 2216, 2616, 2317, 5317, M3902, M3903, M3904, M3905)
- Applications — CallPilot, Customer Controlled routing, Meridian Mail, Meridian Link, Symposium Call Center Server (calling party number only)

Figure 25 "System structure for CLID delivery" (page 573) describes the feature operation.



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**Figure 25**
**System structure for CLID delivery**

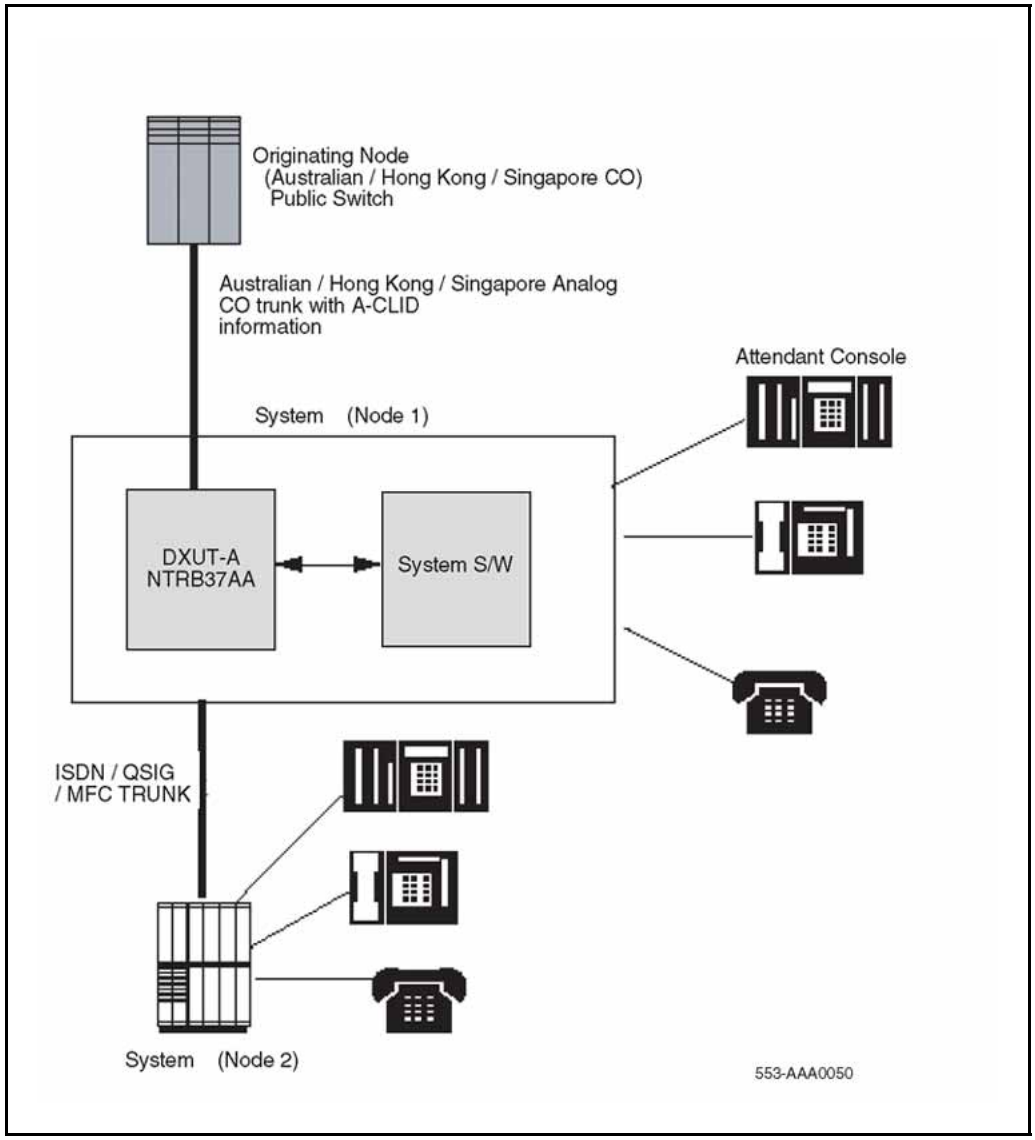


Table 192 "Format of CLI information" (page 574) shows the display format for different combinations of analog CLI information.

If you do not receive the calling number ("P" or "O" is received as the reason for absence), the display shows the P/O route access code number and member number.

If you do not receive the calling name ("P" or "O" is received as the reason for absence), then the display shows "PRIVATE" or "UNAVAILABLE".

If you do not receive either the calling name, or its reason for absence, then the display shows "UNAVAILABLE".



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**Table 192**
**Format of CLI information**

| Calling Number | Reason for Absence of Calling Number | Calling Name | Reason for Absence of Calling Name | Display Format |
|---|---|---|---|---|
| 491893021 | - | JOHN SMITH | - | JOHN SMITH<br>491893021 |
| - | "O " | PAY PHONE | - | PAY PHONE<br>O-8015-1 |
| - | "O " | - | - | UNAVAILABLE<br>O-8015-1 |
| - | "O " | - | "O " | UNAVAILABLE<br>O-8015-1 |
| - | "P " | - | - | UNAVAILABLE<br>P-8015-1 |
| - | "P " | - | "P " | PRIVATE<br>P-8015-1 |
| **P = Private** | **O = Other** | | | |

## Operating parameters

The A-CLID feature is only for incoming loop start trunks (both supervised and non-supervised) in Hong Kong.

Direct Inward Dialing (DID) trunks do not support the A-CLID feature.

A-CLID requires one mode: On-hook data transmission with ring.

If you initialize the system while the CLID information is transferring from the DXUT-A card to software:

- you lose all CLID information not sent.
- you lose the unestablished call (a call is established after the software receives the complete CLID information).

If the call is established, and you initialize the system, the call is restored. However, maintaining the displayed information is not guaranteed.



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If system initialization occurs after the A-CLID call is in the agent queue, the ACD module must display the CLID information after the call is established.

If the cyclic redundancy check (CRC) fails, the call terminates without displaying the CLID ("UNAVAILABLE" and "O-Route access code number - Member number" for name and number display).

If data transmission stops halfway, the call terminates without displaying the CLID ("UNAVAILABLE" and "O-Route access code number - Member number" for name and number displays).

The system can receive, process, and display alphanumeric characters as CLI information. No CLI information displays if the CO transmits information in another format.

A maximum display of 20 digits and 27 characters is possible with this feature.

When the call is tandemed to an ISDN/MFC trunk, only the first 16 digits of A-CLID passes on.

This feature does not change the functionality of R2-MFC trunks. R2-MFC trunks display the route access code number when the CLI information is not available, and not the member number.

If the system receives unrecognized messages or parameter types, the call terminates without displaying the CLID ("UNAVAILABLE" and "O-Route access code number - Member number" for name and number displays).

The A-CLID feature delays the occurrence of the first ring. The terminating set rings when the complete FSK message is received, or the software times out waiting for the FSK message.

When a DISA call is abandoned, the CO trunks is busy for a short period of time before disconnecting. This is characteristic of CO trunks.

## Feature interactions

### Attendant Call Extension

If an attendant extends a call from an incoming A-CLID CO trunk, the terminating set receives the analog CLI information.

### CLASS: Calling Number and Name Delivery

The analog CLI information is given to the XCMC service pack to provide number and name display to analog CLASS telephones. The CLASS telephones can only display the CLI information when the incoming CO call is auto-terminated on that telephone.



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For calls terminating on a CLASS set, only the:

- calling party number and name information display.
- first 15 characters of the information display.

### Direct Inward System Access (DISA)

If a user connects to the system through Direct Inward System Access (DISA) dialing, the incoming trunk information is passed, not the DISA DN information.

### Information Notification Service for Japan

The A-CLID feature does not work with the Information Notification Service for Japan (INS-J) feature.

### Private Line Service

A-CLID information does display on the telephone.

## Feature packaging

This feature requires Analog Calling Line Identification (ACLI) package 349.

## Feature implementation

Use the Calling Line Identification Allowed (CLIA) Class of Service (CLS) in LD 14 to activate the A-CLID feature on an individual port basis.

If EXUT is configured on a DXUT-A card pack, and the ACLI package is equipped, then the default CLS is Calling Line Identification Denied (CLID) for all incoming CO trunks to that card.

**Table 193**
**LD 14 - Configure analog CLI.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG<br>NEW x | Change existing data block.<br>Add new data block to the system. Follow NEW with a value of 1-255 to create that number of consecutive trunks. |
| TYPE | COT | Central Office Trunk data block. |
| .... | .... | |
| XTRK | EXUT | Enhanced Extended CO trunk card. |
| .... | .... | |
| SIGL | LOP | Loop start |
| .... | .... | |



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**Table 193**
**LD 14 - Configure analog CLI. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| CLS | | Class of Service options for trunks. |
| | CLIA | Calling Line Identification Allowed |
| | (CLID) | Calling Line Identification Denied (default) |
| .... | .... | |

## Feature operation

No specific operating procedures are required to use this feature.



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# Collect Call Blocking

## Contents

This section contains information on the following topics:

“Feature description” (page 579)

“Operating parameters” (page 581)

“Feature interactions” (page 582)

“Feature packaging” (page 584)

“Feature implementation” (page 585)

“Feature operation” (page 589)

## Feature description

In Brazil an automatic long distance collect call service called DDC is available. The Collect Call Blocking feature enables a system administrator to block DDC calls on incoming Direct Inward Dialing (DID) and Public Exchange/Central Office trunks (analog or DTI2). Under the following conditions, the system sends a special answer signal to the Central Office to indicate to the Central Office that collect calls cannot be accepted:

- The Collect Call Blocking (CCB) package 290 is enabled
- The incoming route has CCB enabled using the CCB prompt in the Route Data Block, and
- The call is answered by a CCB user (that is, Collect Call Blocking Allowed Class of Service or option).

Classes of Service and prompts have been introduced to inhibit specific users from receiving collect DID and Central Office calls. These can be configured for the following:



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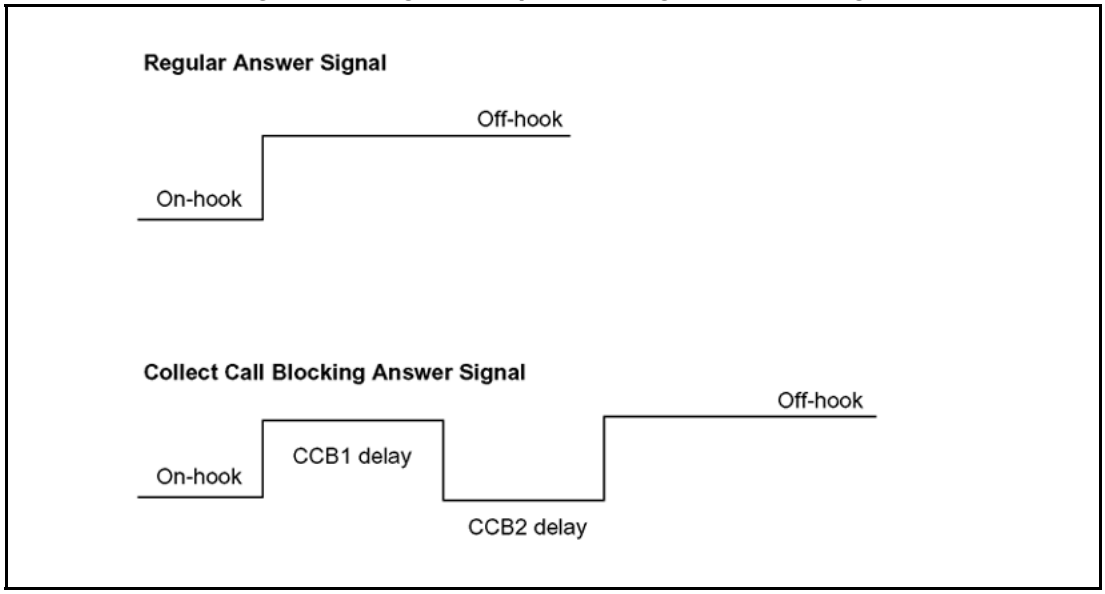
- analog (500/2500 type) telephones and Meridian 1 proprietary telephones through the Collect Call Blocking Allowed/Denied (CCBA/CCBD) Class of Service.
- Attendant and Network Alternate Route Selection calls on a per customer basis through CCBA/CCBD option.
- Automatic Call Distribution (ACD) queues through the CCBA prompt.
- Direct Inward System Access (DISA) through the CCBA prompt.
- Tandem calls dialed with Coordinated Dialing Plan (CDP) (Trunk Steering Code, Distant Steering Code) through the CCBA prompt.
- Tandem non-CDP calls through the CCBA prompt in the Route Data Block from the outgoing trunk route.

The system sends the CCB answer signal in place of the regular signal for incoming DID/CO calls from routes with CCB enabled, when a call is answered by a CCB user. If the call is a collect call, the CO will disconnect the call.

**Figure 26**
**Collect Call Blocking answer signal compared to regular answer signal**



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## Operating parameters

The Collect Call Blocking feature supports both analog and DTI2 trunks, and the following Intelligent Peripheral Equipment (IPE) cards:

- the NTCK16BB Extended Flexible COT Trunk Card (XFCOT) with firmware flash timing
- the NT8D14BA Enhanced Extended Universal Trunk Card (EXUT) containing the Centrex Switchhook Flash function in the firmware, and
- the NT8K14AK Extended Universal Trunk Card (XUT) which may be used if the Centrex Switchhook Flash is configured with software timing.

The Collect Call Blocking answer signal can only be sent in cases where answer supervision is provided by the system.

Once the modified answer signal is sent to the CO, the system has no control over how the call is handled by the CO.

If a CCB user answers a call from a CO/DID route with Collect Call Blocking activated, the CCB answer signal is sent to the CO for all incoming DID and CO calls. For analog trunks, the user will experience clicking on the line and a temporary break is speechpath (0.5 to 2.5 seconds) while the CCB answer signal is being sent.

If the XFCOT and EXUT cards do not have flexible firmware timing, the CCB flash portion of the CCB answer signal is ignored by firmware, and the regular answer signal is returned to the CO. However, software controlled signaling can be done with EXUT cards.

In a standalone environment, all input from a set (except from the Release key) is ignored while the Collect Call Blocking answer signal is being sent.

Collect Call Blocking is applied to attendants on a customer basis only; it cannot be applied on a tenant basis.

The answer signal returned for a call from a route with CCB enabled and that is Network Attendant Service (NAS) routed is determined by the customer option on the source node. Thus, NAS routing can be configured across any Meridian Customer Defined Network environment, but the source node determines the answer supervision sent to the CO.

Call Detail Recording (CDR) record timing begins on the first answer of the CCB answer sequence. For this reason, CDR records is generated for incoming calls to CCB users across routes on which CCB is enabled. If the call is collect, and is dropped, a CDR record of approximately CCB1 + CCB2 length is generated.



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For data calls, all calls is answered with the CCB answer signal, if CCB is enabled. This may have an effect on data protocols, while CCB signaling is taking place.

If firmware timing is used (FWTM = YES in Overlay14) for sending the CCB flash, the CCB2 timer is downloaded to the card before sending the firmware flash. If the CCB2 timer is changed in the Route Data Block, either the card has to be enabled or the switch has to be initialized to get the new CCB2 timer downloaded to the card.

## Feature interactions

### Automatic Answerback

The Automatic Answerback (AAB) feature, when assigned to a Meridian 1 proprietary telephone, allows any incoming call to a single-appearance Prime Directory Number (PDN) to be answered automatically. If an incoming DID or CO call terminates on a set with the AAB feature enabled, the call is automatically answered after one ring. If the set has a CCBA Class of Service, the CCB answer signal is provided in the place of the regular answer signal.

### Automatic Call Distribution

Collect Call Blocking can be enabled on an ACD queue basis. Hence, if an incoming CO or DID call is answered by an ACD agent, the answer supervision signal that is returned to the CO is determined by the value of the CCBA prompt in LD 23. While the CCB answer signal is being sent, the same limitations apply to ACD as apply to sets with CCBA Class of Service.

### Automatic Call Distribution Interflow

If an ACD call from a route with CCB enabled is diverted to an interflow DN, and answer supervision has not already been provided, the answer signal returned to the CO depends on the source ACD queue. The CCB answer signal is returned to the CO if the source ACD queue has CCB enabled.

### Automatic Call Distribution Night Call Forward

During Night Call Forward (ACD) call processing, the source ACD queue is removed or overwritten. Therefore, the CCB treatment given is based on the queue the call happens to be in at the time the call is answered.

### Automatic Call Distribution Night RAN Route Announcement

If an ACD call from a route with CCB enabled is diverted to a Night RAN route (defined by NRRT in the ACD block), the CCB signal returned to the CO depends on the source ACD queue. If the source ACD queue has CCB enabled, the CCB answer signal is sent to the CO.



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### Automatic Call Distribution Overflow

If an ACD call from a route with CCB enabled is diverted to an overflow ACD DN and answer supervision has not already been provided, the answer signal returned to the CO depends on the source ACD queue from where the call came. If the source ACD queue has CCB enabled, the CCB signal is sent to the CO.

### Autoterminate

If an incoming DID or CO call from an autoterminate trunk terminates on a set or ACD queue with a CCBA Class of Service, the CCB answer signal is provided in place of the regular answer signal.

### Basic Rate Interface (BRI) Sets

For BRI sets CCBA/CCBD Class of Service cannot be programmed. Therefore, it is not possible to prevent BRI sets from accepting DDC collect calls.

### Central Answering Position

The answer signal returned to the CO for calls that get answered by a Central Answering Position (CAP) is determined by the source ACD configuration and not the customer option (CCBA/CCBD in LD 15) on the source node.

### Centralized Attendant Service

The answer signal returned to the CO for calls that get answered by a Centralized Attendant Service is determined by the customer option (CCBA/CCDB in LD 15) on the source node.

### Centrex Switchhook Flash

A Centrex Switchhook Flash cannot be invoked by another feature while the CCB answer signal is being sent.

### Malicious Call Trace - Enhanced

If a station activates Malicious Call Trace (MCT) while the CCB answer signal is being sent, MCT activation is ignored. This also applies to the case when MCT is activated from a remote node.

### Meridian Mail

Because Meridian Mail is configured using ACD queues, the same interactions exist as in the ACD case. When Meridian Mail sends a call answer message to the system, the CCB configuration in the source ACD queue is used to determine if a CCB answer signal should be sent to the Central Office. All mail boxes using the same ACD queue to access Meridian Mail will get the same CCB treatment.



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If some of the mail boxes are allowed to receive collect calls, this may be a problem. A possible solution is to configure two ACD queues on the system to access Meridian Mail. One queue would have collect calls allowed and the second queue would have collect calls denied.

### Network Automatic Call Distribution

The answer signal returned to the CO for a network ACD call from a route with CCB enabled is determined by the source ACD queue. If the source ACD queue has CCB enabled, the CCB answer signal is returned in place of the regular answer signal.

### Pilot DN

If an incoming DID or CO call has CCB enabled and is routed to a pilot DN, the answer signal returned to the CO is determined by the CCB configuration of the terminating station.

### Private Line Service

If an incoming DID or CO call from a private line trunk terminates on a set with a CCBA Class of Service, the CCB answer signal is provided in place of the regular answer signal.

### Recorded Announcement

A Recorded Announcement (RAN) route is defined as having CCBA YES or NO, which is used if Coordinated Dialing Plan (CDP) or ACD queues were not used to get to the RAN route. If the call is routed through ACD/CDP to terminate on RAN, the CCB treatment will depend upon the CCB data of the ACD/CDP, and not of the RAN route.

### Tandem to Unsupervised Trunk

If an incoming DID or CO call tandems to an unsupervised trunk before it terminates, the answer signal is sent by timeout. Therefore, any CCB tandem calls made to unsupervised trunks will not have the CCB answer signal sent until the timeout occurs.

### Trunk Hook Flash

If a station activates Trunk Hook Flash (THF) while the CCB answer signal is being sent, THF activation is ignored.

## Feature packaging

Collect Call Blocking (CCB) package 290 must be provisioned to activate this feature.



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# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 194 "LD 16 - Enable Collect Call Blocking on a route and configure timers." (page 585)

   Enable Collect Call Blocking on a route and configure timers.

2. Table 195 "LD 14 - Setup the firmware timing for XFCOT and EXUT cards." (page 586)

   Setup the firmware timing for XFCOT and EXUT cards.

3. Table 196 "LD 15 - Allow Collect Call Blocking for attendants." (page 587)

   Allow Collect Call Blocking for attendants.

4. Table 197 "LD 10 - Enable Collect Call Blocking for analog (500/2500 type) telephones." (page 587)

   Enable Collect Call Blocking for analog (500/2500 type) telephones.

5. Table 198 "LD 11 - Enable Collect Call Blocking for Meridian 1 proprietary telephones." (page 588)

   Enable Collect Call Blocking for Meridian 1 proprietary telephones.

6. Table 199 "LD 23 - Enable Collect Call Blocking on ACD queues." (page 588)

   Enable Collect Call Blocking on ACD queues.

7. Table 200 "LD 24 - Enable Collect Call Blocking on DISA blocks." (page 588)

   Enable Collect Call Blocking on DISA blocks.

8. Table 201 "LD 87 - Enable Collect Call Blocking on CDP Steering codes." (page 589)

   Enable Collect Call Blocking on CDP Steering codes.

**Table 194**
**LD 16 - Enable Collect Call Blocking on a route and configure timers.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add.<br>Change. |
| TYPE | RDB | Route Data Block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ROUT | | Route number |
| | 0-511 | Range for Large System and CS 1000E system. |



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**Table 194**
**LD 16 - Enable Collect Call Blocking on a route and configure timers. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | 0-127 | Range for Small System and Media Gateway 1000B. |
| TKTP | aaa | Trunk type. Must be COT, DID, FEX, or WAT for CCB. |
| ... | | |
| M911_ANI | NO | M911 route. Must be set to NO to enable CCB. |
| ... | | |
| ISDN | NO | ISDN route. Must be set to NO to enable CCB. |
| ... | | |
| ICOG | IAO ICT OGT | Incoming and outgoing, incoming, or outgoing. Must be either IAO or ICT to enable CCB.<br><br>Must be either IAO or OGT to get the CCBA prompt for outgoing calls. |
| ... | | |
| CNTL | (NO) YES | Change to controls or to timers. |
| ... | | |
| CCB | (NO) YES | Collect Call Blocking enabled or disabled on incoming route. CCB package 290 is required. Enter YES to obtain CCB timer prompts. |
| CCB1 | 512-(1536)-4992 | Collect Call Blocking delay timer 1 in milliseconds. Input rounded to the next multiple of 128 milliseconds. |
| CCB2 | 500-(1520)-2550 | Collect Call Blocking delay timer 2 in milliseconds. Input rounded to the next multiple of 10 milliseconds. If any CCB route members (trunks) are using firmware timing (FWTM = YES in LD 14), changes to the CCB2 timer value will not take effect until the new timer value is downloaded to the card. This can be done by enabling the card or initializing the switch. |
| CCBA | (NO) YES | Collect Call Blocking allowed or denied for outgoing route. |

**Table 195**
**LD 14 - Setup the firmware timing for XFCOT and EXUT cards.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add.<br>Change. |
| TYPE | DID COT FEX<br>WAT | Trunk Type. |
| TN | | Terminal number |



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**Table 195**
**LD 14 - Setup the firmware timing for XFCOT and EXUT cards. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| XTRK | EXUT<br>XCOT | Type of card. |
| FWTM | (NO) YES | Firmware timing for flash. Enter YES to enable firmware timing. |
| CUST | xx | Customer number, as defined in LD 15 |
| RTMB | | Route number and Member Number |
| | 0-511 1-4000 | Range for Large System and CS 1000E system. |
| | 0-127 1-4000 | Range for Small System and Media Gateway 1000B. |
| SUPN | YES | Answer supervision required. |

**Table 196**
**LD 15 - Allow Collect Call Blocking for attendants.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add.<br>Change. |
| TYPE: | FTR | Features and options |
| CUST | <br>0-99<br>0-31 | Customer number<br>For Large Systems<br>For Small Systems |
| - OPT | CCBA | Allow Collect Call Blocking.<br>CCBD = Default |

**Table 197**
**LD 10 - Enable Collect Call Blocking for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add.<br>Change. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 197**
**LD 10 - Enable Collect Call Blocking for analog (500/2500 type) telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| CLS | (CCBD) CCBA | (Deny) allow Collect Call Blocking. |

**Table 198**
**LD 11 - Enable Collect Call Blocking for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW<br>CHG | Add.<br>Change. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| ... | | |
| CLS | (CCBD) CCBA | (Deny) allow Collect Call Blocking. |

**Table 199**
**LD 23 - Enable Collect Call Blocking on ACD queues.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add.<br>Change. |
| TYPE | ACD | ACD data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ACDN | xxxx | ACD Directory Number. |
| ... | | |
| CCBA | (NO) YES | (Deny) allow Collect Call Blocking. |

**Table 200**
**LD 24 - Enable Collect Call Blocking on DISA blocks.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add.<br>Change. |
| TYPE | DIS | DISA data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ... | | |
| DN | xxxxxxx | DISA Directory Number. |



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**Table 200**
**LD 24 - Enable Collect Call Blocking on DISA blocks. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| CCBA | (NO) YES | (Deny) allow CCB answer signal to be sent. |

**Table 201**
**LD 87 - Enable Collect Call Blocking on CDP Steering codes.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW<br>CHG | Add.<br>Change. |
| CUST | xx | Customer number, as defined in LD 15 |
| FEAT | CDP | Coordinated Dialing Plan. |
| TYPE | TSC DSC | Steering code type. |
| ... | | |
| CCBA | (NO) YES | (Deny) allow Collect Call Blocking. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Conference Warning Tone Enhancement

## Contents

This section contains information on the following topics:

“Feature description” (page 591)

“Operating parameters” (page 592)

“Feature Interactions” (page 592)

“Feature packaging” (page 592)

“Feature implementation” (page 592)

“Feature operation” (page 594)

## Feature description

The Conference Warning Tone Enhancement feature was developed to meet the Italian requirements to distinguish between a conference warning tone and a true intrusion. A Conference Warning Tone warns users that they are involved in a conference connection. An Intrusion Tone warns users involved in a conference of an intrusion into their connection.

Prior to this development, the Intrusion Tone was also used as a Conference Warning Tone, and the two tones could only be distinguished by their cadences, not by their tone frequency. With this feature, a separate Conference Warning Tone can be defined, with its tone and cadence defined in LD 56. This tone and cadence can only be programmed in Flexible Tones and Cadences (FTC) table 0.

The Conference Warning Tone can be enabled or disabled using the CWFT prompt in LD 97. When the tone is enabled, a permanent speech path connection is placed from the tone circuit to the conference circuit to provide the tone to all parties connected in a conference. The tone and



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cadence for the Conference Warning Tone can be programmed to be distinctively different from the tone and cadence produced by the Intrusion Tone given by such features as Barge-In, Break-In, or Busy Verify.

## Operating parameters

This feature only applies to the Cabinet system.

The Conference Warning Tone will only be contained and defined within FTC Table 0. All other FTC tables will not contain any references to the Conference Warning Tone and this tone cannot be copied to any other FTC table by a numbered response to the DFLT (Default to existing FTC tone table) prompt in LD 56. Since existing code does not allow FTC table 0 to be deleted, there is no danger of deleting the Conference Warning Tone.

For cadence tables, table numbers above 15 should be chosen for the Conference Warning Tone, because cadence tables numbers below 15 are influenced by Software Controlled table numbers.

## Feature Interactions

### Tones and Cadences

There are no changes to the limitations to cadence numbers entry values. The same restriction still applies.

## Feature packaging

This feature is included in base system software.

## Feature implementation

***Note:*** When upgrading from a CS 1000S to a CS 1000E in Release 5.0, if CFWT in LD 56 has a value other than 0, then conference warning tones is enabled following the upgrade. After the upgrade, the CFWT prompt is not available in LD 97. The conference warning tone must be enabled/disabled and configured in LD 56.

### Task summary list

The following is a summary of the tasks in this section:

- Table 202 "LD 56 - Configure Conference Warning Tone" (page 593)

  Configure Conference Warning Tone.

- Table 203 "LD 97 - Enable Conference Warning Tone" (page 593)

  Enable Conference Warning Tone.

- Table 204 "LD 34 - Enable Conference Warning Tone" (page 593)

  Enable Conference Warning Tone.



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**Table 202**
**LD 56 - Configure Conference Warning Tone**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Modify existing data. |
| TYPE | FTC | Flexible Tones and Cadences data block. |
| TABL | 0 | FTC table number 0. Only table number 0 can be used to make changes to the Conference Warning Tone. |
| ... | | |
| RING | NO | Modify the ringing feature definitions. |
| HCCT | YES | Modification of the hardware controlled cadence tone definitions allowed. |
| ... | | |
| - EEST | NO | End-to-end Signaling type. |
| - CFWT | | Conference Warning Tone. |
| - - XTON | 0-(3)-255 | The Conference Warning Tone number. A tone number provided by the tone circuit. |
| - - XCAD | 0-(19)-255 | The Conference Warning Tone cadence number. Cadence number must have been previously set up within LD 56 by responding to the TYPE prompt with FCAD. |

**Table 203**
**LD 97 - Enable Conference Warning Tone**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Modify existing data. |
| TYPE | XCTP | Conference/TDS/MF Sender card parameters. |
| CPAD | <br>(0)<br>1 | Conference pad values.<br>Use software pad values.<br>Use pad values defined by switch settings. |
| DTMF | 0-(14)-255 | Tone table of the first Dual-tone Multifrequency digit to be used. |
| CFWT | (NO) YES | (Disable) enable Conference Warning Tone.<br>***Note:*** For CS 1000E Release 5.0 and later, LD 34 must be used to Enable/Disable Conference Warning Tone. |

**Table 204**
**LD 34 - Enable Conference Warning Tone**

| Command | Description |
|---|---|
| ENLX l | Enable Conf/TDS/MFS card on loop l and l + 1. |
| DISX l | Disable Conf/TDS/MFS card on loop l and l + 1. |



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## Feature operation

No specific operating procedures are required to use this feature.



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# Conference

## Contents

This section contains information on the following topics:

“Feature description” (page 595)

“Operating parameters” (page 596)

“Feature interactions” (page 597)

“Feature packaging” (page 607)

“Feature implementation” (page 607)

“Feature operation” (page 608)

## Feature description

Conference adds additional parties to an established call. The maximum is three or six, depending on the Conference feature assigned to the conference call originator. Not all conference parties have to be local to the system, although one party must be an internal Directory Number (DN) to uphold the conference connection. The attendant can also establish six-party conferences.

Meridian 1 proprietary telephones require a separate Conference 3 or Conference 6 key/lamp pair. M2317 sets establish conference calls by means of a softkey. Analog (500/2500 type) telephones use the switchhook to establish a three-party conference.

The six-party Conference (C6A) Class of Service enables analog (500/2500 type) telephones to establish a six-party conference, which operates the same as a three-party conference, with the exception of Conference Control operation.



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Conference Control disconnects an unwanted third party (trunk only) from a three-party conference. Analog (500/2500 type) telephone users implement this feature by means of switchhook flash. Telephones with the six-party conference capability implement Conference Control by dialing SPRE + 87.

It is recommended that all analog (500/2500 type) telephones have either the three-party conference (C6D) Class of Service or the six-party Conference (C6A) Class of Service to avoid confusion when using Conference Control.

## Operating parameters

Due to the possibility of getting annoying noise (squealing, for example) when two or more trunks are involved in a conference, it is strongly recommended that no more that two trunks be involved in the process.

At least one party in the conference must be a telephone on the local system for the duration of the conference call.

Attendant Administration does not support the implementation of six-party conference for analog (500/2500 type) telephones. An error message is displayed if an attempt is made to remove Transfer Allowed (XFA) Class of Service for analog (500/2500 type) telephones with a C6A Class of Service.

A Transfer allowed (XFA) Class of Service is required for a three-party conference (C6D) and is also a prerequisite for the six-party conference Class of Service (C6A) on analog (500/2500 type) telephones.

Dial access of Conference Control is provided only for analog (500/2500 type) telephones with a C6A Class of Service.

The number of time slots is limited to 30 per conference loop. For Small Systems, a maximum of five simultaneous conferences, each consisting of six conference users, is supported per conference loop.

Double conferences are blocked to avoid conference chains (that is, set A and set B are on an established call. The user of set B presses the Conference key to call set C. Any attempt by set C to initiate another conference is blocked if set B has not yet completed the conference).

While the originating side of a call is linked to a transfer or conference key (that is, the originator of a transfer/conference call has not yet completed the transfer/conference), the terminating side cannot initiate a transfer or conference. Conference calls cannot be transferred.



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A warning tone is available for conference calls. When the option is enabled, the tone lets callers know that they are entering a conference call. The switch for this option is preset to disable the warning tone. For information on the switch settings for the NT8D17 Conference/TDS card, see *Circuit Card Reference* (NN43001-311).

## Feature interactions

### 500/2500 Line Disconnect

If one of the parties in the conference is connected to a 500/2500 port that is in turn connected to a Voice Response Unit (VRU), dial tone is provided to the 500/2500 port when all the other parties in the conference disconnect. This feature enhancement applies in the same way to Call Transfer and Hunting.

### AC15 Recall: Transfer from Meridian 1

The use of the Conference key does not activate the AC15 Recall: Transfer from Meridian 1 feature. Conference call is not supported because it is not possible to have two parties on the same trunk.

### AC15 Recall: Timed Reminder Recall

The conference feature is sometimes used to perform a transfer when a controlling party establishes a call, the controlling party establishes a conference with a third party and releases, and a call is established between the two remaining parties.

If an established call is extended over a trunk to initiate a conference call, this conference call cannot be set up if this trunk has answer supervision and the called extension has not answered. The AC15 Timed Reminder Recall feature cannot be activated by using the conference feature to extend a call over an AC15 TIE trunk, because the AC15 TIE trunk must have answer supervision and the called extension must be ringing.

### AC15 Recall: Transfer from Norstar

It is not possible in any situation with Transfer from Norstar to establish a three-party conference. It is not possible for an AC15 trunk to initiate a consultation if it is involved in a conference.

### Advice of Charge for EuroISDN

If a set is participating in a conference, no charge is displayed for that set. Whenever an ISDN CO trunks that provides Advice of Charge (AOC) is added to a conference, the call charging information, received from the network, accumulates against the set that initiates the call.



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Once the last set involved in a conference call disconnects, a search is made of all trunks remaining in the conference call to determine which trunk has been established in the call for the longest period of time. This trunk becomes the chargeable TN. Once this trunk disconnects, the process is repeated so a new chargeable TN can be located.

### Attendant Barge-In
### Attendant Busy Verify

Conference Control cannot be activated if an attendant has used Barge-In or Busy Verify during a conference that involves a trunk.

### Attendant Break-In

If the attendant cannot break in to a conference call because the call is supporting the maximum number of callers, busy tone continues and the Break-In key lamp flashes.

### Attendant Console

Three-party Conference (C6D) allows analog (500/2500 type) telephones on established calls to flash the switchhook and Dial 0 to talk to the attendant. Six-party conference users follow the same sequence, but the conference loop is seized and the call is treated as a conference call. When only two parties remain from the conference, the call is returned to a simple call if neither of the remaining parties is an attendant console.

### Attendant Overflow Position

An Attendant Overflow Position (AOP) call answered on an AOP DN may be conferenced with another DN.

### Autodial Tandem Transfer

The Autodial Tandem Transfer feature is blocked during Conference and No Hold Conference calls.

### Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Conference (A03 or A06) key is ignored.

### B34 Codec Static Loss Plan Downloading
### B34 Dynamic Loss Switching

When a conference connection is established, no pads are switched in on the trunk side; any extra loss that is required is provided by the conference circuit based on an algorithm which takes into account the number of lines and trunks.

### Call Forward All Calls

On analog (500/2500 type) telephones, Call Forward All Calls can be activated or canceled during a conference call.



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### Call Forward by Call Type

Calls modified by Conference receive Call Forward by Call Type treatment for the conferenced telephone. If party A calls party B, and B tries to conference in party C, the forwarding DN and Class of Service are that of C. For example, Joan and Bob are in conversation, and they try to conference in Mack. Mack is not at his desk, so the attempted conference call is sent to the destination associated with Mack's telephone.

### Call Page Network Wide

A station set or attendant console that conferences an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

### Call Park

A parked call can be accessed after Conference is activated

### Call Party Name Display

When pressed during an active call, or to set up a conference, the Conference, Connect, or Join Parties key clears the display. The telephones involved in the conference have blank displays. If the conference returns to a two-way only call, each telephone displays the DN and name of the other telephone.

### Call Pickup

This feature cannot be activated during a conference call. Meridian 1 proprietary telephones can activate Call Pickup if an idle Directory Number (DN) key is available. The conference call must be put on hold before pressing the idle DN key to pick up the call.

### Call Pickup Network Wide

Call Pickup Network Wide may be used to pickup an enquiry call from a conference, subject to the same limitations as apply to Call Transfer.

### Call Transfer

Conference can be used to transfer calls, eliminating the need for a separate Call Transfer key/lamp pair on Meridian 1 proprietary telephones. Calls in the ringing state cannot be transferred with Conference. The third party must answer before the transfer can be completed.

A conference can also be established after initiating a Call Transfer operation. After the third party answers, pressing the Conference key establishes a three-way conference.

When a switchhook flash transfers calls on analog (500/2500 type) telephones with three-party conference (C6A) Class of Service, the transferring party goes on hook, leaving the other two parties established.



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Telephones with a C6A Class of Service involved in a conference having more than three parties must add the last party to the conference, then flash the switchhook and go on hook to complete the transfer.

### Called Party Disconnect Control

Trunks with Called Party Disconnect Control allowed are treated as trunks without disconnect supervision when conferenced.

### Calling Party Name Display Denied

Call Party Name Display, and thus the Calling Party Name Display Denied enhancement, do not apply to conference calls.

### Calling Party Privacy

The Calling Party Privacy (CPP) feature will pass the Privacy Indicator to the terminating set to inhibit the display of the Calling Party Name and Number if the Conference feature is used for the purpose of performing a transfer.

### Camp-On, Forced

Telephones involved in Conference calls cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

### Centrex Switchhook Flash

Centrex Switchhook Flash (THF) allows conference calls through the CO. It can be invoked only if there is an established call connected to an outside trunk. If the telephone is engaged in internal conference calls, THF cannot be used.

### Charge Account and Calling Party Name

Conference calls produce multiple Call Detail Recording (CDR) records. Whenever a new trunk is added to a conference, the connection between the connected telephone and the trunk is recorded, and a connection to the conference loop is established. This causes CDR to generate a start record with the telephone and trunk identified as the involved parties. As trunks are removed from a conference, CDR end records are produced. These records may identify different telephones or conferences as the local parties.

### China - Attendant Monitor

If any party involved in a monitored call attempts to activate conference, monitoring is immediately deactivated. With Attendant Monitor active, the attendant cannot create a conference without first disabling the Attendant Monitor feature.



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### China - Supervised Analog Lines

If a terminal device answers an incoming call and then initiates a conference, no battery reversal answer supervision signal is extended to the terminal device when new parties of the conference answer. However, a hook flash disconnect supervision signal is extended to the terminal device when the last party in the conference disconnects.

If a terminal device initiates a conference, battery reversal answer supervision is extended to the terminal device when the first party answers. No polarity change is made when additional parties are added to the conference. The polarity is reverted to normal when the terminal device disconnects or when the last party in the conference disconnects.

### China - Toll Call Loss Plan

Toll Loss Plan is not supported when a conference is in progress. When a local party connecting to a toll call makes a conference call, the pad levels on the ONS line card are switched back to their original (non-toll call) values. Then, the existing Conference algorithm takes care of the necessary pad switching. This would not alter the existing conference call in terms of loss levels.

When a conference call joins in a toll call, the Toll Loss Plan is not effective.

When a conference call involving a toll call becomes a two-party call, the Toll Loss Plan is applied on the set and DTI2 trunk.

The conference pad switching algorithm is not changed for the Toll Loss Plan, since the 7 db requirement does not apply to a Conference call.

### Controlled Class of Service

If Controlled Class of Service (CCOS) is activated at a telephone involved in a conference call, established Central Office or toll calls are not affected. The CCOS restriction level is applied immediately, and no new calls can be initiated from the conference. The telephone remains in the CCOS active state after the conference is terminated.

### Controlled Class of Service, Enhanced

If Controlled Class of Service (CCOS) is activated at a telephone on a conference call, established Public Exchange/Central Office or toll calls are not affected. The CCOS restriction level is applied immediately; however, no new calls can be initiated from the conference. That telephone remains in the CCOS state after the end of the conference.

### Dial Access to Group Calls

The Conference feature cannot be applied to a Group Call.



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### Dial Intercom

If an analog (500/2500 type) telephone is part of a Dial Intercom Group (DIG), the user of the telephone can conference only with another user whose telephone is within the same Dial Intercom Group (DIG).

### Digital Private Signaling System 1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is established in a local conference, or if the requested party is involved in an enquiry call. These limitations may apply to the unrequested party depending on the connection being used between the requested and unrequested parties.

### End-to-End Signaling

The attendant console and the telephone receiving Attendant End-to-End Signaling cannot both activate End-to-End Signaling simultaneously.

### Group Call

Neither Call Transfer nor Conference can be initiated during a Group Call. If an analog (500/2500 type) telephone user flashes the switchhook during an established Group Call, the user is dropped from the call.

### Held Call Clearing

Active Conference calls are cleared by an on-hook or Release key action. Conference calls being held are cleared by an on-hook action only, and not by a Release key action. In either case, all other parties on the conference remain connected.

### Hot Line

A Flexible Hot Line (non-enhanced) telephone cannot place conference calls, but an Enhanced Hot Line telephone can activate the conference feature. If the Hot Line restriction option is set, the conference call can terminate only to other Hot Line telephones. If the restriction option is not set, the conference call can terminate to any type of telephone.

### ISDN QSIG/EuroISDN Call Completion

A Call Completion request cannot be made on a conference call attempt.

### ISDN QSIG Name Display

An incoming QSIG call with name display presentation allowed is conferenced locally. When a conferee drops out of the conference, calling party's name information is displayed and is passed on to another conferee. Name display information remains until the last local set remains on the call. With presentation restricted, the calling party's name information is not displayed as conferees leave the call.



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### In-Band Automatic Number Identification

If an agent activates the Conference feature while active on an In-Band Automatic Number Identification (IANI) call, the display is cleared. The display remains clear while the Conference call is active. If the conferenced party releases first, the ANI number appears on the agent's display.

### Malicious Call Trace

When a station or console that is on the conference loop activates the MCT feature, the trace record shows only the conference loop number and conference number as the ORIGTN, and the Terminal Number (TN) of the station or console that activated the feature as the TERTN. No information on the other parties in the conference is given.

### Malicious Call Trace - Enhanced

If MCT is activated during a conference, the trace record shows the conference number and the conference loop number. Trace records are printed for each party involved in the conference. The originator of the call's trace record is printed first.

### Meridian Mail Conference Control

Three- and six-party conference allows 2500 telephones to disconnect from Meridian Mail by dial access during a conference call.

A 2500 telephone on an established call flashes the switchhook to place the existing call on Consultation Hold. After receiving special dial tone, the user dials the third party. If the third party does not answer, the call is forwarded to Meridian Mail. If the 2500 telephone flashes the switchhook again, a three-party conference is established, including Meridian Mail. If the user does not flash the switchhook at this time, Privacy is in effect and the user can disconnect from Meridian Mail by dial access before returning to the original call. This can be done if the user is in conference or on a simple two-party call.

To disconnect from Meridian Mail, press octothorpe (#) to stop the recorded greeting, octothorpe (#) to stop recording your message, and 83 to disconnect. To disconnect from any other message system connected to the system, press 3 to stop the recorded message and the asterisk (*) to disconnect.

### Meridian 911

When a call is answered, and then conferenced, the trunk priority is lost (the conference consultation call is an internal call and treated as low priority by the software). This operation is the same for normal calls and 911 calls.



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### Meridian 911 - Call Abandon

M911 abandoned calls cannot be conferenced.

### Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Conference.

### Multi-Party Operations

Current Conference feature for analog (500/2500 type) telephones with C6A is not affected by conference with TSA Class of Service.

### Multi-Party Operations - Call Join

The Call Join feature allows a user of a system or digital telephone to conference in or transfer a third party to a party held on the user's telephone, without having to dial the third party. The user can then hang up.

### Multi-Party Operations -Three-Party Service
### Multi-Party Operations Enhancements

The patience tone or the Misoperation ringback is not applied to a conference party.

### Music

With basic Music on Hold, when a call is placed on consultation hold while a Conference is being established, music does not play. Enhanced Music (EMUS) package 119 is required for music on consultation hold. See the "Music, Enhanced" feature description in *Features and Services Fundamentals* (NN43001-106), Book 2.

### Music, Enhanced

The held party receives Music when the Conference key is pressed, while the conference is being established, and whenever the conference is reduced to two parties with one party on Hold. Once the conference is established, Music is no longer provided.

A Six-party Conference operates the same as a Three-party Conference.

### Network and Executive Distinctive Ringing

If a new party is to be included in an established conference, the ringing that is applied to the set of the new party depends on the sets of the established parties. The system scans the trunks and sets of the conferees for a trunk marked as distinctive or a set designated as executive. The ringing cadence of the new set depends on the highest index found by the scan.

### Network Intercom

A Conference call may involve a mixture of intercom and regular DN keys.



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### No Hold Conference

This feature can be enabled at any time that a regular Conference-6 feature can be activated.

### Off-Hook Alarm Security

The Off-Hook Alarm Security (OHAS) line lockout treatment occurs when a telephone associated with an OHAS DN initiates a Conference call and the ASTM expires. Only the Conference initiator receives the OHAS treatment; other conferees remain in Conference. If the initiator of the Conference call presses the Conference key, the OHAS DN is conferenced in with the other conferees.

### On Hold on Loudspeaker

It will not be possible to conference the loudspeaker call to another party.

### Override

A conference call cannot be entered by using Override.

### Override, Enhanced

Telephones involved in conference calls cannot be force camped on or Priority Overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-On or Priority Override.

### Paging

Paging trunks cannot be conferenced.

### Periodic Pulse Metering (PPM)

Whenever a PPM trunk is added to a conference, a CDR Start record is generated, if CDR is equipped on the trunk. The PPM pulse counts from the trunk are accumulated against the party who initiated the call. If a party who adds a PPM trunk to the conference disconnects while the conference is still in progress, read requests are sent to the PPM trunk to read the residual count. Then, the onboard counter is cleared, the residual count is added to the temporary meter, and the contents of the temporary meter are added to the terminal meter. A CDR Transfer (X) record is then printed against this party, and the temporary meter is cleared. The party that is charged is the one that has been in conference the longest. When a trunk with disconnect supervision disconnects, a CDR End record is immediately printed. For trunks that do not provide a disconnect signal, their CDR records are not printed until the last party disconnects from the conference.

### Privacy Override

The Conference feature can be used to add other parties to a Privacy Override connection.

### Recorded Announcement Trunk

A Recorded Announcement (RAN) trunk cannot be Conferenced.



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### Recorded Telephone Dictation

Dictation trunks cannot be conferenced.

### Ring Again

This feature cannot be activated during a conference call.

### Station Activity Records

For a set with Class of Service Call Detail Monitoring Allowed (CDMA) involved in a call with a trunk, a Station Activity Record is produced only when that set conferences in the first party. Conferencing of all subsequent parties does not generate a "D" record. An additional "D" record is produced when the last conferee with Class of Service CDMA connected to the trunk goes on hook. This does not affect any other CDR record generation during a conference.

### Trunk Access from any Station

A switchhook flash on analog (500/2500 type) telephones results in special dial tone. Dialing SPRE + 4 (TAFAS access code) then picks up an incoming Trunk Access from any Station (TAFAS) call. A second switchhook flash reconnects the user to the original conference call. The call picked up by TAFAS is put on Consultation Hold. No other action can be taken with a call picked up in this way during an established conference call.

### Trunk Barring

The originator of a conference call can connect only to a barred route on a consultation basis. A switchhook flash from an analog (500/2500 type) telephone results in a reestablished connection with the Originating Trunk Connection. The user of a Meridian 1 proprietary telephone must release the barred connection to return to the Originating Trunk connection, or the conference containing the Originating Trunk connection; operating the Conference key on a Meridian 1 proprietary telephone has no effect. An attendant may return to the Originating Trunk Connection, or the conference containing the Originating Trunk Connection, by releasing the barred connection. This is done by pressing the RLS DEST key; pressing the Conference key has no effect.

### Trunk to Trunk Connection

Trunk to Trunk Connection allows external trunks to remain established in a call, provided that all external trunks involved have disconnect supervision. With respect to charging costs associated with a conference call, once the last set involved in the conference call disconnects, a search is made of all remaining trunks in the call to determine which call is established in the call for the longest period of time. This trunk is the chargeable Terminal Number (TN). This process is repeated to find the next chargeable TN.



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## Feature packaging

This feature is included in base system software.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 205 "LD 10 - Enable Conference 3 or Conference 6 for analog (500/2500 type) telephones." (page 607)

   Enable Conference 3 or Conference 6 for analog (500/2500 type) telephones.

2. Table 206 "LD 11 - Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones." (page 607)

   Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones.

**Table 205**
**LD 10 - Enable Conference 3 or Conference 6 for analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (XFD) XFA<br>(C6D) C6A | (Deny) allow transfer Class of Service.<br>(Deny) allow six-party conference (C6A requires an XFA Class of Service). |

**Table 206**
**LD 11 - Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |



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**Table 206**
**LD 11 - Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx AO3 AO6 | Add a Conference 3 or Conference 6 key.<br><br>xx = key number. |

## Feature operation

To add a new party to an established call on a Meridian 1 proprietary telephone, follow these steps:

**Procedure 3**
**Add a new party to an established call on a Meridian 1 proprietary telephone**

| Step | Action |
|---|---|
| **1** | Press **Conference**.<br><br>The first party is on hold and you receive a dial tone. |
| **2** | Dial the number of the new party.<br><br>When the new party answers, you may talk privately. |
| **3** | Press **Conference** to include all parties in the call. |
| **4** | To add more parties to the conference (up to six, including yourself), repeat steps 1-3. |

**--End--**

If you make a mistake while dialing or receive a busy signal, press **RIs** to disconnect. To return to the call, press the key beside the fast flashing indicator.

To add a new party to an established call on an analog (500/2500 type) telephone, follow these steps:

**Procedure 4**
**Add a new party to an established call on an analog (500/2500 type) telephone**

| Step | Action |
|---|---|
| **1** | Flash the switchhook.<br><br>You hear three beeps followed by dial tone. The first party is on hold. |



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2 Dial the telephone number of the person to be included in your call.

When the call is answered, you may talk privately with the new party.

3 Flash the switchhook to include all parties in the call.

4 To add more parties to the conference (up to six, including yourself), repeat steps 1-3.

If you make a mistake while dialing or receive a busy signal, flash the switchhook to return to the original caller.

**--End--**



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# Console Operations

## Contents

This section contains information on the following topics:

“Feature description” (page 611)

“Operating parameters” (page 612)

“Feature interactions” (page 612)

“Feature packaging” (page 613)

“Feature implementation” (page 613)

“Feature operation” (page 614)

## Feature description

Console Operations consists of Console Presentation and Queue Thermometer.

### Console Presentation

This part of the feature makes it possible to present a call to a certain Incoming Call Indicator (ICI) key only to specified consoles of a customer or an Attendant Console Group (ACG).

Those consoles are configured (LD 15 option PSA/PSD) to have presentation status for the ICI key to handle the following call treatments:

- If a call is not automatically presented to an idle console, it is indicated on the appropriate ICI key on all consoles within the customer or ACG (LD 15 option MTI/CUI).
- When all attendants with presentation status for a certain ICI key within a group, customer or ACG are in position busy, then a call to that ICI key is presented to any other console within the group or only



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presented to the last console that is not in Night Service in a group (LD 15 option RECA/RECO).

- When a ACG is in Night Service, a call to that ACG is redirected to the customer or trunk night DN, or to a night ACG (LD 15 option NCA/NCD).

### Queue Thermometer

This part of the feature applies to a special console which has four single-digit numeric displays. Each display can be configured to show the number of attendant calls in queue for specified ICI keys of a customer or an ACG (LD 15 option MTI/CUI).

A queue thermometer display can also be configured to show the number of calls to those ICI keys that are not individually displayed on any other display of that console.

Optionally, this sum may exclude calls to ICI keys to which inter-attendant calls, recalls and metered calls are presented (LD 15 option DRT/DRE).

## Operating parameters

### Console Presentation

When Multi-tenant Service (MTS) is in use, the following limitations apply when using Console Operations:

- All attendants must belong to an ACG
- All attendants must belong to only one ACG, and
- No attendants must belong to ACG 0.

## Feature interactions

### Console Presentation

#### Departmental Listing Directory Number

Departmental Listing Directory Number is a way of directing attendant calls. The feature has some similarities to MTS, but it overrides Multi-tenant Service (MTS) and is therefore not affected by Console Presentation.

#### Listed Directory Numbers, Network Wide

Console Operation makes it possible for each console to select which ICI call types is presented to the console. Network wide LDN does not work with the Console Presentation feature because it is not supported by NAS. Console Operation can, however, be configured with two additional LDNs.



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The queue thermometer indicates how many calls are in the queue for a certain ICI key. An ICI key can correspond to more than one ICI type. Even though the ICI type of a call may be different with or without this feature active, it will not interact with queue thermometer operations.

## Feature packaging

Console Operations (COOP) package 169.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 207 "LD 15 - Configure the Console Presentation feature." (page 613)

   Configure the Console Presentation feature.

2. Table 208 "LD 15 - Configure the Queue Thermometer feature." (page 614)

   Configure the Queue Thermometer feature.

### Console Presentation

**Table 207**
**LD 15 - Configure the Console Presentation feature.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add, or change. |
| TYPE: | ATT_DATA | Attendant console options |
| ... | | |
| - OPT | (PSD) PSA | Presentation Status selection allowed (denied) on attendant consoles. |
| | (CUI) MTI | ICI lamps show Multi-tenant Service (MTS) Attendant Console Group (AGP) information for incoming calls. |
| | (RECO) RECA | Attendant calls is redirected when there is no presentation status to other consoles in the console group; RECO when all consoles are busy, RECA when all but one console is busy. |
| | (NCD) NCA | When an Attendant Console Group is in Night Service, redirection of attendant calls is allowed (denied). |



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### Queue Thermometer

**Table 208**
**LD 15 - Configure the Queue Thermometer feature.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add, or change. |
| TYPE: | CDB | Customer Data Block. |
| ... | | |
| - OPT | (DRE) DRT | Queue thermometer includes (excludes) Inter-Attendant calls, Recalls and Metered calls. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Console Presentation Group Level Services

## Contents

This section contains information on the following topics:

“Feature description” (page 615)

“Operating parameters” (page 616)

“Feature interactions” (page 616)

“Feature packaging” (page 617)

“Feature implementation” (page 617)

“Feature operation” (page 619)

## Feature description

A Console Presentation Group (CPG) is a subset of the consoles configured for a customer. A CPG handles attendant calls from one or more tenants and incoming trunk calls on one or more routes. CPG improves functions for the following CPG Level Services:

- Attendant Overflow Positions (AOP)
  AOP DN and waiting time threshold can be specified for each CPG.
- Call Waiting Indication
  Count thresholds, timers, and buzz options can be defined for each CPG.
- Incoming Call Identification (ICI)
  ICI keys can be defined for each CPG. Attendants see only those ICI definitions for their own CPG.
- Listed Directory Numbers (LDN)
  Each CPG allows four LDNs.



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- Night Service (NSVC)
  Each CPG can go into Night Service mode independent of the other groups.
- Recorded Announcement (RAN)
  Each CPG can have its own recorded overflow announcements.

## Operating parameters

Console Presentation Group (CPG) services and Departmental Listed Directory Numbers (DLDN) are mutually exclusive at the customer level. That is, DLDNs can be equipped on the same system with Console Presentation Groups (CPGs), but not enabled for the same customer group at the same time.

## Feature interactions

### Attendant Administration

Attendants can dial the access code and activate the Administration mode. In this mode, they can modify the configuration of any telephone for this customer.

### Attendant Secrecy

The Secrecy option specified for a customer applies to all attendants for that customer.

### Attendant Supervisory Console

The supervisory console specified for a customer belongs to one CPG. In the Supervisory mode, ICI indicators show only the information for ICIs in that CPG. Thresholds specified in the Customer Data Block apply only to the CPG where that console resides, and do not effect any other CPG.

### Call Park

Parked calls recall to the attendant who parked them. If that attendant console goes into Position Busy mode, the call recalls to an attendant in the same CPG as the original.

If the attendant goes into Night Service while a call is parked, the recall is presented to the Night DN defined for that CPG. If an attendant goes into Night Service while the recall is in the attendant queue, it stays in the attendant queue until the call is abandoned.



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Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

### Network-Wide Listed Directory Number

CPG does not work with the network part of Network-Wide Listed Directory Number (LDN) because CPG is not supported by Network Attendant Service, which the network part requires. This feature does, however, provide two additional LDNs for each Console Presentation Group.

### Night Key for Direct Inward Dialing Digit Manipulation

The Day/Night can be activated with the DRC key by any attendant in the Console Presentation group.

## Feature packaging

Console Presentation Groups (CPGS) package 172 requires:

- Multi-Tenant Service (TENS) package 86

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 209 "LD 93 - Enable Console Presentation Group (CPG)." (page 618)

   Enable Console Presentation Group (CPG).

2. Table 210 "LD 93 - Assign attendant consoles to a presentation group." (page 618)

   Assign attendant consoles to a presentation group.

3. Table 211 "LD 93 - Assign tenants to an attendant group number." (page 618)

   Assign tenants to an attendant group number.

4. Table 212 "LD 93 - Assign a route to an attendant group number." (page 618)



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Assign a route to an attendant group number.

5. Table 213 "LD 93 - Add Console Presentation Group features." (page 619)

   Add Console Presentation Group features.

**Table 209**
**LD 93 - Enable Console Presentation Group (CPG).**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |
| TYPE | TENS | Multi-Tenant data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| CPGS | YES | Enable CPG Level Services. |

**Table 210**
**LD 93 - Assign attendant consoles to a presentation group.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |
| TYPE | CPG | Console Presentation Group data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| AGNO | 0-63 | Attendant Console Group number. |
| ANUM | 1-63 1-63 | Attendant console numbers. |

**Table 211**
**LD 93 - Assign tenants to an attendant group number.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |
| TYPE | TCPG | Tenant to Console Presentation Group data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| TEN | 1-511 | Tenant number. |
| AGNO | 0-63 | Attendant Console Group number. |

**Table 212**
**LD 93 - Assign a route to an attendant group number.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |
| TYPE | RCPG | Route to Console Presentation Group data block. |
| CUST | xx | Customer number, as defined in LD 15 |
| ROUT | | Route number |
| | 0-511 | Range for Large System and CS 1000E system. |



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**Table 212**
**LD 93 - Assign a route to an attendant group number. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| | 0-127 | Range for Small System and Media Gateway 1000B. |
| AGNO | 0-63 | Attendant Console Group number. |

**Table 213**
**LD 93 - Add Console Presentation Group features.**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW CHG | Add, or change Multi-Tenant Service for a customer. |
| TYPE | CPGP | Console Presentation Group level parameters. |
| CUST | xx | Customer number, as defined in LD 15 |
| CPG | 1-63 | Console Presentation group number. |
| LDN0 | xxxx | Listed DN 0. |
| NIT1 | xxxx | First Night Service by Time of Day (NTOD) DN. |
| TIM1 | hhmm | Hour minute for First NTOD DN. |
| NIT2 | xxxx | Second NTOD DN. |
| TIM2 | hhmm | Time for Second NTOD. |
| NIT3 | xxxx | Third NTOD DN. |
| TIM3 | hhmm | Time for Third NTOD DN. |
| NIT4 | xxxx | Fourth NTOD DN. |
| TIM4 | hhmm | Time for Fourth NTOD. |
| ICI | xx aaa | Incoming Call Indicators (ICI). |
| AQTT | 0-(30)-255 | Attendant queuing threshold. |
| AODN | xxxx | Attendant overflow DN. |
| CWCL | (0)-255 (0)-255 | Number of waiting calls, lower threshold and upper bound. |
| CWTM | (0)-511 (0)-511 | Time for waiting calls, lower threshold and upper bound. |
| CWBZ | (NO) YES<br>(NO) YES | Call Waiting Buzz.<br>The first field provides a two-second buzz when the upper CWCL or CWTM threshold is exceeded.<br>The second field provides a buzz when the first call enters the queue. |

## Feature operation

No specific operating procedures are required to use this feature.



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# Context-sensitive soft keys

## Feature description

Context-sensitive soft keys provide dynamic functionality to the IP Phones similar to that currently supported on the M39xx digital telephone series.

Context-sensitive soft keys are located directly below the LCD screen on the IP Phone. The soft key label above each key dynamically changes depending on the call processing state.

Two new soft keys, Callers List and Redial List, appear in the default idle state when an IP phone is registered on a Signaling Server with Personal Directory (PD) server enabled.

The Call Server adds up to ten additional Context-sensitive soft keys on the IP Phones. See Table 215 "Call features" (page 622) for a list of the call features with its corresponding soft key position. The functionality and labeling of soft keys on an IP Phone is defined by the Call Server using the key map download message. The context-sensitive soft key feature is enabled on the IP Phone and cannot be turned on or off.

See“Using call features” (page 626)for examples of IP Phone screens in different call states.

## Soft keys configuration

The default order and position of the soft keys change depending on the features that are configured by a system administrator. For each feature that is not configured, the corresponding soft key does not appear in the applicable screen. If a soft key is not configured, the remaining soft keys shift up to fill the empty soft key position.

The set of soft keys must be configured in set data block for IP terminal in LD 11.



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**Table 214**
**LD 11 - Configure soft keys**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | Configure a new soft key |
| TYPE | xxxx | Type of telephone |
| CUST | xx | Customer number |
| TN | | |
| ... | | |
| ... | | |
| KEY | x aaa yyy (cccc or D) | xx = Key number<br>aaa = Key name or function (SCR/MCR/PVN/PVR/SCN<br><br>yyyy = DN<br><br>cccc = CLID table entry of (0)-N, where N = the value entered at the SIZE prompt in LD 15 minus 1.<br><br>D = the character "D". When the character D is entered, the system searches the DN keys from key 0 and up to find a DN key with a CLID table entry. The CLID associated with the found DN key is then used. |
| ... | | |

**Table 215**
**Call features**

| Key Number | Feature Name | Description |
|---|---|---|
| 17 | Call Transfer (TRN) | Use the Call Transfer feature to transfer a call to a third-party. You can consult with the third-party privately before completing the transfer. |
| 18 | Three-party conference (A03)<br>or<br>Six-party conference (A06) | The conference feature adds additional parties to an established call. The maximum is three or six, depending on the conference feature assigned to the conference call originator. A system administrator manually configures the feature for Three- or Six-party conference call using LD 11. |



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| Key Number | Feature Name | Description |
|---|---|---|
| 19 | Call Forward (CFW) | Call Forward automatically forwards incoming calls to another destination, within or outside the system. |
| 20 | Ring Again (RGA) | After a busy tone is received, the Ring Again feature alerts the caller once the line becomes free. |
| 21 | Call Park (PRK) | Call Park places a call in a parked state, similar to hold, where it can be retrieved by an Attendant Console or telephone. A parked call must have an access ID, also known as a Park DN. |
| 22 | Ringing Number Pickup (RNP) | An incoming call on one telephone can be picked up on another telephone. A system administrator defines the call pickup group. |
| 23 | Speed Call (SCU/SCC) or System Speed Call (SSU/SSC) | A call is made using a one-, two-, or three-digit code. Your system administrator defines the Speed Call code and Speed Call lists. ***Note:*** The soft key label on your telephone can appear as **`SpcUsr`** or **`SpdCtl`** depending on how Key 23 in LD 11 is defined by your System Administrator. |
| 24 | Privacy Release (PRS) | In multiple appearance, single call arrangements, the Privacy Release feature allows another appearance of the Directory Number (DN) to enter the call. Privacy is then reestablished until Privacy Release is activated again. |
| 25 | Charge Account (CHG) | After a Charge Account number is used, the entire call is billed to that DN. The number can be entered before or during a call. The Charge Account feature is not supported for internal calls. |
| 26 | Call Party Number (CPN) | This feature is used in conjunction with Call Detail Recording (CDR). A Charge Account call is billed directly to a specific account or charge number instead of a DN. |

## Operating parameters

Features are added or removed by a system administrator using LD 11. The default order and position of soft keys is determined by the number of features configured on your IP Phone.



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The following IP Phones support the context-sensitive soft key feature:

- IP Phone 2001
- IP Phone 2002 and 2004—Phase II
- IP Phone 2007
- IP 2050 Softphone
- IP Phone 1110, 1120E, 1140E, and 1150E
- IP Phone 2033
- WLAN Handsets 2210, 2211, and 2212

## Feature restrictions

Context-sensitive soft keys are supported on the Survivable Remote Gateway (SRG) in normal mode only.

## Feature interactions

When the Context-sensitive soft keys on the IP Phone are used by a Call-Server-based application such as Corporate Directory or a Signaling Server-based application such as Personal Directory, the soft keys are defined by the active application. The application controls the soft labels that are displayed. The IP Phone returns to the Context-Sensitive Soft Key labeling upon completion of the application.

During an abnormal call-processing operation, the IP Phone advances to the Reorder state screen and the Reorder tone is sounded. For example, if an invalid extension is entered, the Reorder state screen appears on the display with the message **`Release and try again.`**

CallPilot-related soft keys are only available if the CallPilot voice mailbox is accessed from an IP Phone by using the inbox key instead of directly dialing a CallPilot DN.

The IP Phone 2033 and some third-party IP Phones have only three soft keys . The firmware handles the translation from four soft keys to three soft keys.

## Feature packaging

The Context-sensitive soft key feature is included in the base system software.

## Feature implementation

The features listed in the “Soft keys configuration” (page 621) list can be added or removed by a system administrator using LD 11.



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The Callers List and Redial List feature keys are not configurable in LD 11 because the Personal Directory feature is not a Call-Server-based application. These keys are available from the call-processing default idle state of the IP Phone if the Personal Directory (PD) server is enabled.

## Feature operation

The following table identifies what is displayed on the IP Phone LCD screen when in a specific call state.

**Table 216**
**Call state screens**

| Call state | Action | Display |
|---|---|---|
| Default Idle | Key map download message is sent to the telephone and the default idle state appears. | For IP Phone 2001, 2002, 1110, 1120E, and 2033, the default idle state is **`Fwd Caller Redial`**<br><br>For IP Phone 2004, 2007, 2050, 1140E, and 1150E, the default idle state is **`Forward Callers Redial`**<br><br>For WLAN Handsets 2210, 2211, and 2212, there are only four characters available for each soft key label.<br><br>***Note:*** Depending on your telephone type and the number of characters available for each soft key label on the LCD screen, some soft key labels can appear differently than what is identified in this document. For example, **`Forward`** appears as **`Fwd`** on an IP Phone 2001 with a six- character soft key label. |
| Dial Tone | Lift the handset or press the line (DN) key to get a dial tone. The dial tone screen appears. | **SpcUsr Pickup Charge CParty** |
| Predial | Press the dialpad from the idle state to advance the display to the predial screen. | **`CLEAR DELETE CANCEL`** |
| Dialing | There are no soft keys needed. | Extension number is displayed. |
| Ringing | The calling telephone receives ringback tone from the called telephone. | Extension and calling name are displayed. For example, **`7466 John Smith`** |



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| Call state | Action | Display |
|---|---|---|
| Busy | If the destination number is busy, the display advances to the busy state screen. | **Destination Busy**<br>**Activate RING AGAIN?**<br><br>**RingAgn** |
| Reorder | If an invalid number is dialed, the reorder state screen appears. | **Release and try again** |
| Established (Active) Call | After a call is established there are two layers of soft keys available. Press the **More** key to toggle between these layers. | Layer 1:<br><br>**Conf Trans Park More...**<br><br>Layer 2:<br><br>**PrivRls Charge CParty More...** |

***Note:*** Some soft keys such as the **SpcUsr** key are not configured by default. The System Administrator will configure as needed.

## Using call features

**Table 217**
**Examples of IP Phone screens in different call states**

| Feature | Action | Display |
|---|---|---|
| Call Forward | Press the **Forward** key from the default idle state. | **Enter Forward Number** appears on the display line. |
| Call Forward Number Edit | Enter the forward number. | **CFWD**<br>**Press CFWD or Enter new #**<br><br>The arrow continues to flash until you press the **>Forwar** soft key.<br><br>The telephone is returned to the default idle state of<br><br>**>Forwar Callers Redial**<br><br>with an arrow beside **>Forwar**<br><br>After pressing CFW the user has 40 seconds to complete the CFW otherwise it will timeout. |
| Cancel Call Forward | Press the **>Forwar** soft key from the idle screen state. | **Call Forward cancelled** |



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| Feature | Action | Display |
|---|---|---|
| Busy | A busy tone is received. | **Destination Busy**<br>**Activate RING AGAIN?**<br><br>***Note:*** The Ring Again feature times out if the feature is not activated. The telephone returns to the idle state. |
| Ring Again Activate—screen 1 | Press **RingAgn**. | **>RingAg Forward Callers Redial** |
| Ring Again Activate—screen 2 | After the busy party is free, the IP Phone sends a short alerting tone. | **Ring again ready,**<br>**Select a line RING AGAIN**<br><br>**>RingAg Forward Callers Redial** |
| Cancel Ring Again | Press the **>RingAgn** soft key to cancel and return to the idle state. | **Forward Callers Redial** |
| Conference (available from the Established (Active) call state) | Press the **Conf** soft key. | The conference transfer dial tone screen appears:<br>Layer 1: **>Conf SpcUsr Pickup More...**<br><br>Layer 2: **Charge CParty More...**<br><br>Enter a number. After the call is answered, press the **>Conf** soft key. |
| Transfer | Press the **Trans** soft key. | The transfer number editing state screen appears:<br>Layer 1: **Trans SpcUsr Pickup More...**<br><br>Layer 2: **Charge CParty More...**<br><br>Enter a number and press the **>Trans** key for the telephone to return to the idle state screen. |
| Speed Call | From the dial tone state, press the **SpcUsr** soft key.<br>***Note:*** How this key is configured in LD 11 determines whether you see **SpcUsr** or **SpdCtl.** | Press the **SpcUsr** soft key. Enter the speed call code. The telephone advances to the ringing state. |



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| Feature | Action | Display |
|---|---|---|
| Callers | Press the **Callers** soft key from the idle screen state. Press the up or down arrow on the telephone dialpad. | **Dial Edit Copy Del** appears on the screen |
| Redial | Press the **Redial** soft key from the idle screen state. Press the up or down arrow on the telephone dialpad. | **Dial Edit Copy Del** appears on the screen |

***Note:*** The IP Phone must be registered on the Signaling Server with the Personal Directory (PD) server enabled for the Callers and Redial soft key features to be available. The function of the Callers and Redial list views are controlled by the PD server which can be configured in LD 117.

## CallPilot voice-mailbox-related soft keys

The following table identifies the soft keys in CallPilot as they relate to the IP Phone dialpad. CallPilot soft keys can be used instead of the telephone dialpad.

***Note:*** CallPilot-related soft keys are only available if the CallPilot voice mailbox is accessed from an IP Phone by using the inbox key instead of directly dialing a CallPilot DN.

**Table 218**
**CallPilot voice-mailbox-related soft keys**

| Feature | Action on CallPilot | Equivalent on telephone |
|---|---|---|
| Layer 1: | | |
| Play | Press the **Play** key to listen to a message. | Press 2 on the dialpad. |
| Delete | Press the **Delete** key to delete the current message. | Press 7, 6 on the dialpad. |
| Call | Press the **Call** key to call the sender of a message. | Press 9 on the dialpad. |
| More... | Use the **More** key to toggle to layer 2. | |
| Layer 2: | | |
| Stop | Press the **Stop** key to pause playback of a message. | Press # on the dialpad. |



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| Feature | Action on CallPilot | Equivalent on telephone |
|---|---|---|
| Conference | Press the **Conf** key to conference another caller to your voice mailbox. ***Note:*** This is not a CallPilot soft key but a Call Server feature key. This feature gives someone else access to your mailbox. | |
| Reply | Press the **Reply** key to the message. | Press 7, 1 on the dialpad. |
| More... | Use the **More** key to toggle to layer 3. | |
| Layer 3: | | |
| Compose | Press the **Compose (Comp)** key to compose a new message. | Press 7, 5 on the dialpad. |
| Forward | Press the **Forward (FORWRD)** key to forward a message. | Press 7, 3 on the dialpad. |
| Goodbye | Press the **Goodbye (Bye)** key to exit the voice message system. | Press 8, 3 on the dialpad. |
| More... | Use the **More** key to toggle back to layer 1. | |



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# Controlled Class of Service

## Contents

This section contains information on the following topics:

“Feature description” (page 631)

“Operating parameters” (page 631)

“Feature interactions” (page 632)

“Feature packaging” (page 633)

“Feature implementation” (page 633)

“Feature operation” (page 635)

## Feature description

Controlled Class of Service (CCOS) alters the Class of Service restriction levels on telephones that have been defined as CCOS controlling telephones. This applies to Meridian 1 proprietary telephone users designated as CCOS controllers. While CCOS is active, Public Exchange/Central Office or toll calls made from these telephones cannot be completed without first being routed through an attendant.

Meridian 1 proprietary telephones designated as CCOS controlling telephones are assigned a CCOS key/lamp that is used to activate or cancel the system-defined CCOS restriction level on individual DNs.

## Operating parameters

Controlling telephones can be any Meridian 1 proprietary telephone.

CCOS controlling telephones must refer to the Prime Directory Number (PDN) when activating or canceling CCOS on other telephones.

Automatic Call Distribution (ACD) agents cannot be restricted by CCOS.



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# Feature interactions

## Authorization Code

The Authorization Code overrides a telephone's CCOS restriction level.

## Conference

If CCOS is activated at a telephone involved in a conference call, established Central Office or toll calls are not affected. The CCOS restriction level is applied immediately, and no new calls can be initiated from the conference. The telephone remains in the CCOS active state after the conference is terminated.

## Flexible Feature Codes

If Electronic Lock (ELK) is activated, the CCRS Class of Service is used whether Controlled Class of Service (CCOS) is active or not. ELK takes precedence over CCOS. If ELK is deactivated, the set is treated as per existing operation.

When FFC ELKA and a password is entered, this set will use the CCRS Class of Service configured in LD 15. The CCRS Class of Service will always be used whether or not CCOS is currently controlling the set's Class of Service. When FFC ELKD and a password is entered, the set will use the appropriate Class of Service associated with this set. If CCOS is enabled for the set, the associated customer Class of Service is used (that is, CCRS, ECC1, or ECC2). If CCOS is not enabled for this set, the set's own Class of Service is used.

When FFC ELK is deactivated, the set reverts back to the Class of Service as it should be without FFC ELK, instead of always reverting back to the set's Class of Service (that is, if CCOS is enabled, it will use the customer's Class of Service; if CCOS is not enabled, it will use the set's Class of Service).

## Hot Line

When a Hot Line DN is on a telephone that has Controlled Class of Service activated, Hot Line calls ignore the imposed Class of Service if the System Speed Call (SSC) package is present and the Hot Line list is given an adequate Network Class of Service (NCOS) for the override

## Multiple Appearance Directory Number

CCOS restriction levels are activated or canceled on controlled telephones through their Prime Directory Number (PDN). When the PDN of a Meridian 1 proprietary telephone is made CCOS active, all DNs on that telephone are also restricted. If the DN is a PDN on other telephones, those telephones are also restricted (if they have CCSA Class of Service).



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### Room Status

You can change the access limitations for room telephones from the BGD or from a telephone equipped with a Room Status key (RMK).

### Scheduled Access Restrictions

During normal hours, CCOS limitations override normal telephone limitations. During off-hour periods or times when a Scheduled Access Restrictions (SAR) LOCK is in effect, however, Scheduled Access Restrictions apply. When the LOCK or off-hour period ends, CCOS limitations continue to apply until they are removed or SAR becomes effective again. Whether a CCOS controller or electronic lock is used to activate CCOS, there is no indication to the user when Scheduled Access Restrictions are in effect, overriding CCOS limitations. A telephone defined in LD 10 or 11 or a trunk defined in LD 14, which is assigned an SAR group number, has its Class of Service defined by the SAR schedule of its SAR group.

### Station Category Indication

The Controlled Class of Service (CCOS) feature has priority over SCI. A station's SCI category is suppressed when CCOS is active, and calls to the attendant DN carry the CCOS class defined in the database.

## Feature packaging

The (CCOS) package must be equipped to activate the Controlled Class of Service feature.

## Feature implementation

### Task summary list

The following is a summary of the tasks in this section:

1. Table 219 "LD 15 - Enable CCOS for a customer." (page 634)

   Enable CCOS for a customer.

2. Table 220 "LD 11 - Allow CCOS on Meridian 1 proprietary telephones." (page 634)

   Allow CCOS on Meridian 1 proprietary telephones.

3. Table 221 "LD 10 - Allow CCOS on analog (500/2500 type) telephones." (page 634)

   Allow CCOS on analog (500/2500 type) telephones.

4. Table 222 "LD 11 - Change CCOS controlling telephone assignments on Meridian 1 proprietary telephones." (page 635)

   Change CCOS controlling telephone assignments on Meridian 1 proprietary telephones.



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**Table 219**
**LD 15 - Enable CCOS for a customer.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | CCS | Controlled Class of Service options |
| CUST | <br>0-99<br>0-31 | Customer number<br>For Large Systems<br>For Small Systems |
| - CCRS | UNR<br>CUN<br>CTD<br>TLD<br>SRE<br>FRE<br>FR1<br>FR2 | Unrestricted.<br>Conditionally unrestricted.<br>Conditionally toll-denied.<br>Toll-denied.<br>Semi-restricted.<br>Fully restricted.<br>Fully restricted 1.<br>Fully restricted 2. |

**Table 220**
**LD 11 - Allow CCOS on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CCSD), CCSA | (Deny) allow CCOS. |

**Table 221**
**LD 10 - Allow CCOS on analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CCSD) CCSA | (Deny) allow CCOS. |



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**Table 222**
**LD 11 - Change CCOS controlling telephone assignments on Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | a...a | Telephone type. Type **?** for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx COS | Assign CCOS controlling key. |

## Feature operation

To activate CCOS, follow these steps:

| Step | Action |
|---|---|
| **1** | Press **CCOS**.<br>Note that this is a toggle: If CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active. |
| **2** | Dial the Prime Directory Number (PDN) of the telephone to be changed and press CCOS. |
| **3** | Press **RIs**. |
| | **--End--** |

To deactivate CCOS, follow these steps:

| Step | Action |
|---|---|
| **1** | Press **CCOS**. |
| **2** | Dial the PDN of the telephone to be returned to its original Class of Service and press CCOS. |
| **3** | Press **RIs**. |
| | **--End--** |



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# Controlled Class of Service, Enhanced

## Contents

This section contains information on the following topics:

“Feature description” (page 637)

“Operating parameters” (page 637)

“Feature interactions” (page 638)

“Feature packaging” (page 638)

“Feature implementation” (page 638)

“Feature operation” (page 641)

## Feature description

Enhanced Controlled Class of Service (ECCS) allows a controller or attendant console to alter the Class of Service (CLS) restriction levels of other Controlled Class of Service (CCOS) telephones. The feature allows two customer-defined levels of restriction. In addition, the CCOS key can be assigned to an attendant console as a programmable key.

## Operating parameters

Controlling telephones can be any Meridian 1 proprietary telephone.

A CCOS controlling telephone must refer to the Prime DN when activating or canceling CCOS on other telephones.

Automatic Call Distribution (ACD) agents cannot be restricted by CCOS.

This feature is applicable only when the CLS lamp is lit on the controlling telephone.

The CLS key on an attendant console can be used only on an idle loop. (The loop lamp is lit; source and destination lamps are dark.)



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# Feature interactions

## Attendant Administration

This feature cannot change Controlled Class Service Restrictions (CCRS), ECC1 or ECC2, but can assign CLS keys to certain telephones.

## Attendant Supervisory Console

When the attendant is in the supervisory mode, CCOS programming is prohibited.

## Authorization Codes

The Authorization Code can override a telephone's CCOS restriction level.

## Conference

If CCOS is activated at a telephone on a conference call, established Public Exchange/Central Office or toll calls are not affected. The CCOS restriction level is applied immediately; however, no new calls can be initiated from the conference. That telephone remains in the CCOS state after the end of the conference.

## Coordinated Dialing Plan

The internal DN is used for programming the CLS level for Coordinated Dialing Plan (CDP) from the controlling telephone.

## Multiple Appearance Directory Number

All CCOS restriction levels are activated and canceled from the Prime Directory Number (PDN) for CCOS controlling telephones. The PDN for a Meridian 1 proprietary telephone is made CCOS active, and all DNs for that telephone are restricted as well. If that DN is a PDN on other telephones, they are also restricted (if they have CCSA Class of Service).

## Pre-translation

The DN used to program the CCOS should be the actual DN before pre-translation. When programming CCOS, the DN entered is not pre-translated.

# Feature packaging

Enhanced Controlled Class of Service (ECCS) package 173 requires:

- Controlled Class of Service (CCOS) package 81.

# Feature implementation

## Task summary list

The following is a summary of the tasks in this section:

1. Table 223 "LD 15 - Define the Class of Service limitations for the system." (page 639)



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Define the Class of Service limitations for the system.

2. Table 224 "LD 11 - Assign keys for the controller telephone." (page 640)

   Assign keys for the controller telephone.

3. Table 225 "LD 10 - Configure controlled analog (500/2500 type) telephones." (page 640)

   Configure controlled analog (500/2500 type) telephones.

4. Table 226 "LD 11 - Configure the controlled Meridian 1 proprietary telephones." (page 640)

   Configure the controlled Meridian 1 proprietary telephones.

5. Table 227 "LD 12 - Assign ECCS keys for attendant console." (page 640)

   Assign ECCS keys for attendant console.

**Table 223**
**LD 15 - Define the Class of Service limitations for the system.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | CCS | Controlled Class of Service options |
| CUST | | Customer number |
| | 0-99 | Range for Large System and CS 1000E system. |
| | 0-31 | Range for Small System and Media Gateway 1000B. |
| - CCRS | | CCOS limitations. |
| | (UNR)<br>CTD<br>CUN<br>FRE<br>FR1<br>FR2<br>SRE<br>TLD | Unrestricted service.<br>Conditionally Toll Denied.<br>Conditionally Unrestricted.<br>Fully Restricted.<br>Fully Restricted level 1.<br>Fully Restricted level 2.<br>Semi-Restricted.<br>Toll Denied. |
| - ECC1 | xxx | Enhanced Controlled Class of Service, Level 1.<br>xxx = (UNR), CTD, CUN, FRE, FR1, FR2, SRE, TLD. |
| - ECC2 | xxx | Enhanced Controlled Class of Service, Level 2.<br>xxx = (UNR), CTD, CUN, FRE, FR1, FR2, SRE, TLD. |
| **Input limitations apply when CCSA is active. When CCSA is inactive, the telephone has the CLS assigned in LD 10/11.** | | |



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**Table 224**
**LD 11 - Assign keys for the controller telephone.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx COS | Key number for CCOS key on controller telephone. |

**Table 225**
**LD 10 - Configure controlled analog (500/2500 type) telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | 500 | Telephone type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CCSD) CCSA | (Deny) allow CCOS. |

**Table 226**
**LD 11 - Configure the controlled Meridian 1 proprietary telephones.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | CHG | Change. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| CLS | (CCSD) CCSA | (Deny) allow CCOS. |

**Table 227**
**LD 12 - Assign ECCS keys for attendant console.**

| Prompt | Response | Description |
|---|---|---|
| REQ | CHG | Change. |



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**Table 227**
**LD 12 - Assign ECCS keys for attendant console. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| TYPE | 2250 | Attendant console type. |
| TN | | Terminal number |
| | l s c u | Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |
| KEY | xx COS | Key number for CCOS controller key on attendant console. xx = key number (must be greater than 1). |

## Feature operation

To activate Enhanced Controlled Class of Service (ECCS) from a Meridian 1 proprietary telephone with the feature currently inactive, follow these steps:

| Step | Action |
|---|---|
| 1 | Press **CCOS** to begin the activation sequence.<br>Note that this is a toggle: if CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active. |
| 2 | Dial the PDN of the telephone to be changed and press **CCOS**. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 0 (zero). |
| 3 | To select ECC1, dial # 1.<br>Note that the octothorpe (#) is required. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 1.<br>To select ECC2, dial # 2.<br>Note that the octothorpe (#) is required. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 2. |
| 4 | Press **RIs**. |

**--End--**

To activate ECCS from an attendant console, follow these steps:



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| Step | Action |
|---|---|
| 1 | Select an idle loop key. |
| 2 | Press **CCOS**.<br><br>Note that this is a toggle: If CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active. |
| 3 | Dial the PDN of the telephone to be changed and press **CCOS**. The console's display shows the DN of the changed telephone. A 0 (zero) is displayed if the telephone is active in the original CCOS mode.<br><br>If the telephone does not have CCOS or ECCS active, the console does not acknowledge that you have successfully entered a valid CCOS DN. |
| 4 | To select ECC1, dial # 1.<br>Note that the octothorpe (#) is required. The console's display shows the DN of the changed telephone and a 1.<br><br>To select ECC2, dial # 2.<br>Note that the octothorpe (#) is required. The console's display shows the DN of the changed telephone and a 2. |
| 5 | Press **RIs**. |
| | **--End--** |

To deactivate Enhanced Controlled Class of Service (ECCS), follow these steps:

| Step | Action |
|---|---|
| 1 | Select an idle loop key. |
| 2 | Press **CCOS**. |
| 3 | Dial the PDN of the telephone to be returned to its original Class of Service and press **CCOS**. |
| 4 | Press **RIs**. |
| | **--End--** |



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# Converged Office

The multimedia strategy of many CS 1000 customers is based on deploying the Microsoft® Office Communicator soft clients and Live Communications Server. This strategy enables the introduction of multimedia capabilities using popular instant messenger (IM) clients without the need to install and support additional desktop software.

The Nortel Converged Office feature combines the business-grade telephony of the Communication Server 1000 with the real-time multimedia communication and the remote call control provided by Microsoft® Office Live Communications Server 2005 and Microsoft® Office Communicator 2005 products.

For a complete description of this product, see *Nortel Converged Office Fundamentals* (NN43001-525).

On the Call Server, package 408, Multimedia Systems Convergence (MS_CONV) must be unrestricted. Class of Service (CLS) Remote Call Control (T87D/T87A) must be allowed in LD 11. For more information, see *Software Input/Output Reference — Administration* (NN43001-611).



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# Corporate Directory

## Contents

This section contains information on the following topics:

“Feature description” (page 645)

“Operating parameters” (page 646)

“Feature interactions” (page 647)

“Feature packaging” (page 647)

“Feature implementation” (page 647)

“Feature operation” (page 648)

## Feature description

A Corporate Directory database is created from Telephony Manager (TM) information. This database is downloaded and stored on the system.

The Corporate Directory feature extends the use of this database to IP Phones. Access to Corporate Directory is provided through the Directory key.

Corporate Directory is not supported on the IP Phone 2001, IP Audio Conference Phone 2033, and IP Phone 1110.

Corporate Directory provides an alphabetical list of entries using last names (system generated). Users can:

- search by name
- view additional information on each entry
- dial from the Corporate Directory

The system administrator can configure TM to download the directory database manually, or automatically, to the system.



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For information on the Corporate Directory feature for M3900 series telephones, see *Telephones and Consoles Fundamentals* (NN43001-567).

## Operating parameters

The following telephones support the Corporate Directory feature:

- IP Phone 2002
- IP Phone 2004
- IP Phone 2007
- IP Phone 1120E
- IP Phone 1140E
- IP Phone 1150E
- IP Softphone 2050or MVC 2050
- WLAN Handset 2210
- WLAN Handset 2211
- WLAN Handset 2212
- WLAN Handset 6120
- WLAN Handset 6140

To access Corporate Directory from the telephone, the user must have the Corporate Directory Allowed (CRPA) Class of Service defined in LD 11.

When Corporate Directory is being updated with new data, the user cannot access Corporate Directory.

The TM 3.1 Corporate Directory utility gathers data from the TM 3.1 databases and downloads it to the system. To use the Corporate Directory utility, TM 2.0 or later must be installed. For more information, see *Telephony Manager 4.0 Installation and Commissioning* (NN43050-300).

### Call Server memory requirements

The Call Server memory usage for Corporate Directory is the same for both IP Phones and Digital Telephones.

The equations for approximating Call Server memory usage for Corporate Directory are:

1. Call Server hard disk space needed (bytes) = Number of directory entries * Average length of all entries *2
2. Call Server RAM needed to store database (bytes) = (Average length of all entries + 20) * 1.25 * Number of directory entries



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For a sample database where the average length is 29.5 characters, see Table 228 "Memory requirements based on database size" (page 647) for the Call Server memory requirements.

**Table 228**
**Memory requirements based on database size**

| Call Server RAM needed | Database size (rounded to nearest 1000) | Call Server Hard disk space needed (rounded to next 0.5 MB) |
|---|---|---|
| 1 MB | 16 000 | 1.5 MB |
| 2 MB | 32 000 | 2.0 MB |
| 3 MB | 48 000 | 3.5 MB |
| 4 MB | 64 000 | 4.0 MB |
| 5 MB | 80 000 | 5.5 MB |
| 6 MB | 96 000 | 6.0 MB |
| 7 MB | 113 000 | 7.0 MB |

## Feature interactions

### Call Transfer
### Conference

The Corporate Directory lookup feature works during Call Transfer and Conference operations.

## Feature packaging

This feature is packaged under Corporate Directory (CDIR) package 381.

## Feature implementation

You can change the Call Server configuration while IP Phone users are logged on to Corporate Directory. The changes only take effect when the user logs off and then logs on again to the Corporate Directory.

**Table 229**
**LD 11 - Configure CRPA/CRPD Class of Service.**

| Prompt | Response | Description |
|---|---|---|
| REQ: | NEW CHG | Add new data, or change existing data. |
| TYPE: | a...a | Telephone type. Type ? for a list of possible responses. |
| TN | | Terminal Number |
| | l s c u | Format for Large Systemand CS 1000Esystem, where l = loop, s = shelf, c = card, u = unit. |
| | c u | Format for Small System and Media Gateway 1000B where c = card and u = unit. |



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**Table 229**
**LD 11 - Configure CRPA/CRPD Class of Service. (cont'd.)**

| Prompt | Response | Description |
|---|---|---|
| ... | | |
| CLS | (CRPD) CRPA | Enable or disable the Corporate Directory feature for this TN. |

## Feature operation

Refer to "Accessing the Corporate Directory" (page 648) to access the Corporate Directory on the IP Phones.

**Accessing the Corporate Directory**

| Step | Action |
|---|---|
| 1 | Press the **Directory** key to view a list of available applications. |
| 2 | Highlight **Corporate Directory**, and then press the **Select** soft key. |
| 3 | Go through the Status Query process. |
| 4 | Enter a name, and select **Search**.<br>You can enter special characters in the search parameters. The special characters include some symbols (for example, plus sign [+] and dash [-]) and international characters. |
| 5 | To enter special characters, press the Up navigation key.<br>The special characters are displayed. |
| 6 | Use the navigation keys to review the special characters available.<br>The Corporate Directory may not be available for the following reasons:<br>• The Corporate Directory is locked. The message "Try again Later" displays.<br>• The Corporate Directory file is not available. The message "Directory unavailable" displays.<br>• The Class of Service is not configured. |
| 7 | To exit the Corporate Directory, press the **Quit** key or the **Directory** key. |

**--End--**



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### Special characters

The special character set includes all characters from the extended portion of the ASCII character set. The extended ASCII character set that supports the IP Phone's current language is the character set that appears in the edit mode. The special character set contains up to 130 characters. It is displayed in six lines with 24 characters on each line. Use the navigation keys to scroll through the list or to move through a 24-character line.

The special charactor set does not include upper and lowercase letters or numerals. Use the keypad of the IP Phone to define these characters.

### Search/Edit screen features

Review Table 230 "Search and Edit screen features" (page 649)for more information on the Search/Edit screen features.

**Table 230**
**Search and Edit screen features**

| Select this key... | To... |
|---|---|
| Delete | Backspace one character. |
| Cancel | Close the Corporate Directory. |
| Case | Switch the next character to either uppercase or lowercase. |
| Search | Search for directory entries. Results are displayed in either a List View screen or No Match screen. |
| More | Switch pages. |
| Number 1-9 | Toggle characters. |
| Up/Down navigation | Display a screen to enter special characters.<br><br>Use the Up and Down navigation keys to navigate through the lists of available special characters. |
| Right/Left navigation | Move cursor location.<br><br>When reviewing special characters, use these keys to select a character in the line display. |
| Choose | Select a special character. This option is available when reviewing the special characters. |
| Text | Close the special character display. No special character is selected. The display returns to the default Search/Edit screen. |



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## Corporate Directory views

There are two search results screens available for the IP Phones:

- ListView (default view)
- CardView—not available for IP Phone 2002

If a search was successful and entries were found in the directory, the first match displays on the screen.

If there is no match to the search query, you can choose to either start a new search or change the information in the initial search.

### ListView

The ListView screen shows a list of names where the user selects the name they want to call from the list using the navigation keys.

### CardView

The Card view provides the following information about the name found in the directory: name, telephone number, and department name. Cardview is not available for IP Phone 2002.

**Table 231**
**ListView and CardView screen features**

| Press this key... | To... |
|---|---|
| Up or Down | Scroll through the list of directory entries that match your search criteria. |
| Right | On the IP Phone 2004 and IP Softphone 2050, change view to Card view, where the name, telephone number, and department are displayed. |
| Left | In Card view only, return to List view. |
| Dial | Dial the selected DN.<br>• If there is no DN number associated with the directory entry, a message displays ("No number in directory").<br>• If there is no available DN key, a message displays ("No available line"). When displayed, select Done to return to the List view or Card view. |
| NewFind | Return to the **Search/Edit** screen. |
| Resume | Return to the **Search/Edit** screen with the previously entered name displayed.<br><br>Appears on both views. |



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Nortel Communication Server 1000

# Features and Services Fundamentals — Book 2 of 6 (C)

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