297-8991-510

DMS-100 Family

XA-Core

Maintenance Manual

CSP15 Standard 05.03 May 2001

NORTEL NETWORKS

How the world shares ideas.

DMS-100 Family

XA-Core

Maintenance Manual

Publication number: 297-8991-510
Product release: CSP15
Document release: Standard 05.03
Date: May 2001

Copyright © 2000, 2001 Nortel Networks,
All Rights Reserved

Published in Canada

NORTEL NETWORKS CONFIDENTIAL: The information contained in this document is the property of Northern Telecom. Except as specifically authorized in writing by Northern Telecom, the holder of this document shall keep the information contained herein confidential and shall protect same in whole or in part from disclosure and dissemination to third parties and use same for evaluation, operation, and maintenance purposes only.

Publication history

May 2001

Standard 05.03, supporting CSP15

- In the replacement instructions for the single-width and dual-width IOP circuit packs, removed the requirement that the replacement pack should have the same PEC suffix.

April 2001

Standard 05.02, supporting CSP15

- Revised instructions for clearing the LowPE critical alarm, to take into account the presence of three or more PE circuit packs.
- Revised illustrations of various MAP screens.

April 2001

Standard 05.01, supporting CSP15

- Added information about the 3+1 and 5+1 PE configurations, including procedures for upgrading and downgrading the PE configuration.
- Added procedures for upgrading and downgrading the number of Ethernet packlets in the XA-Core.

March 2001

Standard 04.03, supporting CSP14

- Content maintenance and revisions.

October 2000

Standard 04.02

- Content maintenance and revisions.

August 2000

Standard 04.01

- Added ETHR critical major, and minor alarm clearing procedures, and card replacement procedure for the NTLX09AA packlet. The Ethernet packlet is required to support trials for Succession Network IP solutions and is scheduled for general availability in CSP15.
- Updated card replacement procedures for all IOP packlets to support hot insertion of packlets when the IOP is an NTLX03AB or NTLX03BB.
- Added common routine procedure Selection of DAT tapes approved by Nortel Networks and added reference in procedure How to clean the XA-Core tape drive.

May 2000

Standard release 03.02

- Added AMDI critical and major alarm clearing procedures.
- Updated the IOtrbl alarm to include AMDI packlet information.

March 2000

Standard release 03.01

- Updated processor element (PE) and shared memory (SM) configurations.
- Added alarm clearing procedures for FWvers and FWsoak alarms and one routine procedure for firmware upgrade on an IOP, PE, and OC3.

November 1999

Standard release 02.02

- Added NTLX02CA processor element (PE) for CSP12.

August 1999

Standard release 02.01

- Updated release of the document for CSP12.

June 1999

Standard release 01.01

- First release of the document for CSP10.4.

Contents

Maintenance Manual

About this document ix

When to use this document ix
How to check the version and issue of this document ix
Structure of this document ix
References in this document ix
What precautionary messages mean x
How commands, parameters, and responses are represented xi
Input prompt (>) xi
Commands and fixed parameters xi
Variables xi
Responses xi

1 Understanding the alarm system 1-1

Introduction 1-1
Alarm reporting system 1-1
MAP alarm banner 1-2
Alarm severity and event hierarchy 1-3
MAP subsystem status summary field (SSSF) 1-6
Enabling and disabling of XA-Core alarms 1-8
Alarm enable MAP command 1-9
Alarm disable MAP command 1-9
Alarms and log reports 1-9
Alarm, log and OM relationship 1-11
XAC AMDI critical 1-13
XAC AMDI major 1-24
XAC Disk minor 1-35
XAC ETHR critical 1-46
XAC ETHR major 1-61
XAC ETHR minor 1-75
XAC FWvers major 1-89
XAC FWsoak minor 1-95
XAC Image major 1-96
XAC Image minor 1-100
XAC ImgTst minor 1-104
XAC IOP minor 1-109
XAC IOtrbl minor 1-117
XAC LowPE critical 1-135
XAC LowPE major 1-142

XAC LowSM major 1-149
XAC LowSM minor 1-156
XAC MemLim major 1-164
XAC MemLim minor 1-168
XAC MScomm critical 1-171
XAC MScomm major 1-186
XAC MScomm minor 1-208
XAC PEtrbl minor 1-222
XAC RExSch minor 1-230
XAC RExTst minor 1-240
XAC RIBkey major 1-246
XAC RIBkey minor 1-254
XAC RTIF critical 1-261
XAC RTIF major 1-272
XAC RTIF minor 1-283
XAC SMtrbl minor 1-290
XAC Split minor 1-297
XAC Tape minor 1-302
XAC TOD critical 1-313
XAC TOD major 1-323
XAC TOD minor 1-337
XAC WgSlot minor 1-351
XAC XATrap major 1-357

2 Introduction to card replacement 2-1

Chapter summary 2-1
Application information 2-1
Common procedures 2-1
Summary flowchart 2-1
Step-action instructions 2-1
XA-Core hardware components 2-2
C42 equipment cabinet 2-2
XA-Core shelf module 2-5
Circuit packs and packlets 2-7
Shelf layout 2-7
Shelf layout: XA-Core in a SuperNode 2-8
Shelf layout: XA-core in a single-cabinet SuperNode SE (SNSE) 2-10
Addition, removal, and replacement of circuit packs and packlets 2-12
Light emitting diode (LED) interpretation 2-13
NT9X63 OC-3 two port interface paddleboard in a SuperNode or SuperNode SE Message Switch 2-17
NTLX02 PE circuit pack in a SuperNode and SuperNode SE XA-Core 2-31
NTLX03 single width IOP circuit pack in a SuperNode and SuperNode SE XA-Core 2-48
NTLX03 dual width IOP circuit pack in a SuperNode and SuperNode SE XA-Core 2-71
NTLX05 OC-3 two port interface packlet in a SuperNode and SuperNode SE XA-Core 2-94
NTLX05 OC-3 AMDI two port interface packlet in a SuperNode and Super-

Node SE XA-Core 2-110
NTLX06 disk packlet in a SuperNode and SuperNode SE XA-Core 2-124
NTLX07 tape packlet in a SuperNode and SuperNode SE XA-Core 2-143
NTLX08 RTIF packlet in a SuperNode and SuperNode SE XA-Core 2-164
NTLX09 Ethernet packlet in a SuperNode and SuperNode SE
XA-Core 2-179
NTLX12 SIM circuit pack in a SuperNode and SuperNode SE
XA-Core 2-197
NTLX14 shared memory circuit pack in a SuperNode and SuperNode SE
XA-Core 2-209
NTLX20 Filler circuit pack in a Super Node and Super Node SE
XA-Core 2-218
NTLX20 Terminating filler circuit pack in a SuperNode and SuperNode SE
XA-Core 2-223

3 Introduction to recovery procedures 3-1

Introduction 3-1
Application 3-1
Interval 3-1
Common procedures 3-1
Action 3-1
How to boot an XA-Core in a DMS switch 3-2
How to perform a cold restart in XA-Core 3-8
Emergency power conservation restoration 3-14
Emergency power conservation shutdown 3-19
How to perform a reload restart in an XA-Core 3-25
How to perform a warm restart in XA-Core 3-31
How to recover a dead XA-Core DMS switch 3-37

4 Introduction to routine maintenance procedures 4-1

Introduction 4-1
Application 4-1
Interval 4-1
Common procedures 4-1
Action 4-1
Summary of XA-Core storage device commands and tasks 4-2
Routine maintenance schedule for XA-Core 4-7
Upgrade firmware on an XA-Core component 4-8
How to backup an XA-Core office image from disk to tape 4-16
How to change XA-Core REx test intensity 4-26
How to check and adjust the XA-Core TOD 4-32
How to clean the XA-Core tape drive 4-36
How to copy all files of an XA-Core disk volume to tape 4-47
How to create a test volume on XA-Core disks 4-56
How to create volumes on XA-Core disks 4-65
How to perform XA-Core LED maintenance 4-75
How to record an XA-Core office image on a disk 4-82
How to replace XA-Core cooling unit air filters 4-97
How to restore an XA-Core office image from tape to disk 4-105
How to return an XA-Core circuit pack, packlet, or assembly to Nortel Net-

works (Canada) 4-116
How to schedule automatic image taking for XA-Core 4-121
How to schedule tape drive maintenance in XA-Core 4-131
How to test wrist-strap grounding cords in XA-Core 4-134
Selection of DAT tapes approved by Nortel Networks 4-137

5 Introduction to trouble locating and clearing procedures 5-1

Introduction 5-1
Application 5-1
Interval 5-1
Common procedures 5-1
Action 5-1
How to perform a manual REx test on XA-Core 5-2
How to repair an XA-Core cooling unit 5-12

About this document

When to use this document

This document is a source of information for the XA Core product.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

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

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

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory*, 297-8991-511.

Structure of this document

The document is structured as follows:

References in this document

The following documents are referred to in this document:

- *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431 to 297-8001-5434 (four volumes)
- *Recovery Procedures*, 297-8001-545
- *Routine Maintenance Procedures*, 297-8001-546
- *Log Report Reference Manual*, 297-8001-8401 to 297-8001-8407 (seven volumes)

- *Product Documentation Directory*, 297-8991-511
- *XA-Core Reference Manual*, 297-8991-810

What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION Information needed to perform a task

> **ATTENTION**
> Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING Possibility of equipment damage

> **WARNING**
> **Risk of equipment damage**
> Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION Possibility of service interruption or degradation

> **CAUTION**
> **Loss of service**
> Do not repeat steps.

DANGER Possible risk of electrocution

DANGER
Risk of electrocution
Do not touch the cabinet wiring. Connections with unshielded cabinet wiring can result in electric shock. Only qualified power maintenance personnel can perform the voltage measurements in step 3.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

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

>BSY

Commands and fixed parameters

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

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.
```

The following excerpt from a procedure shows the command syntax used in this document:

Manually busy the CTRL on the inactive plane by typing:

>BSY CTRL ctrl_no

and pressing the enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response:

```
FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.
```

The following example from a procedure shows the command syntax used in this document:

Procedure 1 How to clear an alarm

At the MAP level

1 Place the circuit pack (CP) in a manual busy (ManB) state. At the MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 7 r

Example of system response:

```
BSY 7 r completed
```

If the CP is	Do
not InSv	step 5
InSv	step 6

1 Understanding the alarm system

Introduction

This chapter describes the alarm clearing procedures on the DMS SuperNode (SN) and DMS SuperNode SE (SNSE) XA-Core (XAC).

Alarms notify you of problems or conditions that can change the performance or working state of the XA-Core system. Daily operation of XA-Core requires monitoring for alarms and checking that main switch functions continue without interruption. Alarms provide notification that a system hardware or software related event has occurred. Equipment faults cause reduced service and reliability. The XA-Core system provides alarm reporting, automatic diagnostics, and testing facilities to support maintenance and correct functioning of the switch.

There are three levels of XA-Core alarm severity: minor, major, and critical. XA-Core alarms indicate the following types of working conditions:

- equipment failure
- equipment state change
- equipment test notification
- equipment operating at degraded level
- equipment reached defined capacity level
- software errors
- loss of communication between subsystems

The DMS log utility (LOGUTIL) and alarm reporting system, form part of the XA-Core maintenance notification function. XA-Core log reports provide information about fault conditions or changes in the working state of XA-Core system components. Use the logs to help you to clear an alarm condition.

Alarm reporting system

The alarm reporting system integrates event detection and alarm notification functions. An alarm becomes active when a reduced service, reliability or test condition occurs in the XA-Core. The alarm remains active until a system

event or activity performed by operating company personnel clears the alarm condition. The alarm system includes audible notification and visual display through warning lights and the MAP terminal.

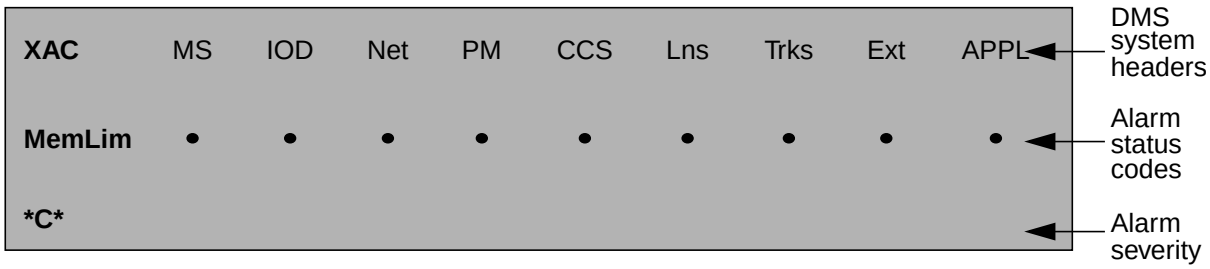
The form and sound of the audible notification can vary in each office. Audible indicators signal that one or more events have started an alarm. You must refer to the MAP or the logs to determine the source of the alarm condition. The MAP and alarm notification systems makes the period of time between alarm detection and analysis as short as possible. A quick response is important because the alarm event can reduce switch service or, in severe conditions, cause a switch outage.

The MAP terminal displays accurate information about alarm condition so that you can decide on an appropriate response. The MAP terminal displays alarm codes in the alarm banner and the subsystem status summary field (SSSF). The alarm banner displays alarm codes that indicate the effect of the alarm event on the XA-Core system. The SSSF displays alarm codes that indicate equipment faults or system states.

MAP alarm banner

The XA-Core system software monitors for equipment or software events or faults. For events that effect performance or redundancy, the XA-Core system raises and displays an appropriate system alarm in the MAP alarm banner. The MAP alarm banner displays alarm codes that indicate the effect of the alarm event on the XA-Core system. The figure (1-1) shows an example of a memory limit (MemLim) alarm with a critical severity level.

Figure 1-1 MAP alarm banner



The alarm banner displays the following information:

1. DMS system headers: The DMS headers permanently display a set of titles indicating the different switch DMS nodes. The XA-Core MAP system displays the DMS headers on all XA-Core MAP levels.
2. Alarm status codes: The alarm status codes indicate the system alarm status. The alarm status fields display the alarm status code under each of

the DMS headers. If there are multiple faults in a single switch system, the alarm status field displays the most important.

3. Alarm severity: The alarm severity field displays the severity of the alarm condition. Each DMS subsystem reports on critical, major and minor alarm conditions. If there are multiple faults in a single switch system, the alarm severity field displays the most important fault (see Figure 1-1 and Table 1-1). The alarm banner displays the alarm severity under the alarm indicator in XAC header.

   The possible alarm severity conditions are as follows:

   - blank (no alarm)

     blank (Minor alarm)

   - M (Major alarm)
   - C (Critical alarm)

The XA-Core alarm banner shows one active alarm at a time in the alarm status code field. The alarm banner displays the most important alarm (see the table that describes alarm banner codes). The RExTst, ImgTst and Split minor alarms override all major alarms. All critical alarms override the RExTst, ImgTst and Split alarms.

Alarm severity and event hierarchy

Equipment alarms and alarm severity codes indicate the effect that a fault or event has on a single piece of equipment. There are three types of alarm severities:

- Critical alarm: A critical alarm indicates a reduced service condition or complete loss of service. A critical alarm indicates that the system can no longer perform its design function. The alarm condition requires immediate correcting action so that the performance of the system can return to its design function. Examples of critical alarm conditions include the following:

  — a reduction in call processing capability

  — a reduction or full loss of system sanity

  — service reduction below an operating company defined threshold

- Major alarm: A major alarm indicates lost redundancy. The next fault of the same type, can cause a reduction or complete loss of service. There is no backup if another fault occurs on the active system. This alarm level can be generated when service decreases below an operating company defined threshold.

  The XA-Core system classifies REx test (RExTst), Image test (ImgTst) and Split mode (Split) as the highest of all minor system alarms. The

REExTst alarm is higher in the alarm hierarchy than ImgTst and Split alarms. The MAP displays critical alarms related to OOS CPs or packlets.

- Minor alarm: A minor alarm indicates a small loss of redundancy. The next fault of the same type won't cause degradation of service. Examples of minor alarm conditions include the following:
  - — conditions that may lead to a major alarm if not corrected
  - — one piece of a pool of equipment that has been taken out of service
  - — service degradation that has fallen below an operating company defined threshold

The system assigns system alarm events into a hierarchy. The alarm event hierarchy determines the type of alarm codes displayed in the alarm banner and SSSF. The system uses the alarm event hierarchy to prevent alarm contention.

When more than one alarm applies to a single subsystem, the MAP alarm banner displays the highest order of the most severe alarm. The SSSF displays an alarm that applies to one or more subsystem. The SSSF displays the total number of OOS CPs or packlets in each of the subsystems.

Note: The Alarm MAP command helps operating company personnel to identify all outstanding XA-Core alarm conditions.

The following table provides the alarm status codes, the alarm severities, and reason descriptions.

Table 1-1 Alarm banner codes (Sheet 1 of 3)

Alarm status code	Alarm severity	Alarm description
RExTst	(Minor)	The system is now performing a system or manually requested routine exercise test
ImgTst	(Minor)	System is testing the image to see if it can withstand a restart.
Split	(Minor)	Split mode indicates that the system is in preparation for a system load upgrade. The system is split into two parts. One part handles call processing, the other handles the installation of new operating system software.
FWvers	(Major)	The system raises the FWvers alarm when the firmware version of a field replaceable unit (FRU) and the firmware version recorded in table XAFWLOAD do not match.

Table 1-1 Alarm banner codes (Sheet 2 of 3)

Alarm status code	Alarm severity	Alarm description
MemLim	(Major)	Insufficient memory resources are available to perform calculations and system-related functions.
MemLim	(Minor)	Memory allocated for XA-Core operating system has reached approximately 90% of physical (total) memory.
LowPE	C (Critical)	Processor capacity is low. A reset is possible.
LowPE	M (Major)	Loss of processor capacity redundancy.
LowSM	M (Major)	Loss of memory capacity redundancy.
LowSM	(Minor)	Partial loss of memory capacity redundancy.
MScomm	C (Critical)	Loss of communication between MS and XA-Core. (Note that for this alarm, the MAP cannot display the status code and severity.)
MScomm	M (Major)	Loss of communication redundancy between MS and XA-Core.
MScomm	(Minor)	Partial loss of communication redundancy between message switch (MS) and XA-Core.
AMDI	C (Critical)	Loss of messaging to Multi-service Gateway 4000.
AMDI	M (Major)	Loss of messaging redundancy.
ETHR	C (Critical)	Loss of two Ethernet links in a two-link configuration or loss of four links in a four-link configuration, which prevents call origination at the call server, or loss of three links in a four-link configuration, which causes the system to function below engineered capacity.
ETHR	M (Major)	Loss of one Ethernet link in a two-link configuration, or loss of two links in a four-link configuration, which causes a loss of redundancy.
ETHR	(Minor)	Loss of one Ethernet link in a four-link configuration, which causes a loss of redundancy.
Image	M (Major)	XA-Core software load cannot withstand a restart.
Image	(Minor)	XA-Core Image test shows possible image faults, test aborted or the test was not run.
TOD	C (Critical)	There is no accurate TOD. XA-Core system has detected faults on all TOD clocks.
TOD	M (Major)	Total loss of redundancy for TOD.
TOD	(Minor)	Partial loss of time of day (TOD) redundancy.
XATrap	M (Major)	Trap rate is above threshold value.

Table 1-1 Alarm banner codes (Sheet 3 of 3)

Alarm status code	Alarm severity	Alarm description
DISK	(Minor)	The alarm indicates a disk access problem caused by a fault in an input/output processor (IOP) or disk packlet.
RTIF	C (Critical)	Access to all remote or local ports is not available.
RTIF	M (Major)	Access to two remote or local ports is not available.
RTIF	(Minor)	Access to one of the two remote or local ports is not available.
RExSch	(Minor)	Cancellation of more than two, daily system REx tests.
TAPE	(Minor)	An access problem between XA-Core and tape device caused by an OOS IOP or tape packlet
PEtbl	(Minor)	System software has detected a problem on one or more processor CPs. All PEs continue to be in service but at least one PE CP is in an IsTb state.
IOtbl	(Minor)	System software has detected a non-critical fault on one or more IOP or packlet. All IOPs and packlets remain in service.
IOP	(Minor)	System software has detected a non-critical fault on one or more IOP or packlet. All IOPs and packlets remain in service.
SMtbl	(Minor)	System software has detected a non-critical fault on one or more SM CP. All SMs CPs remain in service.
RIBkey	M (Major)	Two RIBkeys remain connected.
RIBkey	(Minor)	A single retrofit inactive boot key (RIBkey) remains connected to the RTIF local port.
WgSlot	(Minor)	A CP is in a wrong, or un-provisionable slot. The slot does not contain the correct CP or packlet type.
FWsoak	(Minor)	The system raises the FWsoak alarm when the FRU is returned to service after loading new firmware. The system does not raise the alarm if the soak time for an FRU is set to zero in table XAFWLOAD.

MAP subsystem status summary field (SSSF)

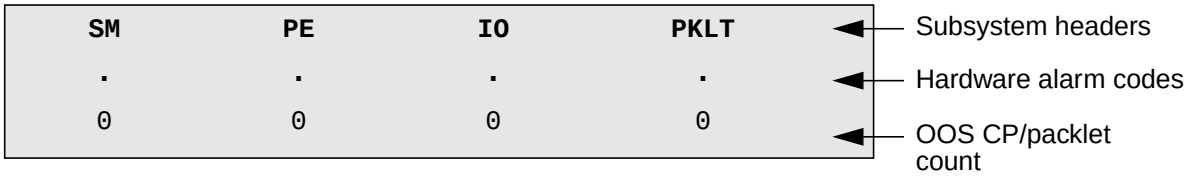
The subsystem status summary field (SSSF) displays the working status of the XA-Core equipment subsystems. The SSSF has three rows and four columns of fields that display the following information:

1. **Subsystem headers**: The subsystem headers permanently display a set of titles that describe the different XA-Core equipment subsystems.
2. **Hardware alarm codes**: The hardware alarm code fields display hardware alarms for each subsystem type. If there are multiple faults in a

single CP/packlet type, the hardware alarm field displays the most important.

3. **OOS circuit pack/packlet count**: The OOS CP/packlet count fields display the total number of out-of-service CPs or packlets in each of the subsystems. The count can increase for each alarm condition. The count does not increase for non-critical device faults and trouble conditions.

Figure 1-2 XA-Core MAP sub-system summary status field



The table below summarizes the SSSF hardware alarm codes for the SM, PE and IO subsystems.

Table 1-2 Fault/state conditions and SM, PE and IO SSSF alarms

Fault/State	SM	PE	IO
Uncorrectable fault	SMfl	PEfl	IOPfl
Inactive CP/packlet	Splt	Splt	Splt
REx Test	RExTst	RExTst	RExTst
ManB CP	SM M	PE M	IOP M
CP trouble	SMtb	PEtb	IOPtb
Unprovisioned slot	badPEC	badPEC	badPEC
Unknown fault	SM ?	PE ?	IOP ?
Firmware fault	SMfw	PEfw	IOPfw

The table below summarizes the SSSF packlet (PKLT) hardware alarm codes. The PKLT field displays the alarm that matches the fault or state detected in a

packlet. The PKLT field displays only the packlet alarm that matches the most critical hardware alarm.

Table 1-3 Fault/state conditions and PKLT SSSF alarms

Fault/State	CMIC	TOD	LINK	RTIF	Local	AMDI	ETHR	Remote	DISK	TAPE
Uncorrectable fault	CMICfl	TODfl	LINKfl	RTIFfl	LocPfl	AMDIfl	ETHRfl	RemPfl	DISKfl	TAPEfl
Inactive CP/packlet	split	split	split	split	split	split	split	split	split	split
REx Test	RExTst	RExTst	RExTst	RExTst	RExTst	RExTst	RExTst	RExTst	RExTst	RExTst
RIB Key not removed				RIBkey	RIBkey			RIBkey		
CMIC Isolation	XAisol									
TOD Isolation		TODflt								
MS TOD fault		MSTOD								
MS Isolation			MSisol							
ManB packlet/link	CMIC M		LINK M	RTIF M	LocP M	AMDI M	ETHR M	RemP M	DISK M	TAPE M
Dependent busy packlet/link	CMIC C	TOD C	LINK C	RTIF C	LocP C	AMDI C	ETHR C	RemP C	DISK C	TAPE C
Packlet/link trouble	CMICtb	TODtb	LINKtb	RTIFtb	LocPtb	AMDItb	ETHRtb	RemPtb	DISKtb	TAPEtb
Unprovisioned slot	badPEC			badPEC		badPEC	badPEC		badPEC	badPEC
Unknown fault	CMIC ?	TOD ?	LINK ?	RTIF ?	LocP ?	AMDI ?	ETHR ?	RemP ?	DISK ?	TAPE ?

Enabling and disabling of XA-Core alarms

You can enable or disable alarm notification by using the appropriate MAP Alarm_ command (see the MAP commands section). The MAP terminal, warning lights and audible alarms notify operating company personnel of an event for enabled alarms.

The MAP or alarm notification system does not provide event notification for disabled alarms. The XA-Core software internally generates and records alarm events for all disabled alarms. The system records all alarm events for log generation, pegging OMs and updating internal data structures.

The Alarm_ command displays the current status of all enabled and disabled alarms to the MAP terminal.

Alarm enable MAP command

You can reset an alarm type by using the Alarm_ MAP command with the <enable> parameter. The command resets the alarm and allows event notification. A fault or maintenance event triggers an alarm (active alarm). An alarm does not have to be active to be enabled. Use the Alarm_ <enable> command from any MAP level.

Alarm disable MAP command

For maintenance or troubleshooting purposes, you can override the display of an existing alarm (system default or operating company personnel-selected). Disable any alarm by using the Alarm_ MAP command with the <disable> parameter. Use the Alarm_ <disable> command from any MAP level.

A disabled alarm does not remove the cause of the alarm. The reason for the alarm exists, but the alarm does not appear in the alarm banner. You can disable an inactive alarm.

Alarms and log reports

Log reports are a primary source of information about the function of the XA-Core equipment and performance. Use the Logs with the alarm system. Log reports include the following information:

- severity of the log (represented by number of asterisks)
- type of log
- time and date
- suspected problem
- list of suspected faulty components

The LOGUTIL system outputs the appropriate log reports. Each alarm matches one or more logs. The MAP alarm banner displays XA-Core related alarms.

The following table displays the correlation between alarm banner codes and XA-Core log reports.

Table 1-4 Alarm banner codes and log correlation (Sheet 1 of 3)

Alarm banner code	Event Log description	Event clear Log description
RExTst	XAC615 REx started	XAC415 REx report
ImgTst	none	none

Table 1-4 Alarm banner codes and log correlation (Sheet 2 of 3)

Alarm banner code	Event Log description	Event clear Log description
Split	XAC618 Split mode entered	XAC619 Split mode exited
FWvers	XAC300 FWversion mismatch	XAC630 FW version mismatch cleared
MemLim	XAC801 MemLim (Memory Limit)	XAC601 MemLim condition cleared
LowPE	XAC302 Low Processor Element (PE)	XAC602 LowPE condition cleared
LowSM	XAC300 Low Shared Memory (SM)	XAC600 LowSM condition cleared
AMDI	XAC309 AMDI link problem	XAC609 AMDI link condition cleared
ETHR	XAC329 ETHR link problem	XAC629 ETHR link condition cleared
MScomm	XAC303 Message Switch (MS) communication problem	XAC603 MScomm alarm cleared
Image	XAC308 Image test report	XAC608 Image test passed/alarm cleared
TOD	XAC304 Time of Day clock (TOD) problem	XAC604 TOD alarm cleared
XATrap	XAC814 XATrap	XAC614 XATrap alarm cleared
DISK	XAC306 Disk problem	XAC606 Disk alarm cleared
RTIF	XAC305 Reset Terminal Interface (RTIF) problem	XAC605 RTIF alarm cleared
RExSch	XAC413 REx Schedule failure	XAC613 RExSch alarm cleared
TAPE	XAC307 Tape problem	XAC607 TAPE alarm cleared
PEtbl	XAC322 PE trouble	XAC622 PEtbl alarm cleared
IOtbl	XAC324 IOP trouble	XAC624 IOtbl alarm cleared
IOflt	XAC312 IOP fault	XAC612 IOP alarm cleared
SMtbl	XAC323 SM trouble	XAC623 SMtbl alarm cleared

Table 1-4 Alarm banner codes and log correlation (Sheet 3 of 3)

Alarm banner code	Event Log description	Event clear Log description
RIBkey	XAC325 RIBKey detected	XAC625 RIBKey removed
WgSlot	XAC321, XAC327 Wrong slot	XAC627 WgSlot cleared (card removed)
FWsoak	XAC631 FW soaking started XAC635 FW soaking in progress	XAC632 FW soaking completed

Alarm, log and OM relationship

The following table contains cross-references to alarms, logs and OMs.

Table 1-5 Alarms and related logs and operational measurement registers (Sheet 1 of 2)

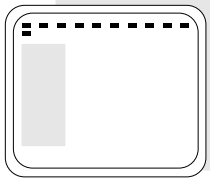
Alarms	Related logs	Related OM registers
RExTst	XAC415, XAC615	XARXPE, XARXIO, XARXSM, XARXBASE, XARXFULL, XARXABRT, XARXALL
FWvers	XAC330, XAC630	none
FWsoak	XAC 631, XAC635, XAC632	none
ImgTst	XAC308, XAC608	none
Split	XAC618, XAC619	XAPEMAJU, XAMSMPXU, XARSMPXU, XASSMPXU
MemLim	XAC601, XAC801	XASM, XASMCRIU
LowPE	XAC302, XAC602	XAPE, XAPECRIU, XAPEMAJU, XARXPE
LowSM	XAC300, XAC600	XASM, XAMSMPXU, XARSMPXU, XASSMPXU
AMDI	XAC309, XAC335, XAC609	XAMDI, XAMDILNK, XAMDMAJU, XAMDCRIU
ETHR	XAC329, XAC629	XETHRMJU, XETHRCRU, XETHR, XETHRPRT, XETHRLNK
MScomm	XAC303, XAC603	XACMIC, XAIOP, XARXIO, XALKMAJU

Table 1-5 Alarms and related logs and operational measurement registers (Sheet 2 of 2)

Alarms	Related logs	Related OM registers
Image	XAC308, XAC608	XARXBASE, XARXFULL
TOD	XAC304, XAC604	XAIOP, XACMIC
XATrap	XAC614, XAC814	XATRAP
Disk	XAC306, XAC606	XADISK
RTIF	XAC305, XAC605	XARTIF, XAIOP, XALOCP, XAREMP
RExSch	XAC413, XAC613	none
Tape	XAC307, XAC607	XATAPE, XAIOP
PEtbl	XAC322, XAC622	none
IOtrbl	XAC324, XAC624	none
IOflt	XAC312, XAC612	none
SMtbl	XAC323, XAC623	none
RiBkey	XAC325, XAC625	none
WgSlot	XAC321, XAC327, XAC627	none

XAC AMDI critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
AMDI	.	.	.	.	.	.	.	.	.
C									

Indication

An AMDI critical alarm code appears under the XAC header of the alarm banner. The alarm code indicates a ATM multi-node data interface (AMDI) critical alarm.

Meaning

All AMDI links in at least one group (as defined in table XAMDILNK) are out of service (OOS).

The following link states can contribute to an AMDI critical alarm:

- AMDI links are in ManBsy state
- AMDI links are in CBsy state
- AMDI links are in SysBsy state

Impact

A minimum of one AMDI link for each messaging group must be INSV to guarantee messaging to a Multi-service Gateway 4000 (MG4K). Without at least one INSV AMDI link for each messaging group, call origination cannot occur at the Call Server.

Common procedures

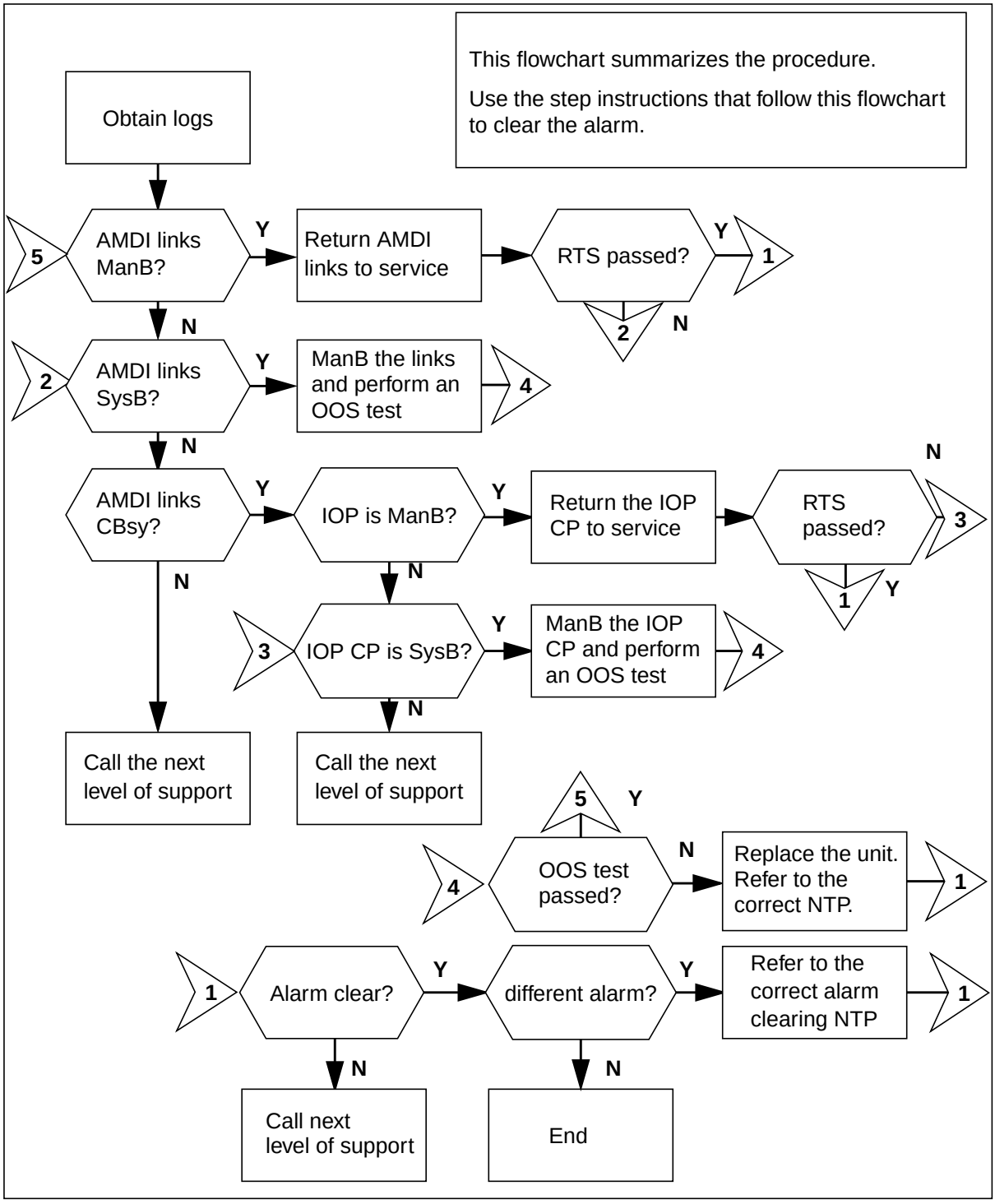
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC AMDI
critical (continued)

Summary of clearing an AMDI alarm



XAC AMDI
critical (continued)

How to clear an AMDI alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC AMDI
critical (continued)

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an AMDI link fault	step 2
a hardware fault	step 13
that the AMDI critical alarm condition is clear	step 19

2 Access the XA-Core AMDI MAP level by typing

MAPCI;MTC;XAC;AMDI

and pressing the Enter key.

3 Examine the AMDI MAP level. Record the location and status of the AMDI packlets.

Note: The AMDI MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC AMDI
critical (continued)

AMDI MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 AMDI     .       .       .       .       .       .       .        .       .
 *C*

AMDI
 0 Quit      Front:   111111111    Rear: 111111   SM     PE    IO     PKLT
 2          123456789012345678    456789012345   .      .     .      .
 3      Sta: ..-..-..- ..         ...-------...  0      0     0      0
 4      Dep:                     F         F
 5      Typ:                     **        **
 6      Slot:  Side:   Packlet:  Status:  Link0:  Link1:
 7 Tst_ 05     Rear     lower        .       S       -
 8 Bsy_ 06     Rear     lower        .       .       -
 9 RTS_ 13     Rear     lower        .       .       -
10 LoadFW_ 14  Rear     lower        .       S       -
11 Uneq_ AMDI:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the AMDI MAP level indicates	Do
AMDI links are in a ManB state	step 4
AMDI links are in a SysB state	step 5
AMDI links are in a CBsy state	step 7
a hardware fault	step 13
no alarm and all CPs and all links are InSv	step 19

4 Return the OOS AMDI links to service. Repeat this step for each ManB link. At the AMDI MAP level type

>RTS <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC AMDI
critical (continued)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet. The two possible values are link0 or link1.

Example of command:

RTS 14 r l link0

Example of system response:

```
RTS 4 rear lower link0 passed
```

If the AMDI links are	Do
in a SysB state	step 5
in a CBsy state	step 7
in an InSv state	step 16

5 Manually busy the OOS AMDI links. Repeat this step for each SysB link. At the AMDI MAP level type

>BSY <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet. The two possible values are link0 or link1.

Example of command use:

>BSY 14 r l link0

Example of system response:

```
BSY 4 rear lower link0 complete
```

Note: If needed, use the Force option to place the link in a ManB state. Refer to the XA-Core MAP commands documentation.

6 Perform an OOS test on the AMDI links. Repeat this step for each ManB AMDI link. At the AMDI MAP level type

>TST <nn> <s> <p> <link>

and press the Enter key

where

XAC AMDI
critical (continued)

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command use:

>TST 14 r l link0

If the OOS test	Do
passed	step 3
did not pass	step 14

7 Access the IO MAP level. At the AMDI MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC AMDI
critical (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 AMDI     .       .       .       .       .       .       .        .       .
 *C*
IO
 0 Quit          Front:  111111111    Rear: 111111   SM    PE    IO     PKLT
 2               123456789012345678    456789012345   .     .     IOP M  RTIF C
 3               Sta: -.-.--..-.----..-    M--.-------.   0     0     1      3
 4               Dep:                  F
 5               Typ:  *              *     *         *
 6               Slot:  Slot:   Status:    Packlet-Upper:          Lower:
 7 Tst_             2   Front      .              Tape .           Disk .
 8 Bsy_            17   Front      .              Tape .           Disk .
 9 RTS_             4   Rear       .              RTIF .           CMIC .
10                  5   Rear       S                               AMDI C
11                  6   Rear       .                               AMDI .
12                 13   Rear       .                               AMDI .
13                 14   Rear       M                               AMDI C
14 Alarm_          15   Rear       .              RTIF .           CMIC .
15
16
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 15
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 r

XAC AMDI
critical (continued)

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related links are ManB	step 12
InSv and any related links are SysB	step 14
SysB and all related links are CBsy	step 10
InSv and all related links are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
BSY 4 rear complete
```

Note: If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

XAC AMDI
critical (continued)

>TST 4 r

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct MAP level. Return the ManB links to service.

>RTS <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command:

RTS 14 r l link0

Example of system response:

```
RTS 4 rear lower link0 passed
```

If the links are	Do
in a SysB state	step 14
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a SysB state	step 14
in an InSv state	step 16

14 Perform the Cleaning fiber-optic components and assemblies procedure. Refer to the correct NTP.

If the links are	Do
in an InSv state	step 16

XAC AMDI **critical** (end)

If the links are	Do
in a SysB state	step 18

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the AMDI MAP level.

If the AMDI critical alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

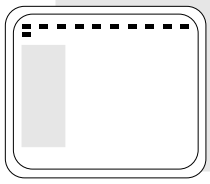
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC AMDI major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
AMDI M	.	.	.	.	.	.	.	.	.

Indication

An AMDI major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a ATM multi-node data interface (AMDI) major alarm.

Meaning

One AMDI link in at least one group (as defined in table XAMDILNK) are out of service (OOS).

The following link states can contribute to an AMDI major alarm:

- AMDI links are in ManBsy state
- AMDI links are in CBsy state
- AMDI links are in SysBsy state

Impact

A loss of AMDI link redundancy occurs. There is no loss of call origination at the Call Server.

Common procedures

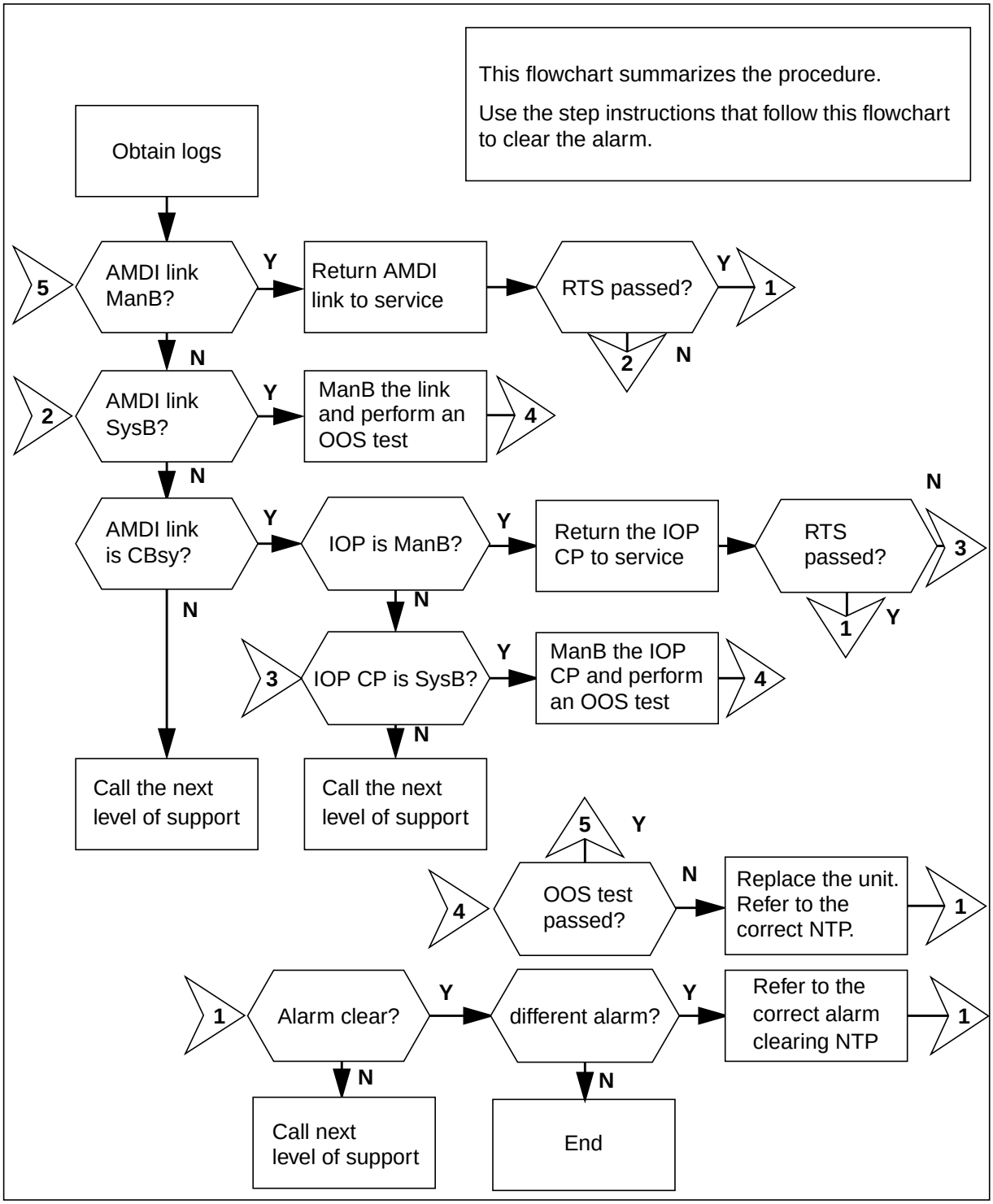
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC AMDI
major (continued)

Summary of clearing an AMDI alarm



XAC AMDI
major (continued)

How to clear an AMDI alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of equipment damage - electric static discharge (ESD)
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC AMDI
major (continued)

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an AMDI link fault	step 2
a hardware fault	step 13
that the AMDI major alarm condition is clear	step 19

2 Access the XA-Core AMDI MAP level by typing

MAPCI;MTC;XAC;AMDI

and pressing the Enter key.

3 Examine the AMDI MAP level. Record the location and status of the AMDI packlets.

Note: The AMDI MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC AMDI
major (continued)

AMDI MAP level

```
XAC     MS     IOD     Net     PM     CCS     Lns     Trks     Ext     APPL
AMDI    .      .       .       .      .       .       .        .       .
*M*
AMDI                    Front:     111111111   Rear:  111111  SM   PE   IO PKLT
 0 Quit                  123456789012345678   456789012345  .    .    .lINKfl
 2                      Sta:   . .- ..-.. -  ..    ..........-... 0    0    0    0
 3                      Dep:                        F
 4                      Typ:
 5                      Slot: Side: Packlet:  Status:  Link0:  Link1:
 6                       05   Rear  lower     .        S         -
 7 Tst_                  06   Rear  lower     .        .         -
 8 Bsy_                  13   Rear  lower     .        .         -
 9 RTS_                  14   Rear  lower     .        .         -
10 LoadFW_               AMDI:
11 Uneq_
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  ADMIN
 Time  14:12
```

If the AMDI MAP level indicates	Do
AMDI links are in a ManB state	step 4
AMDI links are in a SysB state	step 5
AMDI links are in a CBsy state	step 7
a hardware fault	step 13
no alarm and all CPs and all links are InSv	step 19

4 Return the OOS AMDI links to service. Repeat this step for each ManB link. At the AMDI MAP level type

>RTS <nn> <s> <p> <link>

and press the Enter key

where

XAC AMDI
major (continued)

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command:

RTS 14 r l link0

Example of system response:

```
RTS 4 rear lower link0 passed
```

If the AMDI links are	Do
in a SysB state	step 5
in a CBsy state	step 7
in an InSv state	step 16

5 Manually busy the OOS AMDI links. Repeat this step for each SysB link. At the AMDI MAP level type

>BSY <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command use:

>BSY 14 r l link0

Example of system response:

```
BSY 4 rear lower link0 complete
```

Note: If needed, use the Force option to place the link in a ManB state. Refer to the XA-Core MAP commands documentation.

6 Perform an OOS test on the AMDI links. Repeat this step for each ManB AMDI link. At the AMDI MAP level type

XAC AMDI
major (continued)

>TST <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command use:

>TST 14 r l link0

If the OOS test	Do
passed	step 3
did not pass	step 14

7 Access the IO MAP level. At the AMDI MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC AMDI
major (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 AMDI     .       .       .       .       .       .       .        .       .
  *M*

IO
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO      PKLT
 2               123456789012345678    456789012345   .     .     IOP M   LINK C
 3          Sta: -.-.--..-.-----..-    .M..------...   0     0     1       1
 4          Dep:                        F
 5          Typ:  *               *     ***      ***
 6          Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Tst_        2   Front      .              Tape .             Disk .
 8 Bsy_       17   Front      .              Tape .             Disk .
 9 RTS_        4   Rear       .              RTIF .             CMIC .
10             5   Rear       M                                 AMDI C
11             6   Rear       .                                 AMDI .
12            13   Rear       .                                 AMDI .
13            14   Rear       .                                 AMDI .
14 Alarm_     15   Rear       .              RTIF .             CMIC .
15
16
17 Indicat_
18 Query_

 ADMIN
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 15
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 r

XAC AMDI
major (continued)

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related links are ManB	step 12
InSv and any related links are SysB	step 14
SysB and all related links are CBsy	step 10
InSv and all related links are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
BSY 4 rear complete
```

Note: If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 r

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct MAP level. Return the ManB links to service.

>RTS <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an OC-3 packlet.
The two possible values are link0 or link1.

Example of command:

RTS 14 r l link0

Example of system response:

```
RTS 4 rear lower link0 passed
```

If the links are	Do
in a SysB state	step 14
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a SysB state	step 14
in an InSv state	step 16

14 Perform the Cleaning fiber-optic components and assemblies procedure. Refer to the correct NTP.

If the links are	Do
in an InSv state	step 16

XAC AMDI
major (end)

If the links are	Do
in a SysB state	step 18

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the AMDI MAP level.

If the AMDI major alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

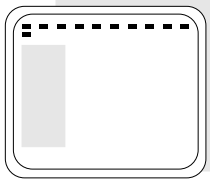
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC Disk minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
DISK	.	.	.	.	.	.	.	.	.

Indication

A DISK alarm code appears under the XAC header of the alarm banner. The alarm banner code indicates a Disk minor alarm.

Meaning

The XA-Core cannot access a disk packlet. One or more of the following conditions cause the Disk minor alarm:

- An XA-Core disk packlet is system busy (SysB) or manual busy (ManB).
- An XA-Core input/output processor (IOP) circuit pack (CP) is SysB or ManB. The disk packlet state is in a OOS CBsy state.

Impact

There is no change in subscriber service.

Common procedures

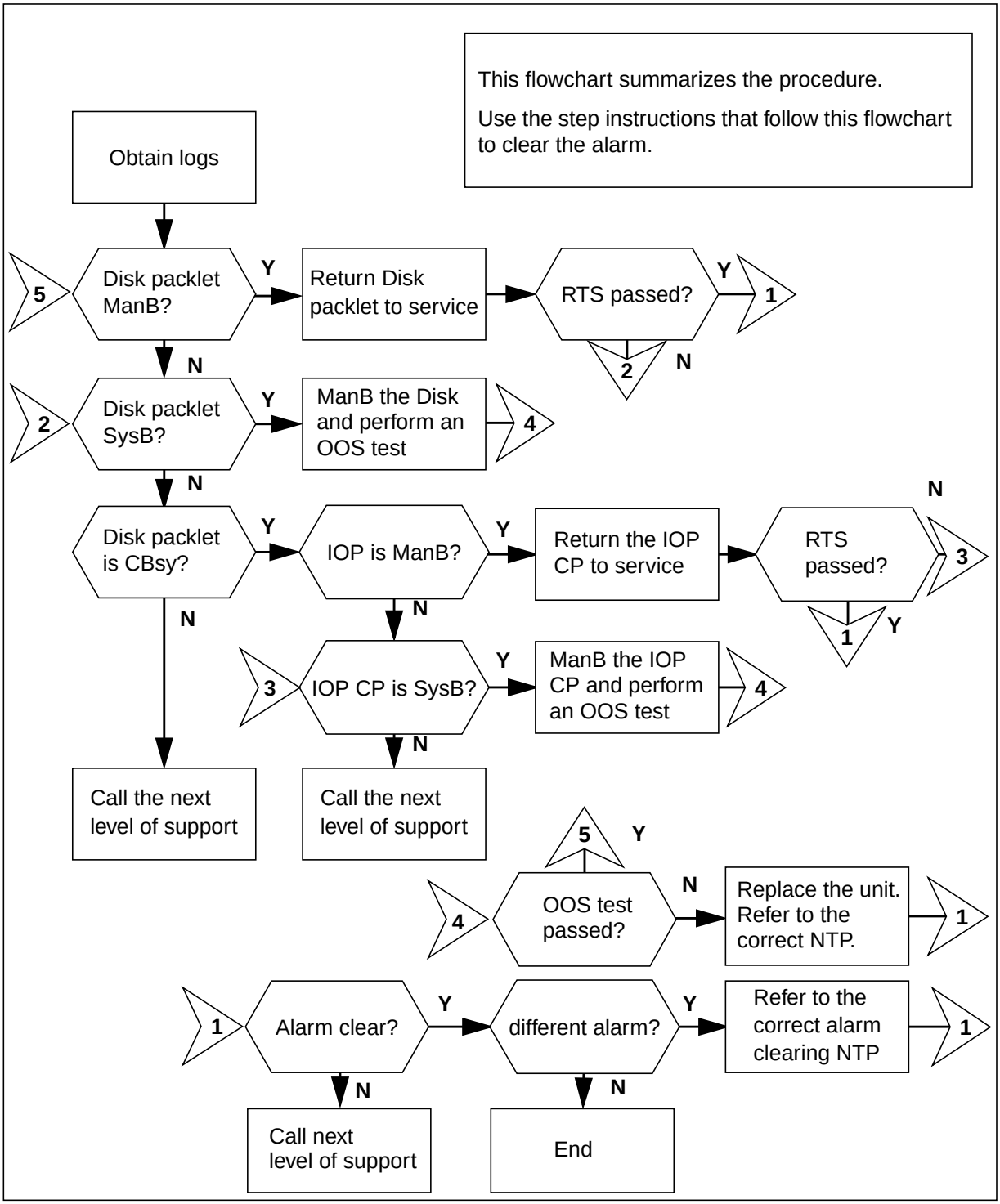
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC Disk
minor (continued)

Summary of clearing a Disk alarm



XAC Disk
minor (continued)

How to clear a Disk alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC Disk
minor (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a Disk minor alarm condition	step 2
a different alarm condition	step 17
that the alarm condition is clear	step 19

2 Access the Disk MAP level. At the CI MAP level, type

MAPCI;MTC;XAC;DISK

and press the Enter key.

3 Examine the Disk MAP level. Record the status of the disk packlets and the IOP CPs. Record the location of any out of service (OOS) CPs or packlets.

Note: The Disk MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the PKLT header in the subsystem status summary field (SSSF)
- status codes appear in the status field in the command interpreter output area

The following is a sample MAP display.

XAC Disk
minor (continued)

Disk MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
DISK       .       .       .       .       .       .       .       .       .


Disk            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      DISK M
 2        Sta: -.-.--..-.-----..-  .--.-------.   0      0       0      1
 3        Dep:                 F
 4        Typ:  *              *
 5        Slot: Side:    Packlet:  Status:
 6 Tst_    2    Front    Lower     .
 7 Bsy_    17   Front    Lower     M
 8 RTS_
 9
10          DISK:
11 Format
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a Disk packlet is in a SysB state	step 4
a Disk packlet is in a ManB state	step 6
a Disk packlet is in a Cbsy state	step 7
a different alarm	step 17
no alarm and all CPs and packlets are in service	step 19

4 Manually busy the OOS Disk packlet. At the Disk MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC Disk
minor (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 17 f l

Example of system response:

```
BSY 4 rear upper complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 18

5 Perform an OOS test on the Disk packlet. At the Disk MAP level type.

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

>TST 17 f l

Example of system response:

```
TST 17 front lower passed
```

If the OOS test	Do
passed	step 6
did not pass	step 14

6 Return the Disk packlet to service. At the Disk MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC Disk
minor (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command:

>RTS 17 f l

Example of system response:

```
RTS 17 front lower passed
```

If the Disk packlet is	Do
in a SysB state	step 4
in a CBsy state	step 7
in an InSv state	step 16

7 Access the IO MAP level. At the Disk MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC Disk
minor (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 DISK     .       .       .       .       .       .       .        .       .

IO
 0 Quit          Front:   111111111    Rear: 111111   SM     PE    IO      PKLT
 2               123456789012345678    456789012345   .      .     IOP M   DISK C
 3         Sta: -.-.--..-..----.M-     .--.-------.   0      0     1       2
 4         Dep:                F
 5         Typ:  *             *     *          *
 6 Tst_    Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Bsy_             2   Front      .              Tape .          Disk .
 8 RTS_             17  Front      M              Tape C          Disk C
 9                  4   Rear       .              RTIF .          CMIC .
10                  15  Rear       .              CMIC .          CMIC .
11                  IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 10
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 17 f

XAC Disk
minor (continued)

Example of system response:

```
RTS 17 front passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet is ManB	step 12
InSv and any related packlet is SysB	step 14
SysB and all related packlets are CBsy	step 15
InSv and all related packlets are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 17 f

Example of system response:

```
BSY 17 front complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the IOP CP is	Do
in a ManB state	step 11
not in a ManB state	step 18

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

XAC Disk
minor (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 17 f

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct packlet MAP level. Return the ManB packlet to service.

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 17 f l

Example of system response:

```
RTS 17 front lower passed
```

If the packlet is	Do
in a SysB state	step 13
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet OOS test	Do
did not pass	step 14
passed	step 16

XAC Disk minor (end)

14 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in an InSv state	step 16
in a SysB state	step 18

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the MAP screen.

If the Disk minor alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

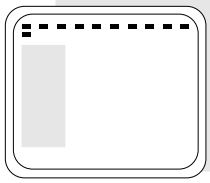
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC ETHR critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
ETHR	.	.	.	.	.	.	.	.	.
C									

Indication

An ETHR critical alarm code appears under the XAC header of the alarm banner. The alarm code indicates an Ethernet critical alarm.

Meaning

The conditions that contribute to an ETHR critical alarm are dependent on the link configuration in use.

The following port or link states can contribute to an ETHR critical alarm in a four link configuration:

- Three or more Ethernet ports or links are in ManBsy state
- Three or more Ethernet ports or links are in CBsy state
- Three or more Ethernet ports or links are in SysBsy state

The following port or link states can contribute to an ETHR critical alarm in a two link configuration:

- Two Ethernet ports or links are in ManBsy state
- Two Ethernet ports or links are in SysBsy state

Impact

In a four link configuration, a minimum of 2 Ethernet links must be in-service (INSV) to guarantee messaging to a Ethernet network. With only one link in-service the system functions below engineered capacity.

In a two link configuration, a minimum of one Ethernet link must be in-service to guarantee messaging to a Ethernet network.

Without at least one INSV Ethernet link, call origination cannot occur at the call server.

XAC ETHR
critical (continued)

Common procedures

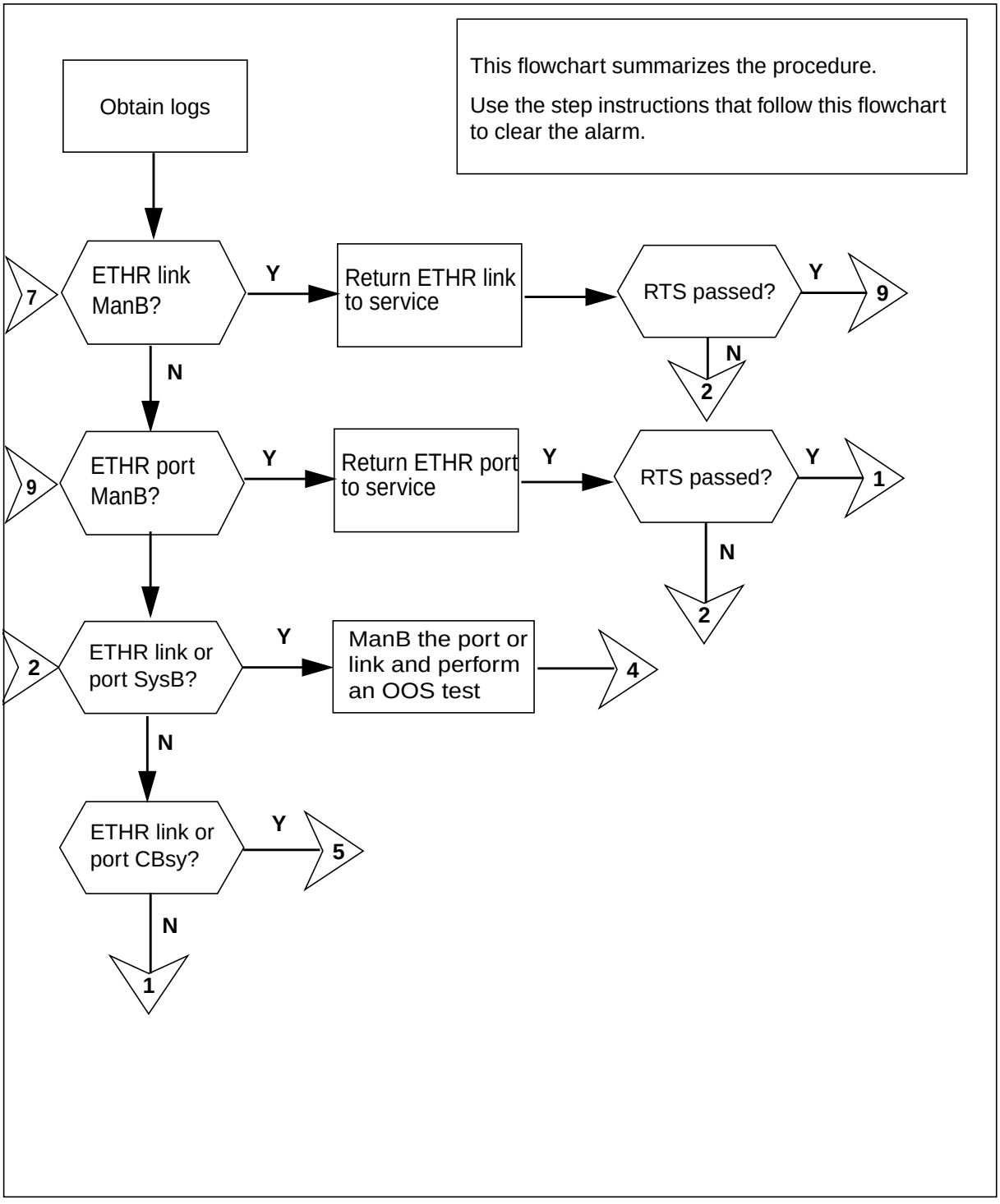
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

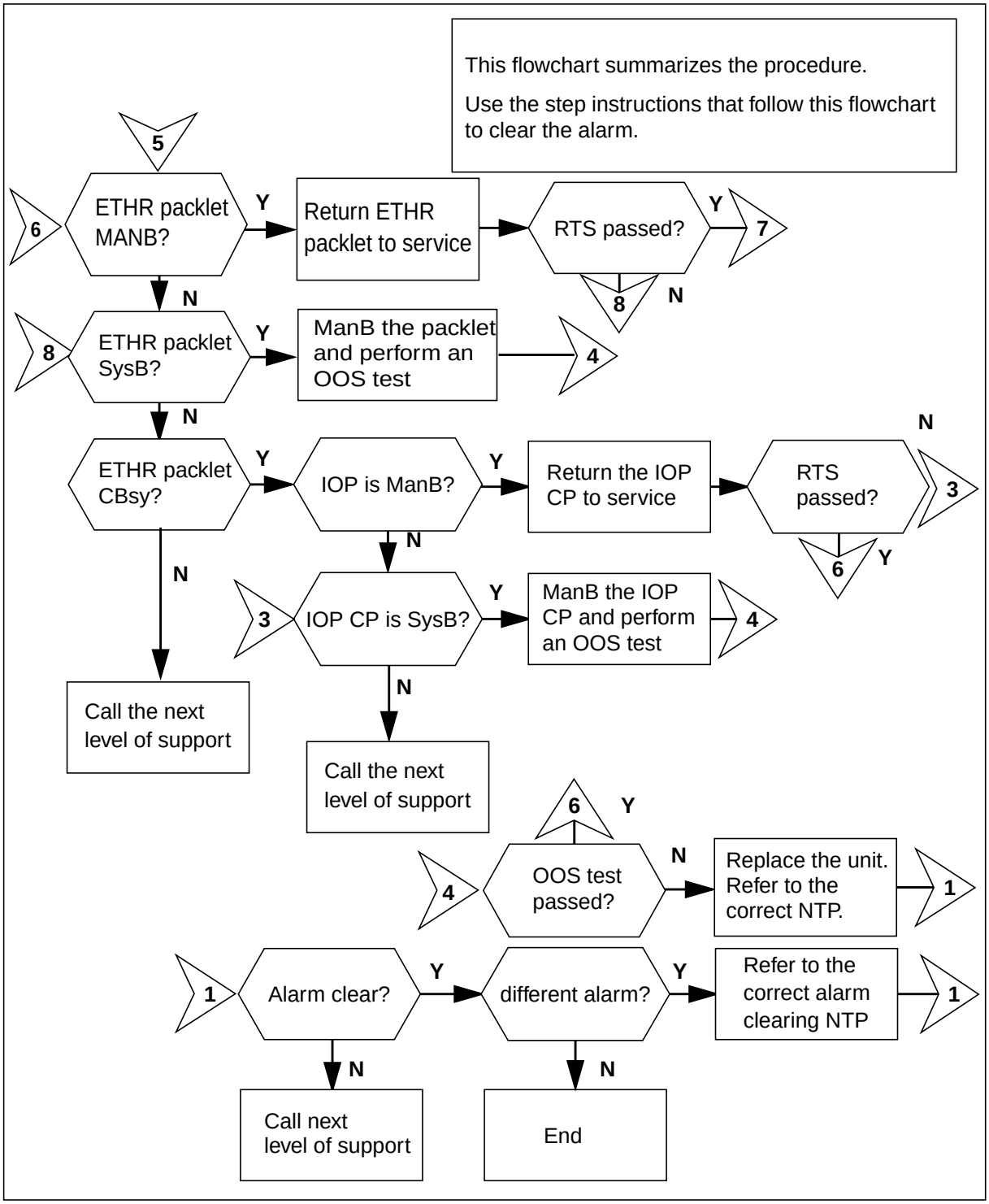
XAC ETHR
critical (continued)

Summary of clearing an ETHR critical alarm



XAC ETHR
critical (continued)

Summary of clearing an ETHR critical alarm



XAC ETHR
critical (continued)

How to clear an ETHR critical alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC ETHR
critical (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an Ethernet packlet fault	step 2
an Ethernet port or link fault	step 2
an IOP packlet hardware fault	step 13
that the ETHR critical alarm condition is clear	step 22

2 Access the XA-Core ETHR MAP level by typing

MAPCI;MTC;XAC;ETHR

and pressing the Enter key.

3 Examine the ETHR MAP level. Record the location and status of the ETHR packlets.

Note: The ETHR MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC ETHR
critical (continued)

ETHR MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 ETHR     .       .       .       .       .       .       .        .       .
 *C*

ETHR
 0 Quit      Front:   111111111    Rear: 111111   SM    PE    IO     PKLT
 2           123456789012345678    456789012345   .     .     .      ETHR M
 3      Sta:  .  ..-..-..-.- ..    ...------...   0     0     0      1
 4      Dep:                        FF       F
 5      Typ:                        **       **
 6      Slot:  Side:   Packlet:   Status:   Port:   Link:
 7 Tst_ 05     Rear     lower      M         C       C
 8 Bsy_ 06     Rear     lower      .         M       C
 9 RTS_ 13     Rear     lower      .         .       S
10 LoadFW_ 14  Rear     lower      I        .       .
11     ETHR:
12 Uneq_
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the ETHR MAP level indicates	Do
ETHR packlet is in a ManB state	step 4
ETHR packlet is in a SysB state	step 5
ETHR packlet is in a CBsy state	step 10
ETHR links or ports are in a ManB state	step 7
ETHR links or ports are in a SysB state	step 8
ETHR links are in a CBsy state	step 7
ETHR ports are in a CBsy state	step 4
no alarm and all CPs and all ports and links are InSv	step 22

4 Return the OOS packlet to service. Repeat this step for each ManB packlet. At the ETHR MAP level type

>RTS <nn> <s> <p>

and press the Enter key

XAC ETHR
critical (continued)

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command:

RTS 14 r l

Example of system response:

```
RTS 4 rear lower passed
```

If the ETHR packlet is	Do
in a SysB state	step 5
in a CBsy state	step 10
in an InSv state	step 19

5 Manually busy the OOS ETHR packlet. Repeat this step for each SysB packlet. At the ETHR MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>BSY 14 r l

Example of system response:

```
BSY 14 rear lower complete
```

6 Perform an OOS test on the ETHR packlet. Repeat this step for each ManB ETHR packlet. At the ETHR MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

XAC ETHR
critical (continued)

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>TST 14 r l

If the OOS test	Do
passed	step 3
did not pass	step 17

7 Return the OOS ETHR links or ports to service. Repeat this step for each ManB link and then each ManB port as directed. At the ETHR MAP level type

>RTS <nn> <s> <p> <link>

or

>RTS <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

Example of system response:

```
RTS 14 rear lower link passed
```

If the ETHR links or ports are	Do
in a SysB state	step 8
in an InSv state	step 19

8 Manually busy the OOS ETHR ports or links. Repeat this step for each SysB link or port. At the ETHR MAP level type

XAC ETHR
critical (continued)

>BSY <nn> <s> <p> <link>

or

>BSY <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command use:

>BSY 14 r l link

Example of system response:

```
BSY 14 rear lower link complete
```

9 Perform an OOS test on the ETHR links or ports. Repeat this step for each ManB ETHR link or port. At the ETHR MAP level type

>TST <nn> <s> <p> <link>

or

>TST <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command use:

>TST 14 r l link

If the OOS test	Do
passed	step 3
did not pass	step 16

XAC ETHR
critical (continued)

10 Access the IO MAP level. At the ETHR MAP level type

>IO

and press the Enter key.

11 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

IO MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 ETHR      .         .        .        .        .        .         .        .        .
  *C*

IO                    Front:   111111111    Rear: 111111   SM     PE    IO      PKLT
 0 Quit               123456789012345678    456789012345    .      .    IOP M   Linkfl
 2                Sta:  . ..-..-..-.- ..     .M..------...    0     0     1       1
 3                Dep:                        FF      F
 4                Typ:  *              *     ***     ***
 5                Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 6                02     Front   .          Tape .                    Disk .
 7 Tst_           17     Front   .          Tape .                    Disk .
 8 Bsy_           04     Rear    .          RTIF .                    CMIC .
 9 RTS_           05     Rear    M                                    ETHR C
10 loadFW_        06     Rear    .                                    ETHR F
11                13     Rear    .                                    ETHR F
12 UNeq_          14     Rear    .                                    ETHR .
13                15     Rear    .          RTIF .                    CMIC .
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 12
in a SysB state	step 18

XAC ETHR
critical (continued)

If the IOP CP is	Do
in an InSv state	step 19

12 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 14 r

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet, ports or links are ManB	step 15
InSv and any related packlet, ports or links are SysB	step 3
SysB and any related packlet, ports or links are CBsy	step 13
InSv and any related packlets, ports and links are InSv	step 19

13 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

XAC ETHR
critical (continued)

>BSY
14 r

Example of system response:

```
BSY 4 rear complete
```

14 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 14 r

If the OOS test	Do
passed	step 11
did not pass	step 18

15 Access the correct MAP level. Return the ManB packlet links or ports to service.

>RTS <nn> <s> <p>

or

>RTS <nn> <s> <p> <link>

or

>RTS <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

XAC ETHR
critical (continued)

Example of system response:

```
RTS 14 rear lower link passed
```

If the MAP level indicates	Do
Ethernet packlet or port is in a SysB state	step 17
Ethernet link is in a SysB state	step 16
in an InSv state	step 19

16 Perform the corrective link maintenance. Refer to the correct NTP. Return to this point when complete.

If the links are	Do
in a SysB state	step 17
in an InSv state	step 19

17 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a InSv state	step 19
in a SysB state	step 21

18 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 19
in a SysB state	step 21

19 Confirm that the alarm is clear. Examine the alarm banner on the ETHR MAP level.

If the ETHR critical alarm is	Do
changed to a different alarm	step 20
not clear	step 21
clear	step 22

XAC ETHR
critical (end)

20 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

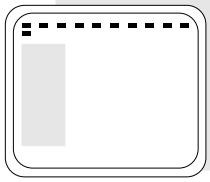
If the alarm is	Do
not clear	step 21
clear	step 22

21 Call the next level of support.

22 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC ETHR major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
ETHR M	.	.	.	.	.	.	.	.	.

Indication

An ETHR major alarm code appears under the XAC header of the alarm banner. The alarm code indicates an Ethernet major alarm.

Meaning

The conditions that contribute to an ETHR major alarm are dependent on the link configuration in use.

The following port or link states can contribute to an ETHR major alarm in a four link configuration:

- Two Ethernet ports or links are in ManBsy state
- Two Ethernet ports or links are in CBsy state
- Two Ethernet ports or links are in SysBsy state

The following port or link states can contribute to an ETHR major alarm in a two link configuration:

- One Ethernet port or link is in ManBsy state
- One Ethernet port or link is in SysBsy state

Impact

A loss of Ethernet redundancy occurs. There is no loss of call origination at the Call Server.

Common procedures

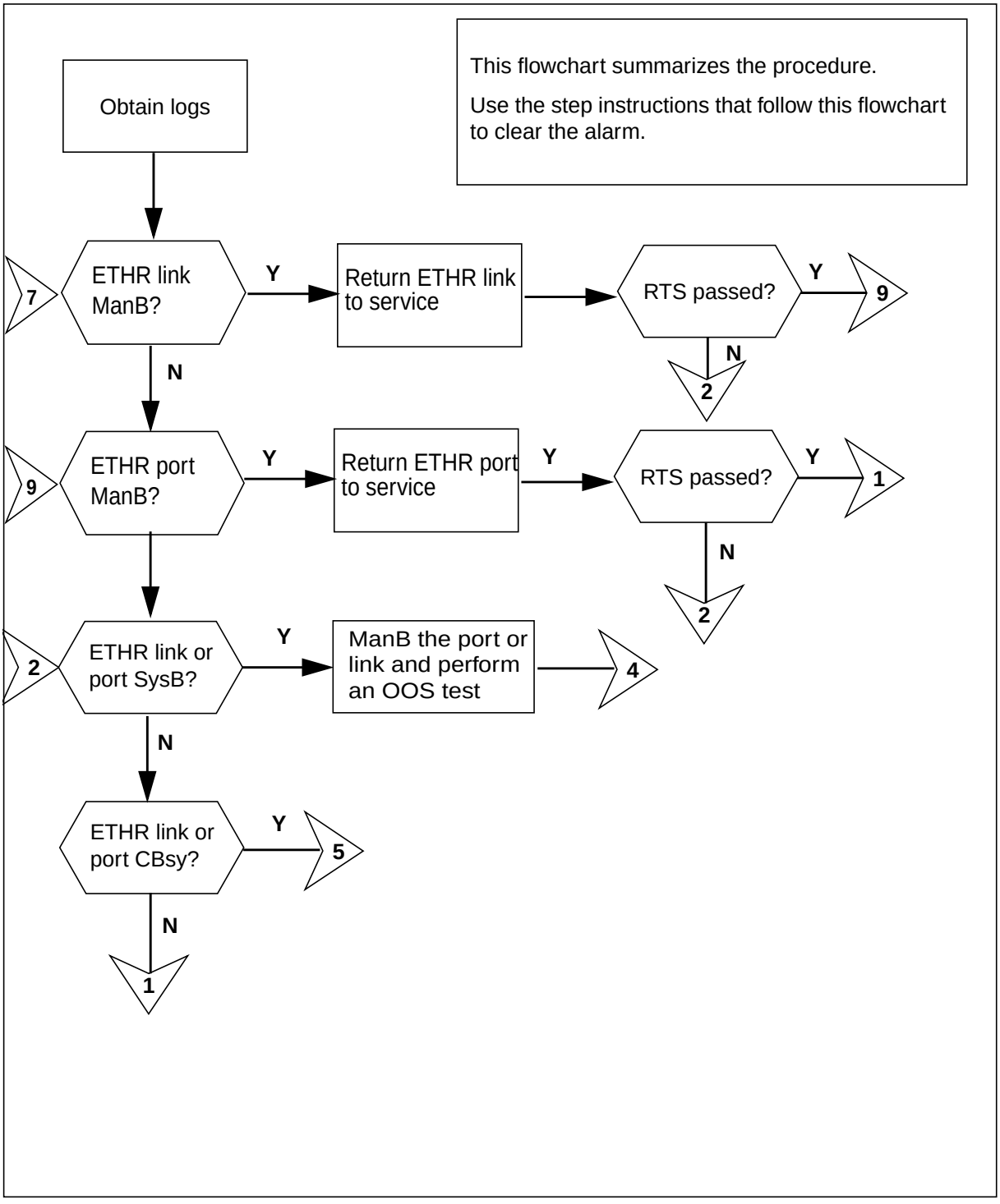
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

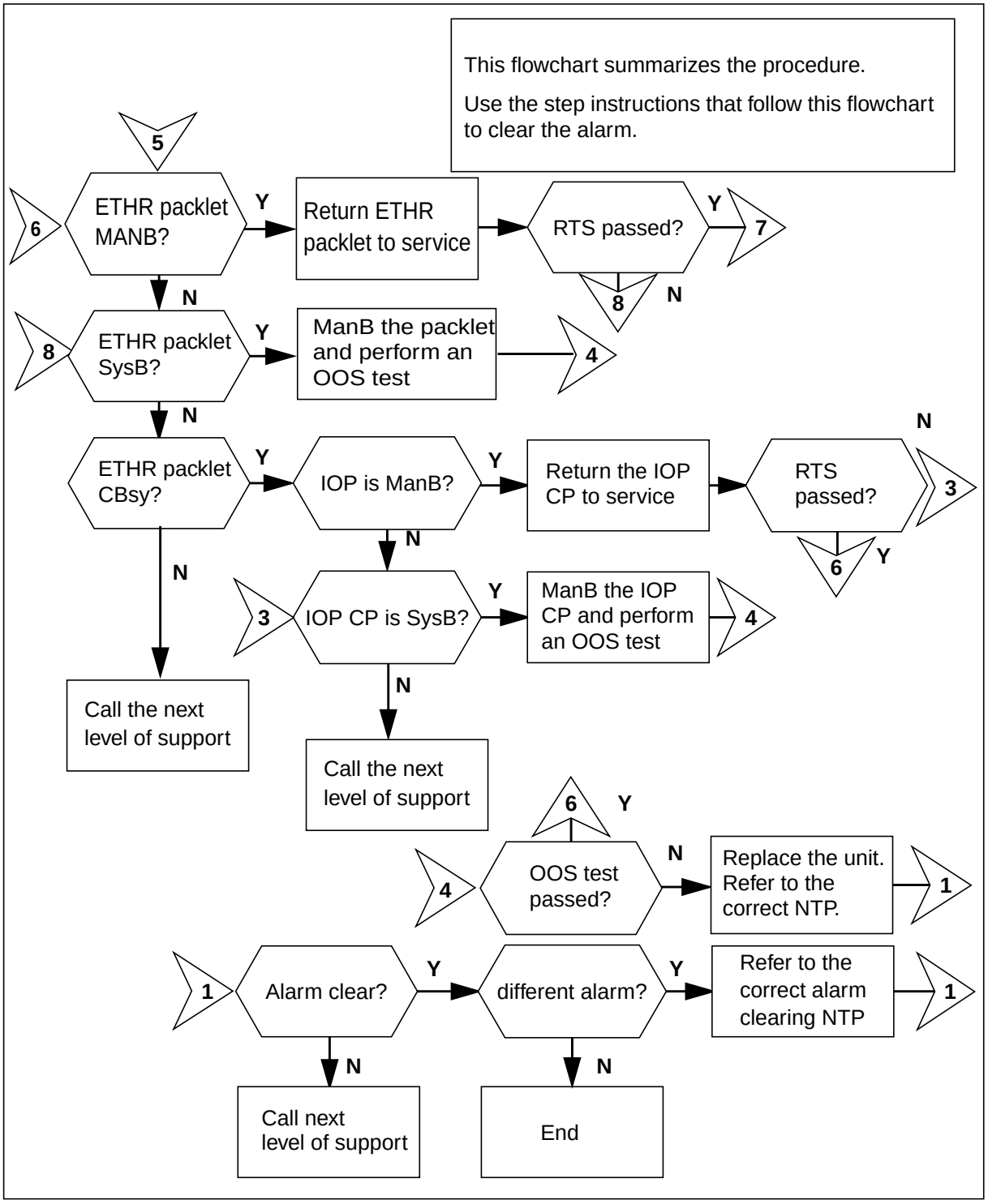
XAC ETHR
major (continued)

Summary of clearing an ETHR major alarm



XAC ETHR
major (continued)

Summary of clearing an ETHR major alarm



XAC ETHR
major (continued)

How to clear an ETHR major alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of equipment damage - electric static discharge (ESD)
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC ETHR
major (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an Ethernet packlet fault	step 2
an Ethernet port or link fault	step 2
an IOP packlet hardware fault	step 13
that the ETHR major alarm condition is clear	step 22

2 Access the XA-Core ETHR MAP level by typing

MAPCI;MTC;XAC;ETHR

and pressing the Enter key.

3 Examine the ETHR MAP level. Record the location and status of the ETHR packlets.

Note: The ETHR MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC ETHR
major (continued)

ETHR MAP level

```
XAC      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
ETHR     .       .        .        .       .        .        .         .        .
 M
ETHR                  Front:   111111111   Rear: 111111 SM  PE  IO   PKLT
 0 Quit               123456789012345678   456789012345  .   .   .  PortF1
 2                Sta:  . ..-..-..-.- . .  ..........-...  0   0   0   0
 3                Dep:                      F        F
 4                Typ:                      **       **
 5
 6 Tst_           Slot: Side: Packlet:  Status: Port:    Link:
 7 Bsy_            05   Rear  lower     .        S         C
 8 RTS_            06   Rear  lower     .        .         .
 9                 13   Rear  lower     .        .         .
10 LoadFW_         14   Rear  lower     .        .         M
11
12 Uneq_
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  ADMIN
 Time  14:12
```

If the ETHR MAP level indicates	Do
ETHR packlet is in a ManB state	step 4
ETHR packlet is in a SysB state	step 5
ETHR packlet is in a CBsy state	step 10
ETHR links or ports are in a ManB state	step 7
ETHR links or ports are in a SysB state	step 8
ETHR links are in a CBsy state	step 7
ETHR ports are in a CBsy state	step 4
no alarm and all CPs and all ports and links are InSv	step 22

XAC ETHR
major (continued)

4 Return the OOS packlet to service. Repeat this step for each ManB packlet. At the ETHR MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command:

RTS 14 r l

Example of system response:

```
RTS 14 rear lower passed
```

If the ETHR packlet is	Do
in a SysB state	step 5
in a CBsy state	step 10
in an InSv state	step 19

5 Manually busy the OOS ETHR packlet. Repeat this step for each SysB packlet. At the ETHR MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>BSY 14 r l

Example of system response:

```
BSY 14 rear lower complete
```

6 Perform an OOS test on the ETHR packlet. Repeat this step for each ManB ETHR packlet. At the ETHR MAP level type

XAC ETHR
major (continued)

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>TST 14 r l

If the OOS test	Do
passed	step 3
did not pass	step 17

7 Return the OOS ETHR ports or links to service. Repeat this step for each ManB link and each ManB port as directed. At the ETHR MAP level type

>RTS <nn> <s> <p> <link>

or

>RTS <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

Example of system response:

```
RTS 14 rear lower link passed
```

If the ETHR links or ports are	Do
in a SysB state	step 8

XAC ETHR
major (continued)

If the ETHR links or ports are	Do
in an InSv state	step 19

8 Manually busy the OOS ETHR ports or links. Repeat this step for each SysB port or link. At the ETHR MAP level type

>BSY <nn> <s> <p> <link>

or

>BSY <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command use:

>BSY 14 r l link

Example of system response:

```
BSY 14 rear lower link complete
```

9 Perform an OOS test on the ETHR ports or links. Repeat this step for each ManB ETHR port or link. At the ETHR MAP level type

>TST <nn> <s> <p> <link>

or

>TST <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command use:

XAC ETHR
major (continued)

>TST 14 r l link

If the OOS test	Do
passed	step 3
did not pass	step 16

10 Access the IO MAP level. At the ETHR MAP level type

>IO

and press the Enter key.

11 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

IO MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 ETHR      .         .        .        .        .        .         .        .         .
  M
IO                      Front:   111111111    Rear: 111111    SM     PE    IO      PKLT
 0 Quit                 123456789012345678    456789012345     .      .    IOP M   LINK M
 2                Sta:  . ..-..-..-.- ..     .M..------...    0      0     1       1
 3                Dep:                        F        F
 4                Typ:  *              *     ***      ***
 5                Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 6                02     Front   .          Tape .                    Disk .
 7 Tst_           17     Front   .          Tape .                    Disk .
 8 Bsy_           04     Rear    .          RTIF .                    CMIC .
 9 RTS_           05     Rear    M                                    ETHR C
10 loadFW_        06     Rear    .                                    ETHR .
11                13     Rear    .                                    ETHR .
12 UNeq_          14     Rear    .                                    ETHR F
13                15     Rear    .          RTIF .                    CMIC .
14 Alarm_
15
16
17 Indicat_
18 Query_
  XMAP0
 Time  14:12   >
```

XAC ETHR
major (continued)

If the IOP CP is	Do
in a ManB state	step 12
in a SysB state	step 18
in an InSv state	step 19

12 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 14 r

Example of system response:

```
RTS 14 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet, ports or links are ManB	step 15
InSv and any related packlet, ports or links are SysB	step 3
SysB and any related packlet, ports or links are CBsy	step 13
InSv and any related packlets, ports and links are InSv	step 19

13 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

XAC ETHR
major (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY
14 r

Example of system response:

```
BSY 14 rear complete
```

14 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 14 r

If the OOS test	Do
passed	step 11
did not pass	step 18

15 Access the correct MAP level. Return the ManB links or ports to service.

>RTS <nn> <s> <p>

or

>RTS <nn> <s> <p> <link>

or

>RTS <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

XAC ETHR
major (continued)

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

Example of system response:

```
RTS 14 rear lower link passed
```

If the MAP level indicates	Do
Ethernet packlet or port is in a SysB state	step 17
Ethernet links are in a SysB state	step 16
in an InSv state	step 19

16 Perform the corrective link maintenance. Refer to the correct NTP. Return to this point when complete.

If the links are	Do
in a SysB stat	step 17
in an InSv	step 19

17 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a InSv state	step 19
in a SysB state	step 21

18 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 19
in a SysB state	step 21

19 Confirm that the alarm is clear. Examine the alarm banner on the ETHR MAP level.

If the ETHR major alarm is	Do
changed to a different alarm	step 20
not clear	step 21

XAC ETHR
major (end)

If the ETHR major alarm is	Do
clear	step 22

20 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

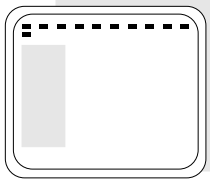
If the alarm is	Do
not clear	step 21
clear	step 22

21 Call the next level of support.

22 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC ETHR minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
ETHR	.	.	.	.	.	.	.	.	.

Indication

An ETHR minor alarm code appears under the XAC header of the alarm banner. The alarm code indicates an Ethernet minor alarm.

Meaning

An Ethernet minor alarm is only possible when using a four link configuration.

An Ethernet minor alarm can not occur in a two link configuration.

The following port or link states can contribute to an ETHR minor alarm in a four link configuration:

- One Ethernet port or link is in ManBsy state.
- One Ethernet port or link is in CBsy state.
- One Ethernet port or link is in SysBsy state.

Impact

A loss of Ethernet redundancy occurs. There is no loss of call origination at the Call Server.

Common procedures

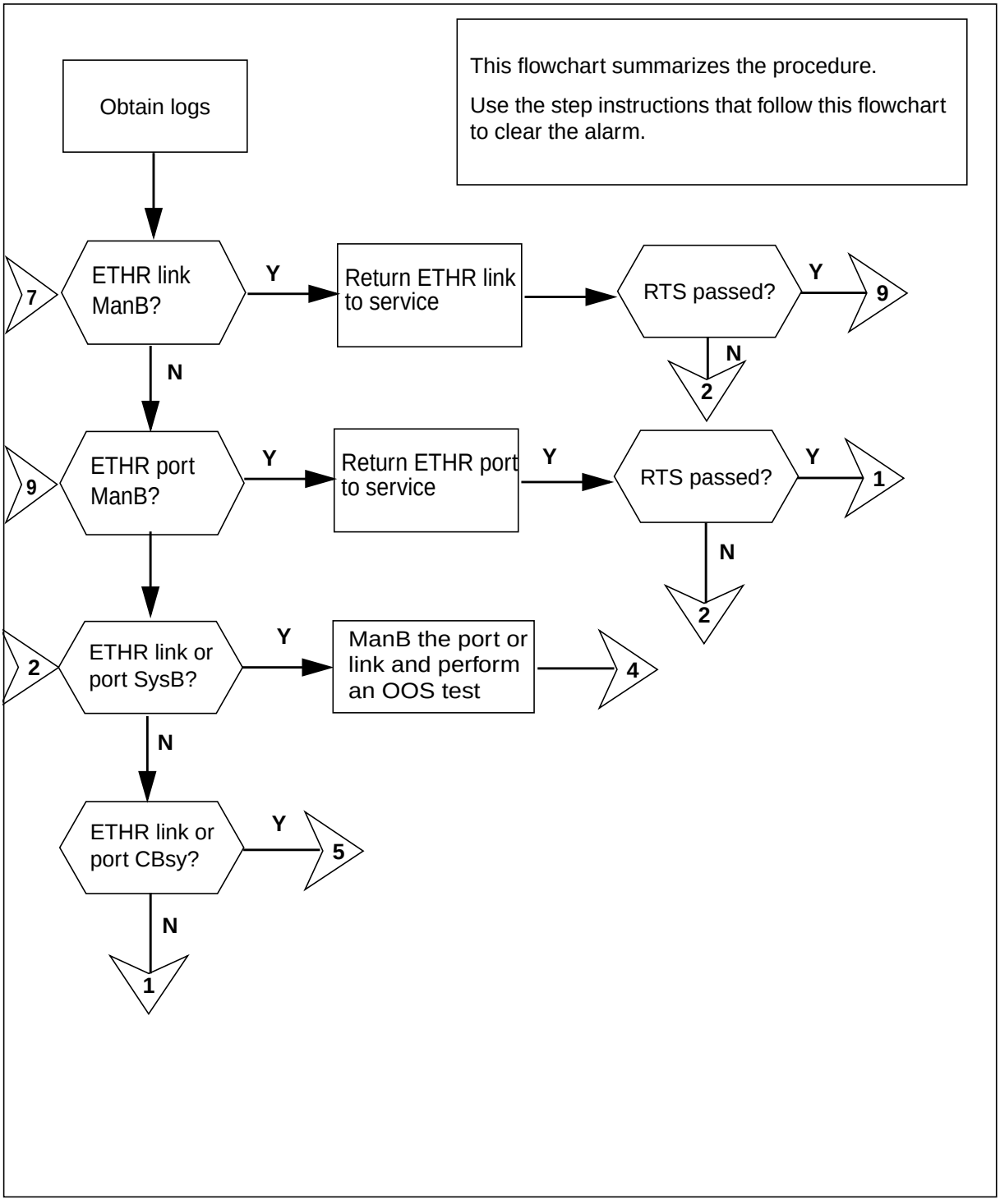
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

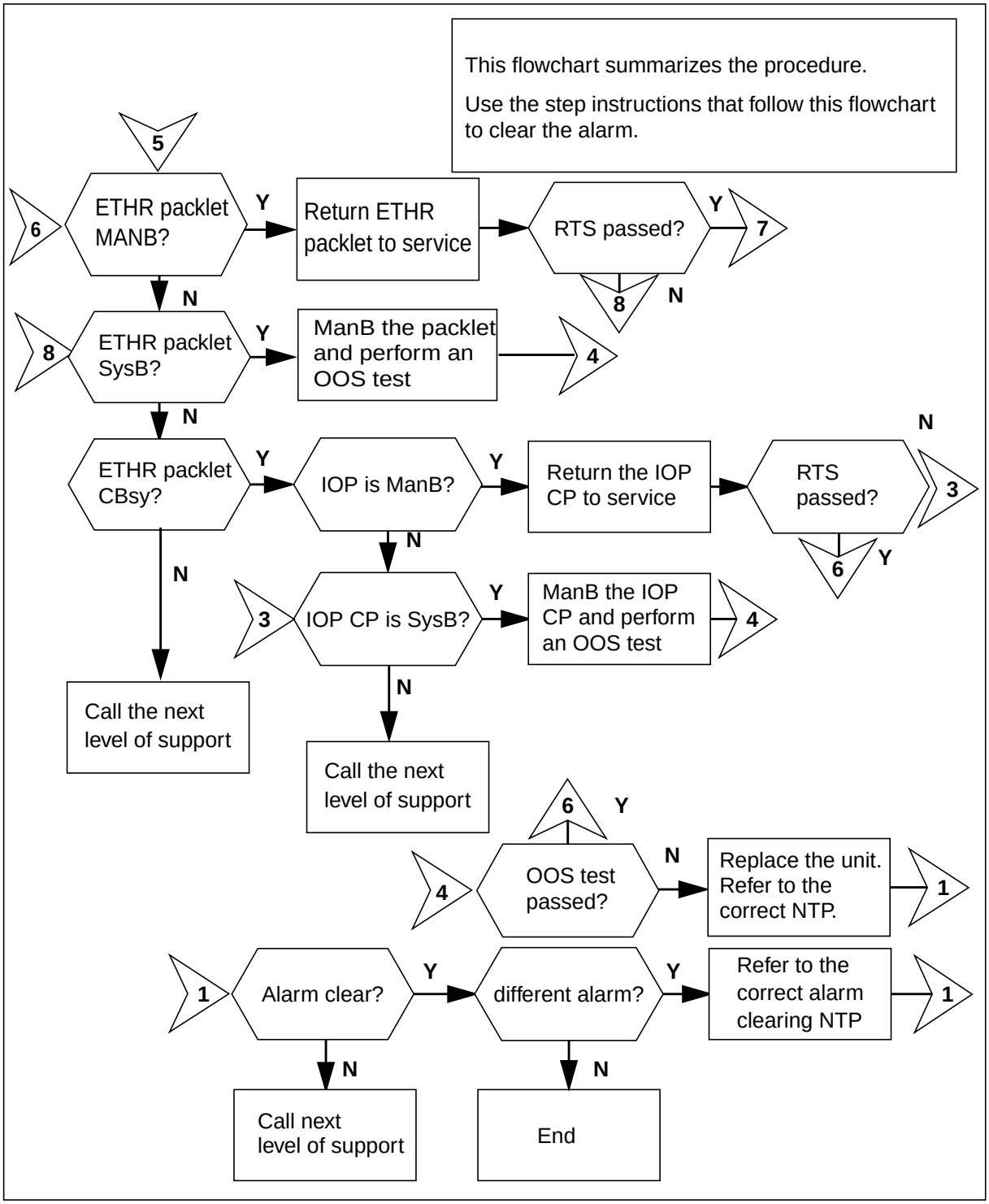
XAC ETHR
minor (continued)

Summary of clearing an ETHR minor alarm



XAC ETHR
minor (continued)

Summary of clearing an ETHR minor alarm



XAC ETHR
minor (continued)

How to clear an ETHR minor alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of equipment damage - electric static discharge (ESD)
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC ETHR
minor (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an Ethernet packlet fault	step 2
an Ethernet port or link fault	step 2
an IOP CP hardware fault	step 13
that the ETHR minor alarm condition is clear	step 22

2 Access the XA-Core ETHR MAP level by typing

MAPCI;MTC;XAC;ETHR

and pressing the Enter key.

3 Examine the ETHR MAP level. Record the location and status of the ETHR packlets.

Note: The ETHR MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC ETHR
minor (continued)

ETHR MAP level

```
XAC      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
ETHR     .       .        .        .       .        .        .         .        .

ETHR                 Front:   111111111   Rear: 111111  SM  PE  IO  PKLT
 0 Quit              123456789012345678   456789012345   .   .   .  Linkfl
 2                Sta:   . ..-..-..-.- ..    ...........   0   0   0  0
 3                Dep:                        F
 4                Typ:                        **      **
 5                Slot: Side: Packlet:  Status: Port:    Link:
 6                 05   Rear  lower     .        .         S
 7 Tst_            06   Rear  lower     .        .         .
 8 Bsy_            13   Rear  lower     .        .         .
 9 RTS_            14   Rear  lower     .        .         .
10 LoadFW_       ETHR:
11
12 Uneq_
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  ADMIN
 Time  14:12
```

If the ETHR MAP level indicates	Do
ETHR packlet is in a ManB state	step 4
ETHR packlet is in a SysB state	step 5
ETHR packlet is in a CBsy state	step 10
ETHR links or ports are in a ManB state	step 7
ETHR links or ports are in a SysB state	step 8
ETHR links are in a CBsy state	step 7
ETHR ports are in a CBsy state	step 4
no alarm and all CPs and all ports and links are InSv	step 22

XAC ETHR
minor (continued)

4 Return the OOS packlet to service. Repeat this step for each ManB packlet. At the ETHR MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command:

RTS 14 r l

Example of system response:

```
RTS 4 rear lower passed
```

If the ETHR packlet is	Do
in a SysB state	step 5
in a CBsy state	step 10
in an InSv state	step 19

5 Manually busy the OOS ETHR packlet. Repeat this step for each SysB packlet. At the ETHR MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>BSY 14 r l

Example of system response:

```
BSY 14 rear lower complete
```

6 Perform an OOS test on the ETHR packlet. Repeat this step for each ManB ETHR packlet. At the ETHR MAP level type

XAC ETHR
minor (continued)

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

Example of command use:

>TST 14 r l

If the OOS test	Do
passed	step 3
did not pass	step 17

7 Return the OOS ETHR links or ports to service. Repeat this step for each ManB link and then each ManB port as directed. At the ETHR MAP level type

>RTS <nn> <s> <p> <port>

or

>RTS <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

Example of system response:

```
RTS 14 rear lower link passed
```

If the ETHR ports or links are	Do
in a SysB state	step 8

XAC ETHR
minor (continued)

If the ETHR ports or links are	Do
in a CBsy state	step 10
in an InSv state	step 19

8 Manually busy the OOS ETHR ports or links. Repeat this step for each SysB port or link. At the ETHR MAP level type

>BSY <nn> <s> <p> <port>

or

>BSY <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command use:

>BSY 14 r l link

Example of system response:

```
BSY 14 rear lower link complete
```

9 Perform an OOS test on the ETHR ports or links. Repeat this step for each ManB ETHR port or link. At the ETHR MAP level type

>TST <nn> <s> <p> <port>

or

>TST <nn> <s> <p> <link>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

XAC ETHR
minor (continued)

Example of command use:

>TST 14 r l link

If the OOS test	Do
passed	step 3
did not pass	step 16

10 Access the IO MAP level. At the ETHR MAP level type

>IO

and press the Enter key.

11 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC ETHR
minor (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 ETHR     .       .       .       .       .       .       .        .       .

IO
 0 Quit          Front:   111111111   Rear: 111111  SM  PE  IO     PKLT
 2               123456789012345678   456789012345   .   .  IOP M  Link C
 3          Sta:   . ..-..-..-.- ..    .M.-------...   0   0   1      1
 4          Dep:                        F
 5          Typ:   *               *    ***      ***
 6
 7 Tst_
 8 Bsy_     Slot: Slot: Status:      Packlet-Upper:            Lower:
 9 RTS_     02    Front   .          Tape                      Disk .
10 loadFW_  17    Front   .          Tape                      Disk .
11          04    Rear    .          RTIF                      CMIC .
12 UNeq_    05    Rear    M                                    ETHR C
13          06    Rear    .                                    ETHR .
14 Alarm_   13    Rear    .                                    ETHR .
15          14    Rear    .                                    ETHR .
16          15    Rear    .          RTIF                      CMIC .
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 12
in a SysB state	step 18
in an InSv state	step 19

12 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 14 r

XAC ETHR
minor (continued)

Example of system response:

```
RTS 14 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related ports or links are ManB	step 15
InSv and any related ports or links are SysB	step 3
SysB and all related ports or links are CBsy	step 13
InSv and all related ports and links are InSv	step 19

13 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY
14 r

Example of system response:

```
BSY 14 rear complete
```

14 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

XAC ETHR
minor (continued)

>TST 4 r

If the OOS test	Do
passed	step 11
did not pass	step 18

15 Access the correct MAP level. Return the ManB ports or links to service.

>RTS <nn> <s> <p>

or

>RTS <nn> <s> <p> <link>

or

>RTS <nn> <s> <p> <port>

and press the Enter key

where

<nn> is the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value indicating the packlet location, upper (u) or lower (l).

<link> is the parameter that defines the link on an Ethernet packlet.

<port> is the parameter that defines the port on an Ethernet packlet.

Example of command:

RTS 14 r l link

Example of system response:

```
RTS 14 rear lower link passed
```

If the MAP level indicates	Do
Ethernet packlet or port is in a SysB state	step 17
Ethernet link is in a SysB state	step 16
In an InSv state	step 19

16 Perform the corrective link maintenance. Refer to the correct NTP. Return to this point when complete.

IfIf the links are	Do
in a SysB state	step 17

XAC ETHR
minor (end)

IfIf the links are	Do
in an InSv	step 19

17 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a InSv state	step 19
in a SysB state	step 21

18 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 19
in a SysB state	step 21

19 Confirm that the alarm is clear. Examine the alarm banner on the ETHR MAP level.

If the ETHR minor alarm is	Do
changed to a different alarm	step 20
not clear	step 21
clear	step 22

20 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

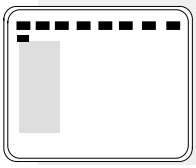
If the alarm is	Do
not clear	step 21
clear	step 22

21 Call the next level of support.

22 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC FWvers major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWvers M	.	.	.	.	.	.	.	.	.

Indication

The FWvers alarm appears in the alarm banner of all MTC MAP levels under the XAC header. The FWvers alarm indicates there is a firmware mismatch. The FWvers alarm severity is major.

Meaning

When the system or operating company personnel issues the query card command, the system checks for a firmware mismatch. The system raises the FWvers alarm when the firmware version of the field replaceable unit (FRU) and the firmware version recorded in table XAFWLOAD do not match.

Impact

When the system raises this alarm, it generates log XAC330. When the system clears the alarm, it generates log XAC630. Use the information in these logs when performing this procedure.

Common procedures

This procedure does not refer to any common procedures.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

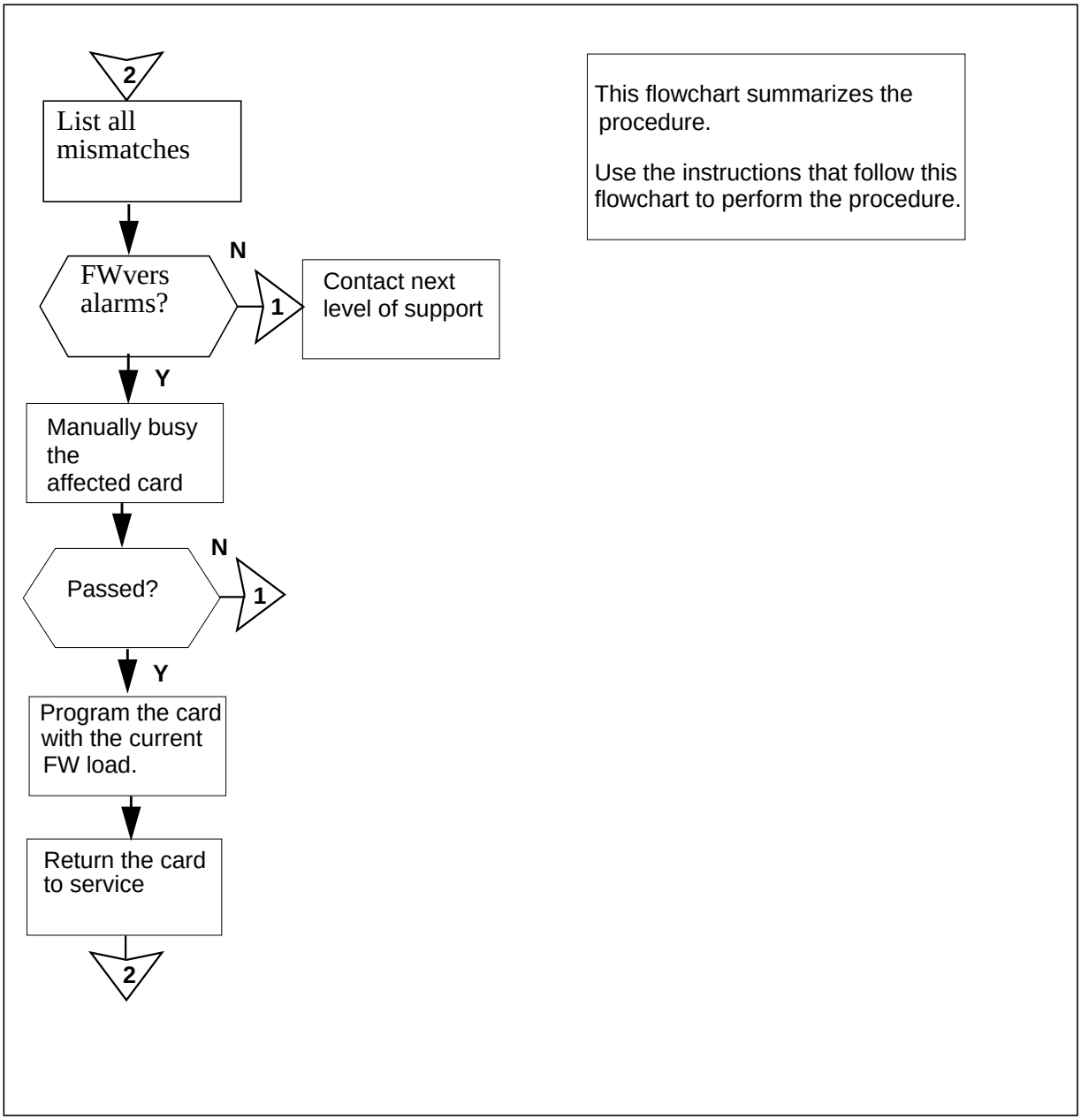
A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*, 297-8001-8401, 297-8001-8402, 297-8001-8403, 297-8001-8404, 297-8001-8405, 297-8001-8406, and 297-8001-8407 (seven volumes).

XAC FWvers
major (continued)

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

Summary of clearing alarm XAC FWvers alarm



XAC FWvers
major (continued)

Clearing alarm XAC FWvers major

At your current location

1 To query FWvers alarms and list all mismatches, type

>ALARM FWVERS

and press the Enter key.

Example of map response

```
Cause                FRU/device   State    Slot Side   Packlet
FW version mismatch   PE           InSv      4    front
FW version mismatch   IOP          InSv      2    front
FW version mismatch   IOP          InSv     17    front
FW version mismatch   CMIC         InSv      4    rear   lower
```

If	Do
any FWvers alarms are listed	step 2
there are no FWvers alarms	step 12

2 To access the table XAFWLOAD, type

>TABLE XAFWLOAD

and press the Enter key.

Example of map response
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: XAFWLOAD

3 To review the tuples in the table, type

>LIST ALL

and press the Enter key.

Example of map response

```
INDEX FRU PEC VERSION VOLUME FILE STATUS SOAK
-----------------------------------------------
1 PE   NTLX02AA XAPE01AC F02LFWLOADS PEFW413 old     48
2 PE   NTLX02AA XAPE01AG F02LFWLOADS PEFW421 current 48
3 PE   NTLX02AA XAPE01BA F02LFWLOADS PEFW424 old     48
4 IOP  NTLX03AA XAIO01AA F02LFWLOADS ISEFW41 old     0
5 IOP  NTLX03AA XAIO01AC F02LFWLOADS ISEFW44 current 0
6 CMIC NTLX05AA PK10CU10 F02LFWLOADS 0C3FW75 current 72

BOTTOM
```

4 To query the card with an associated FWvers alarm, type

>QUERY CARD <slot>

and press the Enter key.

XAC FWvers
major (continued)

where

<slot> is the slot position of the card (for example, 4 Front)

Example of map response
query card 4 f
Command Submitted.
Query 4 front completed
PEC : NTLX02AA
Serial No. : 00000000000000
Firmware Ver: XAPE01AG

Record the information.

5 To access the appropriate MAP level to program the FLASH with the current firmware version and clear the alarm, type

>MAPCI;MTC;XAC;map;<map_level>

and press the Enter key.

where

<map_level> is the name of the map level (for example, PE, IOP or CMIC)

Example of map response
XAC MS IOD APPL
FWvers . .
M

6 To manually busy the card, type

>BSY <slot> FORCE

or

>BSY <slot>

and press the Enter key.

where

<slot> is the slot position of the card (for example, 4 Front)

Note: If this command reduces redundancy, you must use the Force option.

Example of map response
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):

7 To confirm the action, type

>Y

XAC FWvers
major (continued)

and press the Enter key.

If	Do
the response is Command Submitted. Bsy 4 front completed	step 8
the response is Command Submitted. Bsy 4 front failed	step 11

8 To program the card with the current FW load, type

>LOADFW <slot> FILE CURRENT

and press the Enter key.

where

<slot> is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. LoadFW 4 front completed	step 9
the response is Command Submitted. LoadFW 4 front failed Volume nonexistent.	step 11

9 To return the card to service, type

>RTS <slot>

and press the Enter key.

where

<slot> is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. RTS 4 front passed	step 10
the response is Command Submitted. RTS 4 front failed	step 11

10 To query all FWvers alarms and list all mismatches, type

>ALARM FWVERS

and press the Enter key.

Example of map response

XAC FWvers
major (end)

```
Cause                FRU/device   State    Slot  Side   Packlet
FW version mismatch  IOP          InSv      2    front
FW version mismatch  IOP          InSv     17    front
FW version mismatch  CMIC         InSv      4    rear   lower
```

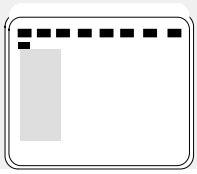
If	Do
any FWvers alarms are listed	step 2
there are no FWvers alarms	step 12

11 Contact your next level of support.

12 The procedure is complete.

XAC FWsoak minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWsoak	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**.**

Indication

The FWsoak alarm appears in the alarm banner of all MTC map levels under the XAC header. The command ALARM FWSOAK lists the field replaceable units (FRU) currently soaking firmware. The system raises the FWsoak alarm when the FRU is returned to service after loading new firmware. The system does not raise the alarm if the soak time for an FRU is set to zero in table XAFWLOAD.

Meaning

The FWsoak alarm indicates the firmware is being soaked on at least one FRU. The alarm clears when the soaking time expires. This alarm requires no action.

Impact

There is no immediate change in subscriber service.

Common procedures

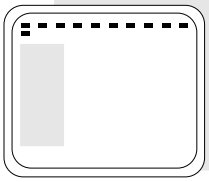
There are no common procedures.

Action

No action is required. The system automatically clears the alarm when the soak time expires.

XAC Image major

Alarm display



XAC IMAGE *M*	MS .	IOD .	Net .	PM .	CCS .	Lns .	Trks .	Ext .	APPL .

Indication

An Image major alarm code appears under the XAC header of the alarm banner. The alarm banner code indicates an image major alarm.

Meaning

The XA-Core image test detected a fault in the software load. The XA-Core operating software cannot support a restart.

Impact

There is no immediate change in subscriber service. If a fault occurs on the XA-Core, the switch cannot recover automatically.

When an image test is run, the XA-Core system is split into active and inactive sides. If a fault on the active side results in restart action, the XA-Core system cannot recover and continue normal operation.

Common procedures

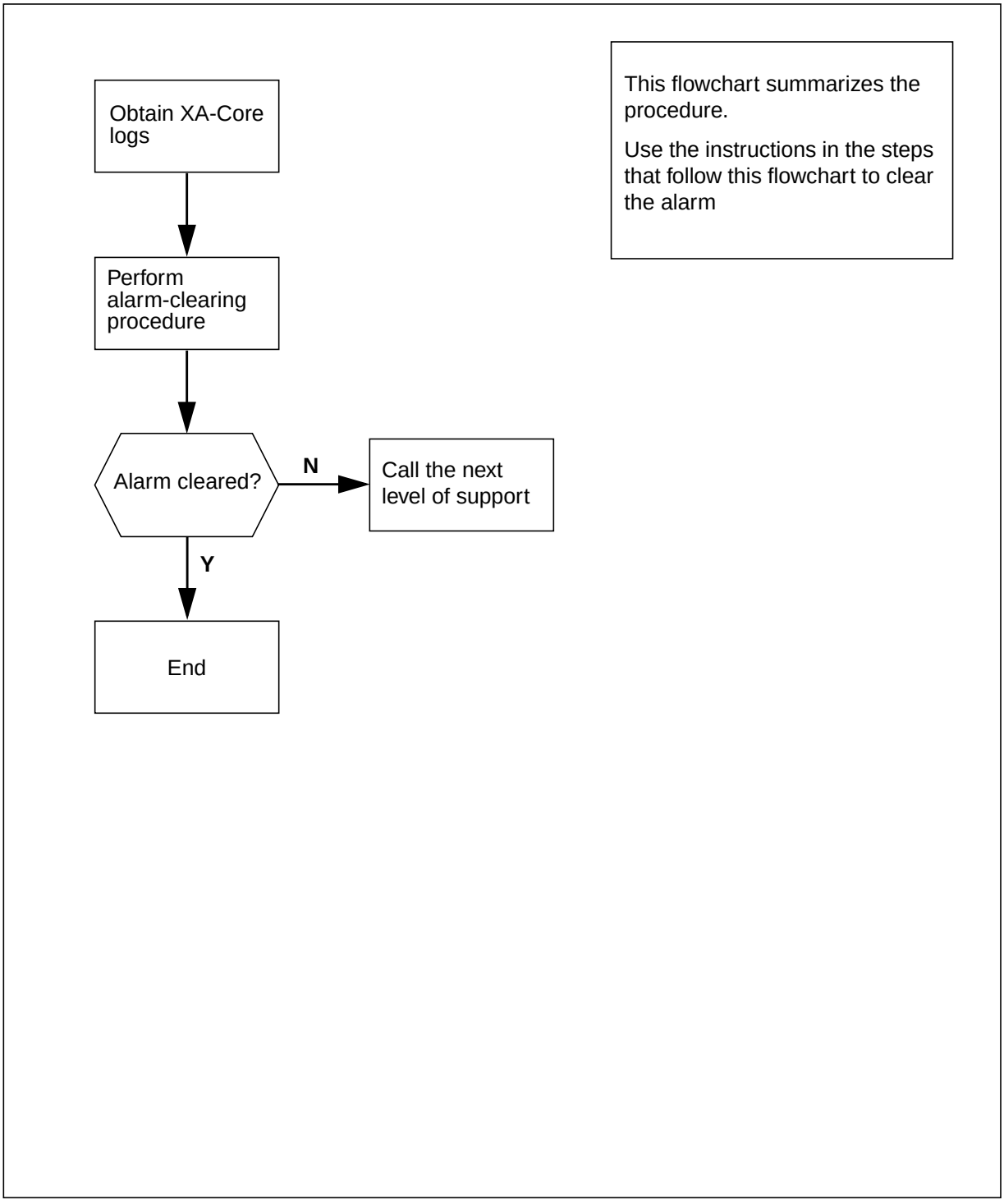
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC Image **major** (continued)

Summary of clearing an Image major alarm



XAC Image
major (continued)

How to clear an Image major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Collect information from the log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a different alarm condition	step 2
an Image major alarm condition	step 3
the alarm condition is clear	step 4

2 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
not clear	step 3

XAC Image **major** (end)

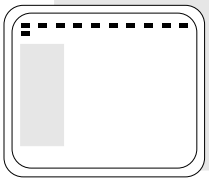
If the alarm is	Do
clear	step 4

3 Call the next level of support.

4 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC Image minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
IMAGE	.	.	.	.	.	.	.	.	.

Indication

An Image minor alarm code appears under the XAC header of the alarm banner. The alarm banner code indicates an image minor alarm.

Meaning

The XA-Core image test detected a possible fault in the software load or the image test was not run or aborted.

Impact

There is no immediate change in subscriber service.

Common procedures

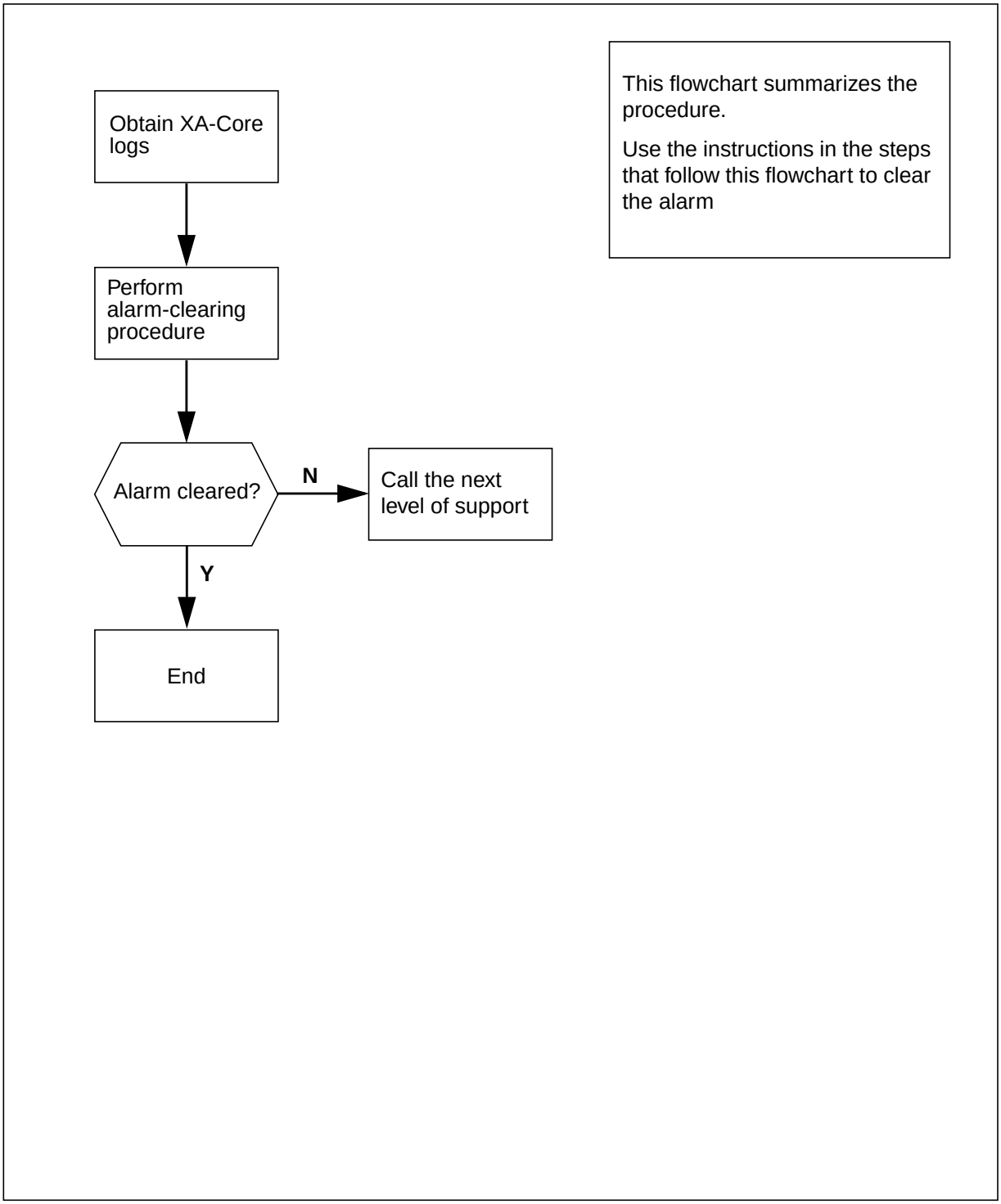
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC Image minor (continued)

Summary of clearing an Image minor alarm



XAC Image
minor (continued)

How to clear an Image minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Collect information from the log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a different alarm condition	step 2
an Image minor alarm condition	step 3
the alarm condition is clear	step 4

2 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
not clear	step 3

XAC Image minor (end)

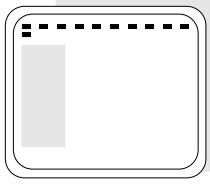
If the alarm is	Do
clear	step 4

3 Call the next level of support.

4 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC ImgTst minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
ImgTst	.	.	.	.	.	.	.	.	.

Indication

An ImgTst minor alarm code appears under the XAC header of the alarm banner. The alarm code indicates an image test minor alarm.

Meaning

The XA-Core system is performing an image test on the XA-Core software load. The image test executes in response to the image test MAP command. The image test checks for correct software function and image restart capability.

Impact

Call processing capacity can be reduced.

Common procedures

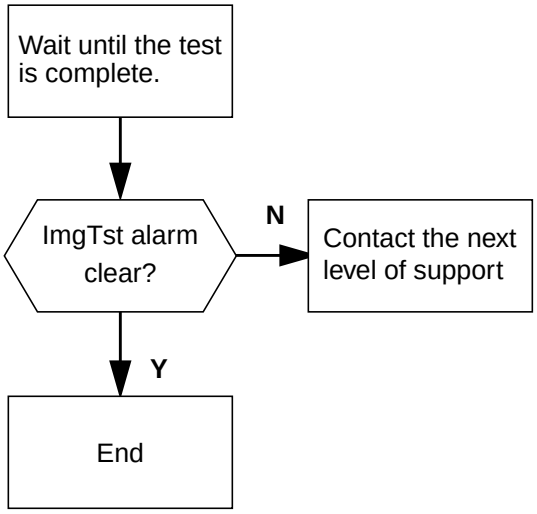
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC ImgTst
minor (continued)

Summary of clearing an ImgTst minor alarm



This flowchart summarizes the procedure.

Use the instructions in the steps that follow this flowchart to clear the alarm.

XAC ImgTst
minor (continued)

How to clear an XA-Core ImgTst minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Examine the XACMtc MAP level. At the CI MAP prompt, type:

>MAPCI;MTC;XAC;XACMTC

and press the enter key.

Note: The MAP can display an ImgTst alarm as follows:

- an alarm code appears under the XAC header in the alarm banner.
- an equipment status code appears in a status field in the shelf layout area.

The following is a sample MAP display.

XAC ImgTst
minor (continued)

XACMtc MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
ImgTst     .       .        .       .        .        .       .       .       .

XACMtc          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      .
 2        Sta: -.-.--..-..-----..-  .--.--------.  0      0       0      0
 3        Dep:
 4
 5
 6
 7        Traps:       Per Minute:  = 0           Total = 1
 8        Last Image run at:     1999/02/15 13:13
 9               restart type= reload
10                 Result    = pass
11 Image  Last XARExTst run at:  1999/03/15 14:25
12 RExTst_Last XARExTst Type:    full
13 RExInt_Last XARExTst Result:  notRun
14 Alarm_
15       XACMTC:
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
an ImgTst alarm	step 2
a different alarm	step 3
no alarm and all CPs are in service	step 6

2 Wait for the image test to end.

If the ImgTst alarm is	Do
not clear	step 5
clear	step 4

3 Perform the correct alarm clearing procedure.

If the alarm is	Do
not clear	step 5
clear	step 6

XAC ImgTst
minor (end)

4 Record the result of the image test and note any errors.

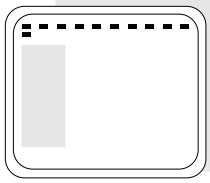
If the ImgTst shows there are	Do
errors	step 5
no errors	step 6

5 Call the next level of support.

6 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC IOP minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
IOP	.	.	.	.	.	.	.	.	.

Indication

An IOP alarm code appears under the XAC header of the alarm banner. The alarm code indicates the input/ouput processor (IOP) minor alarm.

An equipment alarm appears under the IO header in the subsystem summary status field (SSSF).

Meaning

The XA-Core has low IOP redundancy. An IOP minor alarm occurs for one or more of the following events:

- an uncorrectable fault in an IOP circuit pack (CP)
- a manually busy (ManB) IOP CP

Impact

There is no change in subscriber service.

Common procedures

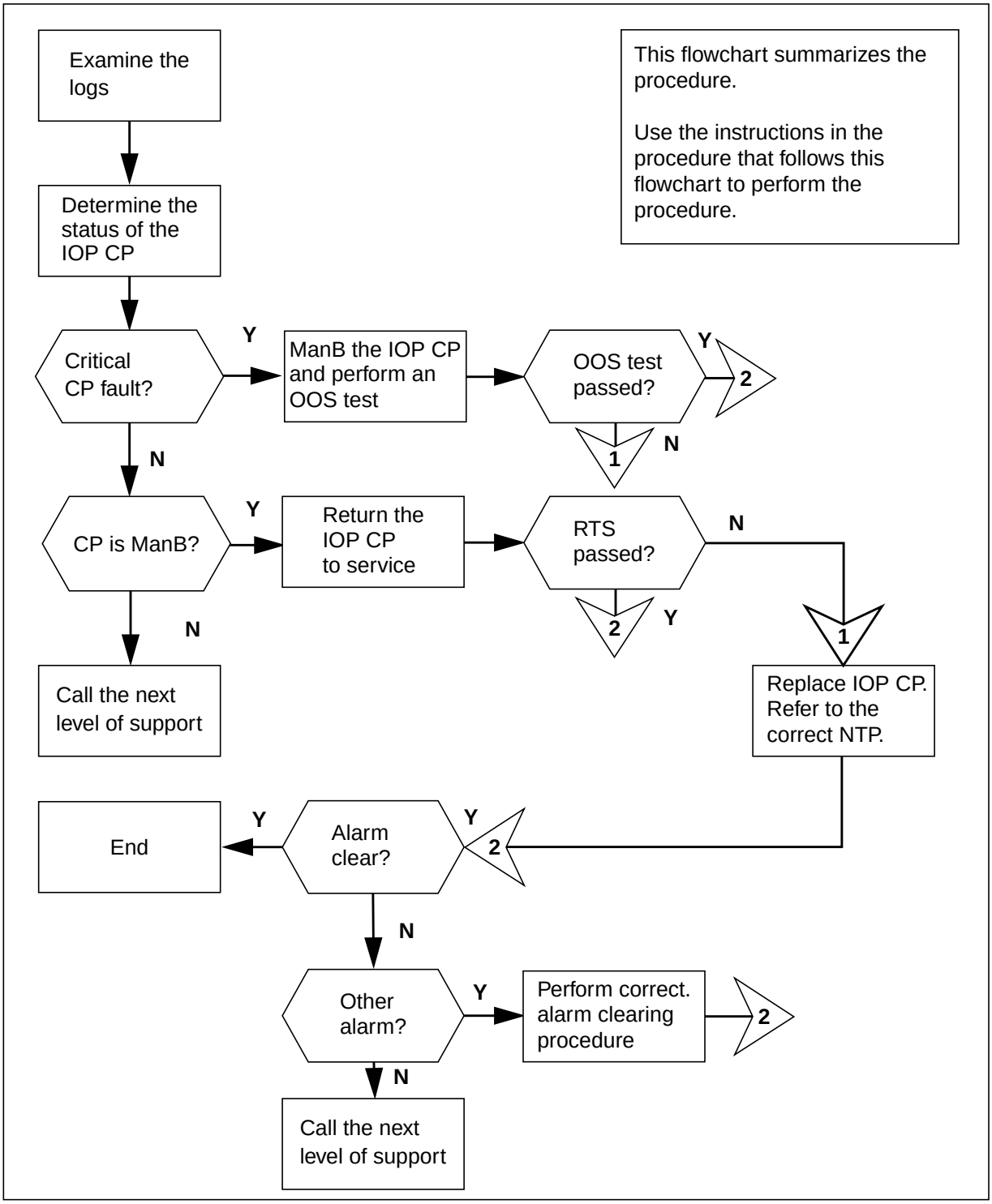
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC IOP
minor (continued)

Summary of clearing a IOP minor alarm



XAC IOP
minor (continued)

How to clear an IOP minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC IOP
minor (continued)

At your current location

1 Collect log information from the log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an IOP minor alarm condition	step 2
another alarm condition	step 10
that the IOP minor alarm condition is clear	step 12

2 Examine the IO MAP level. At the MAP terminal, type

>MAPCI;MTC;XAC;IO

and press the Enter key

3 Examine the IO MAP level. Record the working state of the system and the IOP CPs. Also record the IOP CP location on the physical shelf, side and slot.

Note: The IO MAP can display alarms and status as follows:

- an IOP alarm appears under the XAC header in the alarm banner
- an equipment alarm under the PE header in the subsystem summary status field (SSSF)

The following is a sample MAP display.

XAC IOP
minor (continued)

IO MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 IOP       .         .        .        .        .        .         .        .         .

IO                      Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit                 123456789012345678  456789012345   .      .       IOPtb   .
 2                Sta: -I-.--..-.------..-  .--.--------.   0      0       0       0
 3                Dep:
 4                Typ:  *               *   *           *
 5                Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 6 Tst_             2    Front      I               Disk .            Tape .
 7 Bsy_            17    Front      .               Disk .            Tape .
 8 RTS_             4    Rear       .               RTIF .            CMIC .
 9                 15    Rear       .               CMIC .            CMIC .
10                 IO:
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the IO MAP level indicates	Do
an IOP CP is in a ManB state	step 4
an IOP CP is in a SysB state	step 5
a different alarm	step 10
no alarm and all CPs are in service	step 9

XAC IOP
minor (continued)

At the XA-Core MAP

4 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 2 f

Example of system response:

```
RTS 2 front passed
```

If the IOP CP is	Do
not in an InSv state	step 5
in an InSv state	step 9

5 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 2 f

Example of system response:

```
BSY 2 front complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the IOP CP is	Do
in a ManB state	step 6
not in a ManB state	step 11

6 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 2 f

If the OOS test	Do
passed	step 7
did not pass	step 8

7 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 2 f

Example of system response:

```
RTS 2 front passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
not in an InSv state	step 8
in an InSv state	step 9

8 Perform the correct IOP CP replacement procedure. Refer to the correct CP replacement NTP. Continue to 9 when complete.

XAC IOP
minor (end)

9 Confirm that the alarm is clear. Examine the IO MAP display.

If the IOP minor alarm is	Do
changed to a different alarm	step 10
not clear	step 11
clear	step 12

10 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

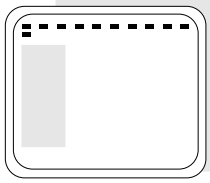
If the alarm is	Do
not clear	step 11
clear	step 12

11 Call the next level of support.

12 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC IOtrbl minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
IOtrbl	.	.	.	.	.	.	.	.	.

Indication

An IOtrbl alarm code appears under the XAC header of the alarm banner. The alarm code indicates an input/output (IO) trouble minor alarm.

An “I” (in-service trouble code) appears in the state field in the shelf layout area. The indicator appears directly below the number that matches the IOP location in the physical shelf slot.

The XA-Core MAP displays an IOtrbl alarm if there is a non-critical fault in the IOP circuit pack (CP) and related packlets. The following equipment alarm codes can appear under the IO header in the subsystem status summary field (SSSF):

- IOPtb (input/output trouble)
- CMICtb (OC-3 two-port interface packlet trouble)
- LINKtb (CMIC link trouble)
- TODtb (time of day trouble)
- RTIFtb (reset terminal interface packlet trouble)
- LocPtb (local port trouble)
- RemPtb (remote port trouble)
- DISKtb (disk packlet trouble)
- TAPEtb (tape packlet trouble)
- AMDItb (AMDI packlet trouble)
- ETHRtb (Ethernet packlet trouble)

XAC IOtrbl
minor (continued)

Meaning

The state of the IO circuit pack (CP) has changed from in-service (InSv) to in-service trouble (IsTb). There is a loss of a redundant power feed to the IOP CP or a non-critical fault in one or more of the following:

- IOP CP
- packlets
- local or remote RTIF ports
- Time of day signals (TODs)
- CMIC links
- AMDI links
- ethernet links

Impact

There is no change in subscriber service. To minimize service degradation, test or replace the IOP CP when call traffic is low.

Common procedures

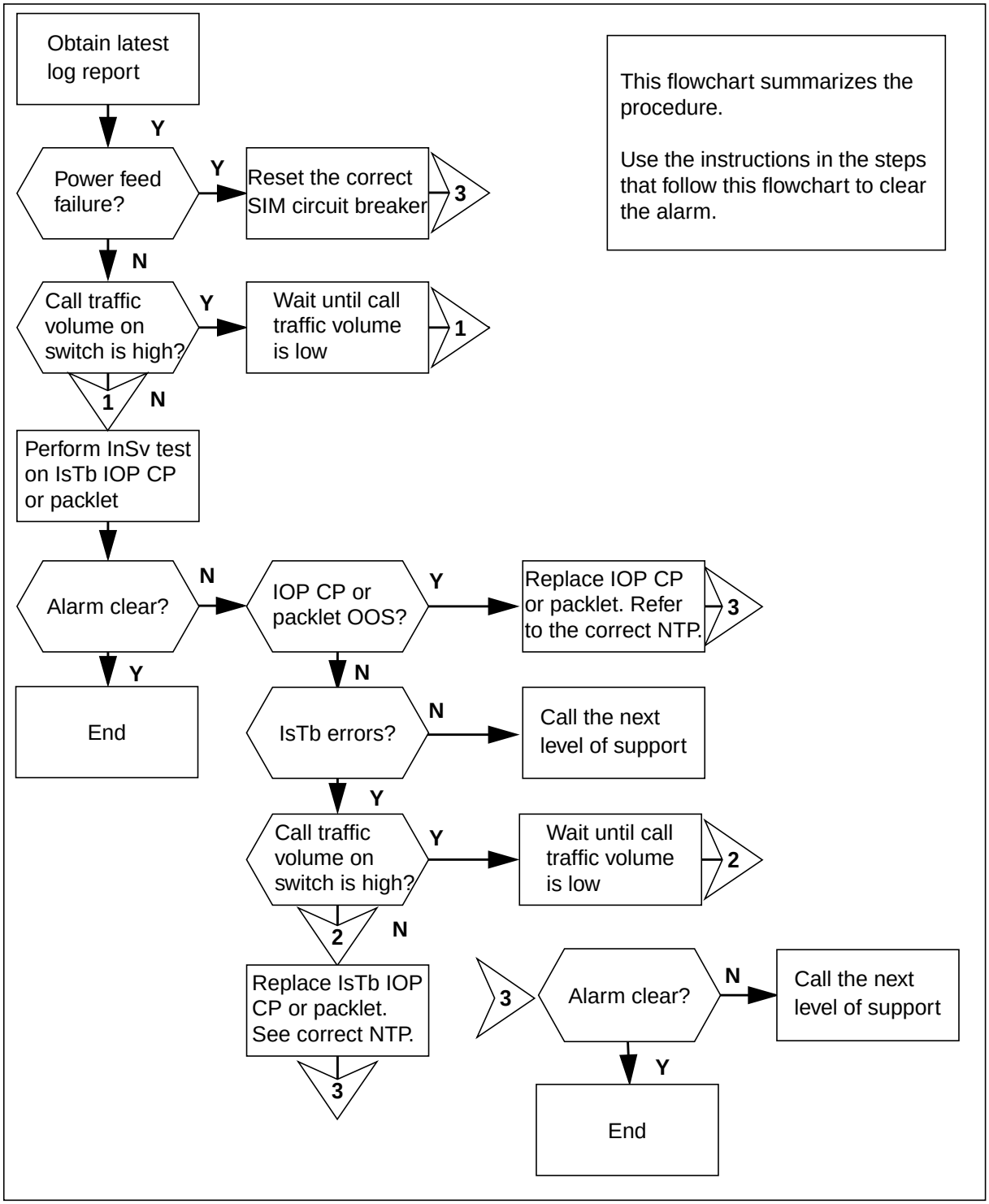
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC IOtrbl minor (continued)

Summary of clearing an IOtrbl minor alarm



XAC IOtrbl
minor (continued)

How to clear an IOtrbl minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC IOtrbl
minor (continued)

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the IOtrbl alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an IOtrbl minor condition	step 2
a different alarm condition	step 18
that the alarm condition is clear	step 20

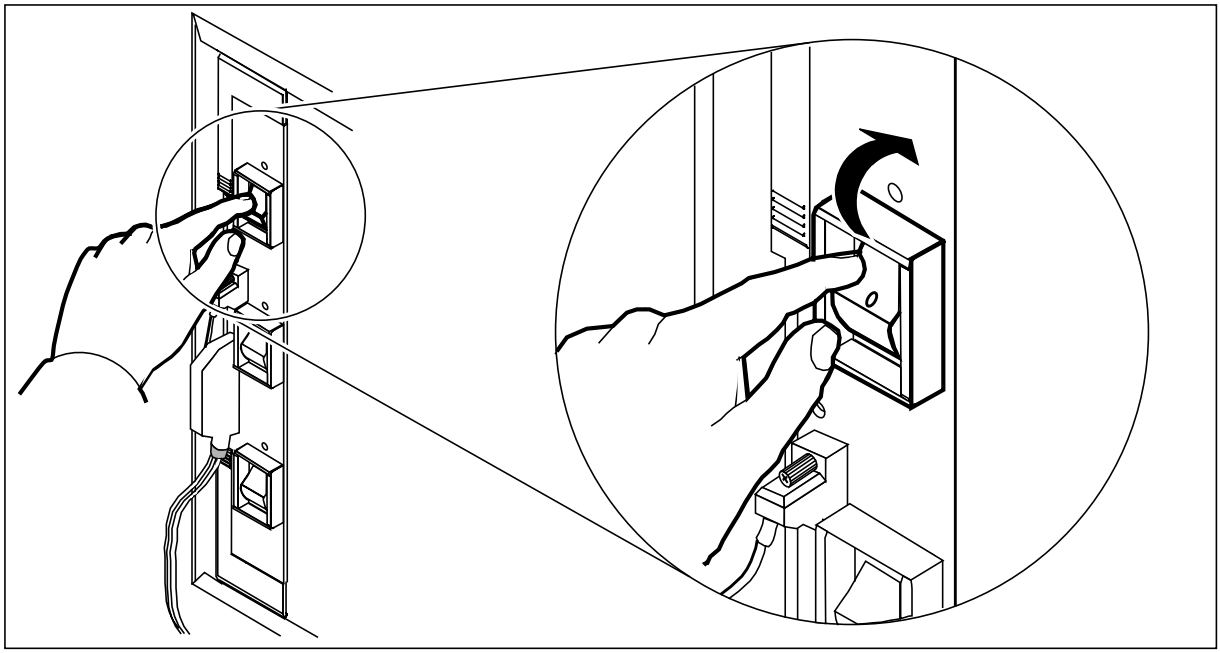
2 Examine the shelf interface modules (SIMs). Make sure that all circuit breakers are in the ON position. Make sure that the green LEDs are lit.

If SIM circuit breakers are	Do
in the OFF position and a red led is lit	step 3
in the ON position and green leds are lit	step 4

3 Set the shelf interface module (SIM) circuit breaker to the ON position (see the diagram in this step). Wait 30 sec.

XAC IOtrbl
minor (continued)

Set circuit breaker on the SIM to the ON (1) position



If SIM circuit breaker	Do
resets to the ON position	step 4
does not reset to the ON position	step 19

At the XA-Core MAP

4 Access the IO MAP level. At the XAC MAP level type

>IO

and press the Enter key.

5 Examine the IO MAP level. Record the status and location of the IsTb IOP CP.

Note: The IO MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an “I” (in-service trouble indicator) appears in the state field in the shelf layout area.
- an “I” (in-service trouble indicator) appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC IOtrbl
minor (continued)

IO MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 IOtrbl    .        .        .        .        .        .        .         .        .

IO
 0 Quit          Front:   111111111  Rear: 111111  SM     PE      IO     PKLT
 2               123456789012345678  456789012345  .      .       IOPtb  .
 3          Sta: -I-.--..-..-----..-  .--.-------.  0      0       0      0
 4          Dep:
 5          Typ:  *               *   *           *
 6 Tst_     Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Bsy_       2    Front      I               Disk .            Tape .
 8 RTS_       17   Front      .               Disk .            Tape .
 9            4    Rear       .               RTIF .            CMIC .
10            15   Rear       .               CMIC .            CMIC .
11            IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the IO SSSF field indicates	Do
an IOP CP is in an IsTb state (IOPtb)	step 6
a OC-3 two-port interface packlet is in an IsTb state (CMICtb)	step 7
an RTIF packlet is in an IsTb state (RTIFtb)	step 8
a Disk packlet is in an IsTb state (DISKtb)	step 9
a Tape packlet is in an IsTb state (TAPE)	step 10
an AMDI packlet is in an ISTb state (AMDItb)	step 11
an Ethernet packlet is in an ISTb state (ETHR)	step 12
a different alarm	step 18
no alarm and all CPs are in service	step 20

XAC IOtrbl
minor (continued)

6 Perform an in-service test on the IOP CP.

a Wait until call traffic volume is low. At the IO MAP level, type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 2 f

b Examine the alarm banner and SSSF. Determine the result of the test.

Example of system response:

```
Tst 2 front passed
```

If the	Do
IOP CP changes to an OOS state	step 14
IsTb alarm is not clear	step 16
IsTb alarm is clear	step 17

7 Access the CMIC MAP level. At the IO MAP level type

>CMIC

and press the Enter key.

Examine the CMIC MAP level. Record the status and location of the IsTb OC-3 two-port interface packlet.

Note: The CMIC MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an “I” (in-service trouble indicator) appears in the equipment status, link or TOD fields in the command interpreter output area.

The following is a sample MAP display.

XAC IOtrbl
minor (continued)

CMIC MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
IOtrbl    .       .       .        .       .       .       .        .       .


CMIC              Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit           123456789012345678  456789012345   .      .       .      CMICtb
 2          Sta: -.-.--..-..--.-..-  .--.--------.   0      0       0      0
 3          Dep:
 4          Typ:                     *         *
 5          Slot:Side:  Packlet:     Status:  Link0:   Link1:    TOD:
 6 Tst_       4  Rear    Lower       I          .        .       .
 7 Bsy_       15 Rear    Lower       .          .        .       .
 8 RTS_      CMIC:
 9
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_
  XMAP0
Time 14:12   >
```

a Perform an in-service test on the OC-3 two-port interface packlet. Wait until call traffic volume is low. At the CMIC MAP level, type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p>is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

Example of system response:

```
Tst 4 rear lower passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
OC-3 two port interface packlet changes to an OOS state	step 13

XAC IOtrbl
minor (continued)

If the	Do
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

8 Access the RTIF MAP level. At the IO MAP level type

>RTIF

and press the Enter key

Examine the RTIF MAP level. Record the status and location of the IsTb RTIF packlet.

Note: The RTIF MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an "I" (in-service trouble indicator) appears in the equipment status or port fields in the command interpreter output area.

The following is a sample MAP display.

RTIF MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
IOtrbl     .       .        .        .       .        .       .       .       .


RTIF                Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      RTIFtb
 2                Sta: -.-.--.-.--.-.-  .--.--------.   0      0       0      0
 3                Dep:
 4                Typ:                        *          *
 5                Slot:   Side:    Packlet:    Status:    Local Port:     Remote Port:
 6 Tst_              4    Rear     Upper       I          .               .
 7 Bsy_              15   Rear     Upper       .          .               .
 8 RTS_           RTIF:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

a Perform an in-service test on the RTIF packlet. At the RTIF MAP level, type

>TST <nn> <s> <p>

and press the Enter key

XAC IOtrbl
minor (continued)

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r u

Example of system response:

```
Tst 4 rear upper passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
RTIF packlet changes to an OOS state	step 13
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

9 Access the Disk MAP level. At the IO MAP level type

>DISK

and press the Enter key.

Examine the Disk MAP level. Record the status and location of the IsTb Disk packlet.

Note: The Disk MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an “I” (in-service trouble indicator) appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC IOtrbl
minor (continued)

Disk MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
IOtrbl     .       .        .       .        .        .       .       .       .


Disk            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      DISKtb
 2        Sta: -.-.--.--.--.--.--  .--.--------.   0      0       0      0
 3        Dep:
 4        Typ: *               *
 5        Slot:   Side:      Packlet:     Status:
 6 Tst_      2    Front      Lower        I
 7 Bsy_     17    Front      Lower        .
 8 RTS_
 9          DISK:
10
11 Format
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time 14:12   >
```

a Perform an in-service test on the Disk packlet. Wait until call traffic volume is low. At the Disk MAP level, type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 2 f l

Example of system response:

```
Tst 2 front lower passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
Disk packlet changes to an OOS state	step 13

XAC IOtrbl
minor (continued)

If the	Do
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

10 Access the Tape MAP level. At the IO MAP level type

>TAPE

and press the Enter key.

Examine the Tape MAP level. Record the status and location of the IsTb Tape packlet.

Note: The Tape MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an "I" (in-service trouble indicator) appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

Tape MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
IOtrbl     .       .        .        .       .        .       .       .       .


Tape            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      TAPEtb
 2         Sta: -.-.--.-.--.-.-.-  .--.--------.   0      0       0      0
 3         Dep:
 4         Typ:  *              *
 5         Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 6 Tst_       2    Front    Upper      I                         Unmounted
 7 Bsy_      17    Front    Upper      .                         Unmounted
 8 RTS_     TAPE:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

a Perform an in-service test on the Tape packlet. Wait until call traffic volume is low. At the Tape MAP level, type

>TST <nn> <s> <p>

XAC IOtrbl
minor (continued)

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 2 f u

Example of system response:

```
Tst 2 front upper passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
Tape packlet changes to an OOS state	step 13
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

11 Access the AMDI MAP level. At the IO MAP level type

>AMDI

and press the Enter key.

Examine the AMDI MAP level. Record the status and location of the IsTb AMDI packlet.

Note: The AMDI MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an “I” (in-service trouble indicator) appears in the equipment status, link or TOD fields in the command interpreter output area.

The following is a sample MAP display.

XAC IOtrbl
minor (continued)

AMDI MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 Iotrbl   .       .       .       .       .       .       .        .       .

AMDI
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO     PKLT
 2               123456789012345678    456789012345   .     .     AMDItb  .
 3          Sta: ..-..-..- ..          ...-------...  0     0     0       0
 4          Dep:
 5          Typ:                          *      *
 6          Slot:  Side:   Packlet:   Status:   Link0:   Link1:
 7 Tst_     05     Rear     lower         I        .        -
 8 Bsy_     06     Rear     lower         .        .        -
 9 RTS_     13     Rear     lower         .        .        -
10 LoadFW_  14     Rear     lower         .        .        -
11 Uneq_    AMDI:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

a Perform an in-service test on the AMDI packlet. Wait until call traffic volume is low. At the AMDI MAP level, type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

Example of system response:

```
Tst 4 rear lower passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
AMDI packlet changes to an OOS state	step 13

XAC IOtrbl
minor (continued)

If the	Do
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

12 Access the ETHR MAP level. At the IO MAP level type

>ETHR

and press the Enter key.

Examine the ETHR MAP level. Record the status and location of the IsTb ETHR packlet.

Note: The ETHR MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- an "I" (in-service trouble indicator) appears in the equipment status, port or link fields in the command interpreter output area.

The following is a sample MAP display.

ETHR MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 Iotrbl   .        .       .      .       .       .       .       .       .

ETHR
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO      PKLT
 2              123456789012345678    456789012345   .     .     ETHRtb   .
 3          Sta:   . ..-..-..-.- ..    ....-------.    0     0     0       0
 4          Dep:                           F
 5          Typ:                           **      **
 6          Slot:  Side:         Packlet:        Status:   Port:   Link:
 7 Tst_     05     Rear           lower            I        .       -
 8 Bsy_     06     Rear           lower            .        .       -
 9 RTS_     13     Rear           lower            .        .       -
10 LoadFW_  14     Rear           lower            .        .       -
11 Uneq_
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  XMAP0
 Time  14:12   >
```

a Perform an in-service test on the ETHR packlet. Wait until call traffic volume is low. At the ETHR MAP level, type

>TST <nn> <s> <p>

XAC IOtrbl
minor (continued)

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 1 to 18 for the front plane, 4 to 15 for the rear plane.

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

Example of system response:

```
Tst 4 rear lower passed
```

b Examine the alarm banner and SSSF. Determine the result of the test.

If the	Do
ETHR packlet changes to an OOS state	step 13
IsTb alarm is not clear	step 15
IsTb alarm is clear	step 17

13 Replace the OOS packlet immediately. Refer to the correct replacement procedure located in this document. Continue to 17 when complete.

14 Replace the OOS IOP CP immediately. Refer to the correct replacement procedure located in this document. Continue to 17 when complete.

15 Wait until call traffic volume is low. Replace the IsTb packlet. Refer to the correct replacement procedure. Continue to 17 when complete.

16 Wait until call traffic volume is low. Replace the IsTb IOP CP. Refer to the correct replacement procedure. Return to this point when complete.

17 Confirm that the alarm is clear. Examine the IO MAP level.

If the alarm is	Do
changed to another alarm	step 18
not clear	step 19
clear	step 20

18 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
not clear	step 19

XAC IOtrbl
minor (end)

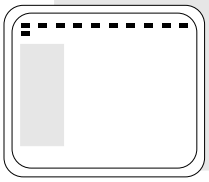
If the alarm is	Do
clear	step 20

19 Call the next level of support.

20 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed.

XAC LowPE critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
LowPE	.	.	.	.	.	.	.	.	.
C									

Indication

A LowPE critical alarm code appears under the XAC header of the alarm banner. Audible alarms provide notice of a critical processor element (PE) condition. If all PE capacity has been lost, the reset terminal interface (RTIF) provides reboot messages.

The CP and packlet red LEDs light for a short period of time. If the CPs and packlets return to service, the green LEDs light. If the reboot is successful, XA-Core displays a restart reload message on the MAP terminal.

An ACTIVE message and CI prompt displayed on the MAP terminal indicates a successful reboot and restart reload.

Meaning

The amount of PE capacity that has been lost is so large that the PE capacity that remains available is below the engineered capacity. In CSP15 this means that more than one PE CP is out of service.

One or more of the following conditions cause the LowPE major alarm:

- a critical fault in multiple PE circuit packs (CPs) cause InSv PE CPs to go OOS
- a critical fault in a PE CP causes an InSv PE CP to go OOS while a PE CP is manually busy (ManB)

Impact

The impact depends on whether any PE capacity remains available.

If some PE capacity remains available

If some PE capacity remains available, there is a degradation in service.

XAC LowPE
critical (continued)

If no PE capacity remains available

If no PE capacity remains available, the switch is in an outage condition. Call processing has stopped and there is no processing redundancy. Internal switch operations cannot receive processing instructions. An XA-Core reboot and restart reload begins automatically.

The reboot sequence begins and the operating software tries to return the XA-Core processors to service. If the reboot is successful, XA-Core displays a restart reload message on the MAP terminal. A reload restart simulates a reload of the current software load from disk or tape. The restart reload messages indicate that the system is performing restart self tests.

A restart reload initializes the system software and runs tests on all hardware. The tests are done before and after loading the Interface software files. XA-Core maintenance software tests all subsystem hardware during a restart. The tests cause the red LED on circuit packs (CPs) to light. When the tests are complete, the greed LEDs are lit. The red LEDs on damaged, or inactive CPs or packlets remain lit. An ACTIVE message displayed on the MAP indicates a successful reload and restart.

Note 1: A restart disables the MAP system. you cannot use the MAP system to determine the source of the fault. Use the RTIF terminal to monitor the reboot and restart reload process. You can use the MAP system if the restart is successful.

Note 2: If the restart is not successful, the system repeats the reboot procedure.

Note 3: If the restart reload is successful, all manual busy (ManB) CPs automatically return to service.

Common procedures

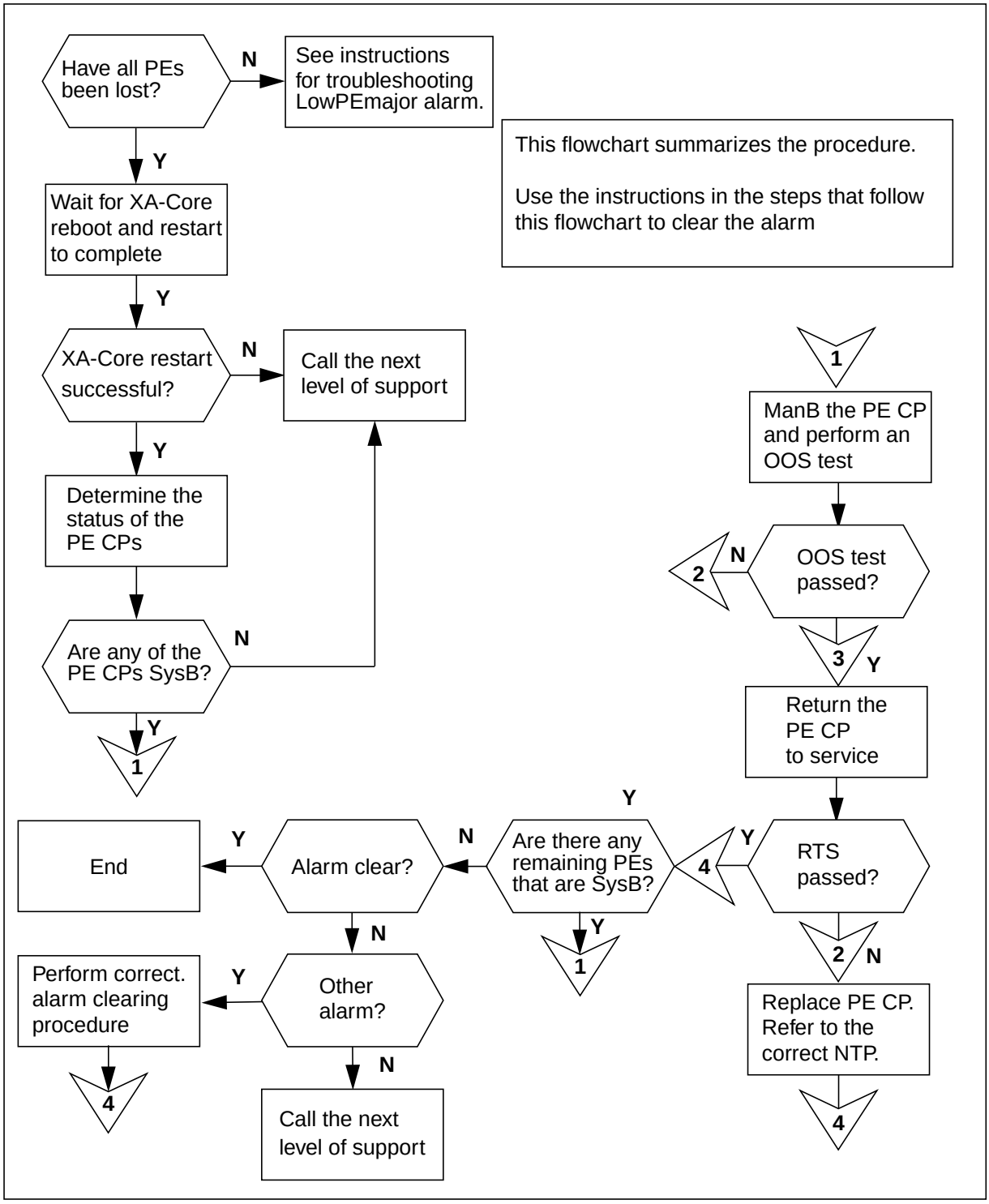
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC LowPE critical (continued)

Summary of clearing a LowPE critical alarm



XAC LowPE
critical (continued)

How to clear a LowPE critical alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

At your current location

1 Check how many PEs are out of service.

If	Do
all PEs are out of service	step 2
some but not all PEs are out of service	troubleshoot each of the OOS PEs by following the instructions for troubleshooting a LowPE major alarm

2 Wait for the XA-Core to execute a system reboot and restart reload. Look at the RTIF screen. The RTIF screen displays boot and reload messages.

XAC LowPE
critical (continued)

Look at the CI MAP level. Wait for the ACTIVE message to appear on the MAP terminal. When the ACTIVE message appears, the system is ready for command entry.

If the XA-Core restart is	Do
successful	step 3
not successful and continues to execute the restart repeatedly	step 12

3 Access the PE MAP level. At the MAP terminal, type

>MAPCI;MTC;XAC;PE

and press the Enter key.

4 Examine the PE MAP level. Record the location and status of the PE CPs. Identify the location of any trouble PE CPs.

Note: The PE MAP level displays alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the PE header in the subsystem status summary field (SSSF)
- an equipment status code appears in the Status field in the shelf layout area.

The following is a sample MAP display.

PE MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
LowPE      .       .        .       .        .       .       .       .       .
 *C*

PE                Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit           123456789012345678  456789012345   .      PEfl    .       .
 2           Sta: -.-S.-..-..-..-..-  .--.-------.   0      1       0       0
 3           Dep:
 4           Typ:    **       *  *
 5            PE:
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10 LoadFW
11
12 Uneq_
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

XAC LowPE
critical (continued)

If the MAP indicates	Do
a LowPE alarm and one or more PE CPs are SysB	step 5
a different alarm condition	step 11
no alarm and all CPs are in service	step 13

5 Manually busy the OOS PE CP. At the PE MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 f

Example of system response:

```
BSY 4 front complete
```

6 Perform an OOS test on the ManB PE CP. At the PE MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 f

If the OOS test	Do
passed	step 7
did not pass	step 8

7 Return the PE to service. At the PE MAP level type

>RTS <nn> <s>

and press the Enter key

XAC LowPE critical (end)

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 f

Example of system response:

```
RTS 4 front passed
```

If the PE CP is	Do
in a SysB state	step 12
in an InSv state	step 9

8 Perform the PE CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

9 Check whether there are any PEs that are still SysB.

If	Do
there is another PE that is SysB	step 5
no more PEs are SysB	step 10

10 Confirm that the alarm is clear. Examine the PE MAP level.

If the alarm is	Do
changed to a different alarm	step 11
not clear	step 12
clear	step 13

11 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

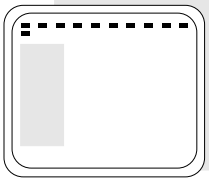
If the alarm is	Do
not clear	step 12
clear	step 13

12 Call the next level of support.

13 You have completed this procedure.

XAC LowPE major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
LowPE M	.	.	.	.	.	.	.	.	.

Indication

A LowPE major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a processor element (PE) major alarm.

Meaning

The amount of PE capacity that has been lost is so large that all redundant capacity is absent. In CSP15 this means that one PE CP is out of service. One or more of the following conditions cause the LowPE major alarm:

- a critical fault in a PE circuit pack (CP) causes an InSv PE CP to go OOS
- undetectable, invalid, or uninitialized PE CP
- wrong CP type
- manually busy (ManB) PE CP

Impact

There is no immediate change in subscriber service. A restart can occur if the remaining PEs cannot manage the volume of call traffic or internal processes.

Common procedures

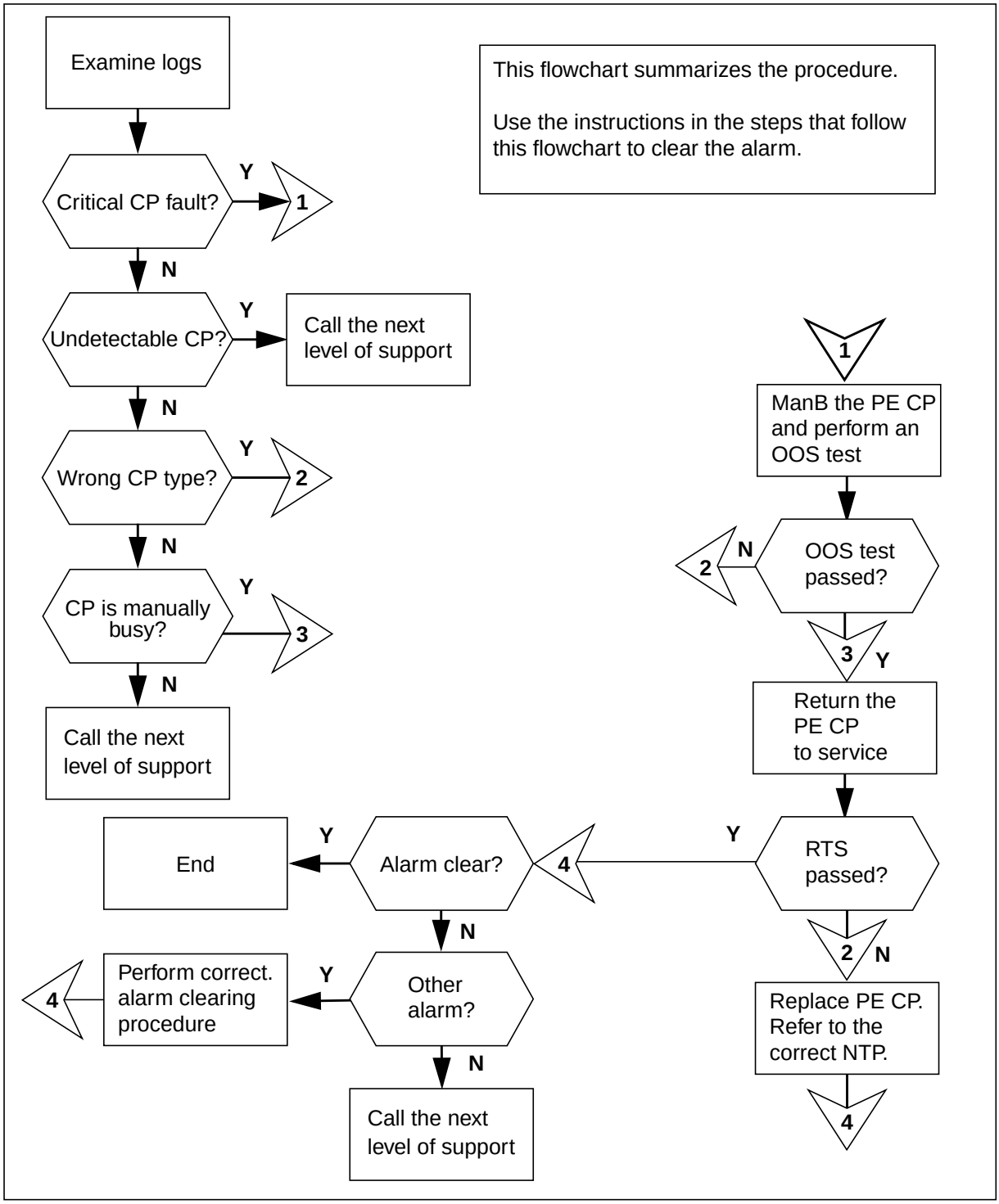
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC LowPE
major (continued)

Summary of clearing a LowPE major alarm



XAC LowPE
major (continued)

How to clear a LowPE major alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of equipment damage - electric static discharge (ESD)
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets, or resources OOS.

XAC LowPE
major (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the LowPE alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt, type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt, type

>QUIT

and press the Enter key.

If the log indicates	Do
a LowPE major condition	step 2
a different alarm condition	step 9
that the LowPE major alarm condition is clear	step 11

2 Access the PE MAP level. At the MAP terminal, type

>MAPCI;MTC;XAC;PE

and press the Enter key.

3 Examine the PE MAP level. Record the location and status of the PE CPs. Identify the location of any trouble PE CPs

Note: The PE MAP level displays alarms and status as follows:

- A system alarm code appears under the XAC header in the alarm banner.
- An equipment alarm code appears under the PE header in the subsystem status summary field (SSSF).
- An equipment status code appears in the Status field in the shelf layout area.

The following is a sample MAP display.

XAC LowPE
major (continued)

PE MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
LowPE      .       .       .       .       .       .       .       .       .
  M

PE                    Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit               123456789012345678  456789012345   .      PEfl    .       .
 2                Sta: -.-S.-..-..-..-..-  .--.--------.   0      1       0       0
 3                Dep:
 4                Typ:    **        *  *
 5                 PE:
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10 LoadFW
11
12 Uneq_
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a LowPE alarm and a PE CP is in a SysB state	step 4
a LowPE alarm and a PE CP is in a SysB state	step 5
a different alarm condition	step 9
no alarm and all CPs are in service	step 11

4 Manually busy the OOS PE CP. At the PE MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 f

XAC LowPE
major (continued)

Example of system response:

```
BSY 4 front complete
```

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

If the PE CP is	Do
in a ManB state	step 5
not in a ManB state	step 10

5 Perform an OOS test on the ManB PE CP. At the PE MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 f

If the OOS test	Do
passed	step 6
did not pass	step 7

6 Return the PE to service. At the PE MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 f

XAC LowPE
major (end)

Example of system response:

```
RTS 4 front passed
```

If the PE CP is	Do
in a SysB state	step 7
in an InSv state	step 8

At the XA-Core physical shelf

7 Perform the PE CP replacement procedure. Refer to the correct CP replacement procedure in this document. Return to this point when complete.

At the XA-Core MAP terminal

8 Confirm that the alarm is clear. Examine the PE MAP level.

If the LowPE alarm is	Do
changed to a different alarm	step 9
not clear	step 10
clear	step 11

9 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

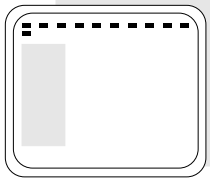
If the alarm is	Do
not clear	step 10
clear	step 11

10 Call the next level of support.

11 You have completed this procedure.

XAC LowSM major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
LowSM	.	.	.	.	.	.	.	.	.
M									

Indication

A LowSM major alarm code appears under the XAC header of the alarm banner. The alarm code indicates the shared memory (SM) major alarm.

Meaning

The XA-Core has lost shared memory redundancy and is now in a Simplex working state. A LowSM major alarm can occur from one or more of the following events:

- a critical fault in one or more SM circuit packs (CPs)
- manually busy (ManB) SM CP

Impact

There is no immediate change in subscriber service. Shared memory redundancy is not available and the system cannot support another critical fault in an SM CP. A restart can occur if another SM CP changes state to out-of-service.

Common procedures

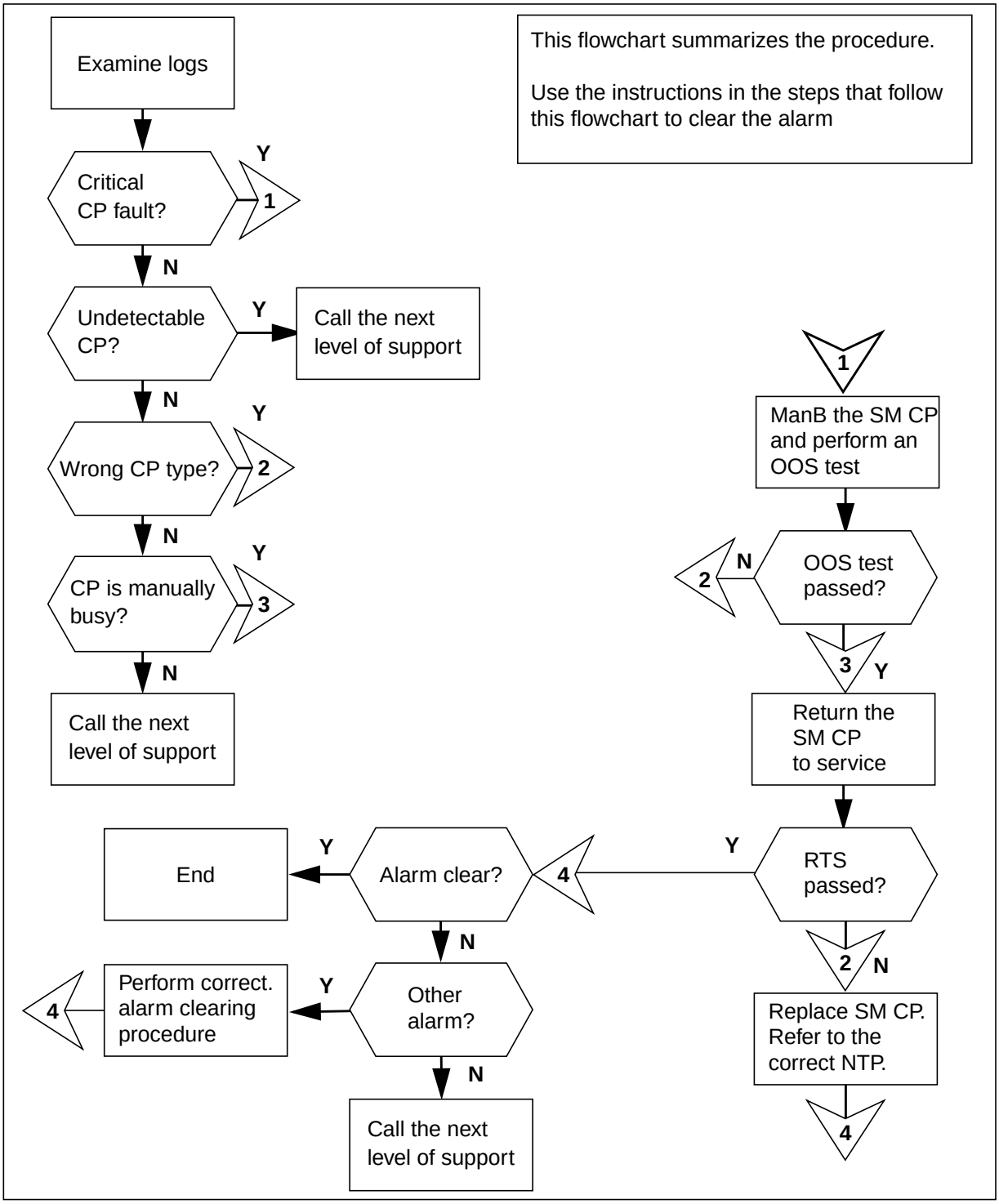
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC LowSM
major (continued)

Summary of clearing a LowSM major alarm



XAC LowSM
major (continued)

How to clear a LowSM major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC LowSM
major (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the LowSM alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a LowSM major alarm condition	step 2
a different alarm condition	step 9
that the LowSM major alarm condition is clear	step 11

2 Access the XA-Core SM MAP level. At the CI MAP level prompt type

>MAPCI;MTC;XAC;SM

and press the Enter key.

XAC LowSM
major (continued)

3 Examine the XA-Core SM MAP level. Record the location and status of the SM CPs. Identify the location of the trouble SM CP.

Note: The SM MAP can display alarms as follows:

- a system alarm code appears under the XAC header in the alarm banner
- a system alarm code appears under the XAC header in the alarm banner
- an equipment status code appears in the status field in the shelf layout area.

The following is a sample MAP display.

SM MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
LowSM      .       .       .       .       .       .       .       .       .
  M

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 2               123456789012345678  456789012345   SMfl   .       .       .
 3          Sta: -.------.-.S--.-.-  .--S-------.   2      0       0       0
 4          Dep:
 5          Typ:       ** **           *
 6 Tst_      Physical: 1920          Useable: 1152        Available: 576
 7 Bsy_      SYNC State: simplex
 8 RTS_      SM:
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

  XMAP0
Time 14:12   >
```

If the MAP indicates	Do
a LowSM alarm and one or more SM CPs are in a SysB state	step 4
a LowSM alarm and one or more SM CPs are in a ManB state	step 6
a different alarm condition	step 9
no alarm and all CPs are in service	step 11

4 Manually busy the OOS SM CP. At the SM MAP level type

XAC LowSM
major (continued)

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 7 r

Example of system response:

```
BSY 7 rear complete
```

5 Perform an OOS test on the ManB SM CP. At the SM MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 7 r

If the OOS test	Do
passed	step 6
did not pass	step 7

6 Return the ManB SM CP to service. At the SM MAP level type

>RTS <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 7 r

XAC LowSM major (end)

Example of system response:

```
RTS 7 rear passed
```

If the SM CP is	Do
in a SysB state	step 7
in an InSv state	step 8

At the XA-Core physical shelf

7 Perform the SM CP replacement procedure. Refer to the correct CP replacement procedure in this document. Return to this point when complete.

At the XA-Core MAP terminal

8 Confirm that the alarm is clear. Examine the SM MAP level display.

If the LowSM alarm is	Do
changed to a different alarm	step 9
not clear	step 10
clear	step 11

9 Perform the correct alarm clearing procedure. Refer to the correct NTP located in this document. Return to this point when complete

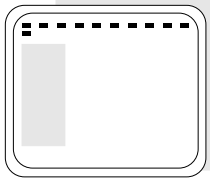
If the alarm is	Do
not clear	step 10
clear	step 11

10 Call the next level of support.

11 You have completed this procedure.

XAC LowSM minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
LowSM	.	.	.	.	.	.	.	.	.

Indication

A LowSM minor code appears under the XAC header of the alarm banner. The alarm code indicates a shared memory (SM) minor alarm.

An equipment alarm appears under the SM heading in the subsystem status summary field (SSSF).

Meaning

The XA-Core memory redundancy is partially lost but shared memory synchronization is in full duplex. A LowSM minor alarm can occur from one or more of the following events:

- an SM circuit pack (CP) is out-of-service (OOS)
- a manually busy (ManB) SM CP

Impact

There is no immediate change in subscriber service.

Common procedures

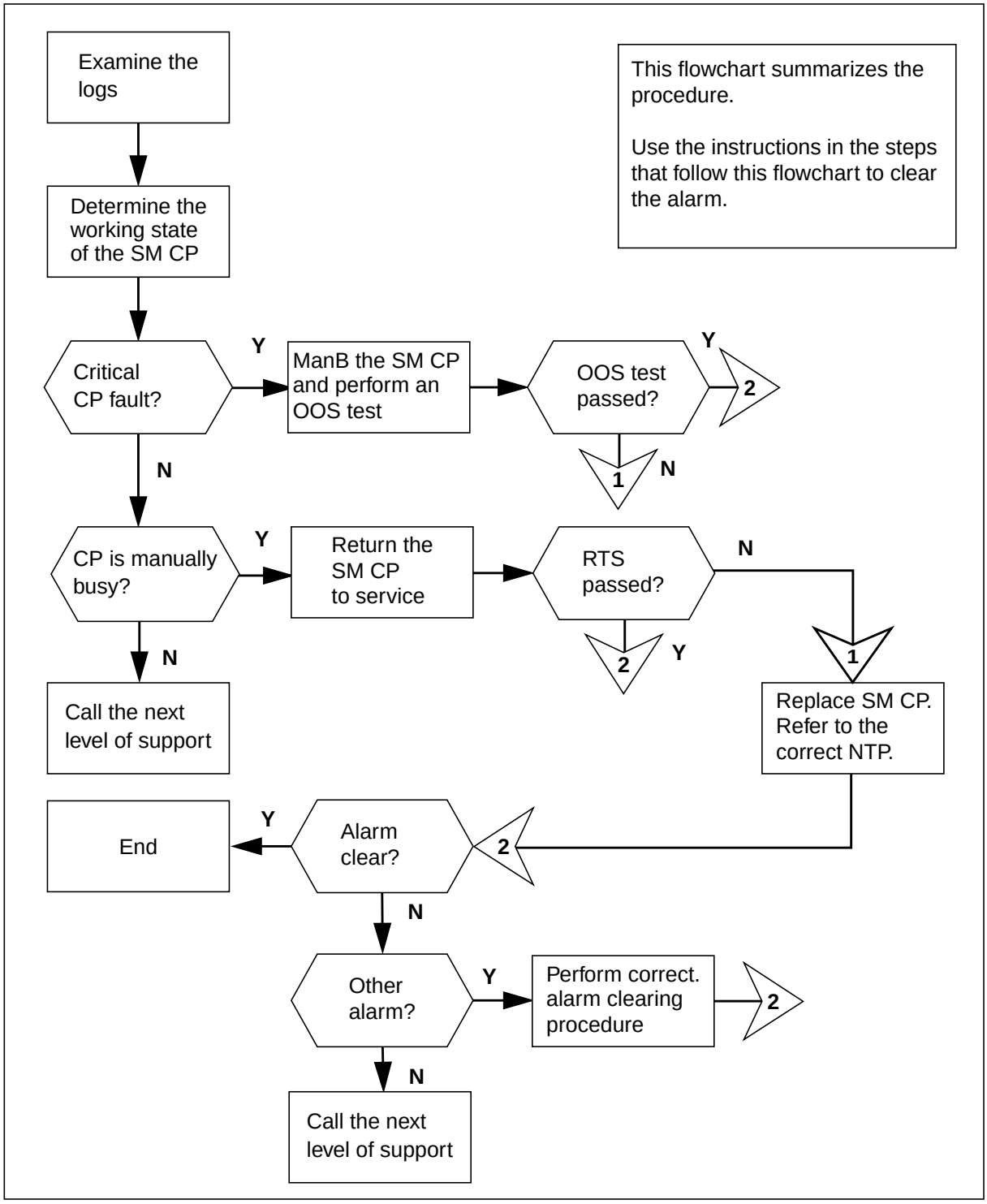
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC LowSM
minor (continued)

Summary of clearing a LowSM minor alarm



XAC LowSM
minor (continued)

How to clear a LowSM minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC LowSM
minor (continued)

At the MAP terminal

1 Collect log information from the log report system.The log messages provide information about the source of the LowSM alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a LowSM minor alarm condition	step 2
a different alarm condition	step 11
that the LowSM minor alarm condition is clear	step 13

2 Access the SM MAP. At the MAP terminal, type

>MAPCI;MTC;XAC;SM

and press the Enter key

XAC LowSM
minor (continued)

3 Examine the SM MAP level. Record the location and status of the SM CPs. Identify the location of the trouble SM.

Note: The SM MAP can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner
- an equipment status code appears in the status field in the shelf layout area
- an equipment alarm code appears under the SM header in the subsystem status summary field (SSSF)

The following is a sample MAP display.

SM MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
LowSM      .       .       .       .       .       .       .       .       .

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
                 123456789012345678  456789012345   SM M   .       .       .
 2          Sta: -.----..-.---.-..-  .--M-------.   1      0       0       0
 3          Dep:
 4          Typ:       ** **            *
 5            Physical: 1536        Useable: 1536      Available: 960
 6 Tst_       SYNC State: duplex
 7 Bsy_      SM:
 8 RTS_
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_
  XMAP0
Time  14:12   >
```

If the SM MAP level indicates	Do
an SM CP is in a ManB state	step 4
an SM CP is in a SysB state	step 5
split, RExTst	step 8
a different alarm	step 11
no alarm and all CPs are in service	step 13

XAC LowSM
minor (continued)

4 Return the SM CP to service. At the SM MAP level type

>RTS <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 7 r

Example of system response:

```
RTS 7 rear passed
```

If the SM CP is	Do
not in an InSv state	step 5
in an InSv state	step 10

5 Manually busy the OOS SM CP. At the SM MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 7 r

Example of system response:

```
BSY 7 rear complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the SM CP is	Do
in a ManB state	step 6
not in a ManB state	step 12

6 Perform an OOS test on the ManB SM CP. At the SM MAP level type

>TST <nn> <s>

XAC LowSM
minor (continued)

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 7 r

If the OOS test	Do
passed	step 7
did not pass	step 9

7 Return the SM CP to service. At the SM MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 7 r

Example of system response:

```
RTS 7 rear passed
```

If the SM CP is	Do
not in an InSv state	step 9
in an InSv state	step 10

8 Wait for the image test, upgrade or RExTst to complete. Continue when the system process is complete.

If the SM MAP level shows	Do
the system process is successful	step 10
a different alarm	step 11
the system process is not successful	step 12

XAC LowSM minor (end)

9 Perform the SM CP replacement procedure. Refer to the correct replacement procedure. Return to this point when complete.

10 Confirm that the LowSM minor alarm is clear. Examine the SM MAP level.

If the LowSM minor alarm is	Do
changed to a different alarm	step 11
not clear	step 12
clear	step 13

11 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

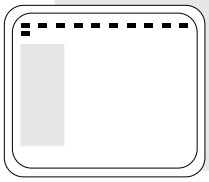
If the alarm is	Do
not clear	step 12
clear	step 13

12 Call the next level of support.

13 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC MemLim major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
MemLIm M	.	.	.	.	.	.	.	.	.

Indication

A MemLim alarm code appears under the XAC header of the alarm banner. The alarm code indicates the memory limit major alarm.

Meaning

The memory availbale for allocation by the XA-Core operating system has dropped below one or both of the major memory limit alarm thresholds. The alarm indicates that there are not enough memory resources to perform calculations or system related functions. The MemLim alarm does not indicate a fault in any hardware.

Impact

There is no change to subscriber service. The XA-Core operating software cancels some internal switch processes such as testing and reporting.

Common procedures

There are no common procedures.

Action

Use the instructions in the step-action procedure to clear the alarm.

XAC MemLim
major (continued)

How to clear a MemLim major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

At the XA-Core MAP

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

Note: Due to the refresh rate for MemLim alarm information, the user may experience some delay between the event that triggered the alarm to the change in the alarm condition.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a MemLim major condition	step 2
another alarm condition	step 4
that the alarm condition is clear	step 7

2 Access the XA-Core SM MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;SM

and press the Enter key.

3 Examine the SM MAP level. Record the amount of available memory.

Note: The SM MAP level can display alarms and status as follows:

- The MAP displays a MemLim alarm code under the XAC header in the alarm banner.
- The MAP displays the amount of physical, usable and available memory in the command output area.

The following is a sample MAP display.

XAC MemLim
major (continued)

SM MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
MemLim     .       .        .       .        .        .       .       .        .
  M

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 2               123456789012345678  456789012345   .      .       .      .
 3          Sta   . ..-.....-.- ..  .--.....---.
 4          Dep:
 5          Type:      *****           *****
 6 Tst_     Physical: 3840           Usable: 3840          Available: 0
 7 Bsy_     SYNC State: duplex
 8 RTS_
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a different alarm	step 4
a MemLim alarm	step 5
no alarm and all CPs are in service	step 7

4 Perform the correct alarm clearing procedure as described in this document. Return to this point when complete.

If the alarm is	Do
not clear	step 5
clear	step 7

5 Collect further information on memory limits using the XSMEMLIM command.

a At the CI prompt, type

> XSMEMLIM

and press the Enter key.

XAC MemLim major (end)

b Examine and record the displayed memory statistics.

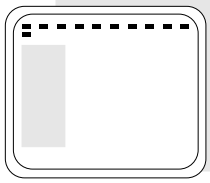
Available memory	Alarm status
Critical data-store is less than 512 kilobytes.	DS major
Data-store is less than 32768 kilobytes.	DS minor
Critical program store is less than 64 kilobytes.	PS major
Program store is less than 8192 kilobytes.	PS minor

6 Contact the next level of support.

7 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC MemLim minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
MemLim	.	.	.	.	.	.	.	.	.

Indication

A MemLim alarm code appears under the XAC header of the alarm banner. The alarm code indicates the memory limit minor alarm.

Meaning

The memory allocation to the XA-Core operating system has reached 90% of the available address space. The alarm indicates that there are not enough memory resources to perform calculations or system related functions. The MemLim alarm does not indicate a fault in any hardware.

Impact

There is no change to subscriber service. The XA-Core operating software cancels some internal switch processes such as testing and reporting.

Common procedures

There are no common procedures.

Action

Use the instructions in the step-action procedure to clear the alarm.

XAC MemLim minor (continued)

How to clear a MemLim minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

At the XA-Core MAP

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a MemLim minor condition	step 3
another alarm condition	step 4
that the alarm condition is clear	step 6

2 Access the XA-Core SM MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;SM

and press the Enter key.

3 Examine the SM MAP level. Record the amount of available memory.

Note: The SM MAP level can display alarms and status as follows:

- The MAP displays a MemLim alarm code under the XAC header in the alarm banner
- The MAP displays the amount of physical, usable and available memory in the command output area. The MemLim condition indicates that the amount of available memory is 10% of the amount of usable memory.

The following is a sample MAP display.

XAC MemLim
minor (end)

SM MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
MemLim     .       .        .       .        .        .       .       .       .

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 2               123456789012345678  456789012345   .      .       .      .
 3          Sta: -.-.--..-.----..-  .--.--------.   0      0       0      0
 4          Dep:
 5          Typ:       ** **            *
 6 Tst_       Physical: 1920         Useable: 1920        Available: 191
 7 Bsy_       SYNC State: duplex
 8 RTS_
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a different alarm	step 4
a MemLim alarm	step 5
no alarm and all CPs are in service	step 6

4 Perform the correct alarm clearing procedure as described in this document. Return to this point when complete.

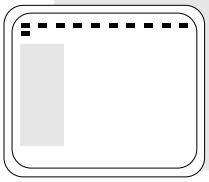
If the alarm is	Do
not clear	step 5
clear	step 6

5 Call the next level of support.

6 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC MScomm critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	.	.

Indication

There is no MAP alarm code under the XAC header to indicate a critical XA-Core/message switch (MS) communication alarm. Audible alarms provide notice of an outage. The local reset terminal interface (RTIF) provides status information on the progress of a software restart or system reboot.

Note: The events that cause an MScomm critical alarm make it impossible for the MAP to display alarm codes. The XA-Core has lost all avenues of communication with the message switch. None of the MAP interfaces is available.

The CP and packlet red LEDs light for a short period of time. If the CPs and packlets return to service, the green LEDs light. If the reboot is successful, XA-Core displays a restart reload message on the MAP terminal.

An ACTIVE message and CI prompt displayed on the MAP terminal indicates a successful reboot and restart reload.

Meaning

There is no communication between the XA-Core and MS. The OC-3 two-port interfaces, the physical links or the MS cannot provide communication service because of one or more of the following:

- XA-Core OC-3 two-port interface packlet status is a combination of system busy (SysB), out of service (OOS) CBsy or ManB
- OC-3 two-port interface paddleboard status is a combination of SysB and ManB
- MS port circuit packs (CPs) are SysB
- damage to ports on the OC-3 two-port interface packlets or OC-3 two-port interface paddleboards
- damage to fiber optic cables
- fiber optic cables disconnected

XAC MScomm
critical (continued)

Impact

There is a change in subscriber service. Subscriber service has stopped and a system restart sequence begins. The system restart sequence tries to establish communication with the MS and return the XA-Core to service. A restart reload initializes the system software and runs tests on all hardware. The tests are done before and after loading the Interface software files.

XA-Core maintenance software tests all subsystem hardware during a restart. The tests cause the red LED on circuit packs (CPs) and packlets to light. When the tests are complete, the greed LEDs are lit. The red LEDs on damaged, or inactive CPs or packlets remain lit. An ACTIVE message displayed on the MAP indicates a successful reload and restart.

The type of system restart depends on the severity and type of communication fault. The types of system restarts are as follows:

- Restart warm: A restart warm de-allocates and clears temporary memory storage. A restart warm does not cause an outage for existing calls. The system records and saves current call event information.The system does not allow new call processing.
- Restart cold: A restart cold process has more serious effects on system operation that a restart warm. A restart cold de-allocates and clears temporary memory storage. A restart cold can cause an outage in existing calls if the system requires the ports that the calls are using. The system does not record and save call event information. The system does not allow new call processing.
- Restart reload: A restart reload has more serious effects on system operation than the restart warm and restart cold processes. A reload restart simulates a reload of the current software into the switch. A reload restart initializes the system software and runs tests on all hardware. A reload restart causes an outage in existing calls and does not allow new call processing.

The restart process begins with a restart warm. If the restart warm fails, a restart cold begins. If the restart cold fails, a restart reload begins. If all restart processes do not restore communication service to the MS, the XA-Core performs a system reboot.

If a restart process restores MS communication, the XA-Core MAP displays reload/restart messages on the MAP terminal. An ACTIVE message displayed

XAC MScomm critical (continued)

on the MAP indicates a successful restart. All CPs and packlets that were in a manually busy (ManB) state before the restart, automatically return to service.

Note 1: A restart disables the MAP system. you cannot use the MAP system to determine the source of the fault. Use the RTIF terminal to monitor the reboot and restart reload process. You can use the MAP system if the restart is successful.

Note 2: If the restart is not successful, the system repeats the reboot procedure.

Note 3: If the restart reload is successful, all manual busy (ManB) CPs automatically return to service.

Common procedures

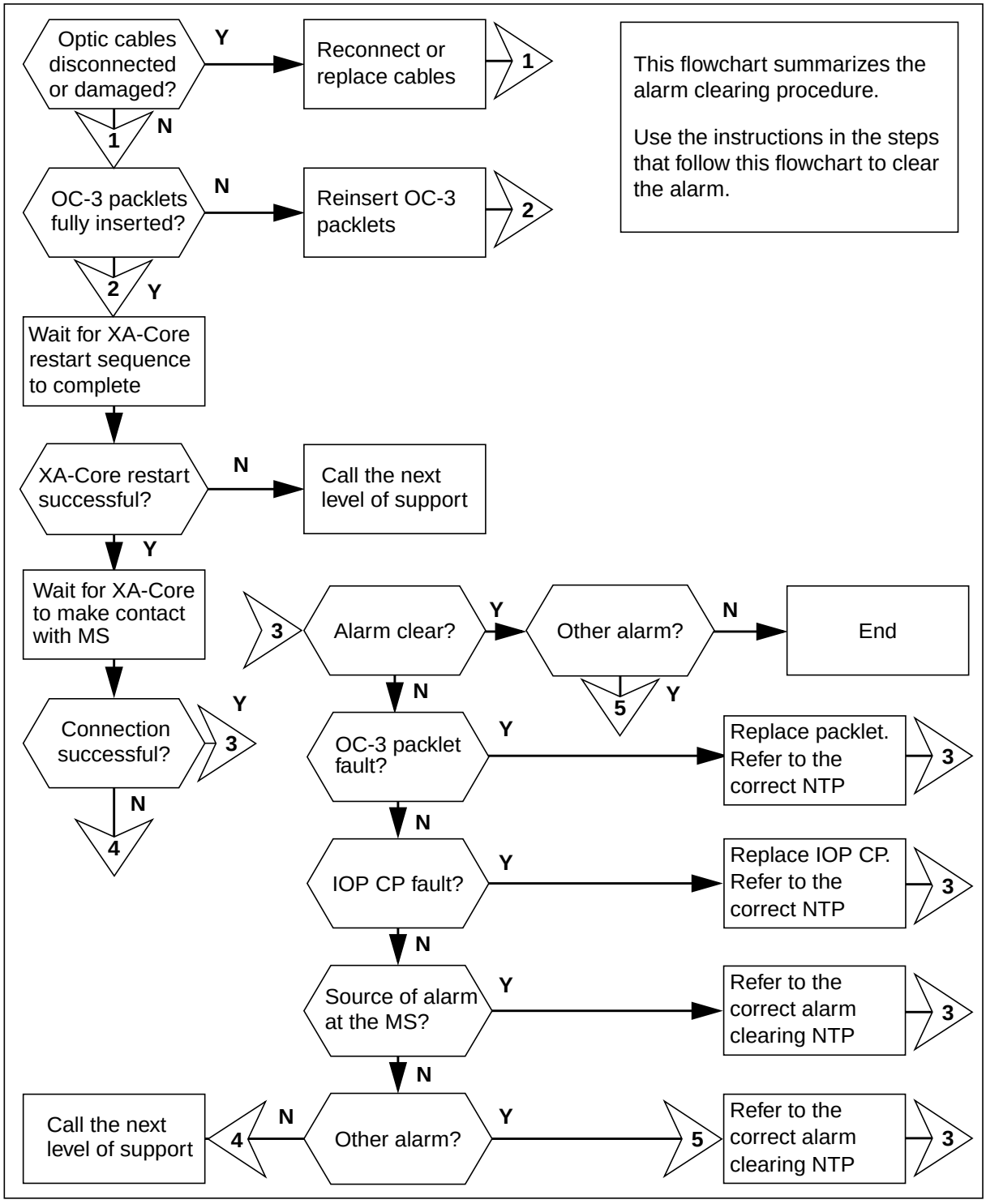
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC MScomm
critical (continued)

Summary of clearing an MScomm critical alarm



XAC MScomm critical (continued)

How to clear an MScomm critical alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING

Possible Fiber cable damage

Handle the fiber optic cables with care. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface degrades fiber performance

CAUTION

Loss of service

Do not repeat steps.

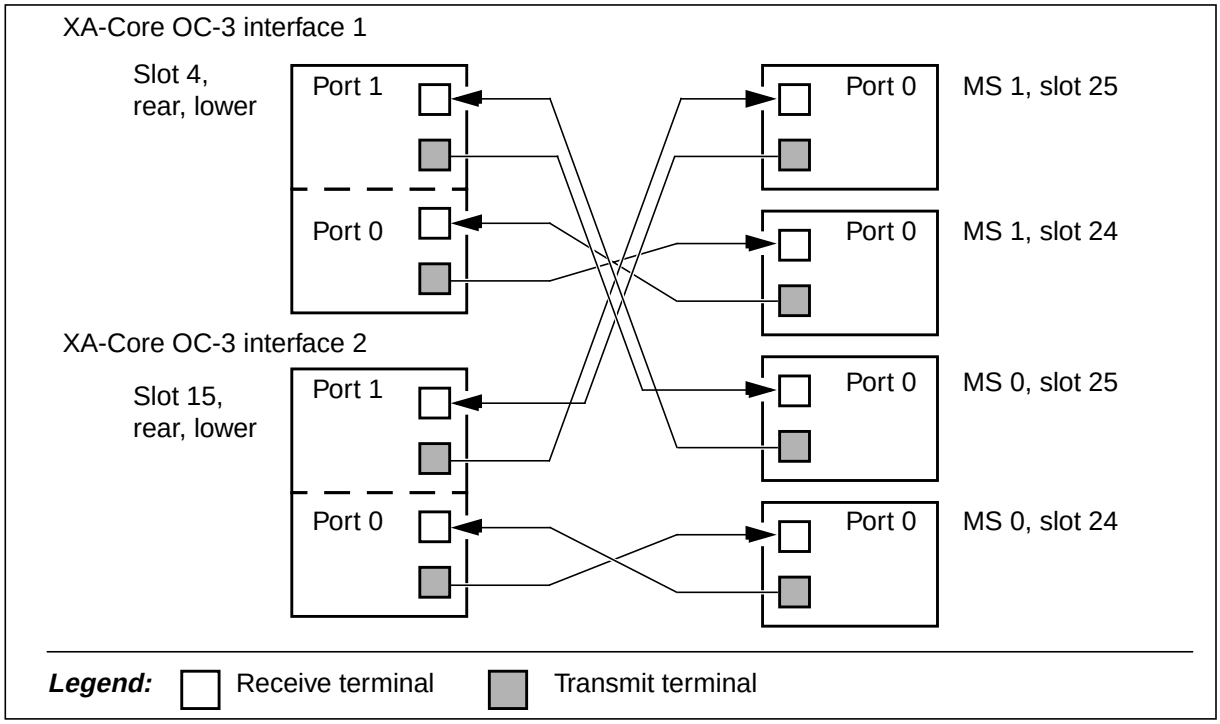
XAC MScomm
critical (continued)

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At the XA-Core physical shelf

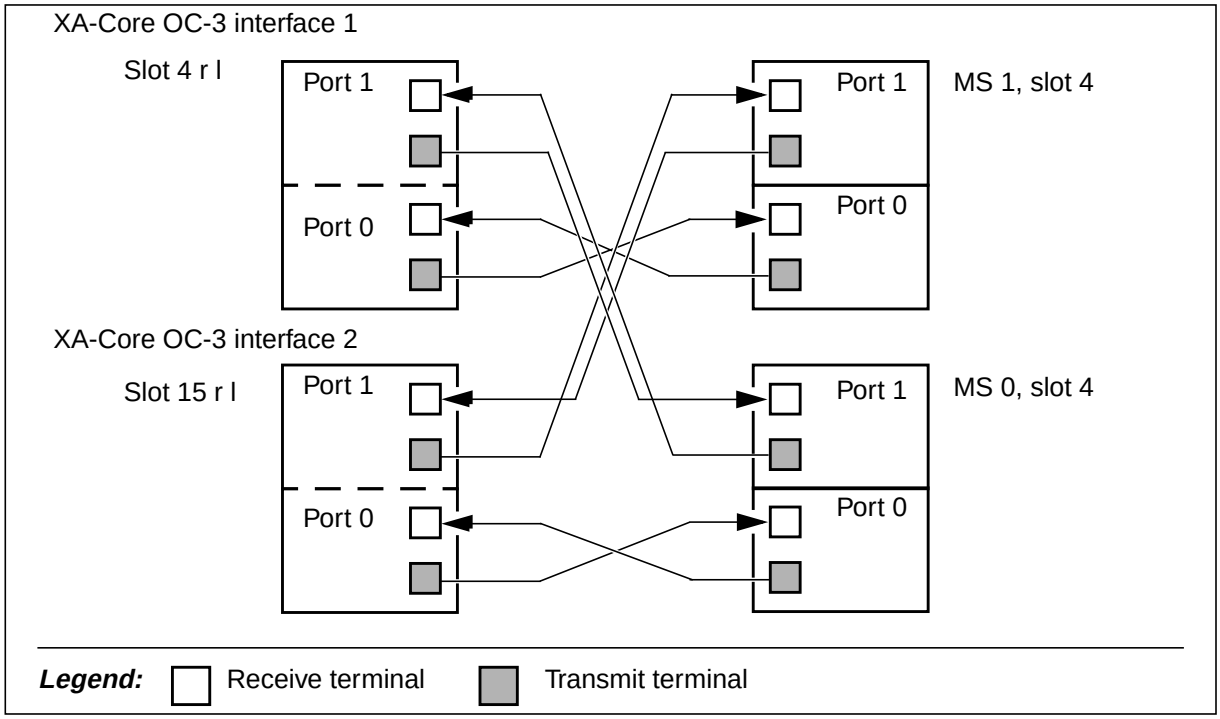
1 Examine the fiber optic cable connections. Make sure that the fiber optic connectors fit correctly into the OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports. Use the following diagrams to check the link connections.

XA-Core and MS fiber optic cable connections (SuperNode)



XAC MScomm **critical** (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)

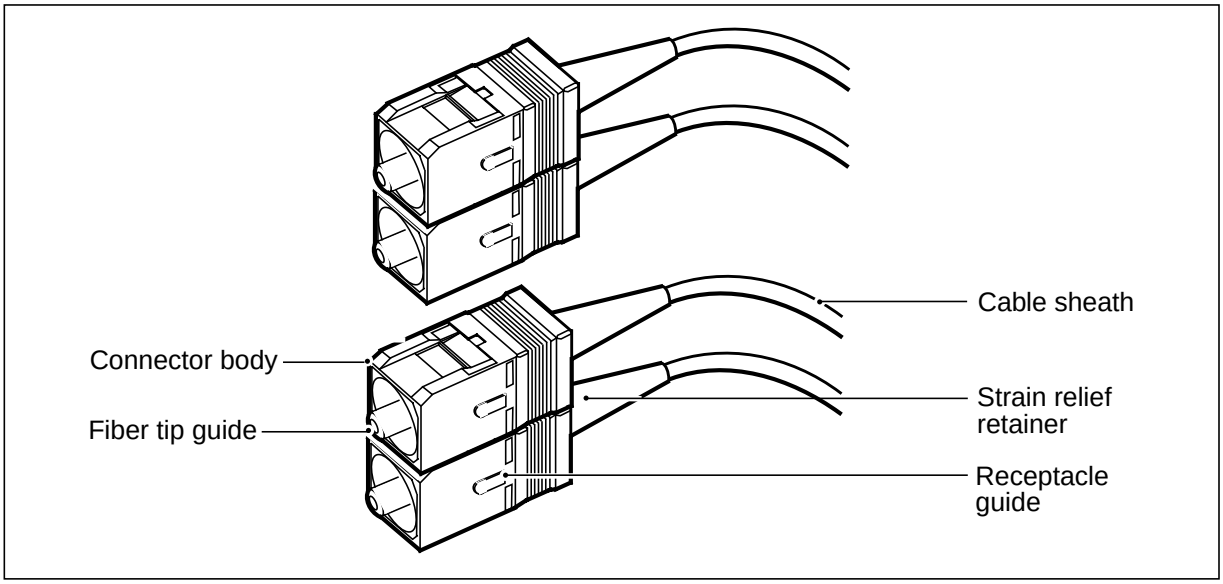


If the fiber optic cables are	Do
correctly inserted	step 2
not correctly inserted	step 3

2 Examine the fiber optic cables. Make sure that there is no damage to the fiber optic cables.

XAC MScomm
critical (continued)

Paired fiber optic cable connectors



If the OC-3 fiber optic cables are	Do
visibly damaged	step 3
not visibly damaged but you suspect a fault in an OC-3 two-port interface packlet or OC-3 two-port interface paddleboard	step 4
not visibly damaged and you do not suspect a fault in an OC-3 two-port interface packlet or OC-3 two-port interface paddleboard	step 7

3 Disconnect the fiber optic cables from the OC-3 two-port interface packlets and the OC-3 two-port interface paddleboards.

a Hold the connector by the receptacle body only

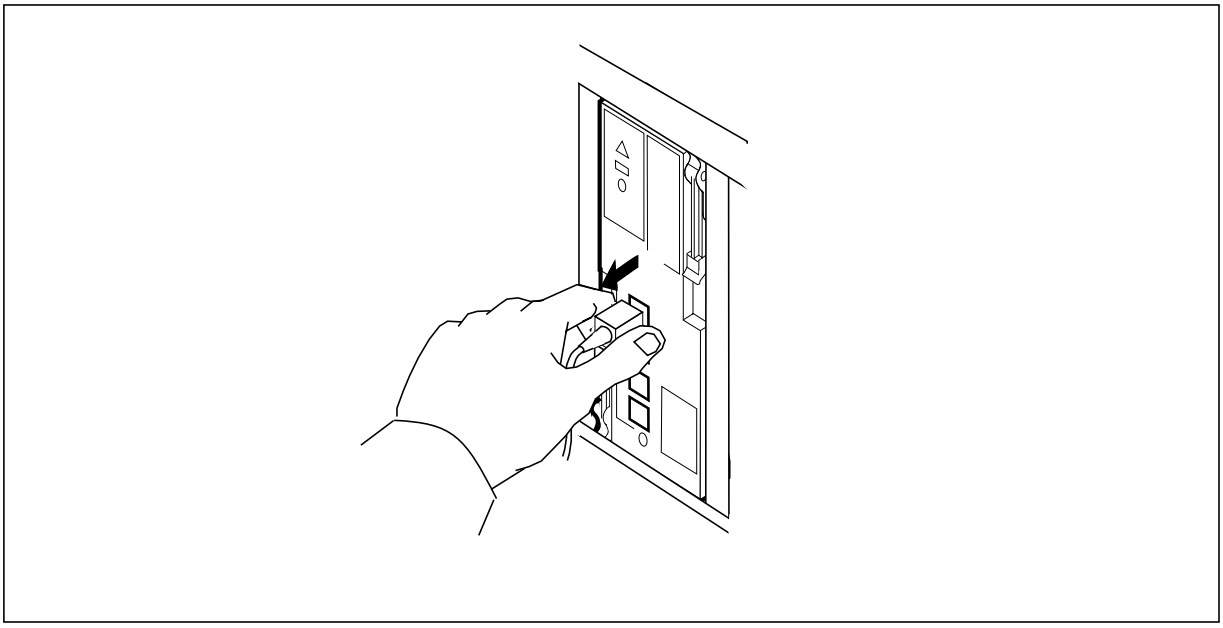
b Carefully pull the fiber optic connectors away from the port receptacles.

c Cover the ends of the fiber optic cable with dust caps.

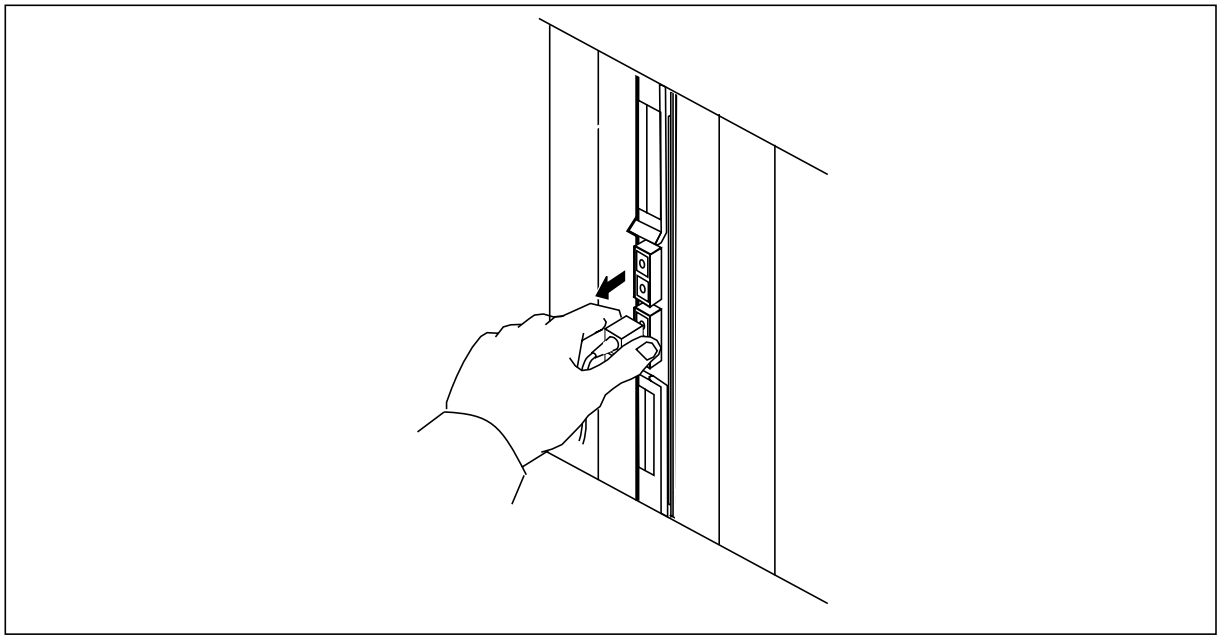
d Place the fiber optic cables in a safe location away from the physical shelf.

XAC MScomm
critical (continued)

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



Disconnect the OC-3 fiber optic cables from the OC-3 two port interface paddleboard ports



XAC MScomm
critical (continued)

If you are	Do
replacing the OC-3 two-port interface packlet or paddleboard	step 4
replacing the fiber optic cables	step 5
reconnecting the fiber optic cables to the correct port receptacles	step 6

4 Perform the correct OC-3 two port interface packlet or paddleboard replacement procedure. Continue to 7 when complete.

5 Obtain the correct, new fiber optic cables.

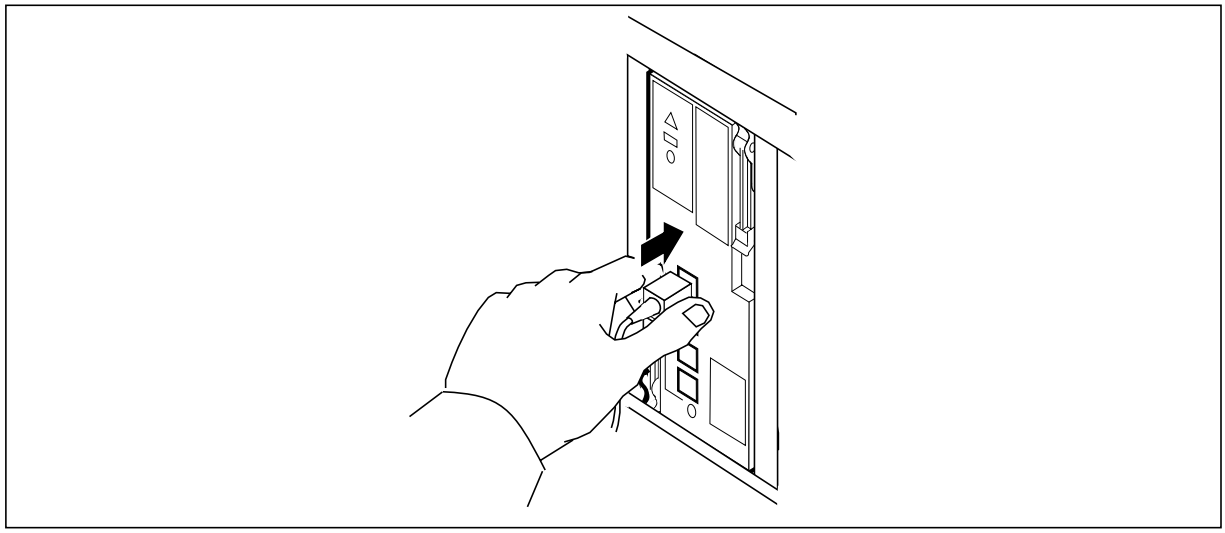
6 Connect the correct fiber optic cables to the correct OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports.

a Hold the fiber optic cable connectors by the body only.

b Remove the fiber optic cable dust caps. Clean the tips of the fiber optic cables. Use the recommended cleaning methods.

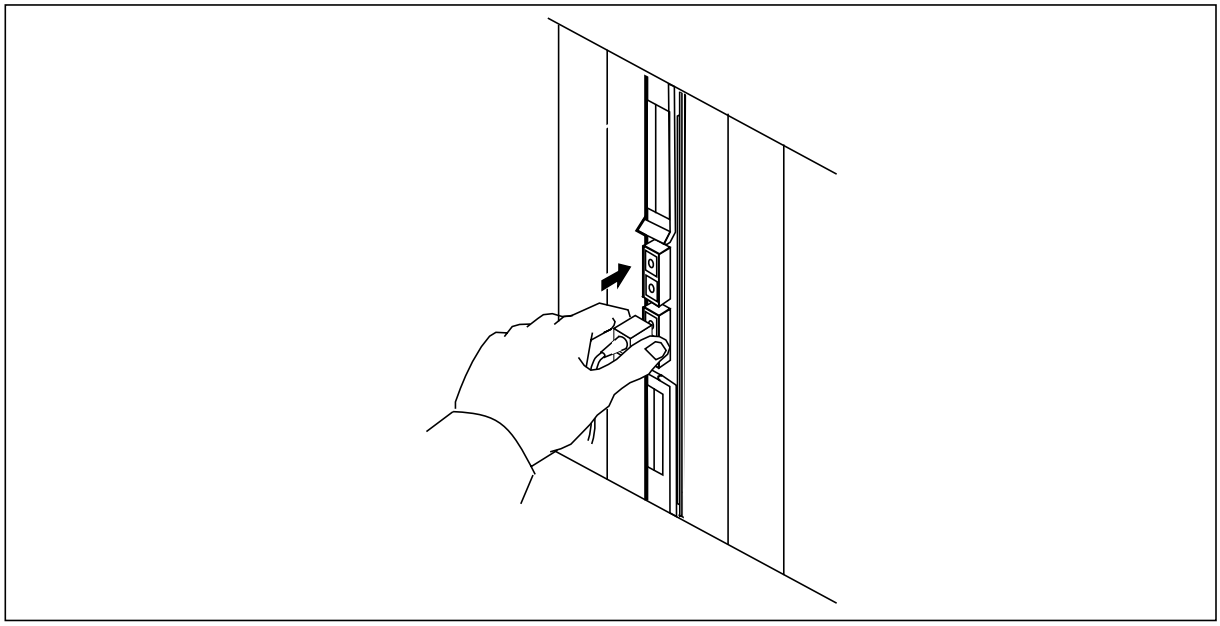
c Carefully insert the connectors into the correct port receptacles.

Connect the fiber optic cables to the OC-3 two port interface packlet ports



XAC MScomm
critical (continued)

Connect the fiber optic cables to the OC-3 two port interface paddleboard ports



At the XA-Core MAP

7 Examine the RTIF display. The RTIF display provides information on the progress of the restart or system reboot. Wait for the XA-Core system software to execute and complete a system restart. Wait for the ACTIVE message to appear on the MAP terminal display. When the ACTIVE message and CI prompt appear, the system is ready for command entry.

If the XA-Core restart is	Do
successful	step 8
unsuccessful and continues to execute the restart repeatedly	step 17

8 Collect log information from the log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

XAC MScomm
critical (continued)

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
that all alarm events are clear	step 9
a different alarm event	step 16

9 Access the XA-Core XAC MAP level. At the CI level prompt, type

>MAPCI;MTC;XAC

and press the Enter key.

10 Examine the XAC MAP level. Record the location and status of any trouble CPs.

Note: The XAC MAP level can display alarms as follows:

- an alarm under the XAC header in the alarm banner.
- an equipment alarm under the headers in the subsystem status summary field (SSSF).

The following is a sample MAP display.

XAC MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


XAC                 Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      .
 2 Card_       Sta: -.-----..-.---.-..-  .--.-------.   0      0       0      0
 3 XACMtc      Dep:
 4 SM
 5 PE
 6 IO
 7 CMIC
 8 RTIF
 9 Disk
10 Tape
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

XAC MScomm **critical** (continued)

If the MAP level indicates	Do
a CP or packlet is ManB	step 11
a CP or packlet is SysB	step 12
an alarm related to one or more CP or packlet	step 16
no alarm and all CPs are in service	step 18

11 Return out-of-service (OOS) equipment to service. Access the appropriate MAP level.

Return the OOS CP or packlet to service. At the MAP level, type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower complete
```

If the equipment is	Do
not returned to service	step 12
returned to service	step 18

12 Manually busy the OOS CP or packlet. At the appropriate MAP level type

>BSY <nn> <s>

or

>BSY <nn> <s> <p>

and press the Enter key

XAC MScomm
critical (continued)

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 f

Example of system response:

```
BSY 4 rear lower complete
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the CP or packlet is	Do
in a ManB state	step 13
not in a ManB state	step 17

13 Perform an OOS test on the ManB CP or packlet. At the appropriate MAP level type

>TST <nn> <s>

or

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the OOS test	Do
passed	step 14
did not pass	step 15

14 Return the ManB CP or packlet to service. At the appropriate MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 f

Example of system response:

```
RTS 4 rear lower passed
```

If the CP or packlet is	Do
not InSv	step 17
InSv	step 18

At your current location

15 Perform the correct CP or packlet replacement procedure. Return to this point when complete.

If the CP or packlet is	Do
not returned to service	step 17
returned to service	step 18

16 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

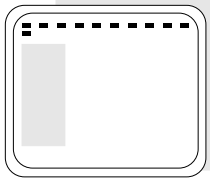
If the alarm is	Do
not clear	step 17
clear	step 18

17 Call the next level of support.

18 You have completed this procedure.

XAC MScomm major

Alarm display



XAC MScomm M	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	.	.

Indication

An MScomm major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a message switch (MS) communication major alarm.

Meaning

There is no communication link redundancy between the XA-Core and message switch (MS). There is a communication service outage for a single XA-Core and MS link for one of the following reasons:

- an XA-Core OC-3 two-port interface packlet working state is either system busy (SysB), out of service (OOS) CBsy or, ManB
- an OC-3 two-port interface paddleboard working state is either SysB or ManB
- an MS port circuit pack (CP) is SysB or ManB
- damage to fiber optic cables
- disconnection of fiber optic cables

Impact

There is no immediate change in subscriber service. There is a risk of a system restart if another failure occurs on one of the following:

- OC-3 two-port interface packlet
- OC-3 fiber optic cables
- MS port CP
- OC-3 two-port interface paddleboard

Common procedures

There are no common procedures.

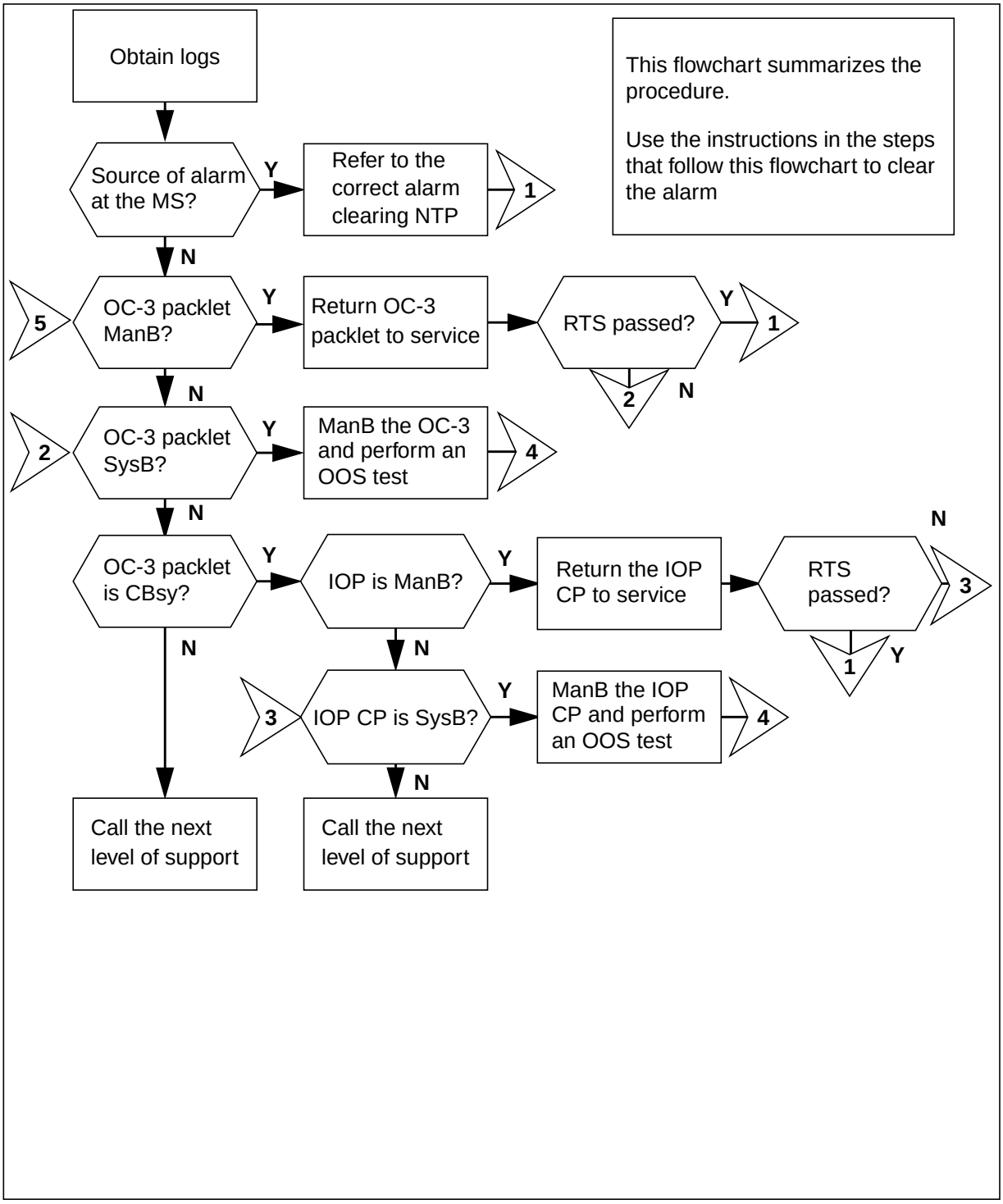
XAC MScomm
major (continued)

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

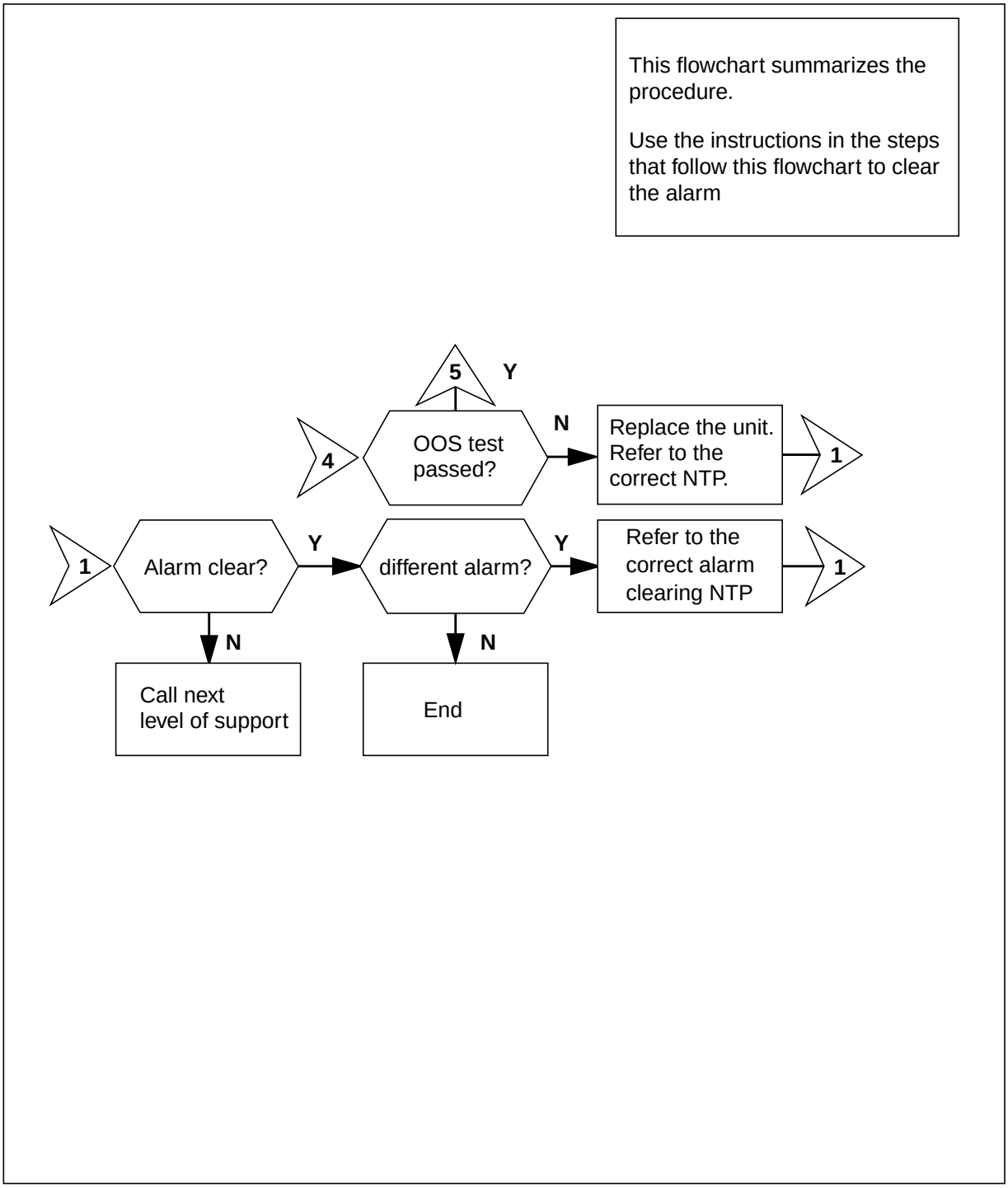
XAC MScomm
major (continued)

Summary of clearing an MScomm major alarm



XAC MScomm major (continued)

Summary of clearing an MScomm major alarm (continued)



XAC MScomm
major (continued)

How to clear an MScomm major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING

Fiber cable damage

Handle the fiber optic cables with care. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface degrades fiber performance

CAUTION

Loss of service

Do not repeat steps.

XAC MScomm major (continued)

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an MScomm major alarm condition	step 2
a different alarm condition	step 21
that the alarm condition is clear	step 23

2 Access the XA-Core CMIC MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and status of the OC-3 two port interface packlets and the IOP CPs.

Note: The CMIC MAP level can display alarms and status as follows:

- an MSComm alarm under the XAC header in the alarm banner.
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF).
- status codes appear under the Status, Link and TOD headers in the command interpreter output area

The following is a sample MAP display.

XAC MScomm
major (continued)

CMIC MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
MScomm     .       .        .        .       .        .       .        .       .
  M

CMIC
 0 Quit
 2
 3
 4
 5
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_
      Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
      123456789012345678  456789012345   .      .       .      CMICfl
Sta: -.----..-.---.-..-  .--.--------.   0      0       0      1
Dep:                     F
Typ:                     *          *
Slot:Side:  Packlet:     Status:  Link0:   Link1:     TOD
   4  Rear     Lower      S        C        C         C
   15 Rear     Lower      .        .        .         .
  CMIC:

 XMAP0
Time  14:12   >
```

If the CMIC MAP level indicates	Do
an OC-3 two port interface packlet is ManB	step 4
an OC-3 two port interface packlet is SysB	step 5
an OC-3 two port interface packlet is CBsy	step 7
an OC-3 link is SysB	step 13
a different alarm	step 21
no alarm and all CPs are in service	step 23

4 Return the OC-3 two port interface packlet to service. At the CMIC MAP level, type

>RTS <nn> <s> <p>

and press the Enter key.

where

XAC MScomm
major (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower passed
```

If the CMIC MAP level indicates	Do
the OC-3 two port interface packlet is SysB	step 5
the OC-3 two port interface packlet is CBsy	step 7
the OC-3 two port interface packlet is InSv	step 20

5 Manually busy the OOS 0C-3 two-port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
BSY 4 rear lower complete
```

Note: If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.

6 Perform an OOS test on the OC-3 two-port interface packlet. At the CMIC MAP level type

>TST <nn> <s> <p>

XAC MScomm
major (continued)

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the OOS test	Do
passed	step 3
did not pass	step 14

7 Access the IO MAP level. At the CMIC MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the location and status of the OOS IOP CP.

Note: The IO MAP level can display alarms and status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC MScomm
major (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 MScomm   .       .       .       .       .       .       .        .       .
  M

IO
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO      PKLT
 2               123456789012345678    456789012345   .     .     IOP M   XAisol
 3               Sta: -.-.--..-..----..-    M--.-------.   0     0     1       2
 4               Dep:                       F
 5               Typ:  *              *     *         *
 6               Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Tst_            2    Front      .              Tape .              Disk .
 8 Bsy_            17   Front      .              Tape .              Disk .
 9 RTS_            4    Rear       M              RTIF C              CMIC C
10                 15   Rear       .              RTIF .              CMIC .
11                 IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
 Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 10
in an InSv state	step 20

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 r

XAC MScomm
major (continued)

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet status.

If the IOP CP is	Do
SysB and all related packlets are CBsy	step 10
InSv and any related packlet is ManB or SysB	step 12
InSv and all related packlets are InSv	step 20

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
BSY 4 rear complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the IO CP is	Do
in a ManB state	step 11
not in a ManB state	step 22

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC MScomm
major (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 r

If the OOS test	Do
passed	step 8
did not pass	step 19

12 Access the correct packlet MAP level. Return the ManB packlet to service.

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 4 r u

Example of system response:

```
RTS 4 rear upper passed
```

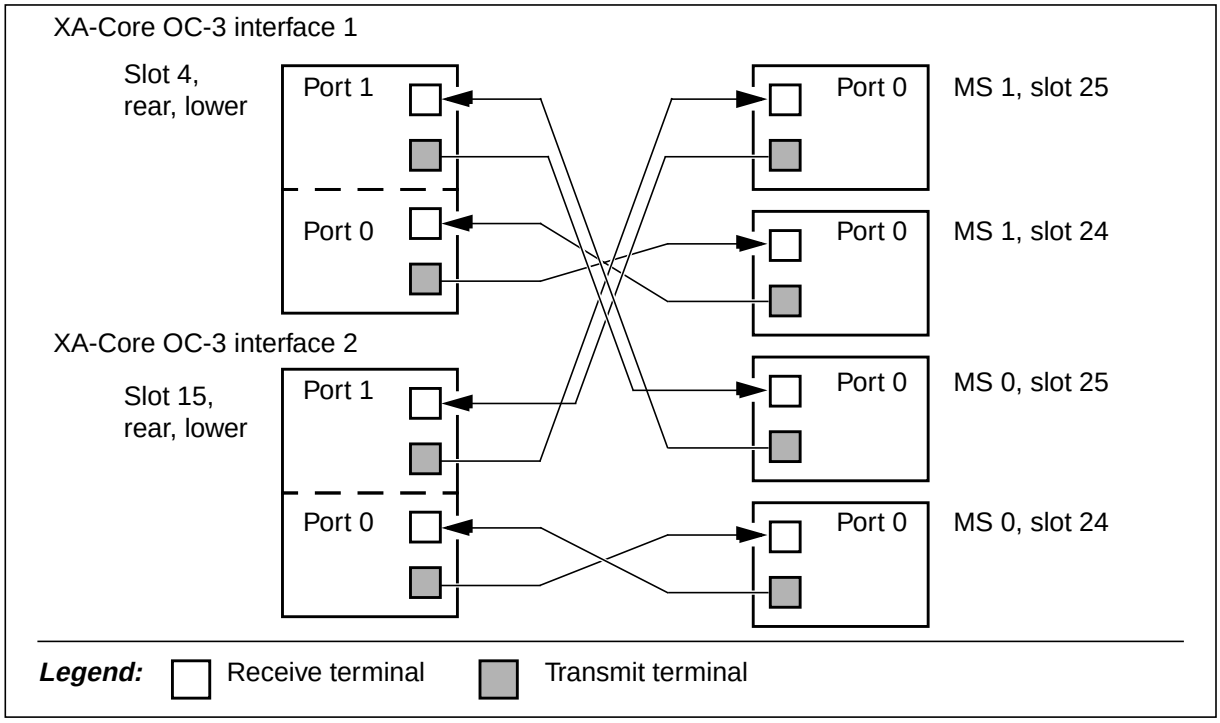
If the packlet is	Do
in a SysB state	step 5
in an InSv state	step 20

At the XA-Core physical shelf

13 Examine the fiber optic cables and connectors. Make sure that the link connections fit into the correct OC-3 interface ports. Use the diagrams in this step to check the link connections.

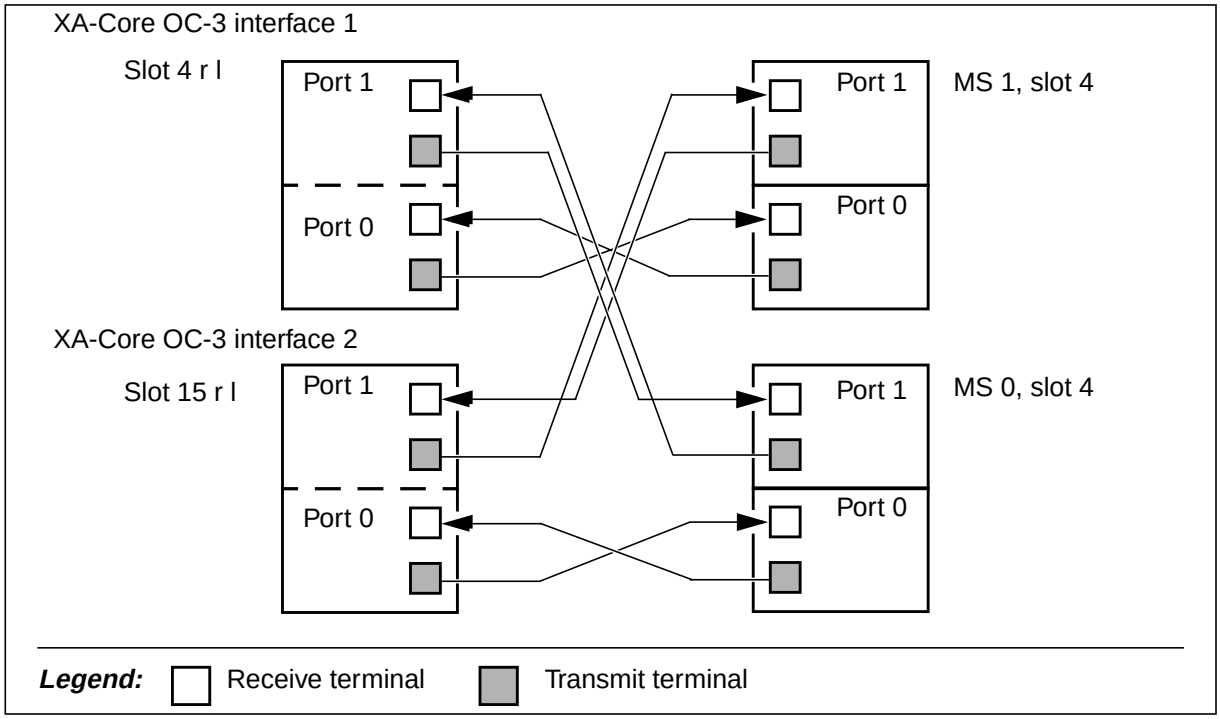
XAC MScomm
major (continued)

XA-Core and MS fiber optic cable connections (SuperNode)



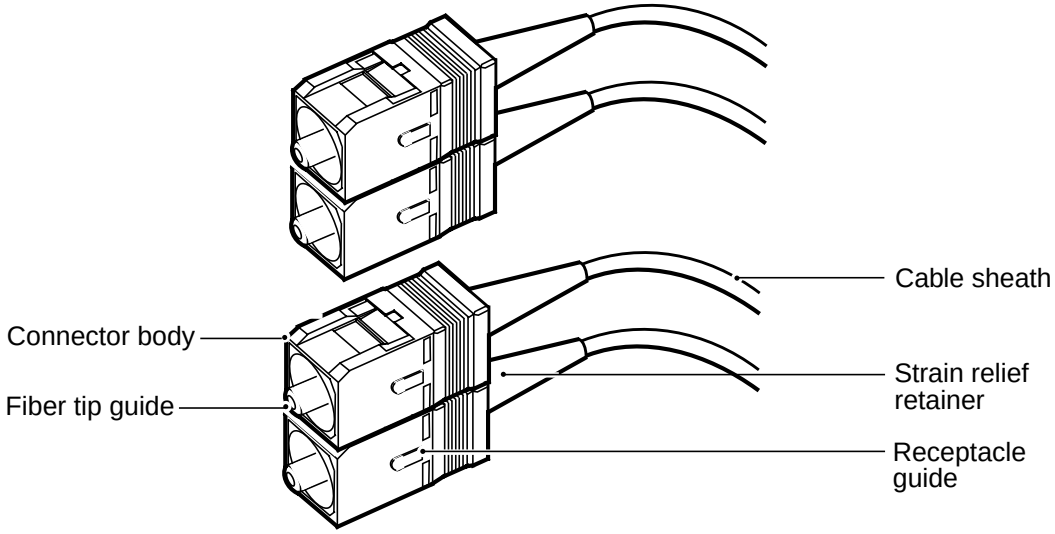
XAC MScomm **major** (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



XAC MScomm
major (continued)

Paired fiber optic cable connectors



If the link connections are	Do
damaged or not correctly connected	step 14
not damaged and correctly connected	step 16

XAC MScomm
major (continued)

At the MAP terminal

14 Place the OC-3 two-port interface packlet in a ManB state. Disconnect the fiber optic cables from the OC-3 two-port interface packlets and the OC-3 two-port interface paddleboards.

a ManB the OC-3 two-port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 4 rear lower complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

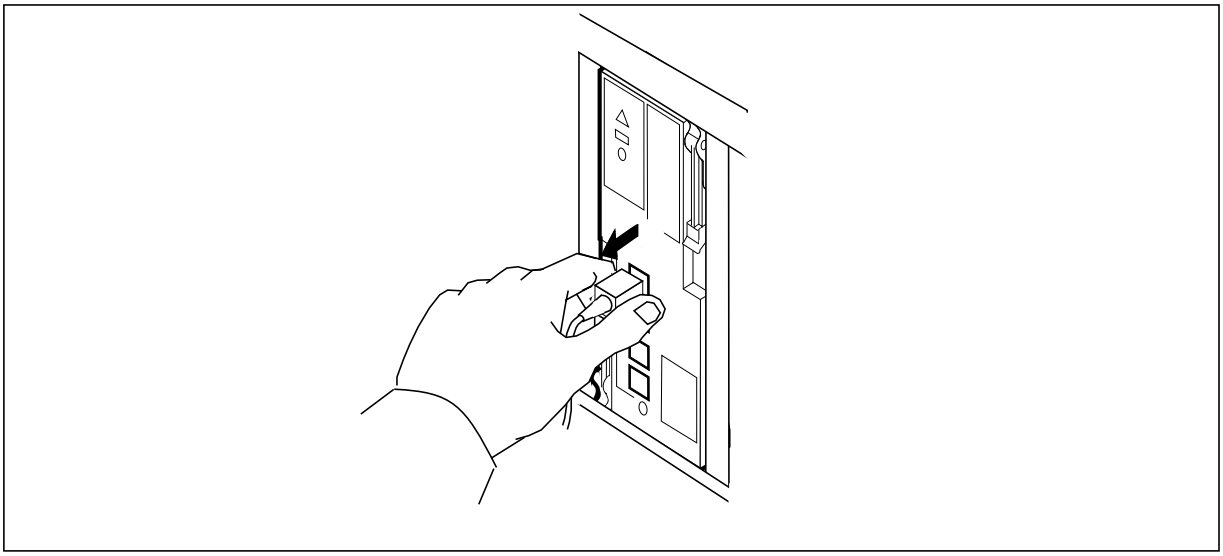
b Carefully pull the fiber optic connector away from the receptacle. Hold the connector by the body only.

c Cover the ends of the fiber optic cable with dust caps.

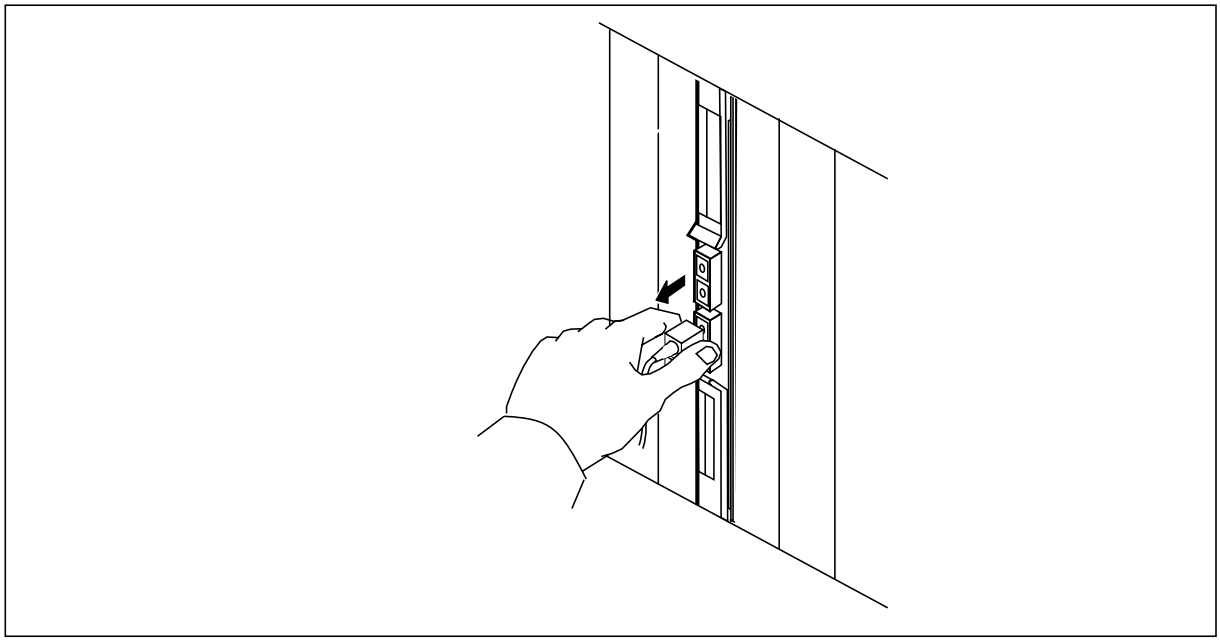
d Place the fiber optic cable in a safe location away from the physical shelf

XAC MScomm
major (continued)

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



Disconnect the OC-3 fiber optic cables from the OC-3 two port interface paddleboard ports



If you are	Do
replacing the fiber optic cable	step 15

XAC MScomm
major (continued)

If you are	Do
replacing the OC-3 two-port interface paddleboard	step 16
replacing the OC-3 two-port interface packlet	step 19

15 Connect the replacement fiber optic cables to the correct OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports. Use the connection diagrams shown in this step.

a Hold the fiber optic cable connector by the body only.

b Remove the dust caps from the ends of the fiber optic cable.

c Clean the tips of the fiber optic cables. Use the correct fiber optic cleaning procedure.

d Carefully insert the connector into the correct receptacle.

e Return the OC-3 two port interface packlet to service. At the CMIC MAP level, type

>RTS <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

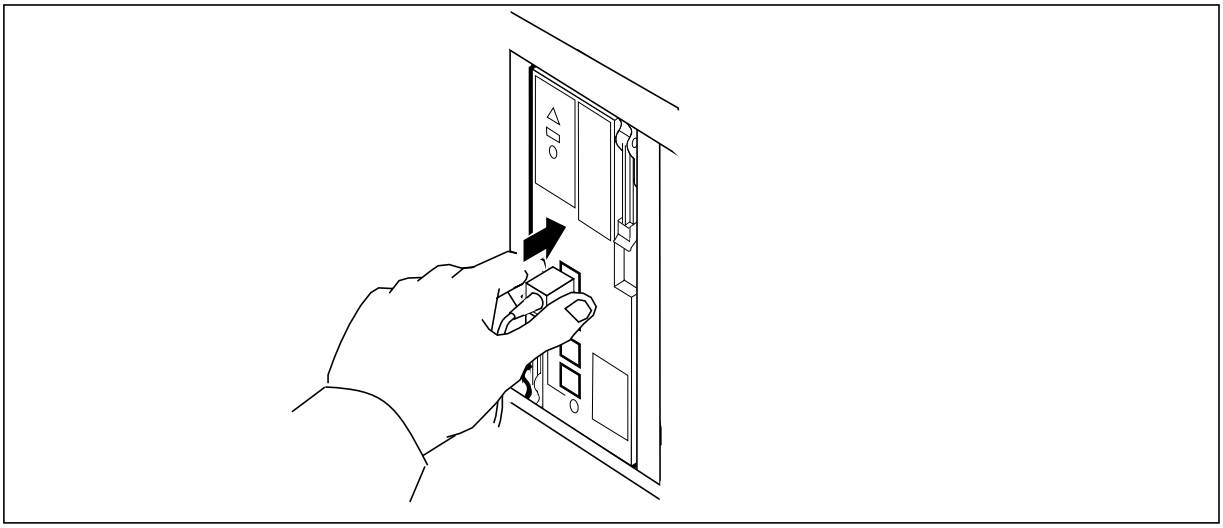
<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

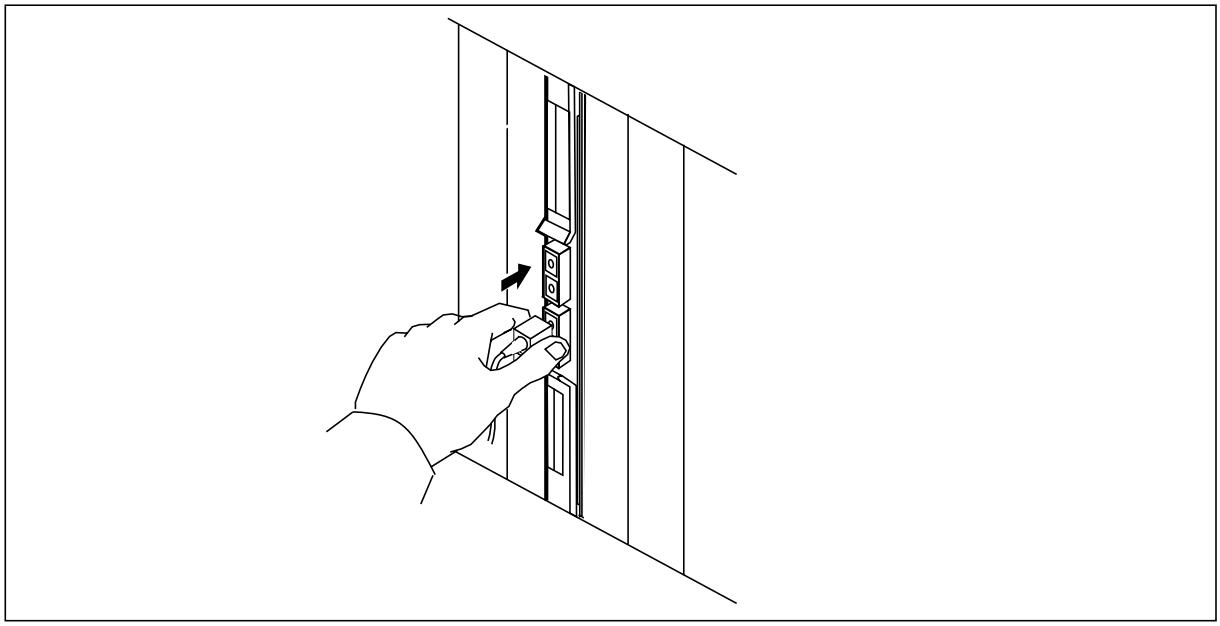
>RTS 4 r l

XAC MScomm
major (continued)

Connect the fiber optic cables to the OC-3 two port interface packlet ports



Connect the fiber optic cables to the OC-3 two port interface paddleboard ports



If the MAP level indicates the alarm is	Do
not clear	step 19
clear	step 20

XAC MScomm
major (continued)

16 Examine the MS MAP. Perform the following steps:

a Display the MS MAP level. At the CMIC MAP level type

>MS

and press the Enter key.

b Access the MS Shelf MAP level. The Shelf MAP level displays the status of all CPs in the shelf. At the MS MAP level, type

>SHELF

and press the Enter key.

c Access the MS Card MAP level for the OC-3 two port interface paddleboards. The card MAP level displays the status of the OC-3 two port interface paddleboards. At the MS MAP level, type

>CARD <nn>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the MS physical shelf slot - 1 to 26

Example of command:

>CARD 24

d Record the status of the OC-3 two port interface paddleboards (see the MS Card MAP level diagram in this step).

The following is a sample MAP display.

XAC MScomm
major (continued)

MS Card MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


MS
 0 Quit          Message Switch      Clock       Shelf  0      Inter-MS Link 0 1
 2          MS 0       .            M Free              .                   - -
 3          MS 1       .            Slave               F                   - -
 4
 5          Shelf  0                 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 6 Tst_     Card   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7 Bsy_     Chain
 8 RTS_     MS 0   . . . - . - - - - - - - - - - - - - - - - . . . . .
 9          MS 1   . . . - . - - - - - - - - - - - - - - - - . . . . .
10 LoadMS_
11          Card 24 CMIC Interface Card       Port: 0
12 SwMast   MS 0         .                         .
13 Shelf    MS 1         .                         S
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

If the MS Card MAP level indicates	Do
OC-3 two port interface paddleboard ports are OOS	step 17
a different alarm	step 21
no faults or alarms	step 23

17 Perform the correct MS CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
changed to a different alarm	step 21
not clear	step 22
clear	step 23

XAC MScomm major (end)

18 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a SysB state	step 19
in an InSv state	step 20

19 Perform the correct CP or packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the CP or packlet is	Do
in an InSv state	step 20
in a SysB state	step 22

20 Confirm that the MScomm major alarm is clear. Examine the alarm banner on the MAP screen.

If the alarm is	Do
replaced by different alarm	step 21
not clear	step 22
clear	step 23

21 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

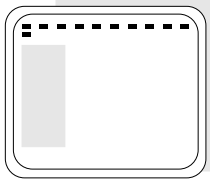
If the alarm is	Do
not clear	step 22
clear	step 23

22 Call the next level of support.

23 You have completed this procedure.

XAC MScomm minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
MScomm	.	.	.	.	.	.	.	.	.

Indication

An MScomm message appears under the XAC header of the alarm banner. The message indicates an XA-Core/message switch (MS) communication minor alarm.

Meaning

Communication link redundancy between the XA-Core and the MS is partially lost. A single, physical link cannot provide communication service. One or more of the following conditions cause the MScomm minor alarm:

- a single port on an OC-3 two-port interface packlet is out of service (SysB or CBsy)
- a single port on an OC-3 two-port interface paddleboard is out of service (SysB, Cbsy, or ManB)
- damage to, or disconnection of a fiber optic cable on a single OC-3 two-port interface

Impact

There is no immediate change to subscriber service. To minimize service degradation, wait until call traffic is low to test or replace equipment.

Common procedures

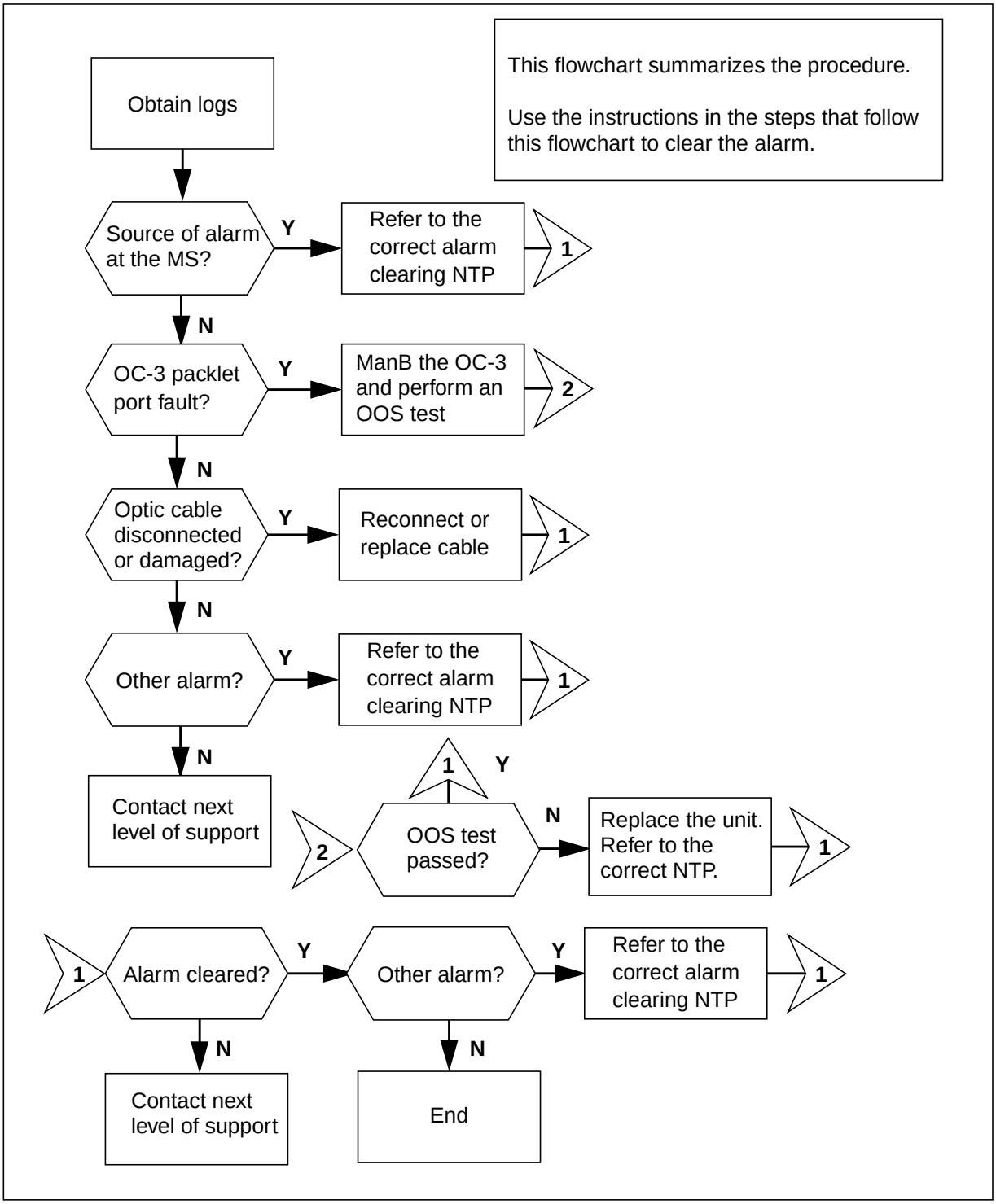
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC MScomm minor (continued)

Summary of clearing an MScomm minor alarm



XAC MScomm
minor (continued)

How to clear an MScomm minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING

Fiber cable damage

Handle the fiber optic cables with care. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface degrades fiber performance

CAUTION

Loss of service

Do not repeat steps.

XAC MScomm minor (continued)

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates an	Do
XA-Core MScomm minor condition	step 2
MS or different alarm condition	step 20
MScomm minor condition is clear	step 22

2 Access the XA-Core CMIC MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and status of the OC-3 two-port interface packlets and the IOP CPs.

Note: The CMIC MAP level can display alarms and status as follows:

- an alarm under the XAC header in the alarm banner.
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF)
- a status code appears under the Status or Link headers in the command interpreter output area

The following is a sample MAP display.

XAC MScomm
minor (continued)

CMIC MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
MScomm     .       .        .       .        .       .       .       .       .


CMIC                Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      LINKfl
 2                Sta: -.-.--.-.-----.-  .--.-------.   0      0       0      0
 3                Dep:                   F
 4                Typ:                   *          *
 5                Slot:Side:  Packlet:    Status:  Link0:   Link1:    TOD
 6 Tst_             4  Rear    Lower      I        .        S         .
 7 Bsy_            15  Rear    Lower      .        .        .         .
 8 RTS_           CMIC:
 9
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a single link is OOS SysB and the OC-3 two-port interface status is IsTb	step 4
a single link is OOS CBsy and the OC-3 two-port inteface packlet status is InSv	step 7
a different alarm condition	step 20
no alarm and all links, packlets and CPs are in service	step 22

4 Manually busy the OOS OC-3 two-port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC MScomm
minor (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
BSY 4 rear lower complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the OC-3 two port interface packlet is	Do
in a ManB state	step 5
not in a ManB state	step 21

5 Perform an OOS test on the OC-3 two-port interface packlet. At the CMIC MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the CMIC MAP level indicates	Do
the OOS test passed and all links are InSv	step 6
a link failure and the OC-3 status is IsTb	step 16
the OOS test did not pass and the OC-3 status is OOS	step 17

6 Return the OC-3 two port interface packlet to service. At the CMIC MAP level, type

>RTS <nn> <s> <p>

and press the Enter key.

XAC MScomm
minor (continued)

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower passed
```

If the OC-3 two port interface packlet is	Do
not in an InSv state	step 17
in an InSv state	step 19

7 Display the MS MAP level. At the CMIC MAP level type

>MS

and press the Enter key.

8 Access the MS Shelf MAP level. The Shelf MAP level displays the status of all CPs in the shelf. At the MS MAP level, type

>SHELF

and press the Enter key.

9 Access the MS Card MAP level for the OC-3 two port interface paddleboards. The card MAP level displays the status of the OC-3 two port interface paddleboards. At the MS MAP level, type

>CARD <nn>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the MS physical shelf slot - 1 to 26

Example of command:

>CARD 24

10 Record the status of the OC-3 two port interface paddelboard (see the MS MAP level diagram in this step).

The following is a sample MAP display.

XAC MScomm minor (continued)

MS Card MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


MS
 0 Quit          Message Switch      Clock       Shelf  0      Inter-MS Link 0 1
 2          MS 0       .            M Free              .                   - -
 3          MS 1       .            Slave               F                   - -
 4
 5          Shelf  0                 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 6 Tst_     Card   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7 Bsy_     Chain
 8 RTS_     MS 0   . . . - . - - - - - - - - - - - - - - - - . . . . .
 9          MS 1   . . . - . - - - - - - - - - - - - - - - - . . . . .
10 LoadMS_
11          Card 24 CMIC Interface Card       Port: 0
12 SwMast   MS 0         .                         .
13 Shelf    MS 1         .                         S
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

11 Examine the MS Card MAP level.

If the MS MAP level indicates	Do
an OC-3 two-port interface paddleboard port is OOS (ManB)	step 12
an OC-3 two-port interface paddleboard port is OOS (SysB)	step 13
a different alarm	step 20
all OC-3 two-port interface paddleboard ports are InSv	step 22

12 Determine the reason why the OC-3 two-port interface paddleboard is in a ManB state. If there are no maintenance activities in progress, return the OC-3 two-port interface paddleboard port to service.

>RTS <ms_#>

and press the Enter key

where

<ms_#> is the number of the message switch

Example of command:

XAC MScomm
minor (continued)

>RTS 0

If the MS MAP level indicates	Do
the OC-3 two-port interface paddleboard is InSv and a port is SysB	step 13
the OC-3 two-port interface paddleboard is not InSv	step 18

13 Test the suspect message switch port. At the MS Card MAP level type

>TST <ms_#> <port_#>

and press the Enter key

where

<ms_#> is the number of the message switch

<port_#> is the number of the message switch port

Example of command:

>TST 1 0

If the MS port test	Do
fails and the link is OOS	step 14
passes and all links are InSv	step 19

At the XA-Core physical shelf

14 Replace the fiber optic cable that match the OOS link. Disconnect the fiber optic cable from the OC-3 two-port interface packlet and OC-3 two-port interface paddleboard. Wait until call processing volume is low.

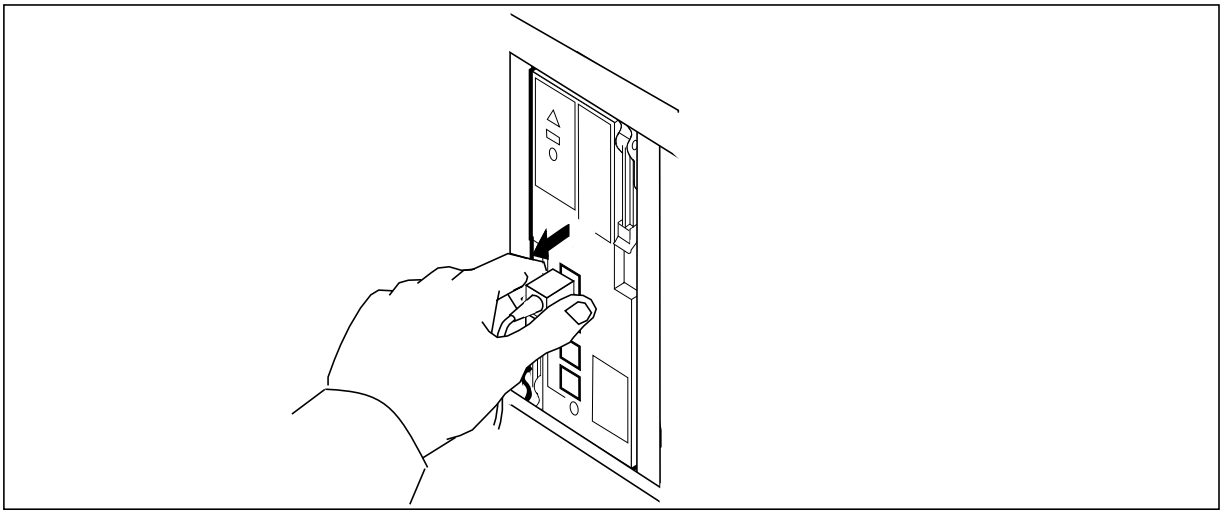
a Carefully pull the fiber optic connector away from the port receptacles. Hold the connector by the body only

b Cover the ends of the fiber optic cable with dust caps.

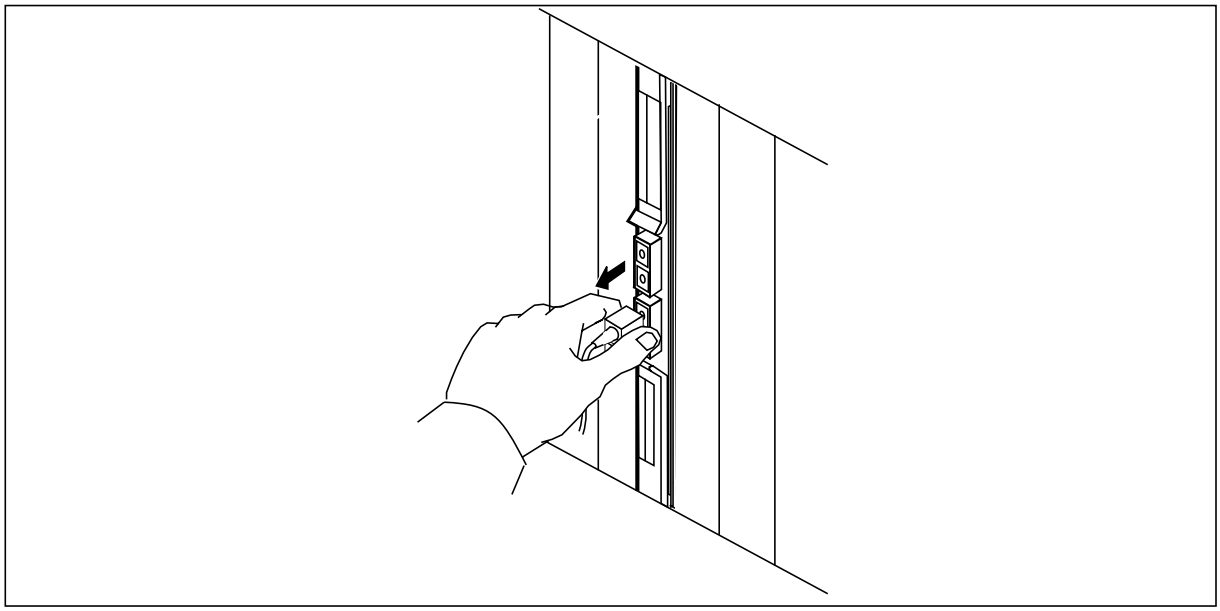
c Place the fiber optic cable in a safe location away from the physical shelf.

XAC MScomm
minor (continued)

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



Disconnect the OC-3 fiber optic cables from the OC-3 two port interface paddleboard ports



If you are	Do
replacing the fiber optic cable	step 15
replacing the OC-3 two-port interface packlet	step 16

XAC MScomm
minor (continued)

If you are	Do
replacing the OC-3 two-port interface paddleboard	step 18

15 Connect the replacement fiber optic cable to the correct port (see link configuration diagrams in this step).

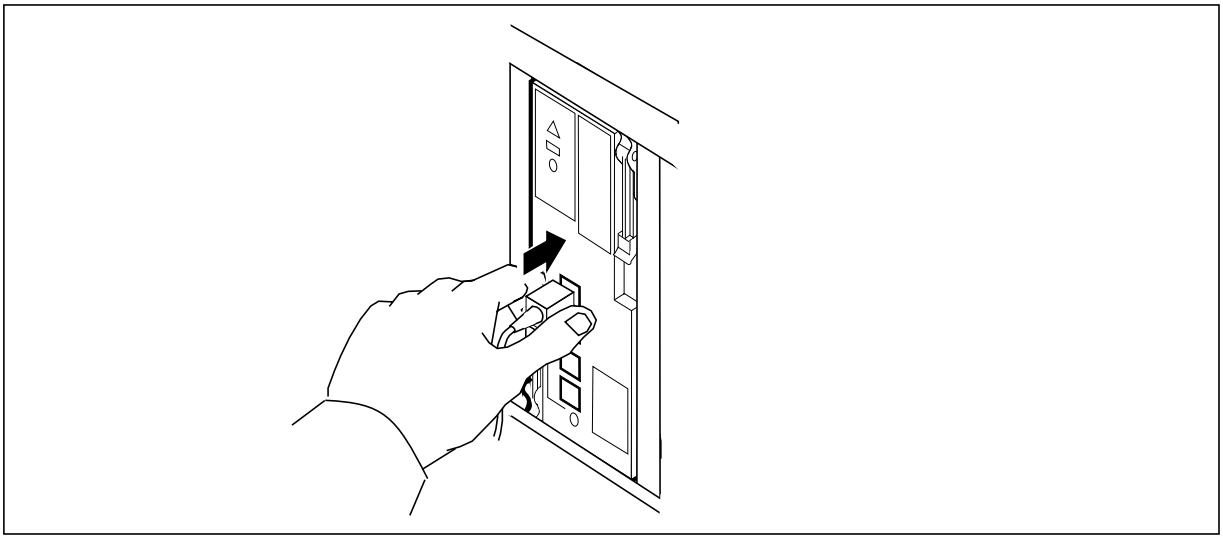
a Hold the fiber optic cable connector by the body only.

b Remove the dust caps from the ends of the fiber optic cable.

c Clean the tips of the fiber optic cables. Use the correct fiber optic cleaning procedure.

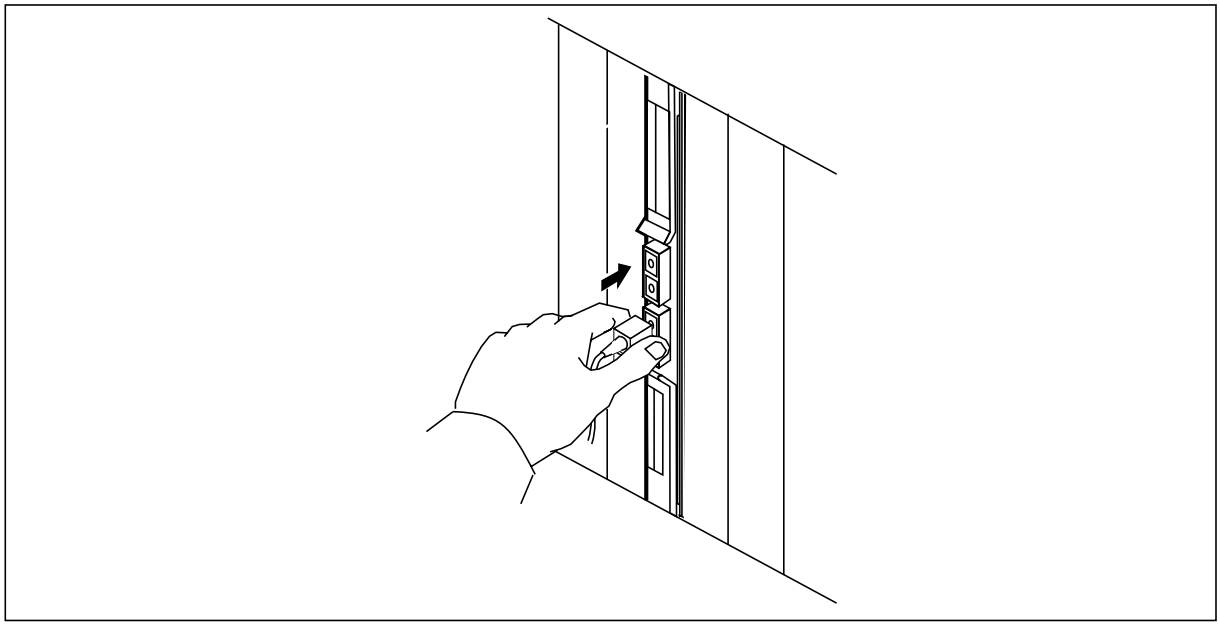
d Carefully insert the connectors into the correct receptacles.

Connect the fiber optic cables to the OC-3 two port interface packlet ports

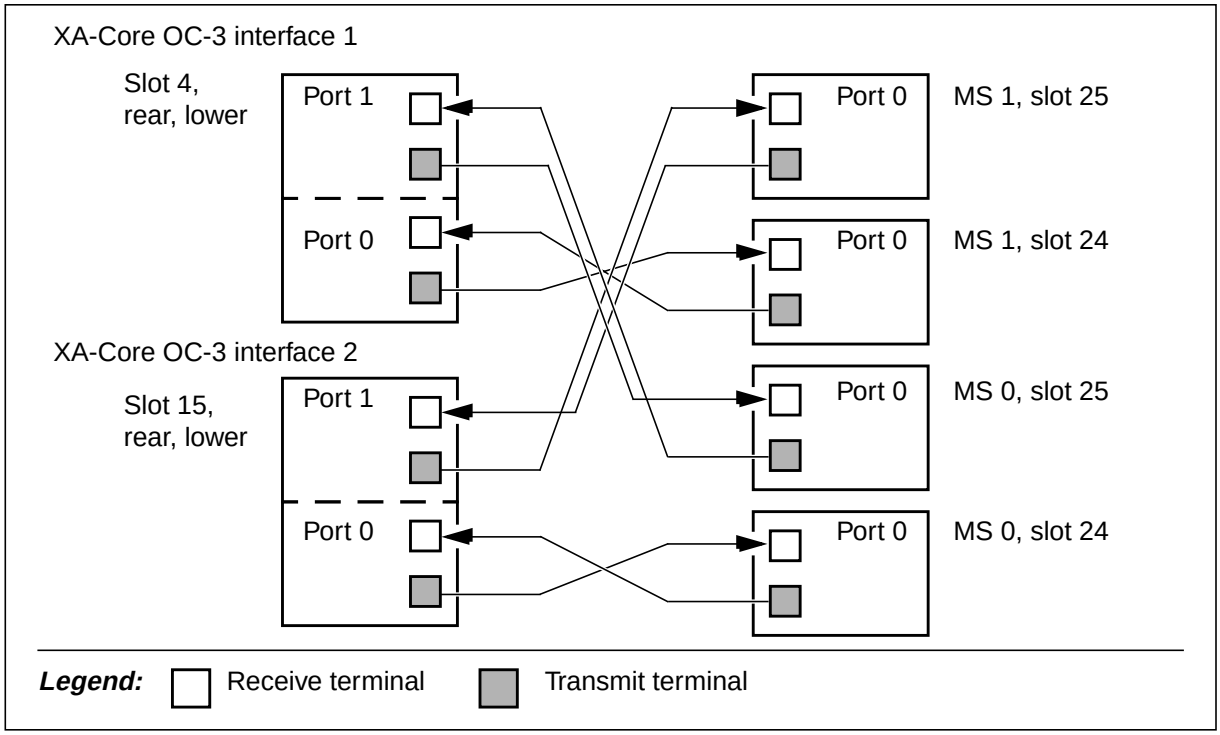


XAC MScomm
minor (continued)

Connect the fiber optic cables to the OC-3 two port interface paddleboard ports

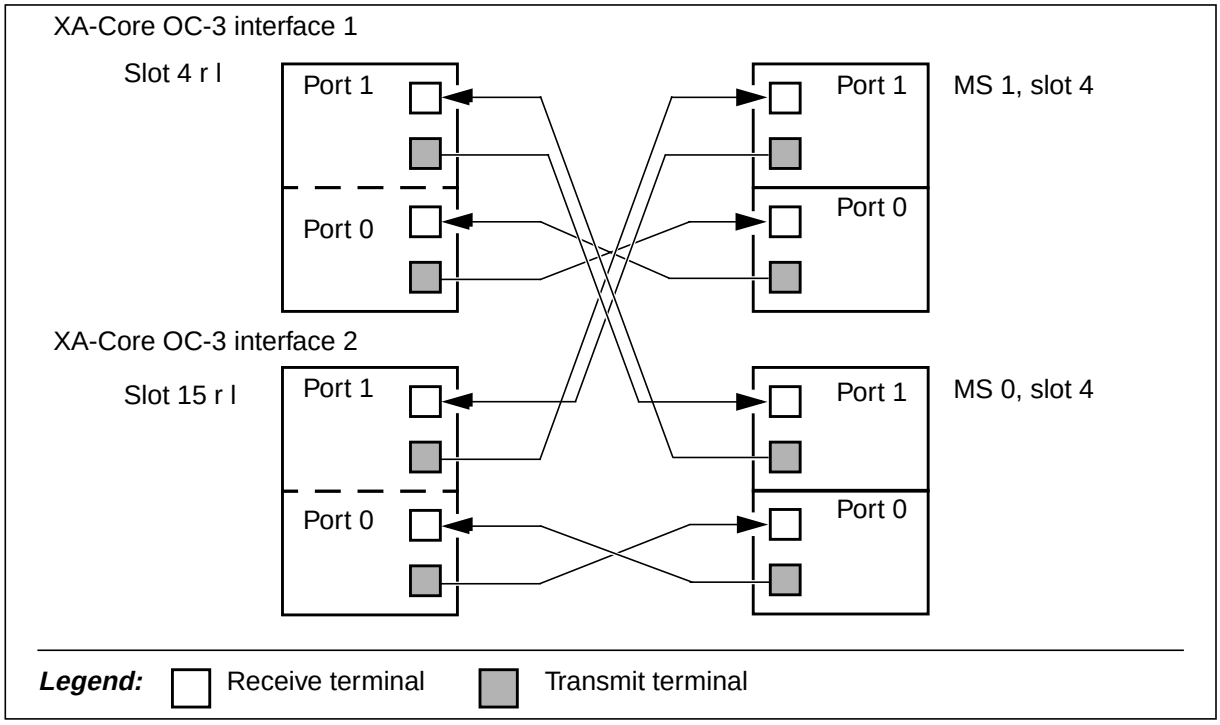


XA-Core and MS fiber optic cable connections (SuperNode)



XAC MScomm
minor (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



If the MS Card MAP level shows that the link is	Do
InSv	step 19
not InSv	step 18

At the XA-Core MAP

16 Perform the OC-3 two-port interface packlet replacement procedure. Wait until call processing volume is low. Refer to the correct packlet replacement procedure in this NTP. Return to this point when complete.

If the packlet replacement is	Do
successful	step 19
not successful	step 21

XAC MScomm **minor** (end)

17 Perform the OC-3 two-port interface packlet replacement procedure immediately. Refer to the correct packlet replacement procedure in this NTP. Return to this point when complete.

If the packlet replacement is	Do
successful	step 19
not successful	step 21

18 Perform the OC-3 two-port interface paddleboard replacement procedure. Wait until call processing volume is low. Refer to the correct NTP in this documnet. Return to this point when complete.

If the OC-3 two-port interface paddleboard replacement is	Do
successful	step 19
not successful	step 21

19 Confirm that the alarm is clear. Examine the alarm banner on the CMIC MAP level.

If the CMIC MAP indicates	Do
a different alarm	step 20
the alarm is not clear	step 21
the alarm is clear	step 22

20 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

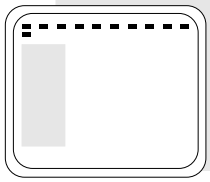
If the alarm is	Do
not clear	step 21
clear	step 22

21 Call the next level of support.

22 You have completed this procedure.

XAC PEtrbl minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
PEtrbl	.	.	.	.	.	.	.	.	.

Indication

A PEtrbl minor alarm code appears under the XAC header of the alarm banner. The alarm code indicates a processor element (PE) trouble minor alarm.

An “I” (in-service trouble indicator) appears in the state field in the shelf layout area. The indicator appears directly below the number that matches the circuit pack (CP) location in the physical shelf slot.

Meaning

The state of the PE CP has changed from in-service (InSv) to in-service trouble (IsTb). The state change indicates a non-critical fault on a PE CP.

Impact

There is no change in subscriber service. To minimize service degradation, test or replace the PE CP when call traffic is low.

Common procedures

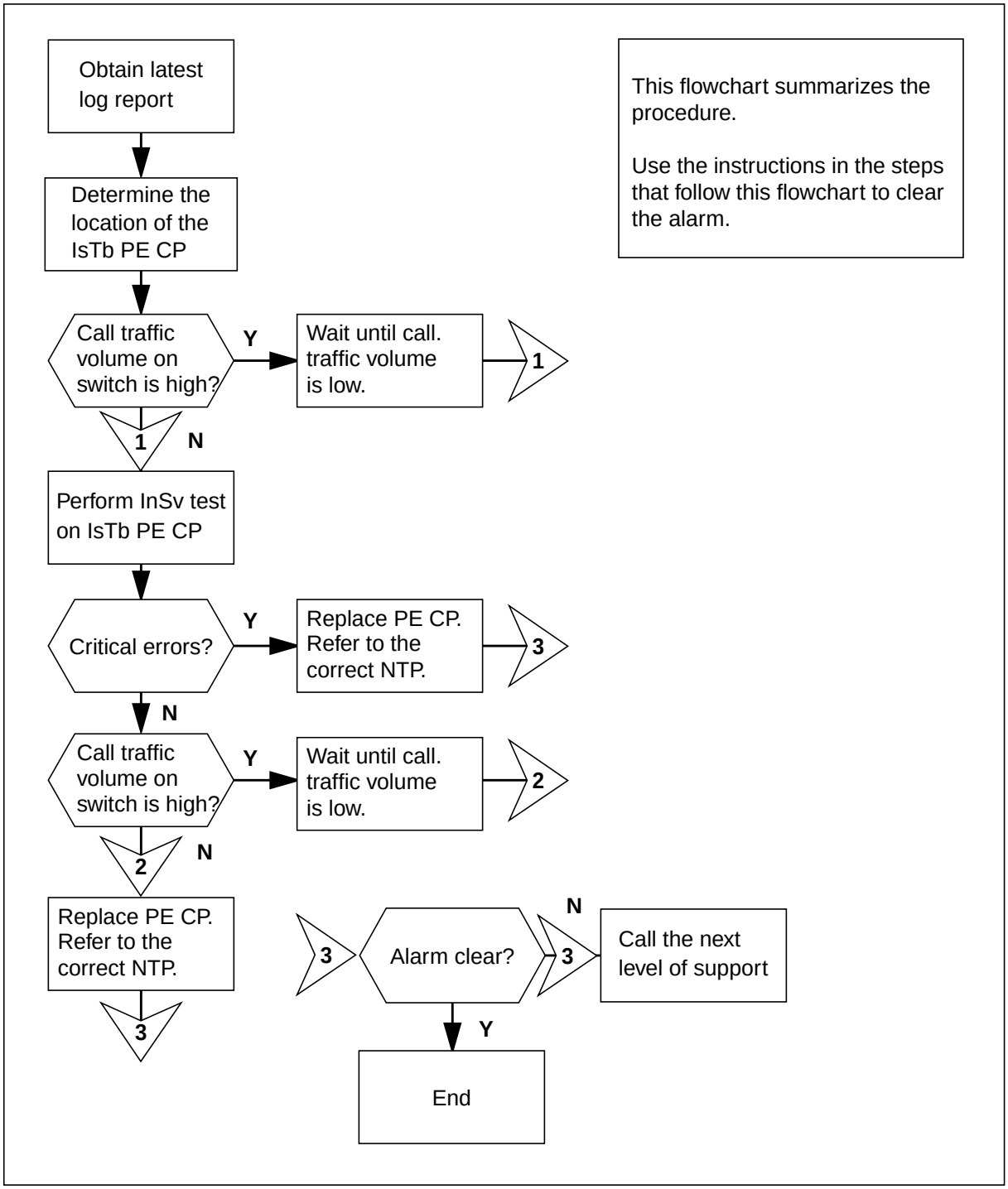
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC PEtrbl minor (continued)

Summary of clearing a PEtrbl minor alarm



XAC PEtrbl
minor (continued)

How to clear a PEtrbl minor alarm

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC PEtrbl
minor (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the PEtrbl alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a PEtrbl minor condition	4
another alarm condition	11
that the alarm condition is clear	13

2 Examine the shelf interface modules (SIMs). Make sure that all circuit breakers are in the ON position. Make sure that the green LEDs are lit.

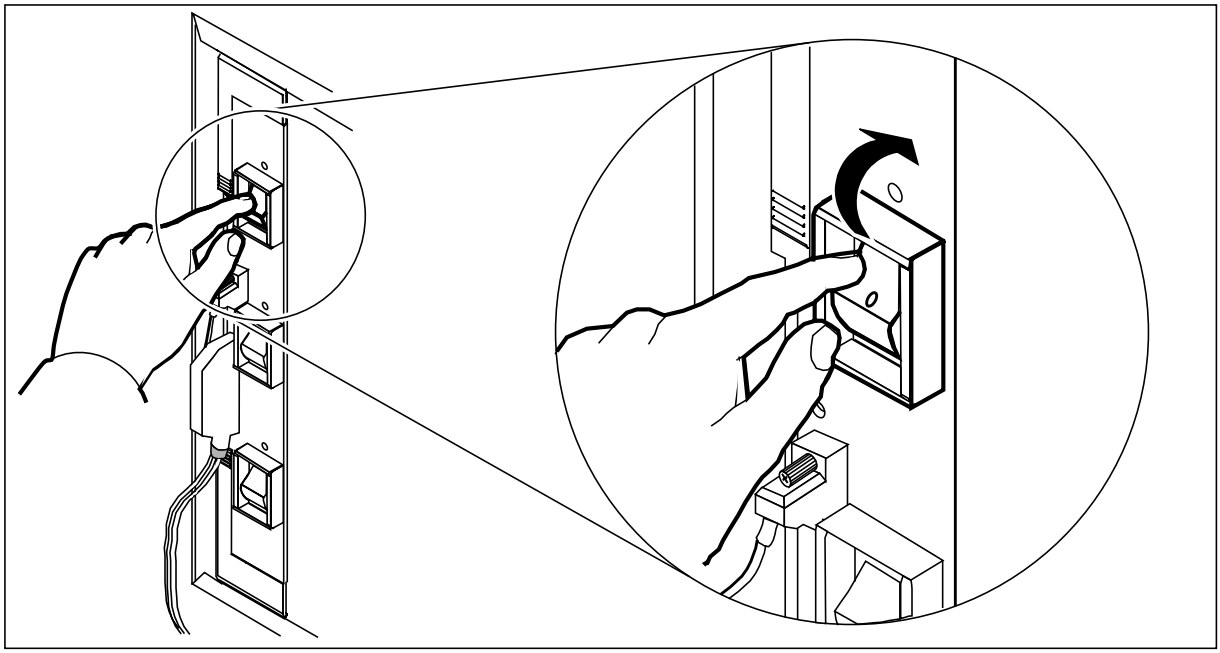
If SIM circuit breakers are	Do
in the OFF position and a red led is lit	3
in the ON position and green leds are lit	4

3 Set the shelf interface module (SIM) circuit breaker to the ON position (see the diagram in this step). Wait 30 sec.

Example

XAC PEtrbl
minor (continued)

Set circuit breaker on the SIM to the ON (1) position



If SIM circuit breaker	Do
resets to the ON position	4
does not reset to the ON position	12

4 Access the PE MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;PE

and press the Enter key.

5 Examine the PE MAP level. Record the location of the IsTb PE CP.

Note: The PE MAP level displays alarms and PE working states as follows:

- a system alarm code appears under the XAC header in the alarm banner
- an equipment alarm codes appears under the PE header in the subsystem status summary field (SSSF)
- an "I" (in-service trouble indicator) appears in the state field in the shelf layout area.

Example

XAC PEtrbl
minor (continued)

PE MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
PEtrbl.    .       .        .       .        .        .       .       .

PE                    Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit               123456789012345678  456789012345   .      PEfl    .      .
 2                Sta: -.-I.-..-..-..-..-  .--.--------.   0      0       0      0
 3                Dep:
 4                Typ:    **        *  *
 5                 PE:
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10 LoadFW
11
12 Uneq_
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a PE CP is in an IsTb state	6
a different alarm	11
no alarm and all CPs are in service	13

6 When traffic call volume is low, perform an in-service test on the IsTb PE CP. At the PE MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 f

XAC PEtrbl
minor (continued)

Example of system response:

```
Tst 4 front failed.
```

If the InSv test	Do
passed	7
did not pass	9

7 Return the PE CP to service. At the PE MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 f

Example of system response:

```
RTS 4 front passed
```

If the PE CP is	Do
not in an InSv state	8
in an InSv state and the IsTb alarm is active	9
in an InSv state and the IsTb alarm is clear	10

At the XA-Core physical shelf

8 Perform the PE CP replacement procedure immediately. Refer to the correct replacement procedure located in this document. Continue to 10 when complete.

9 Wait until call traffic volume is low. Perform the PE CP replacement procedure. Refer to the correct replacement procedure located in this document. Return to this point when complete.

XAC PEtrbl minor (end)

10 Confirm that the alarm is clear. Examine the PE MAP screen.

If the PEtrbl minor alarm is	Do
changed to different alarm	11
not clear	12
clear	13

11 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

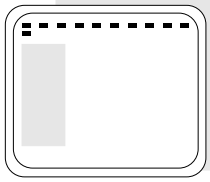
If the alarm is	Do
not clear	12
clear	13

12 Call the next level of support.

13 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC RExSch minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RExSch	.	.	.	.	.	.	.	.	.

Indication

A RExSch minor alarm code appears under the XAC header of the alarm banner. The alarm code indicates a routine exercise (REx) schedule minor alarm.

Meaning

The RExSch minor alarm indicates the cancellation of two, consecutive system daily REx (SREx) tests.

Each day, maintenance system software starts the REx test at 1:30am and ends at 3:30am (system time). If call volume or CPU occupancy is high at the time of the REx test, the system places critical REx test requests in a queue. The maintenance software continues to perform REx tests on non-critical subsystems. When the tests on non-critical components are complete, the maintenance software again tries to perform the critical tests. If call volume or CPU occupancy is low, the system can complete the critical REx tests. If the system cannot complete the critical tests, the RExSch minor alarm appears in the alarm banner.

The RExSch alarm notifies operating company personnel that the system is not performing the REx test maintenance function. The system must perform a system REx test to clear the RExSch minor alarm. A manual REx test won't clear the RExSch minor alarm.

The XA-Core system cancels a REx test for the following reasons:

- XACORE_REX_TEST tuple values are not correct (Table RExSched)
- processor occupancy is equal to, or greater than 40% of capacity
- failed REx pre-test check
- insufficient elapsed time between the last restart and system REx test
- a circuit pack (CP) is out of service (OOS)

XAC RExSch
minor (continued)

- memory mismatch or processor trap conditions
- inability to contact system software

Impact

There is no change in subscriber service.

Common procedures

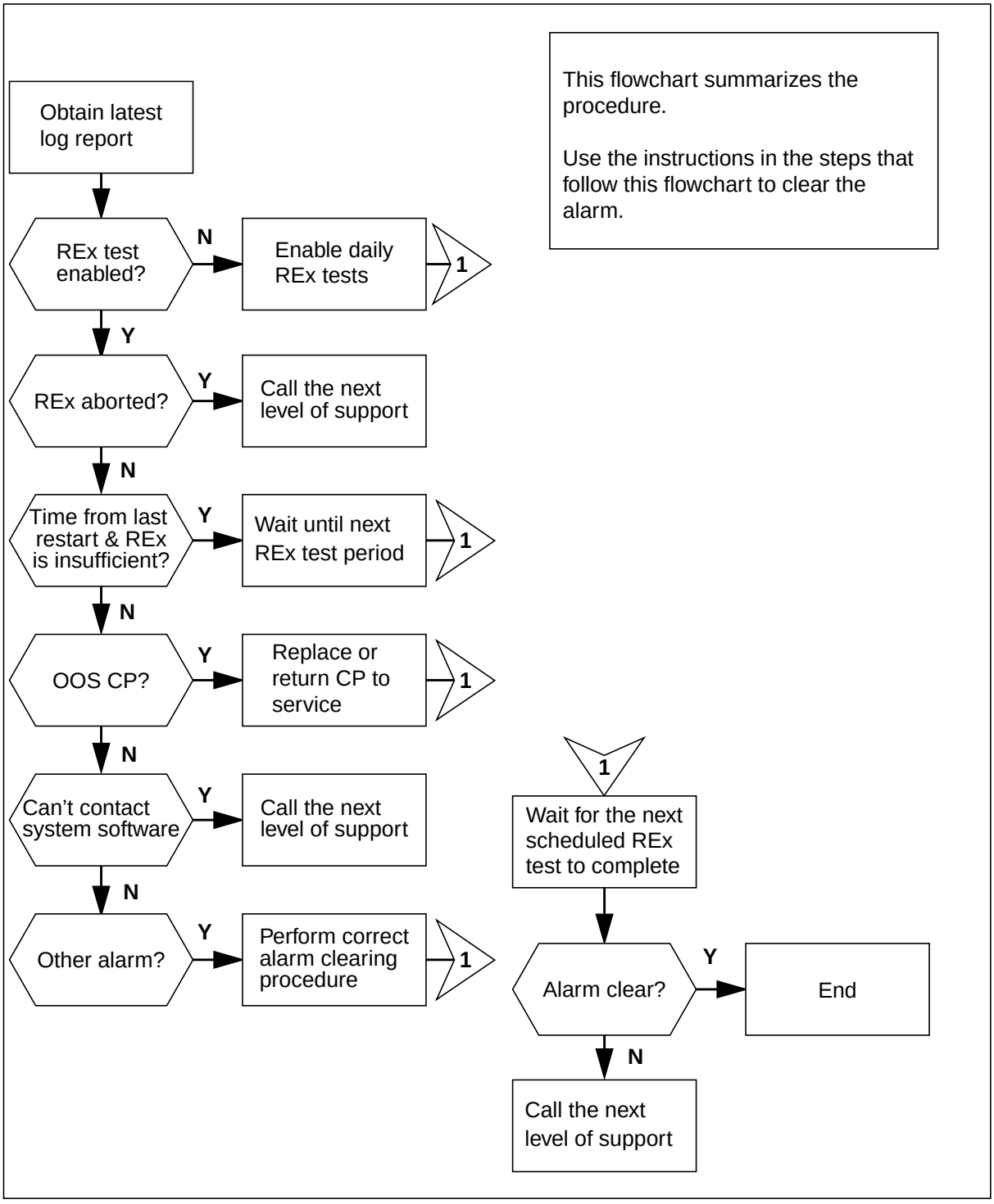
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RExSch
minor (continued)

Summary of clearing a RExSch minor alarm



XAC RExSch minor (continued)

How to clear a RExSch minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the RExSch alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a RExSch minor alarm condition because the REx test is not enabled	step 2
a RExSch minor alarm condition because the REx pre-check failed	step 7
a RExSch minor alarm condition because a CP or packlet is OOS	step 8
a RExSch minor alarm condition because the time between the last restart and REx is insufficient (less than 1 day)	step 11
another alarm condition	step 13
that the alarm condition is clear	step 15

2 Access the XACMtc MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;XACMTC

and press the Enter key.

XAC RExSch
minor (continued)

3 Examine the XACMtc MAP level. Record the results and date of the last run REx test. Record the location of any OOS CPs or packlets.

Note: The XACMtc MAP level displays the RExSch alarm code under the XAC header in the alarm banner.

The following is a sample MAP display.

XACMtc MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
RExSch     .       .        .        .       .        .       .       .       .


XACMtc          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      .
 2        Sta: -.-.--..-..----..-  .--.--------.   0      0       0      0
 3        Dep:
 4
 5
 6
 7        Traps:       Per Minute:  = 0           Total = 1
 8        Last Image run at:     1999/02/15 13:13
 9               restart type= reload
10                 Result    = pass
11 Image  Last XARExTst run at:  1999/03/15 14:25
12 RExTst_Last XARExTst Type:    full
13 RExInt_Last XARExTst Result:  notRun
14 Alarm_
15       XACMTC:
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a RExSch minor alarm and all CPs and packlets are InSv	step 4
a RExSch minor alarm and a CP or packlet is OOS	step 8
a different alarm	step 13
no alarm	step 15

4 Access and examine the REXSCHED table.

a Display the CI MAP level prompt. At the XACMtc MAP level, type

>QUIT ALL

and press the Enter key.

b Access the REXSCHED table. At the CI MAP level prompt type

XAC REx Sch
minor (continued)

>TABLE REXSCHED

and press the Enter key.

c List all of the system REx test schedule tuples. At the CI MAP prompt type

>LIST ALL

and press the Enter key.

The CI MAP level displays the system REx schedule tuples for the message switch (MS) and the XA-Core. Examine the field values in the XACORE_REX_TEST tuple (see the example system response in this step)

Example of system response:

```
TOP
REXTSTIDENABLEPERIODPARALLELDAYSDSBL

------------------------------------------------------
----
MS_REX_TESTY11NONE
XACORE_REX_TESTY11NONE
BOTTOM
```

Note 1: The Enable field enables or disables the ability of the REx controller to run system REx tests. The Enable field can have a value of Y (Yes) or N (No).

Note 2: The Period field controls the daily interval between system REx tests. The Period field can have a value of 1 - 7. A Period field value of 1 tells the REx controller to run the REx test one time each day. A Period field value of 2 tells the REx controller to run the system REx test one time every second day. A Period field value of 3 tells the REx controller to run the system REx test one time every third day.

Note 3: The Parallel field value controls the number of parallel REx tests to run. A Parallel field value of 1 tells the REx controller to run serial system REx tests. A Parallel field value of 2 tells the REx controller to run parallel system REx tests.

Note 4: The DAYSDSBL field value controls the day to disable a regular, system REx test. The DAYSDSBL field values are MON, TUE, WED, THU, FRI, SAT, SUN, ALL, NONE.

5 Make sure that all XACORE_REX_TEST field values match those in the REXSCHED table example in 4.

If the tuple field values are	Do
not the same	step 6
the same	step 7

6 Change the XACORE_REX_TEST field values to match those in the example in c.

a Edit the XACORE_REX_TEST table. At the CI MAP prompt type

XAC RExSch
minor (continued)

>POS XACORE_REX_TEST

and press the Enter key.

Example of system response:

```
XACORE_REX_TESTY11NONE
```

b At the CI MAP prompt type

>CHA

and press the Enter key.

Example of system response:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

c At the CI MAP prompt type

>Y (to continue with the edit process)

and press the Enter key. The MAP displays the current Enable field value.

Example of system response:

```
ENABLE: Y/N
```

d Make sure the Enable field value is correct. If the Enable field has a current value of Y (Yes), press the Enter key to accept.

If the Enable field has a current value of N (No), type

>Y

and press the Enter key. The MAP displays the current Period field value.

Example of system response:

```
PERIOD: 1
```

e Make sure the Period field value is correct. If the Period field has a current value of 1, press the Enter key to accept.

If the Period field has a current value of 2, type

>1

and press the Enter key. The MAP displays the current Parallel field value.

Example of system response:

```
PARALLEL: 1
```

f Make sure the Parallel field value is correct. If the Parallel field has a current value of 1, press the Enter key to accept.

If the current Parallel field value is set to 2, type

>1

XAC RExSch
minor (continued)

and press the Enter key. The MAP displays the edit changes and a prompt to confirm, reject or edit the changes.

Example of system response:

```
TUPLE TO BE CHANGED:
MS_REX_TESTY11NONE
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

g If the changes to the MS_REX_TEST tuple match the values shown in this step, type

>Y

and press the Enter key.

7 Examine the Maintenance Activity MAP level to determine CPU occupancy. At the CI MAP prompt, type

>MAPCI;MTC;ACTIVITY

and press the Enter key.

The following is a sample MAP display.

Maintenance activity MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
RExSch     .       .       .       .       .       .       .       .       .


  MTC                 CpOcc BAvgDel 95%BLim   RTrip
 0 Quit                40%   36ms   275ms    ----
 2 Activity
 3
 4 SRSTATUS
 5
 6 CPSTATUS
 7
 8
 9 XAC
10 MS
11 IOD
12
13
14
15
16
17
18 APPL

  XMAP0
Time  14:12   >
```

If the MAP indicates	Do
CPU occupancy is less than 40%	step 8

XAC RExSch
minor (continued)

If the MAP indicates	Do
CPU occupancy is greater than or equal to 40%	step 14
no alarm	step 15

8 Make sure that all CPs and packlets are in an InSv state.

If CPs and packlets are	Do
in a ManB state	step 9
in a SysB state	step 10
in an InSv state	step 11

9 Return ManB CPs or packlets to service.

a Display the MAP level appropriate to the ManB CP or packlet type

b Return the ManB CP or packlet to service. At the correct MAP level type

>RTS <nn> <s> (if a CP is ManB)

or

>RTS <nn> <s> <p> (if a packlet is ManB)

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f (for a CP)

or

>RTS 2 f l (for a packlet)

Example of system response:

```
RTS 2 front lower passed
```

If the CP is or packlet is	Do
in a SysB state	step 10
in an IsTb state	step 13
in an InSv state	step 12

XAC RExSch minor (end)

10 Perform the correct CP or packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the CP or packlet is	Do
InSv	step 11
not InSv	step 14

11 Wait until the system performs the next scheduled REx test.

If the system	Do
performs the REx test	step 12
does not perform the REx test	step 14

12 Confirm that the alarm is clear. Examine the XACMtc MAP level.

If the alarm is	Do
changed to another alarm	step 13
not clear	step 14
clear	step 15

13 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

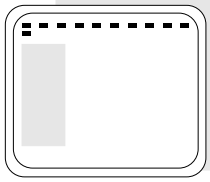
If the alarm is	Do
clear	step 11
not clear	step 14

14 Call the next level of support.

15 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed.

XAC RExTst minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RExTst	.	.	.	.	.	.	.	.	.

Indication

A RExTst minor alarm code appears under the XAC header of the alarm banner. The alarm code provides notification that the XA-Core software is performing REx tests.

Meaning

The RExTst alarm tells operating company personnel that a REx test is in progress. The purpose of a REx test is to make sure that XA-Core system components are functioning correctly.

By default, the XA-Core system automatically performs a REx test as follows:

- a daily, base, in-service (InSv) tests on all circuit packs in all subsystems
- a full, out-of-service (OOS) test on one circuit pack in each subsystem each week
- an Image test each day

Impact

The REx test performs both InSv and OOS tests on selected circuit packs (CPs). The REx test takes a period of time to complete. There is no immediately change to subscriber service. There can be a reduction in device redundancy during testing.

The RExTst alarm is the highest priority of all XA-Core alarms. The RExTst alarm masks other alarms related to out-of-service (OOS) CP states. If a REx test reduces device redundancy, a major or critical alarm can occur.

A restart can occur if the XA-Core cannot communicate with the following XA-Core equipment:

- single remaining Core-MS Interconnect (CMIC) interface
- single remaining PE

XAC RExTst
minor (continued)

Common procedures

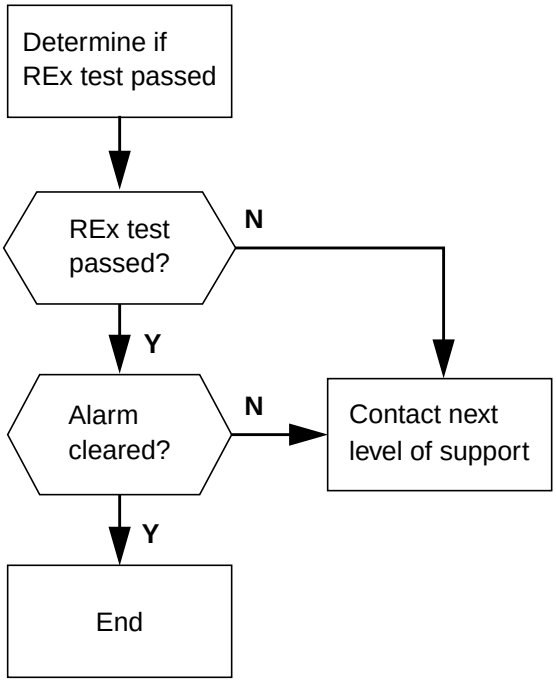
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RExTst
minor (continued)

Summary of clearing a RExTst minor alarm



This flowchart summarizes the procedure.

Use the instructions in the steps that follow this flowchart to clear the alarm.

XAC RExTst
minor (continued)

How to clear a RExTst minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION

Loss of service

Do not repeat steps.

At your current location

1 Collect information from the log report system.The log messages provide information about the source of the LowSM alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
REx started condition	step 2
another alarm event	step 6

XAC RExTst
minor (continued)

If the log indicates	Do
the RExTst summary report	step 8

2 Access the XA-Core maintenance (XACMtc) MAP level. At the CI MAP level type

MAPCI;MTC;XAC;XACMTC

and press the Enter key.

3 Examine the XACMtc MAP level.

Note: The XACMtc MAP displays a RExTst alarm under the XAC header in the alarm banner

The following is a sample MAP display.

XACMtc MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
RExTst     .       .       .       .       .       .       .       .       .


XACMtc          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit        123456789012345678  456789012345   .      .       .      .
 2       Sta: -.-.--..-..----..-  .--.-------.   0      0       0      0
 3       Dep:
 4
 5
 6
 7       Traps:       Per Minute:  = 0           Total = 1
 8       Last Image run at:     1999/02/15 13:13
 9          restart type= reload
10            Result    = pass
11 Image Last XARExTst run at:  1999/03/15 14:25
12 RExTst_ Last XARExTst Type:    full
13 RExInt_ Last XARExTst Result:  notRun
14 Alarm_
15      XACMTC:
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the XA-Core XACMtc MAP indicates	Do
a RExTst alarm	step 4
a different alarm	step 6
not accessible	step 7

XAC RExTst minor (end)

4 Examine the MAP command interpreter output area. The MAP output area displays the subsystem now under test. Allow the REx test to complete.

If the MAP indicates	Do
errors on completion of the REx test or the REx test terminated	step 5
a different alarm	step 6
successful completion of the REx test, no alarm and all CPs and packlets are in service	step 8

5 Determine the reason for the REx test interruption or errors.

If the cause for REx test error is	Do
related to a trap rate threshold, clock, or subsystem equipment fault	step 6
not indicated	step 7

6 Perform the correct alarm clearing procedure. Refer to the correct alarm clearing NTP. Return to this point when complete.

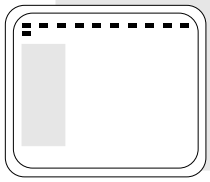
If the alarm is	Do
not clear	step 7
clear	step 8

7 Call the next level of support.

8 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC RIBkey major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RIBkey M	.	.	.	.	.	.	.	.	.

Indication

A retrofit inactive boot key (RIBkey) major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a RIBkey major alarm.

Meaning

The RIBkey major alarm indicates that both RTIF local ports have the RIBkey device attached.

A RIBkey is a device connected to the local port on each of the XA-Core reset terminal interfaces (RTIFs). The RIBkey is an installation tool used during an upgrade or cut-over process to an XA-Core system. Installation personnel remove the RIBkeys on completion of switch of activity (SWact) and when the XA-Core is in-service.

Impact

There is no immediate change in subscriber service. The XA-Core is in service after the switch activity (SWact) process is complete. The MAP displays the RIBkey major alarm. If the RIBkey devices remain installed and if an XA-Core reboot occurs, the system cannot process calls.

Common procedures

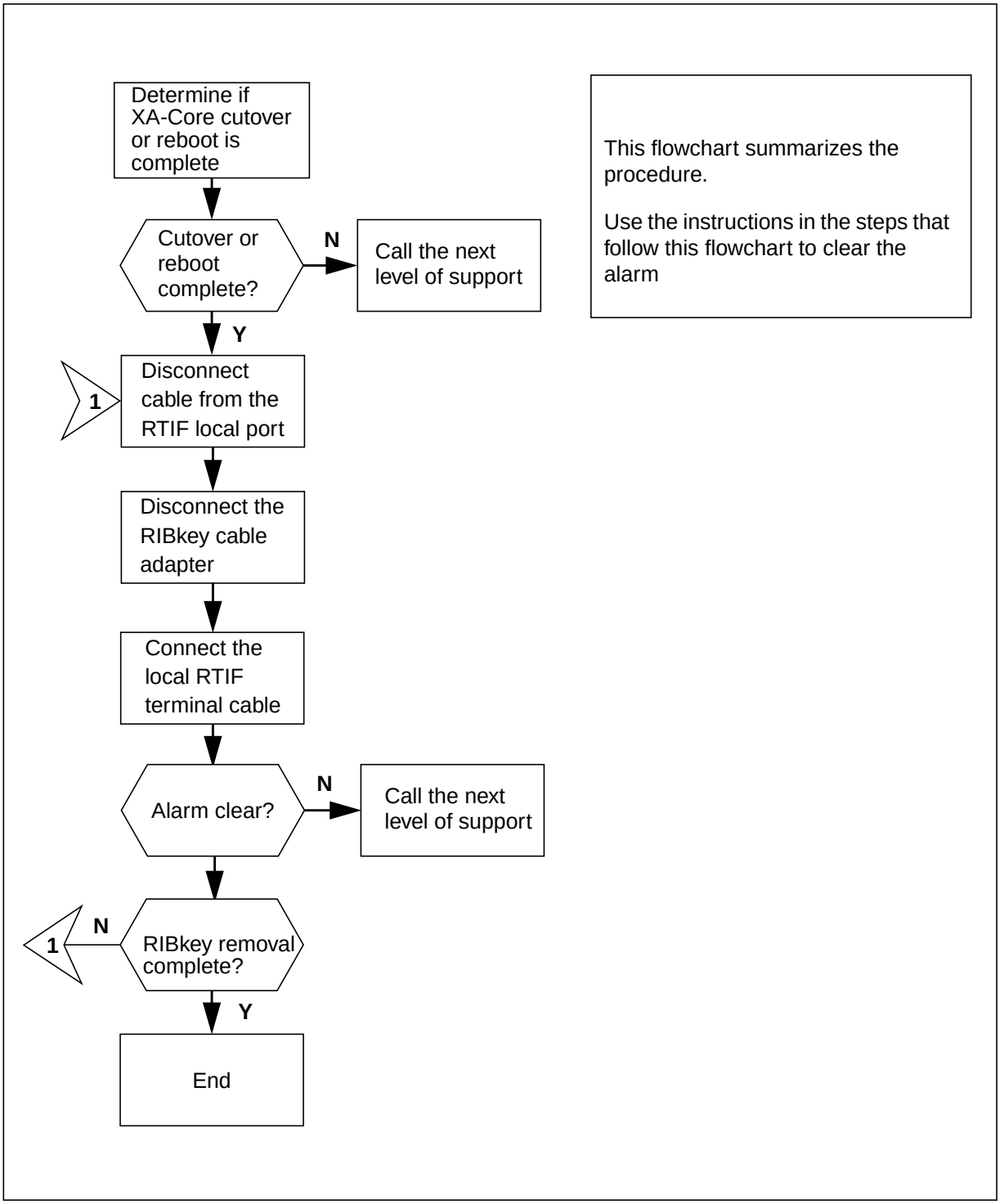
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RIBkey major (continued)

Summary of clearing a RIBkey major alarm



XAC RIBkey
major (continued)

How to clear a RIBkey major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING

Terminal cable connector damage

Exercise care in handling cables. Do not bend the cable pin connectors.

CAUTION

Loss of service

Do not repeat steps.

XAC RIBkey
major (continued)

At the XACore MAP

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the RIBkey alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a RIBKey major alarm condition	step 2
another alarm condition	step 9
that the RIBkey major alarm condition is clear	step 11

2 Determine from office records or from maintenance or installation personnel that the XA-Core installation process is complete.

If the XA-Core installation process is	Do
complete	step 3
incomplete	step 10

3 Access the XA-Core RTIF MAP. At the CI MAP level type

>MAPCI;MTC;XAC;RTIF

and press the Enter key.

4 Examine the RTIF MAP level. Record the location and status of the RTIFs and IOP CPs.

Note: The RTIF MAP level can display alarms as follows:

- a RIBkey major alarm under the XAC header in the alarm banner.
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF).
- a RIBkey notification appears under the Local Port header in the command interpreter output area.

XAC RIBkey
major (continued)

The following is a sample MAP display.

RTIF MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 RIBkey    .        .        .        .        .        .        .         .        .
  M
RTIF
 0 Quit          Front:   111111111  Rear: 111111   SM       PE        IO       PKLT
 2               123456789012345678  456789012345   .        .         .        RIBkey
 3         Sta:  -.----..-.---.-..-  .--.--------.   0        0         0        0
 4         Dep:
 5         Typ:                      *           *
 6 Tst_    Slot: Side:   Packlet:    Status:  Local Port:  Remote Port:
 7 Bsy_      4   Rear    Upper       .        RIBkey       .
 8 RTS_     15   Rear    Upper       .        RIBkey       .
 9          RTIF:
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time 14:12   >
```

If the MAP indicates	Do
a RIBkey major alarm	step 5
a different alarm	step 9
no alarm and all CPs are in service	step 11

At the XA-Core physical shelf

5 Disconnect the terminal cable from the RIBkey device. Perform this step for all RTIF packlets.

- **a** Unscrew the cable connector from the RIBkey receptacle
- **b** Hold the cable connector by the body only
- **c** Carefully pull the cable connector away from the RIBkey device
- **d** Place the remote terminal cable in a safe location away from the physical shelf

6 Disconnect the RIBkey device from the RTIF ports (see the diagrams in this step). Perform this step for all RTIF packlets.

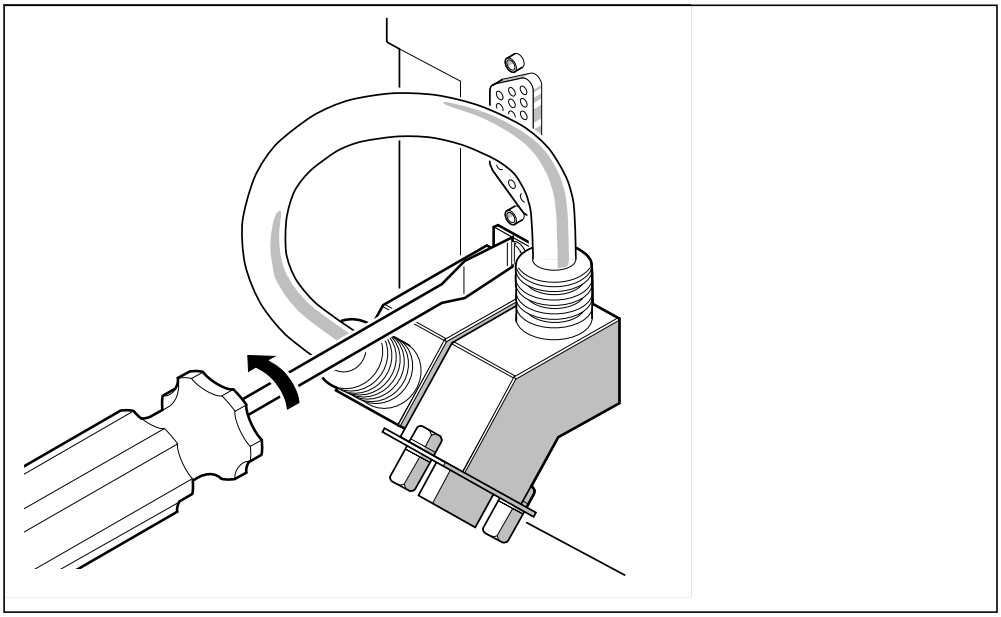
- **a** Unscrew the RIBkey from the RTIF port receptacle

XAC RIBkey
major (continued)

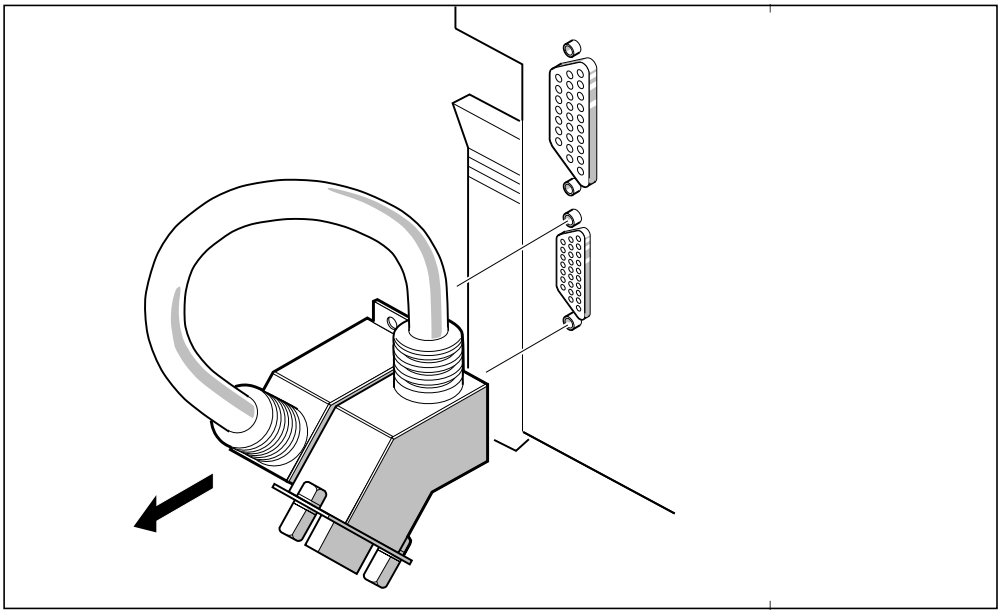
b Hold the RIBkey device by the body only

c Carefully pull the RIBkey device away from the RTIF port receptacle

Unscrew the RIBkey connector



Remove the RIBkey device from the RTIF port receptacle



7 Connect the terminal cables to the RTIF port receptacles. Perform this step for all RTIF packlets.

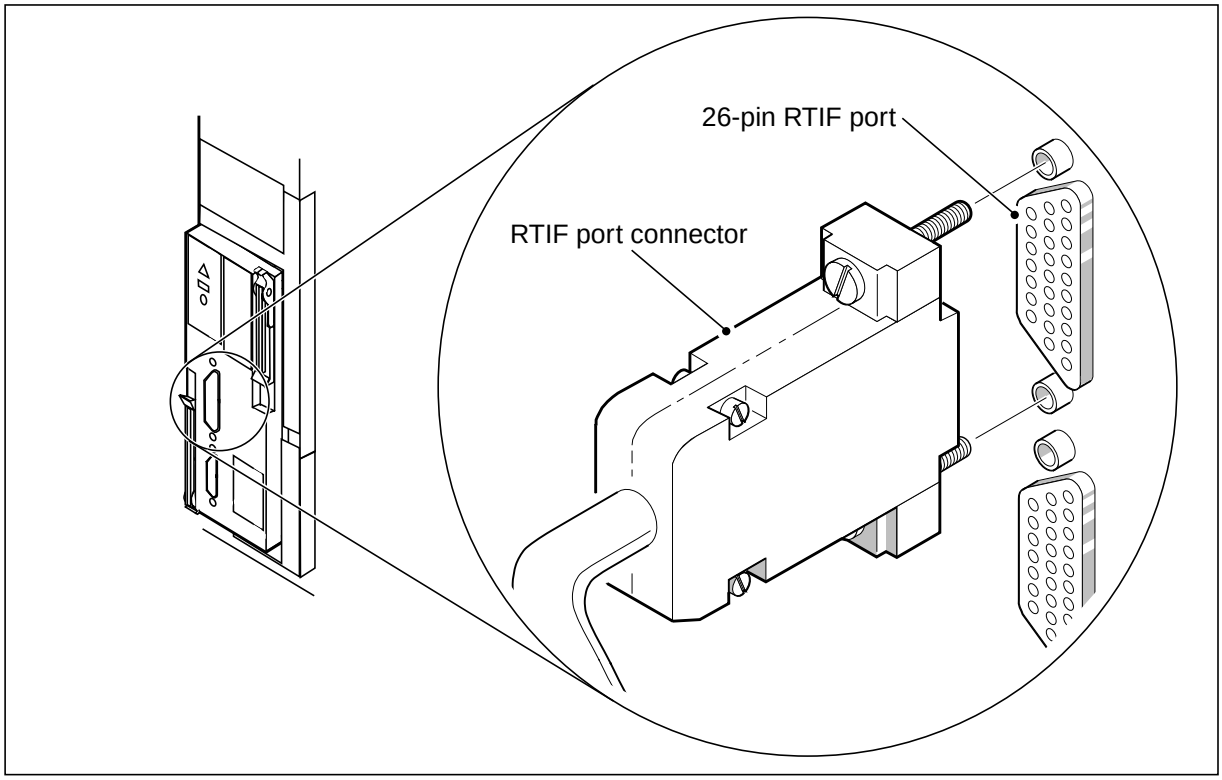
XAC RIBkey
major (continued)

a Hold the terminal connector by the body only.

b Carefully push the connector into the RTIF port receptacle.

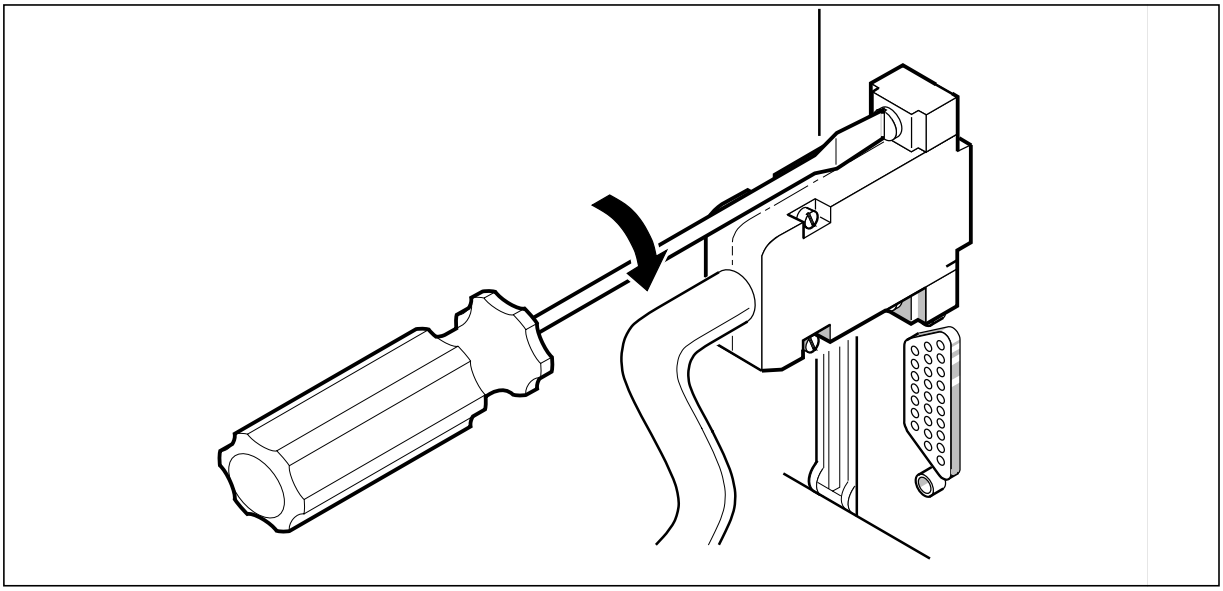
c Screw the terminal connector into the RTIF port connector.

RTIF port receptacles



XAC RIBkey **major** (end)

Connect the terminal cable to the RTIF port receptacle



At the XA-Core MAP

8 Confirm that the alarm is clear. Examine the alarm banner on the RTIF MAP level.

If the RIBkey alarm is	Do
changed to another alarm	step 9
not clear	step 10
clear	step 11

9 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

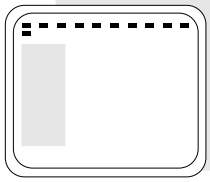
If the alarm is	Do
not clear	step 10
clear	step 11

10 Call the next level of support.

11 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed.

XAC RIBkey minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RIBkey	.	.	.	.	.	.	.	.	.

Indication

A retrofit inactive boot key (RIBkey) minor alarm code appears under the XAC header of the alarm banner. The alarm code indicates a RIBkey minor alarm.

Meaning

The RIBkey minor alarm indicates that a single RTIF local port has a RIBkey device attached.

A RIBkey is a device connected to the local port on each of the XA-Core reset terminal interfaces (RTIFs). The RIBkey is an installation tool used during an upgrade or cut-over process to an XA-Core system. Installation personnel remove the RIBkeys on completion of switch of activity (SWact) and when the XA-Core is in-service.

Impact

There is no immediate change in subscriber service. The XA-Core is in service after the switch activity (SWact) process is complete. The MAP displays the RIBkey minor alarm. If one RIBkey device remains installed, another RTIF goes SysB and an XA-Core reboot occurs, the system cannot process calls.

Common procedures

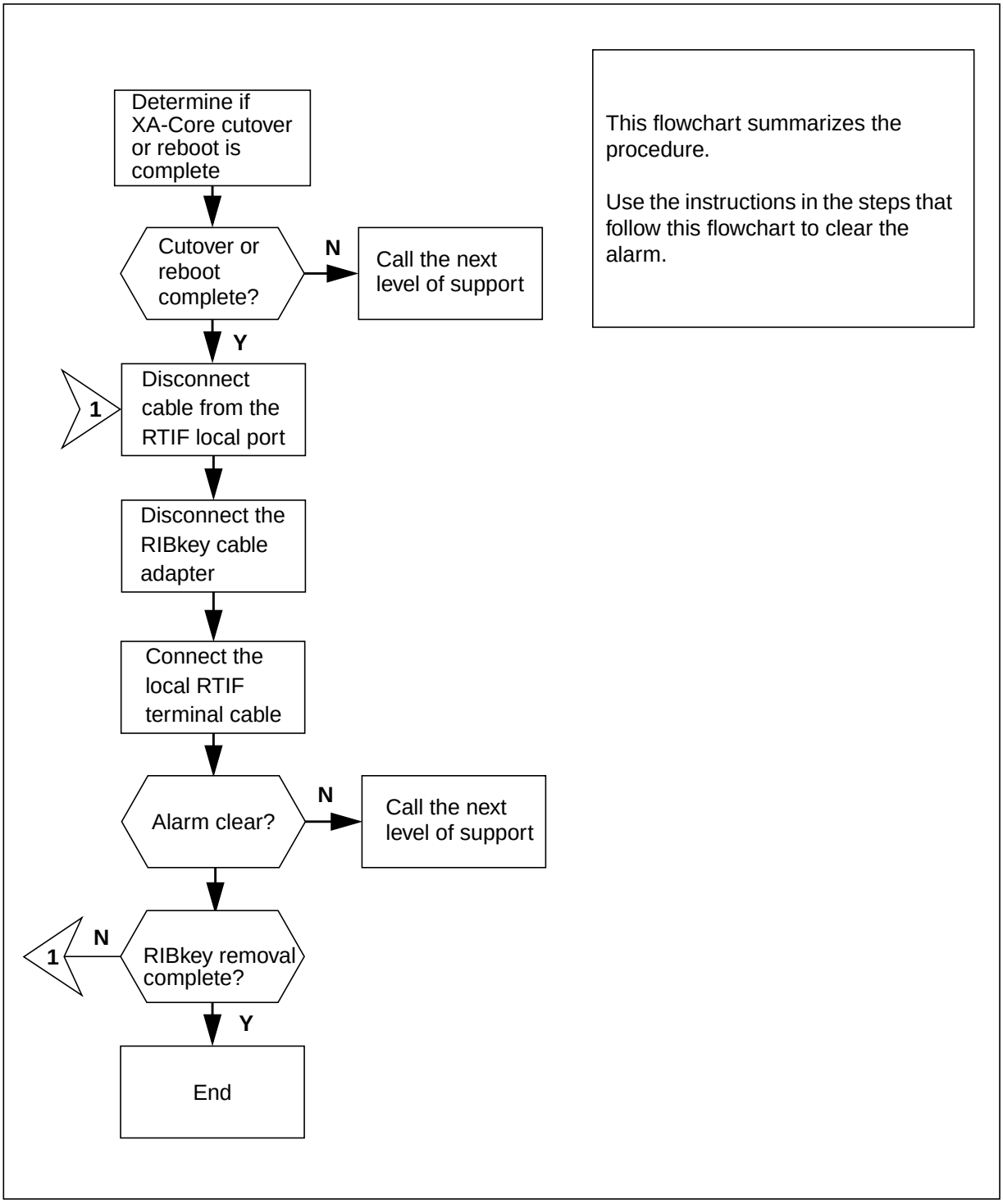
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RIBkey minor (continued)

Summary of clearing a RIBkey minor alarm



XAC RIBkey
minor (continued)

How to clear a RIBkey minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING

Terminal cable connector damage

Exercise care in handling cables. Do not bend the cable pin connectors.

CAUTION

Loss of service

Do not repeat steps.

XAC RIBkey
minor (continued)

At the XACore MAP

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the RIBkey alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a RIBKey minor alarm condition	step 2
another alarm condition	step 9
that the RIBkey minor alarm condition is clear	step 11

2 Determine from office records or from maintenance or installation personnel that the XA-Core installation process is complete.

If the XA-Core installation process is	Do
complete	step 3
incomplete	step 10

3 Access the XA-Core RTIF MAP. At the CI MAP level type

>MAPCI;MTC;XAC;RTIF

and press the Enter key.

4 Examine the RTIF MAP level. Record the working state of the system and the RTIF packlets. Record the location of the RTIFs from the MAP level.

Note: The RTIF MAP level can display alarms as follows:

- a RIBkey minor alarm under the XAC header in the alarm banner.
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF).
- a RIBkey notification appears under the Local Port header in the command interpreter output area.

XAC RIBkey
minor (continued)

The following is a sample MAP display.

RTIF MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext     APPL
 RIBkey    .        .        .        .        .        .        .         .       .

RTIF
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 2               123456789012345678  456789012345   .      .       .       RIBkey
 3          Sta: -.----..-.---.-..-  .--.--------.   0      0       0       0
 4          Dep:
 5          Typ:                     *          *
 6 Tst_     Slot:   Side:    Packlet:   Status:    Local Port:     Remote Port:
 7 Bsy_        4    Rear     Upper      .          RIBkey          .
 8 RTS_       15    Rear     Upper      .          .               .
 9           RTIF:
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time 14:12   >
```

If the MAP indicates	Do
a RIBkey minor alarm	step 5
a different alarm	step 9
no alarm and all CPs are in service	step 11

At the XA-Core physical shelf

5 Disconnect the terminal cable from the RIBkey device.

a Unscrew the cable connector from the RIBkey receptacle.

b Hold the cable connector by the body only.

c Carefully pull the cable connector away from the RIBkey device.

d Place the remote terminal cable in a safe location away from the physical shelf.

6 Disconnect the RIBkey device from the RTIF local port (see the diagrams in this step).

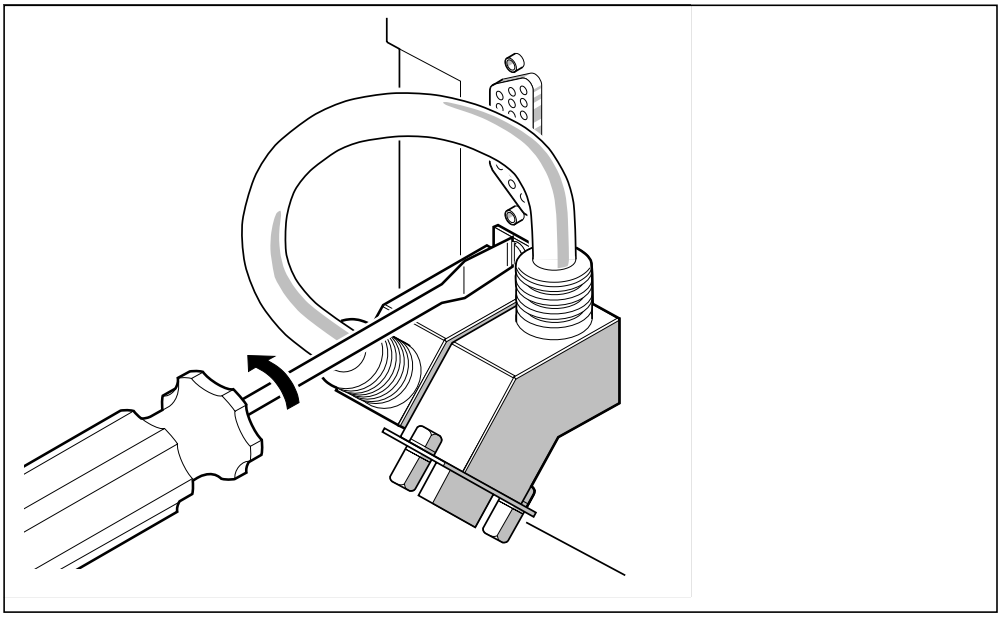
a Unscrew the RIBkey from the RTIF local port receptacle.

XAC RIBkey
minor (continued)

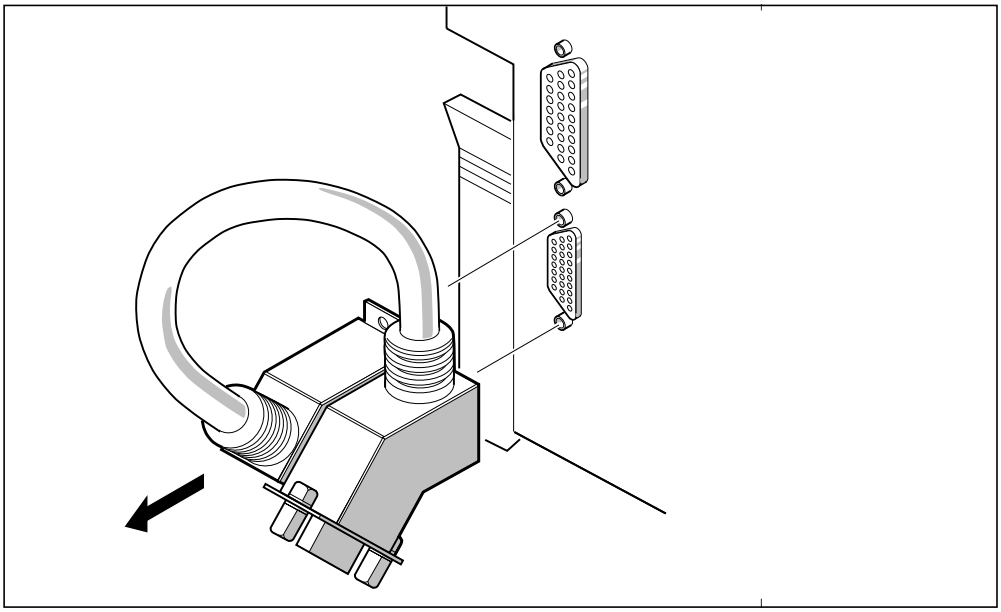
b Hold the RIBkey device by the body only.

c Carefully pull the RIBkey device away from the RTIF local port receptacle.

Unscrew the RIBkey connector



Remove the RIBkey device from the RTIF port receptacle



7 Connect the terminal cable to the RTIF local port.

XAC RIBkey
minor (end)

a Hold the terminal connector by the body only.

b Carefully push the terminal connector into of the receptacle.

c Screw the terminal connector into the RTIF port connector.

At the XA-Core MAP

8 Confirm that the alarm is clear. Examine the alarm banner on the RTIF MAP level.

If the RIBkey alarm is	Do
changed to another alarm	step 9
not clear	step 10
clear	step 11

9 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

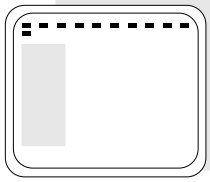
If the alarm is	Do
not clear	step 10
clear	step 11

10 Call the next level of support.

11 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed.

XAC RTIF critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RTIF	.	.	.	.	.	.	.	.	.
C									

Indication

An RTIF critical alarm code appears under the XAC header of the alarm banner. The alarm code indicates a reset terminal interface (RTIF) critical alarm.

Meaning

All local ports on all RTIF packlets are out-of-service (OOS). The following conditions cause an RTIF critical alarm:

- all RTIF packlets are in a SysB state
- one RTIF packlet is in a ManB state and the other RTIF packlet is SysB
- one RTIF packlet is in a CBsy state and the other RTIF packlet is SysB
- one RTIF packlet is in a CBsy state and the other RTIF packlet is ManB
- all RTIF packlet local ports are in a SysB state
- one RTIF packlet local port is in a SysB state and the other RTIF packlet local port is in a Cbsy state

Impact

There is no change in subscriber service.

Common procedures

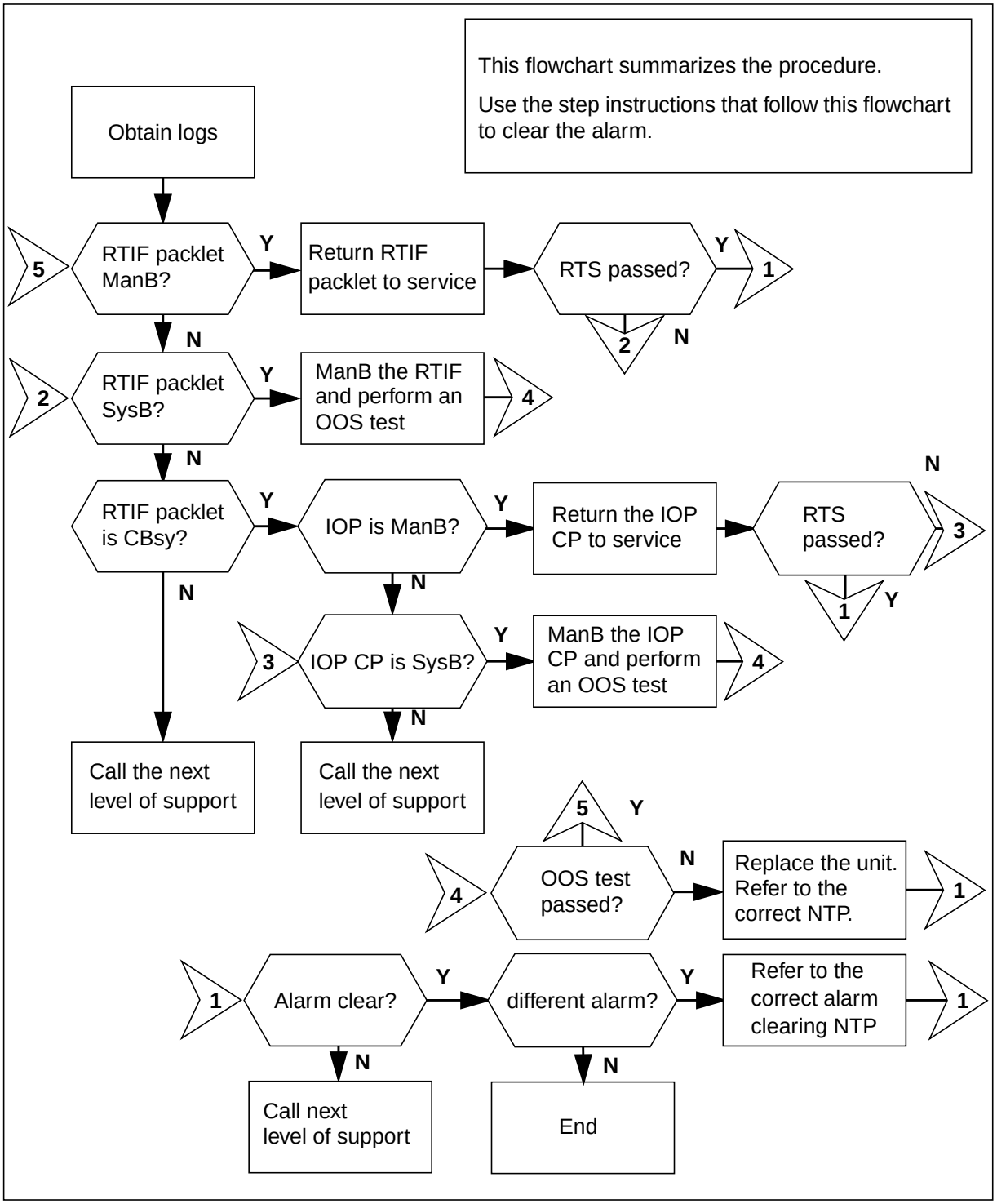
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RTIF
critical (continued)

Summary of clearing an RTIF critical alarm



XAC RTIF
critical (continued)

How to clear an RTIF critical alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC RTIF
critical (continued)

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the logs indicate	Do
an RTIF critical alarm condition	step 2
a different alarm condition	step 17
that the RTIF critical alarm condition is clear	step 19

2 Access the XA-Core RTIF MAP level by typing

MAPCI;MTC;XAC;RTIF

and pressing the Enter key.

3 Examine the RTIF MAP level. Record the location and status of the RTIF packlets and the IOP CPs.

Note: The RTIF MAP level can display alarms and status as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC RTIF
critical (continued)

RTIF MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
RTIF      .        .        .       .        .        .       .       .       .
*C*

RTIF                Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      RTIFfl
 2             Sta: -.----..-.---.-..-  .--.--------.   0      0       0      1
 3             Dep:                     F
 4             Typ:                     *          *
 5             Slot:   Side:    Packlet:   Status:    Local Port:     Remote Port:
 6 Tst_           4    Rear     Upper      S          C               C
 7 Bsy_           15   Rear     Upper      .          S               .
 8 RTS_         RTIF:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the RTIF MAP level indicates	Do
an RTIF packlet is in a ManB state	step 4
an RTIFpacklet is in a SysB state	step 5
an RTIF packlet is in a CBsy state	step 8
a different alarm	step 17
no alarm and all CPs and packlets are InSv	step 19

4 Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC RTIF
critical (continued)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 4 r u

Example of system response:

```
RTS 4 rear upper passed
```

If the RTIF packlet is	Do
in a CBsy state	step 8
in a SysB state	step 14
in an InSv state	step 16

5 Manually busy the OOS RTIF packlet. At the RTIF MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

Example of system response:

```
BSY 4 rear upper complete
```

Note: If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.

6 Perform an OOS test on the RTIF packlet. At the RTIF MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

XAC RTIF
critical (continued)

Example of command use:

>TST 4 r u

If the OOS test	Do
passed	step 3
did not pass	step 14

7 Access the IO MAP level. At the RTIF MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC RTIF
critical (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 RTIF     .       .       .       .       .       .       .        .       .
 *C*
IO
 0 Quit          Front:  111111111    Rear: 111111   SM    PE    IO     PKLT
 2               123456789012345678    456789012345  .     .     IOP M  RTIF C
 3               Sta: -.-.--..-.----..-    M--.-------.  0     0     1      3
 4               Dep:                  F
 5               Typ:  *              *     *         *
 6               Slot:  Slot:   Status:    Packlet-Upper:          Lower:
 7 Tst_            2    Front      .            Tape .            Disk .
 8 Bsy_            17   Front      .            Tape .            Disk .
 9 RTS_            4    Rear       M            RTIF C            CMIC C
10                 15   Rear       .            RTIF S            CMIC .
11                 IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 15
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 r

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet is ManB	step 12
InSv and any related packlet is SysB	step 14
SysB and all related packlets are CBsy	step 10
InSv and all related packlets are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
BSY 4 rear complete
```

Note: If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

XAC RTIF
critical (continued)

>TST 4 r

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct packlet MAP level. Return the ManB packlet to service.

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 4 r u

Example of system response:

```
RTS 4 rear upper passed
```

If the packlet is	Do
in a SysB state	step 14
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in a SysB state	step 14
in an InSv state	step 16

14 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in an InSv state	step 16
in a SysB state	step 18

XAC RTIF
critical (end)

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the RTIF MAP level.

If the RTIF major alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

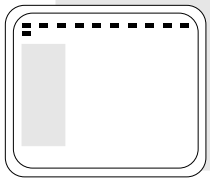
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC RTIF major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RTIF M	.	.	.	.	.	.	.	.	.

Indication

An RTIF major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a reset terminal interface (RTIF) major alarm.

Meaning

One of the following conditions cause an RTIF major alarm:

- a single RTIF local port is out-of-service (OOS)
- all RTIF remote ports are out-of-service (OOS)
- one RTIF packlet is in a ManB state
- one RTIF packlet is in a SysB state
- one RTIF packlet is in a CBsy state

Impact

There is no change in subscriber service.

Common procedures

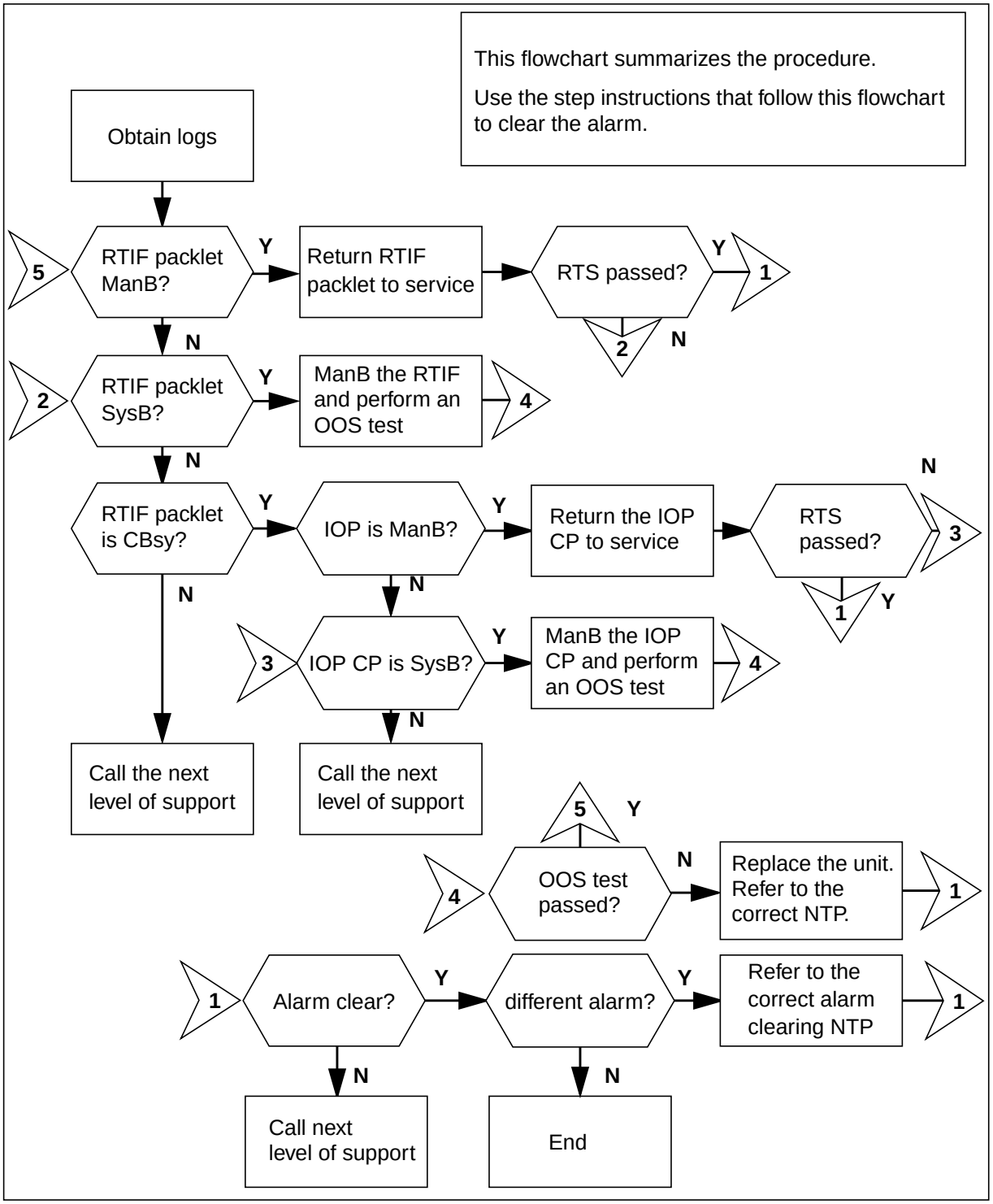
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RTIF
major (continued)

Summary of clearing an RTIF major alarm



XAC RTIF
major (continued)

How to clear an RTIF major alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC RTIF
major (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an RTIF major alarm condition	step 2
a different alarm condition	step 17
that the RTIF major alarm condition is clear	step 19

2 Access the XA-Core RTIF MAP. At the CI MAP level, type

MAPCI;MTC;XAC;RTIF

and press the Enter key.

3 Examine the RTIF MAP level. Record the location and status of the RTIF packlets and IOP CPs. Record the status of the local/remote RTIF ports.

Note: The RTIF MAP level displays working states as follows:

- a system alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC RTIF
major (continued)

RTIF MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
RTIF      .        .        .       .        .        .       .       .       .
 M

RTIF                Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit             123456789012345678  456789012345   .      .       .       RTIFfl
 2             Sta: -.-----.-.---.-..-  .--.--------.   0      0       0       1
 3             Dep:                     F
 4             Typ:                     *          *
 5             Slot:   Side:    Packlet:   Status:    Local Port:     Remote Port:
 6 Tst_           4    Rear     Upper      S          C               C
 7 Bsy_           15   Rear     Upper      .          .               .
 8 RTS_         RTIF:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
 XMAP0
Time 14:12   >
```

If the RTIF MAP level indicates	Do
an RTIF packlet is in a SysB state	step 4
an RTIF packlet is in a ManB state	step 6
an RTIF packlet is in a CBsy state	step 7
an RTIF packlet local port is in a SysB state	step 14
a different alarm	step 17
no alarm and all CPs and packlets are InSv	step 19

4 Manually busy the OOS RTIF packlet. At the RTIF MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC RTIF
major (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

Example of system response:

```
BSY 4 rear upper complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 18

5 Perform an OOS test on the RTIF packlet. At the RTIF MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r u

If the OOS test	Do
passed	step 6
did not pass	step 14

6 Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC RTIF
major (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 4 r u

Example of system response:

```
RTS 4 rear upper passed
```

If the RTIF packlet is	Do
in a SysB state	step 4
in a CBsy state	step 7
in an InSv state	step 16

7 Access the IO MAP level. At the RTIF MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the status and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC RTIF
major (continued)

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 RTIF     .        .       .      .        .       .       .       .       .
  M
IO
 0 Quit          Front:   111111111    Rear: 111111   SM     PE    IO      PKLT
 2               123456789012345678    456789012345   .      .     IOP M   LocP C
 3          Sta: -.-.--..-..----..-    M--.-------.   0      0     1       2
 4          Dep:                       F
 5          Typ:  *              *     *         *
 6 Tst_     Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Bsy_       2    Front      .              Tape .             Disk .
 8 RTS_       17   Front      .              Tape .             Disk .
 9            4    Rear       M              RTIF C             CMIC C
10            15   Rear       .              RTIF .             CMIC .
11            IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 10
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 r

XAC RTIF
major (continued)

Example of system response:

```
RTS 4 rear passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet is ManB	step 12
InSv and any related packlet is SysB	step 14
SysB and all related packlets are CBsy	step 15
InSv and all related packlets are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
BSY 4 rear complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the IOP CP is	Do
in a ManB state	step 11
not in a ManB state	step 18

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

XAC RTIF
major (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 4 r

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct packlet MAP level. Return the ManB packlet to service.

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 4 r u

Example of system response:

```
RTS 4 rear upper passed
```

If the packlet is	Do
in a SysB state	step 13
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet OOS test	Do
did not pass	step 14
passed	step 16

XAC RTIF
major (end)

14 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in an InSv state	step 16
in a SysB state	step 18

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the RTIF MAP level.

If the RTIF major alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

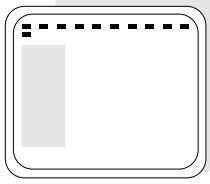
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC RTIF minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
RTIF	.	.	.	.	.	.	.	.	.

Indication

An RTIF message appears under the XAC header of the alarm banner. The message indicates a remote terminal interface (RTIF) minor alarm.

Meaning

A single RTIF local or remote port is out-of-service (OOS).

Impact

There is no change in subscriber service.

Common procedures

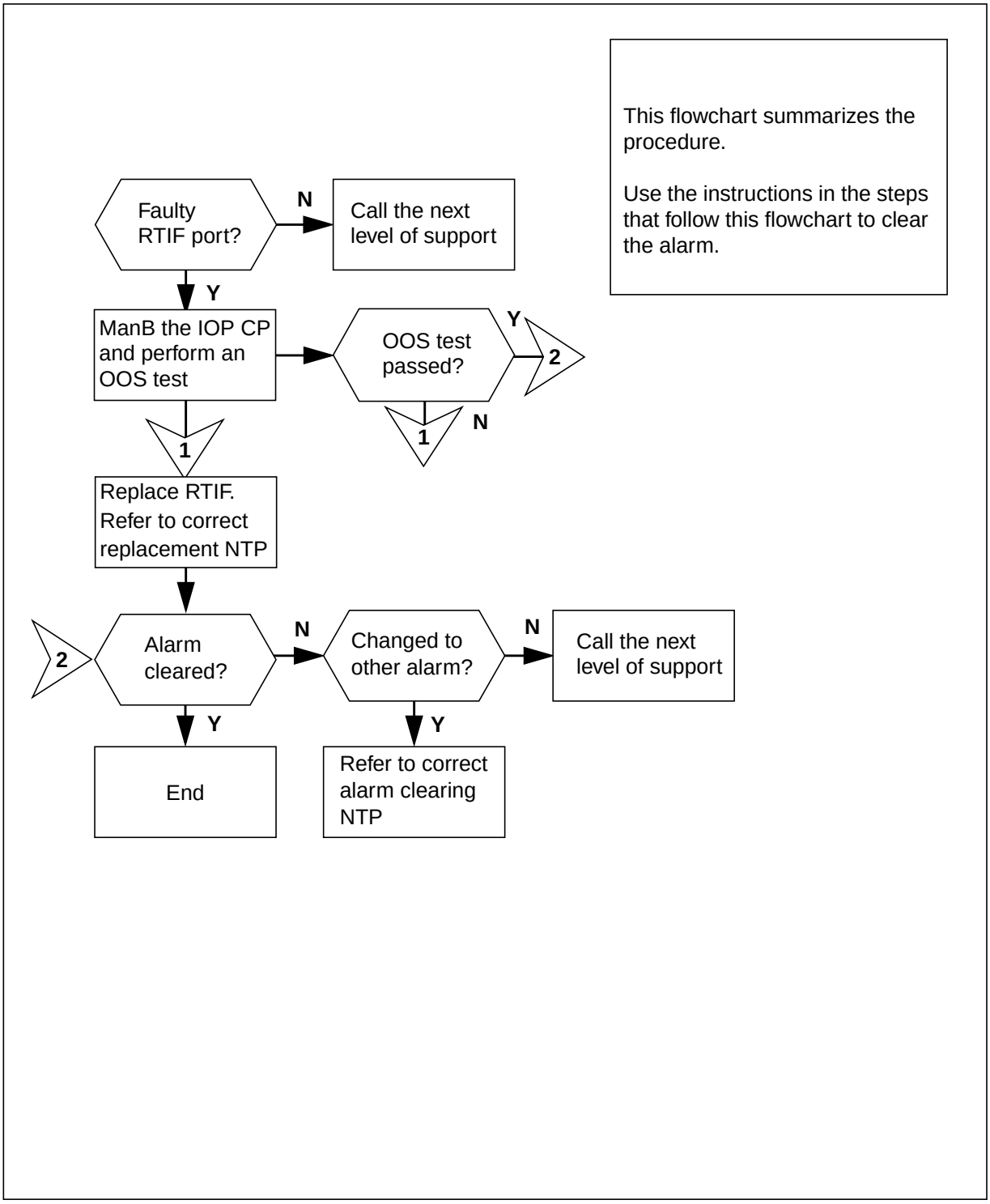
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC RTIF
minor (continued)

Summary of clearing an RTIF minor alarm



XAC RTIF
minor (continued)

How to clear an RTIF minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC RTIF
minor (continued)

At your current location

1 Collect log information from the log report system. The log messages provide information about the source of the alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an RTIF minor alarm condition	step 2
a different alarm condition	step 9
that the RTIF minor alarm condition is clear	step 11

2 Examine the RTIF MAP level. At the MAP terminal, type

MAPCI;MTC;XAC;RTIF

and press the Enter key.

3 Examine the RTIF MAP level. Record the working state of the system and the RTIF packlets. Also record the RTIF packlet location on the physical shelf, side and slot.

Note: The RTIF MAP level can display alarms as follows:

- an RTIF minor alarm code appears under the XAC header in the alarm banner.
- an equipment alarm code appears under the PKLT header of the subsystem status summary field (SSSF).

The following is a sample MAP display.

XAC RTIF
minor (continued)

RTIF MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
RTIF       .       .        .       .        .        .       .       .       .


RTIF                Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      RemPfl
 2             Sta: -.----..-.---.-..-  .--.--------.   0      0       0      1
 3             Dep:
 4             Typ:                     *
 5             Slot:   Side:    Packlet:   Status:    Local Port:     Remote Port:
 6 Tst_           4    Rear     Upper      .           .               S
 7 Bsy_           15   Rear     Upper      .           .               .
 8 RTS_         RTIF:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the RTIF MAP level indicates	Do
an RTIF minor alarm	step 7
a different alarm	step 9
no alarm and all CPs are in service	step 11

4 Manually busy the RTIF packlet. At the RTIF MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn>is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s>is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p>is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 4 r u

XAC RTIF
minor (continued)

Example of system response:

```
BSY 4 rear upper complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the RTIF packlet is	Do
in a ManB state	step 5
not in a ManB state	step 10

5 Perform an OOS test on the ManB RTIF packlet. At the RTIF MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn>is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s>is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p>is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>TST 4 r u

If the OOS test	Do
passed	step 6
did not pass	step 7

6 Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn>is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s>is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p>is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command:

>RTS 4 r u

XAC RTIF minor (end)

Example of system response:

```
RTS 4 rear upper passed
```

If the RTIF packlet is	Do
in a SysB state	step 7
in an InSv state	step 8

7 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

8 Confirm that the alarm is clear. Examine the alarm banner on the RTIF MAP level.

If the RTIF alarm is	Do
changed to different alarm	step 9
not clear	step 10
clear	step 11

9 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete

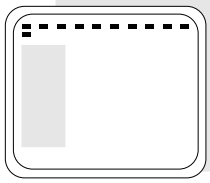
If the alarm is	Do
not clear	step 10
clear	step 11

10 Call the next level of support.

11 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed.

XAC SMtrbl minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
SMtrbl	.	.	.	.	.	.	.	.	.

Indication

An SMtrbl alarm code appears under the XAC header of the alarm banner. The alarm code indicates a shared memory (SM) trouble minor alarm.

An “I” (in-service trouble indicator) appears in the state field in the shelf layout area. The indicator appears directly below the number that matches the circuit pack (CP) location in the physical shelf slot.

Meaning

The state of the SM CP has changed from in-service (InSv) to in-service trouble (IsTb). The state change indicates a non-critical fault on an SM CP.

Impact

There is no change in subscriber service. To minimize service degradation, test or replace the SM CP when call traffic is low.

Common procedures

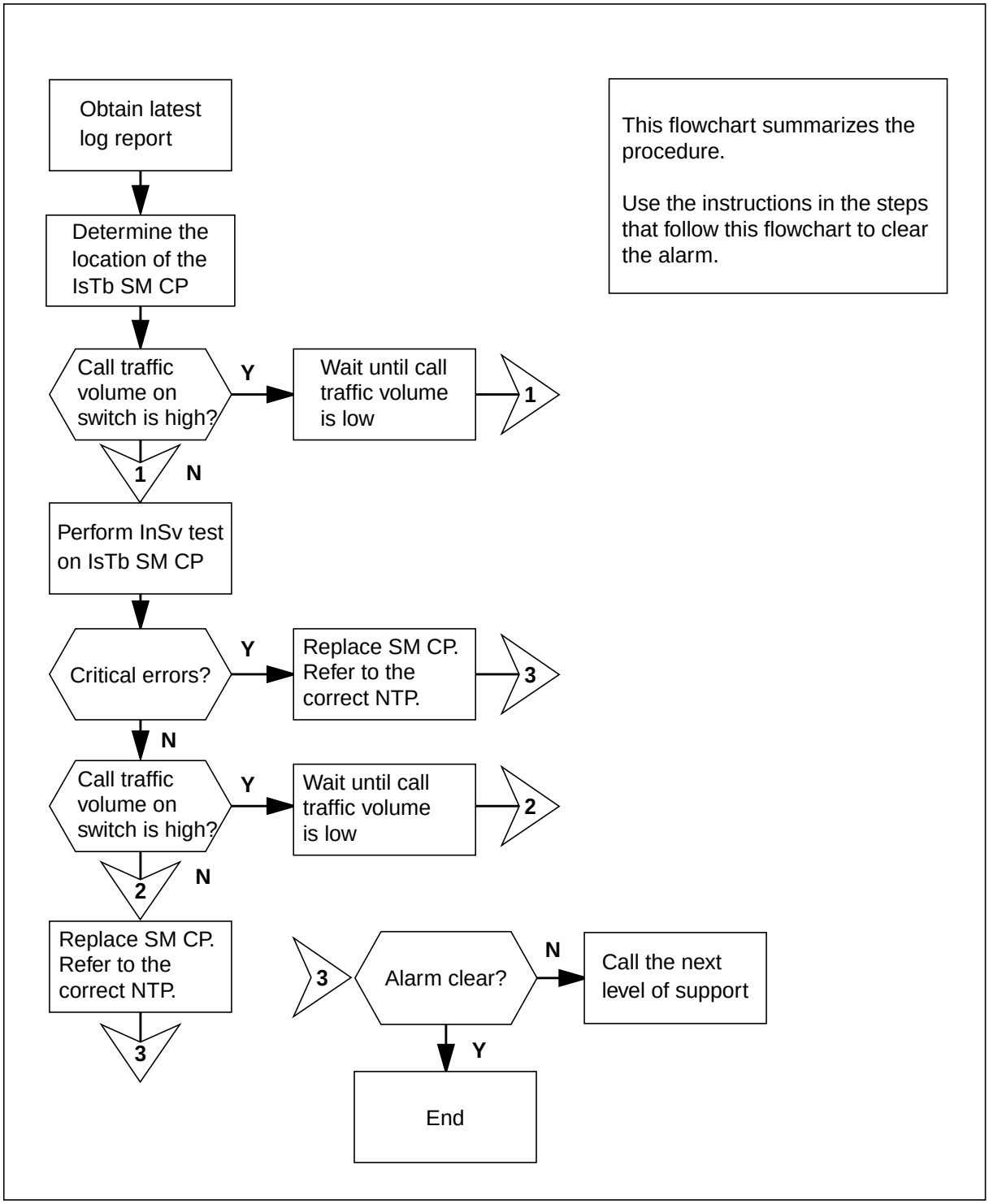
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC SMtrbl
minor (continued)

Summary of clearing an SMtrbl minor alarm



XAC SMtrbl
minor (continued)

How to clear an SMtrbl minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC SMtrbl
minor (continued)

At the XA-Core MAP

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the SMtrbl alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
an SMtrbl minor condition	step 2
another alarm condition	step 10
that the alarm condition is clear	step 12

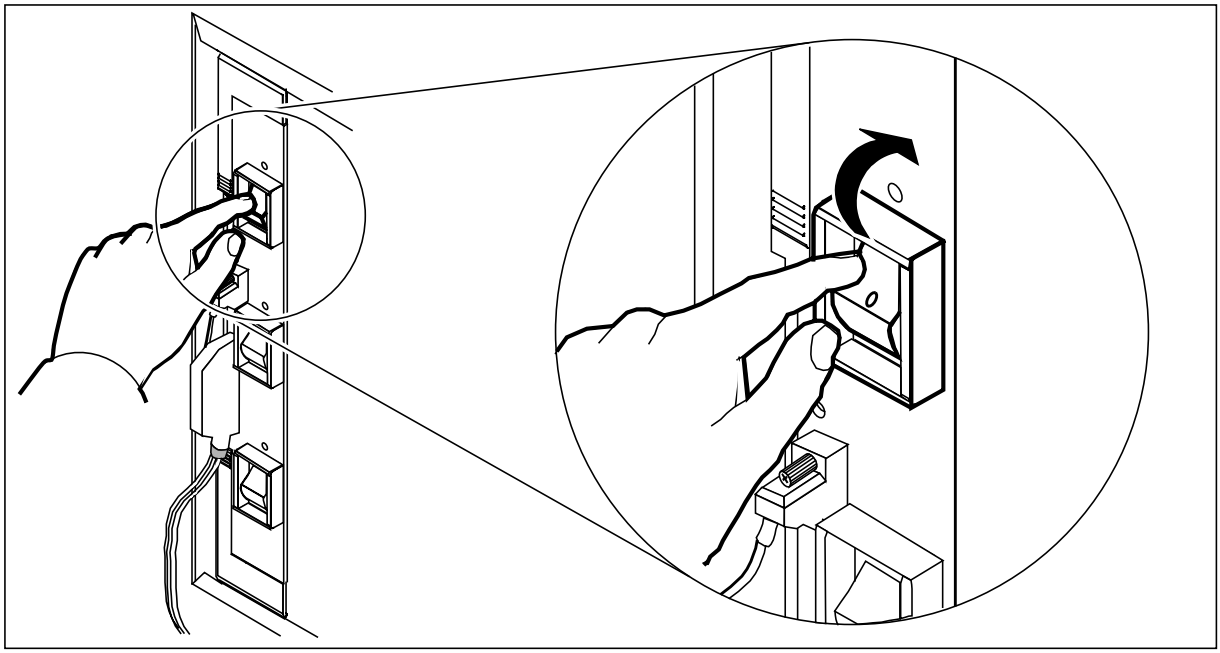
2 Examine the shelf interface modules (SIMs). Make sure that all circuit breakers are in the ON position. Make sure that the green LEDs are lit.

If SIM circuit breakers are	Do
in the OFF position and a red led is lit	step 3
in the ON position and green leds are lit	step 4

3 Set the shelf interface module (SIM) circuit breaker to the ON position (see the diagram in this step). Wait 30 sec.

XAC SMtrbl
minor (continued)

Set circuit breaker on the SIM to the ON (1) position



If SIM circuit breaker	Do
resets to the ON position	step 4
does not reset to the ON position	step 11

4 Access the SM MAP level. At the CI MAP level type

MAPCI;MTC;XAC;SM

and press the Enter key.

5 Examine the SM MAP level. Record the location of the IsTb SM CP.

Note: The SM MAP level displays alarms and SM working states as follows:

- a system alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the SM header in the subsystem status summary field (SSSF)
- an "I" (in-service trouble indicator) appears in the state field in the shelf layout area.

The following is a sample MAP display.

XAC SMtrbl
minor (continued)

SM MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
SMtrbl     .       .       .       .       .       .       .       .       .

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 2               123456789012345678  456789012345  SMtb   .       .      .
 3          Sta: -.-.--..-..--.-..-  .--I-------.  0      0       0      0
 4          Dep:
 5          Typ:       ** **            *
 6 Tst_       Physical: 1920        Useable: 1920       Available: 960
 7 Bsy_       SYNC State: triplex
 8 RTS_      SM:
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the SM MAP level indicates	Do
an SM CP is in an IsTb state	step 6
a different alarm	step 10
no alarm and all CPs are in service	step 12

6 Perform an in-service test on the IsTb SM CP. Wait until traffic call volume is low. At the SM MAP level type

>TST <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 7 r

XAC SMtrbl
minor (end)

Example of system response:

```
Tst 7 rear failed.
```

If the test shows the SM CP has	Do
critical errors	step 7
non-critical errors	step 8
no errors	step 9

At the XA-Core physical shelf

7 Perform the SM CP replacement procedure immediately. Refer to the correct replacement procedure. Continue to 9 when complete.

8 Wait until call traffic volume is low. Perform the SM CP replacement procedure. Refer to the correct replacement procedure located in this document. Return to this point when complete.

At the SM MAP level

9 Confirm that the alarm is clear. Examine the SM MAP level.

If the SMtrbl minor alarm is	Do
changed to a different alarm	step 10
not clear	step 11
clear	step 12

10 Perform the correct alarm clearing procedure. Refer to the correct alarm clearing procedure in this document. Return to this point when complete.

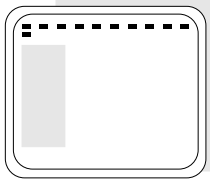
If the alarm is	Do
not clear	step 11
clear	step 12

11 Call the next level of support.

12 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC Split minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
Split	.	.	.	.	.	.	.	.	.

Indication

A Split alarm code appears under the XAC header of the alarm banner. The alarm code indicates that the state of the system is now in split mode.

Meaning

There is an upgrade to the operating system software in progress. Maintenance software has configured processor and shared memory to allow two images to run at the same time. One part of the XA-Core switch continues to process call traffic. The remaining part of the system is ready to receive, or is receiving new operating software. You can access all MAP levels for the subsystems that are processing calls.

Impact

There is no change to subscriber service.

Common procedures

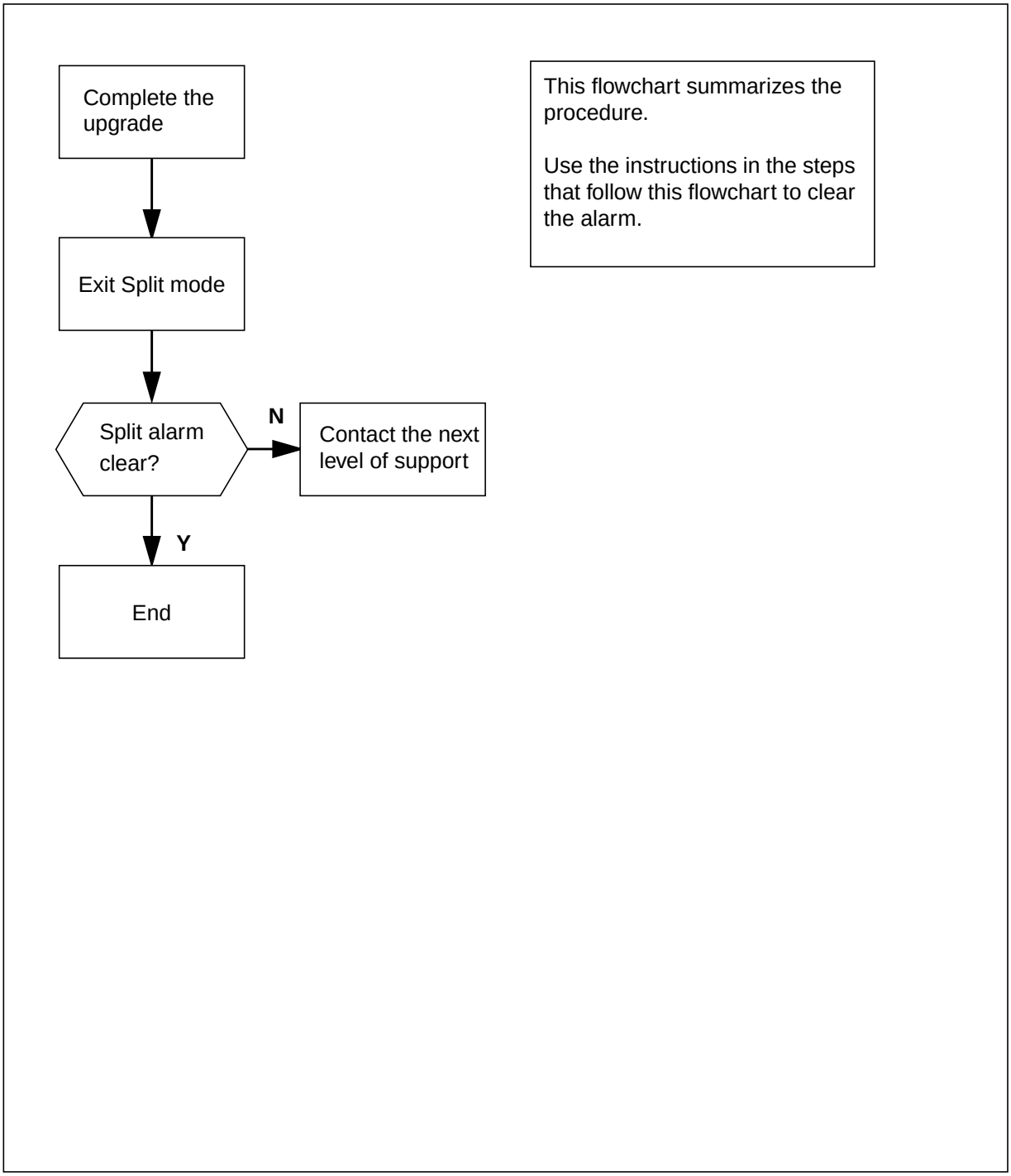
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC Split
minor (continued)

Summary of clearing a Split minor alarm



XAC Split
minor (continued)

How to clear a Split minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

At the XA-Core MAP

1 Collect information from the XA-Core log report system. The log messages provide more information about the split mode.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a Split minor condition	step 2
another alarm condition	step 5
that the alarm condition is clear	step 7

2 Access the XAC MAP level. At the CI MAP level type

>MAPCI;MTC;XAC

and press the Enter key.

3 Examine the XAC MAP level. Record the working state of the system (refer to the XAC MAP level example shown in this step).

Note: The XAC MAP level displays system, CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the SM and PE headers in the subsystem status summary field (SSSF)

XAC Split
minor (continued)

- the SSSF shows the number of CPs that are not processing calls
- an “X” (split indicator) appears in the state field in the shelf layout area. The split indicator tells you that the CP is not part of the system that is processing calls

The following is a sample MAP display.

XAC MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
Split     .        .       .      .       .       .        .       .       .


XAC              Front:   111111111  Rear: 111111   SM     PE     IO     PKLT
 0 Quit          123456789012345678  456789012345   Splt   Splt   .      .
 2 Card_    Sta: -.-.--X.-..----X.-  .--X-------.   2      1      0      0
 3 XACMtc   Dep:
 4 SM
 5 PE        XAC:
 6 IO
 7 CMIC
 8 RTIF
 9 Disk
10 Tape
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a Split alarm	step 4
a different alarm	step 5
no alarm and all CPs are in service	step 7

4 Complete the upgrade process. Examine the XAC MAP after the upgrade process is complete.

If the alarm is	Do
not clear	step 6
clear	step 7

XAC Split minor (end)

5 Perform the correct alarm clearing procedure described in this document.

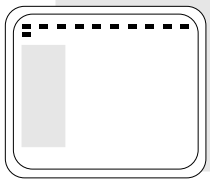
If the alarm is	Do
not clear	step 6
clear	step 7

6 Call the next level of support.

7 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC Tape minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
TAPE	.	.	.	.	.	.	.	.	.

Indication

A Tape message appears under the XAC header of the alarm banner. This message indicates a tape minor alarm.

Meaning

An input/output processor (IOP) CP or tape packlet fault is creating access problems between the XA-Core and the tape device. A Tape minor alarm condition is a result of one or more of the following conditions:

- an XA-Core tape packlet is manual busy (ManB)
- an XA-Core tape packlet is system busy (SysB)
- an XA-Core tape packlet is OOS CBsy because an IOP CP is in a SysB or ManB state

Impact

There is no change to subscriber service.

Common procedures

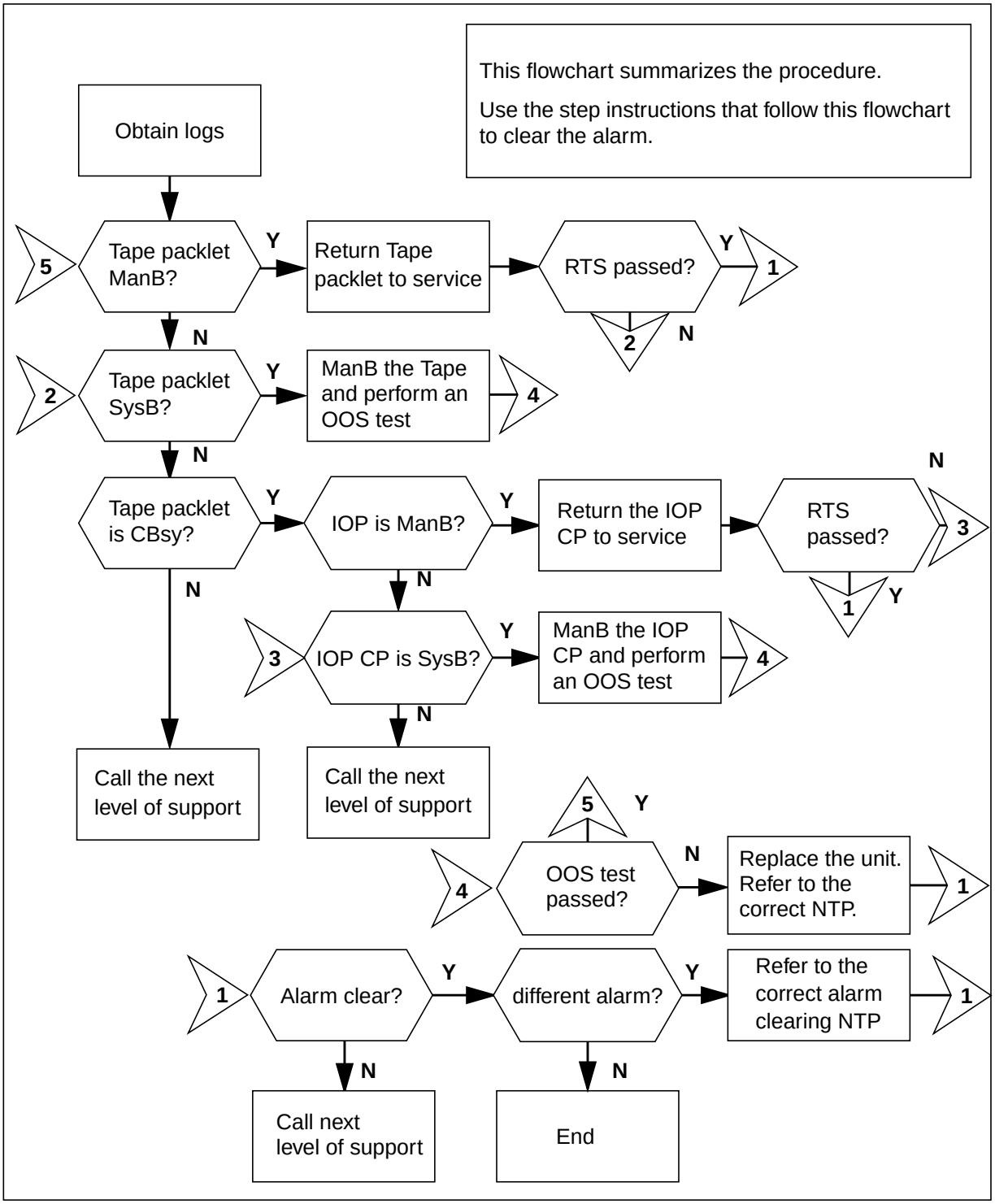
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the steps that follow the flowchart to clear the alarm.

XAC Tape
minor (continued)

Summary of clearing a Tape minor alarm



XAC Tape
minor (continued)

How to clear a Tape minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of static electricity damage

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC Tape
minor (continued)

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the Tape alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a Tape minor condition	step 2
a different alarm condition	step 17
that the alarm condition is clear	step 19

2 Access the Tape MAP level. At the CI MAP level, type

MAPCI;MTC;XAC;TAPE

and press the Enter key.

3 Examine the Tape MAP level. Record the status of the Tape packlets and the IOP CPs. Record the location of any out of service (OOS) CPs or packlets.

Note: The Tape MAP level displays alarms and Tape packlet status as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the PKLT header in the subsystem status summary field (SSSF)
- a status code appears under the Status header in the command interpreter output area

The following is a sample MAP display.

XAC Tape
minor (continued)

Tape MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
TAPE       .       .        .       .        .        .       .       .       .

Tape                Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit             123456789012345678  456789012345   .      .       .      TAPE C
 2                  Sta: -.-.--..-.---.-.M-  .----------.   0      0       0      1
 3                  Dep:                 F
 4                  Typ:  *              *
 5                  Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 6 Tst_                2    Front    Upper      .          .               Unmounted
 7 Bsy_               17    Front    Upper      C          .               Unmounted
 8 RTS_               TAPE:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
a Tape packlet is in a SysB state	step 4
a Tape packlet is in a ManB state	step 6
a Tape packlet is in a Cbsy state	step 7
a different alarm	step 17
no alarm and all CPs and packlets are in service	step 19

4 Manually busy the OOS Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC Tape
minor (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 17 f u

Example of system response:

```
BSY 17 front upper complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 18

5 Perform an OOS test on the Tape packlet. At the Tape MAP level type.

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

>TST 17 f u

Example of system response:

```
TST 17 front upper passed
```

If the OOS test	Do
passed	step 6
did not pass	step 14

6 Return the Tape packlet to service. At the Tape MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC Tape
minor (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command:

>RTS 17 f u

Example of system response:

```
RTS 17 front upper passed
```

If the Tape packlet is	Do
in a SysB state	step 4
in a CBsy state	step 7
in an InSv state	step 16

7 Access the IO MAP level. At the Tape MAP level type

>IO

and press the Enter key.

8 Examine the IO MAP level. Record the working state and location of the OOS IOP CP.

Note: The IO MAP level displays IOP CP and packlet working states as follows:

- an alarm code appears under the XAC header in the alarm banner
- an equipment alarm code appears under the IO header in the subsystem status summary field (SSSF)
- a status indicator appears in the state field in the shelf layout area.
- a status indicator appears in the equipment status field in the command interpreter output area.

The following is a sample MAP display.

XAC Tape
minor (continued)

IO MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 Tape      .        .        .        .        .        .        .         .        .

IO
 0 Quit          Front:   111111111    Rear: 111111   SM     PE    IO      PKLT
 2               123456789012345678    456789012345   .      .     IOP M   TAPE C
 3          Sta: -.-.--..-..----.M-    .--.-------.   0      0     1       2
 4          Dep:                F
 5          Typ:  *             *     *          *
 6 Tst_     Slot:  Slot:   Status:    Packlet-Upper:            Lower:
 7 Bsy_       2    Front      .              Tape .             Disk .
 8 RTS_       17   Front      M              Tape C             Disk C
 9            4    Rear       .              RTIF .             CMIC .
10            15   Rear       .              CMIC .             CMIC .
11            IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the IOP CP is	Do
in a ManB state	step 9
in a SysB state	step 10
in an InSv state	step 16

9 Return the IOP CP to service. Make sure that all related packlets are also in service.

a At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 17 f

XAC Tape
minor (continued)

Example of system response:

```
RTS 17 front passed
```

b Make sure that all related packlets are in service. Examine the IO MAP level to determine the packlet working states.

If the IOP CP is	Do
InSv and any related packlet is ManB	step 12
InSv and any related packlet is SysB	step 14
SysB and all related packlets are CBsy	step 15
InSv and all related packlets are InSv	step 16

10 Manually busy the OOS IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 17 f

Example of system response:

```
BSY 17 front complete
```

Note: *If needed, use the Force option to place the CP in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the IOP CP is	Do
in a ManB state	step 11
not in a ManB state	step 18

11 Perform an OOS test on the ManB IOP CP. At the IO MAP level type

>TST <nn> <s>

and press the Enter key

where

XAC Tape
minor (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>TST 17 f

If the OOS test	Do
passed	step 8
did not pass	step 15

12 Access the correct packlet MAP level. Return the ManB packlet to service.

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command:

RTS 17 f u

Example of system response:

```
RTS 17 front upper passed
```

If the packlet is	Do
in a SysB state	step 13
in an InSv state	step 16

13 Perform the correct packlet OOS test procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet OOS test	Do
did not pass	step 14
passed	step 16

XAC Tape
minor (end)

14 Perform the correct packlet replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the packlet is	Do
in an InSv state	step 16
in a SysB state	step 18

15 Perform the correct IOP CP replacement procedure. Refer to the correct NTP. Return to this point when complete.

If the IOP CP is	Do
in an InSv state	step 16
in a SysB state	step 18

16 Confirm that the alarm is clear. Examine the alarm banner on the MAP screen.

If the Tape minor alarm is	Do
changed to a different alarm	step 17
not clear	step 18
clear	step 19

17 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

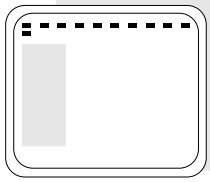
If the alarm is	Do
not clear	step 18
clear	step 19

18 Call the next level of support.

19 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC TOD critical

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
TOD	.	.	.	.	.	.	.	.	.
C									

Indication

A TOD critical alarm code appears under the XAC header of the alarm banner. The alarm code indicates the time-of-day (TOD) critical alarm.

Meaning

There is no accurate time of day. The XA-Core system has detected clock signal faults on all message switch (MS) links. The XA-Core system sets the value of the TOD clocks to zero. A hardware fault can exist as one or more of the following:

- all XA-Core OC-3 two port interface packlet TOD devices are OOS
- all MS OC-3 two port interface paddleboards cannot send TOD clock signals

Impact

The switch needs time-of day clocks to record billing information (automatic message accounting) and produce log reports. There is a change in subscriber billing service and logs.

Common procedures

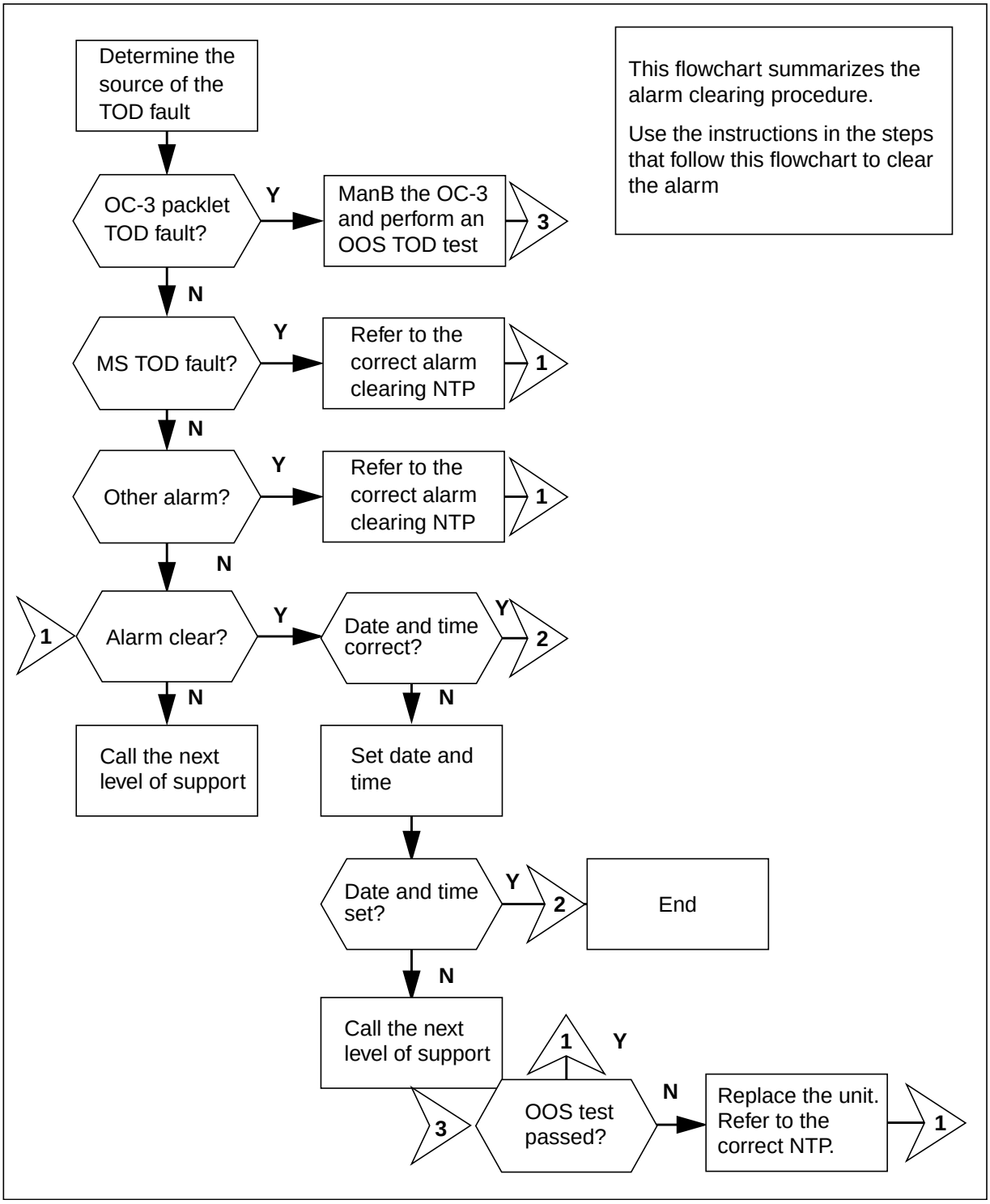
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC TOD
critical (continued)

Summary of clearing a TOD critical alarm



XAC TOD
critical (continued)

How to clear a TOD critical alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING

Risk of equipment damage

Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING

Risk of equipment damage - electric static discharge (ESD)

Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION

Loss of service

Do not repeat steps.

CAUTION

Loss of service

Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC TOD
critical (continued)

At the XA-Core MAP terminal

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the loss of TOD.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a TOD critical alarm condition	step 2
a different alarm condition	step 10
the TOD critical alarm condition is clear	step 14

2 Access the XA-Core CMIC MAP level. At the CI MAP level prompt type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and status of the OC-3 two port interface packlets the links and the IOP circuit packs (CPs).

Note: The CMIC MAP level displays alarms and TOD status as follows:

- an alarm under the XAC header in the alarm banner
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF)
- a status code appears under the TOD header in the command interpreter output area

The following is a sample MAP display.

XAC TOD
critical (continued)

CMIC MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
 TOD      .        .       .       .        .       .       .       .       .
  C

CMIC            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      TODflt
 2        Sta: -.-.--.-.--.--.-.-  .--.--------.   0      0       0      0
 3        Dep:                     F         F
 4        Typ:                     *         *
 5        Slot:Side:  Packlet:     Status:  Link0:   Link1:    TOD:
 6 Tst_     4  Rear    Lower       .        .        .         S
 7 Bsy_    15  Rear    Lower       .        .        .         S
 8 RTS_   CMIC:
 9
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_
  XMAP0
Time 14:12   >
```

If the CMIC MAP level indicates	Do
XA-Core TODs are in a SysB state and the alarm code under the SSSF PKLT header is TODflt	step 4
XA-Core TODs are in a CBsy state and the alarm code under the SSSF PKLT header is MSTOD	step 8
a different alarm	step 10
no alarm and all CPs and TODs are in service	step 14

4 ManB the OC-3 two port interface packlet that displays a TOD fault. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC TOD
critical (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
BSY 4 rear upper completed
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 13

5 Perform an OOS test on the ManB OC-3 two port interface packlet. At the CMIC MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the OOS test	Do
passed	step 6
did not pass	step 7

XAC TOD
critical (continued)

6 Confirm that the TOD critical alarm is clear. Examine the CMIC MAP level.

If the TOD alarm is	Do
changed to different alarm	step 10
clear	step 11
not clear	step 13

7 Perform the OC-3 two port interface packlet replacement procedure. Refer to the correct NTP. Replace one OC-3 two port interface packlet at a time. Use the location information from 3. Return to this point when complete.

If the OC-3 two port interface packlets and TODs are	Do
in an InSv state	step 6
in a SysB state	step 13

8 Confirm that the OC-3 two port interface paddleboard TODs are OOS. Perform the following steps:.

a Display the MS MAP level. At the CMIC MAP level type

>MS

and press the Enter key.

b Access the MS Shelf MAP level. The Shelf MAP level displays the status of all CPs in the shelf. At the MS MAP level, type

>SHELF

and press the Enter key.

c Access the MS Card MAP level for the OC-3 two port interface paddleboards. The card MAP level displays the status of the OC-3 two port interface paddleboards. At the MS MAP level, type

>CARD <nn>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the MS physical shelf slot - 1 to 26

Example of command:

>CARD 24

d Record the status of the OC-3 two port interface paddelboards (see the MS Card MAP level diagram in this step).

The following is a sample MAP display.

XAC TOD
critical (continued)

MS Card MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


MS
 0 Quit          Message Switch      Clock       Shelf  0      Inter-MS Link 0 1
 2          MS 0       .            M Free              .                   - -
 3          MS 1       .            Slave               F                   - -
 4
 5          Shelf  0                 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 6 Tst_     Card   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7 Bsy_     Chain
 8 RTS_     MS 0   . . . - . - - - - - - - - - - - - - - - - . . . . .
 9          MS 1   . . . - . - - - - - - - - - - - - - - - - . . . . .
10 LoadMS_
11          Card 24 CMIC Interface Card       Port: 0
12 SwMast   MS 0         .                         .
13 Shelf    MS 1         .                         S
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

If the MS Card MAP level indicates	Do
OC-3 two port interface paddleboard ports are OOS	step 9
a different alarm	step 10
no faults or alarms	step 13

9 Perform the OC-3 two port interface paddleboard replacement procedure. Return to this point when complete.

If the TOD alarm is	Do
changed to a different alarm	step 10
clear	step 11
not clear	step 13

XAC TOD
critical (continued)

10 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
clear	step 11
not clear	step 13

11 Set the system date. Exit the CMIC or MS Card MAP level and display the CI MAP prompt. At the CMIC MAP level, type

>QUIT all

and press the Enter key.

a Set the system date. At the CI prompt type

>SETDATE <dd> <mm> <yyyy>

and press the Enter key.

where

<dd> is the day (01 to 31)

<mm> is the month (01 to 12)

<yyyy> is the current year

Example of command use:

>SETDATE 14 04 1999

Example of system response:

```
Date is WED. 14/APR/1999 08:16:45
```

If the system date is	Do
set	step 12
not set	step 13

12 Set the XA-Core system time.

a At the CI prompt type

>SETTIME <hh> <mm> [timezone]

and press the Enter key.

<hh> is the hour (00 to 23)

<mm> is the minutes (00 to 59)

[Timezone] is the offset time (in minutes) relative to Greenwich Mean Time (GMT). The default value is zero minutes.

Example of command use:

>SETTIME 08 24 1999

XAC TOD
critical (end)

Example of system response:

```
Time is 08:24:00 on WED. 1999/04/14
Timezone is 0 minutes from GMT
```

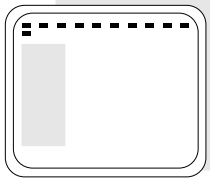
If the system time is	Do
not set	step 13
set	step 14

13 Call the next level of support.

14 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC TOD major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
TOD	.	.	.	.	.	.	.	.	.
M									

Indication

A TOD major alarm code appears under the XAC header of the alarm banner. The alarm code indicates the time-of-day (TOD) major alarm.

Meaning

There is no TOD clock redundancy. A single OC-3 two port interface packlet cannot receive TOD information from the message switch (MS). A hardware fault can exist as one or more of the following:

- a single XA-Core OC-3 two port interface packlet TOD device is OOS
- an MS OC-3 two port interface paddleboard cannot send TOD clock signal
- a single XA-Core OC-3 two port interface packlet is in a SysB, ManB or Cbsy state

Impact

There is no immediate change in subscriber service. An OC-3 two port interface packlet is isolated from the XA-Core system.

Common procedures

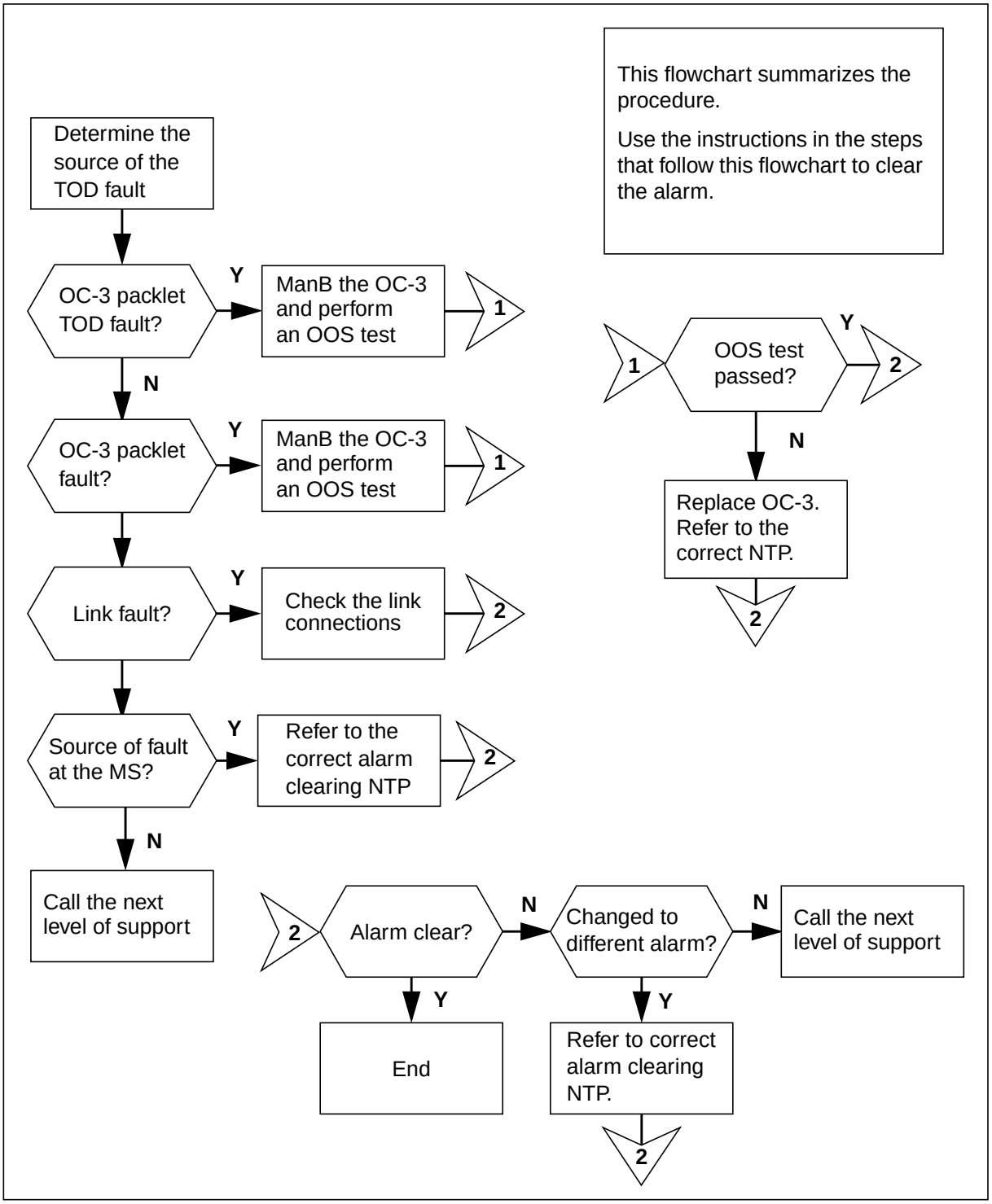
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC TOD
major (continued)

Summary of clearing a TOD major alarm



XAC TOD
major (continued)

How to clear a TOD major alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING
Possible fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC TOD
major (continued)

At the XA-Core MAP terminal

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the loss of TOD.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a TOD major alarm condition	step 2
a different alarm condition	step 15
the TOD major alarm condition is clear	step 17

2 Access the CMIC MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and state of the OC-3 two port interface packlets, the links and the IOP circuit packs (CPs).

Note: The CMIC MAP level displays alarms and TOD status as follows:

- an alarm under the XAC header in the alarm banner
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF)
- a status code appears under the TOD header in the command interpreter output area

The following is a sample MAP display.

XAC TOD
major (continued)

CMIC MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
 TOD      .        .       .       .        .       .       .       .       .
  M

CMIC
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 2               123456789012345678  456789012345   .      .       .       TODfl
 3          Sta: -.-----..-.---.-..-  .--.--------.   0      0       0       0
 4          Dep:
 5          Typ:                     *          *
 6 Tst_     Slot:Side:  Packlet:     Status:  Link0:   Link1:     TOD
 7 Bsy_       4  Rear     Lower       .          .        .       s
 8 RTS_       15 Rear     Lower       .          .        .       .
 9           CMIC:
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
an XA-Core TOD is SysB	step 4
an XA-Core OC-3 two port interface packlet TOD is CBsy	step 6
a different alarm	step 15
no alarm and all OC-3 XA-Core and MS TODs are in service	step 17

4 Manually busy the OOS 0C-3 two-port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC TOD
major (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
BSY 4 rear lower complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 16

5 Perform an OOS test on the 0C-3 two-port interface packlet. At the CMIC MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the OOS test	Do
did not pass	step 9
passed	step 11

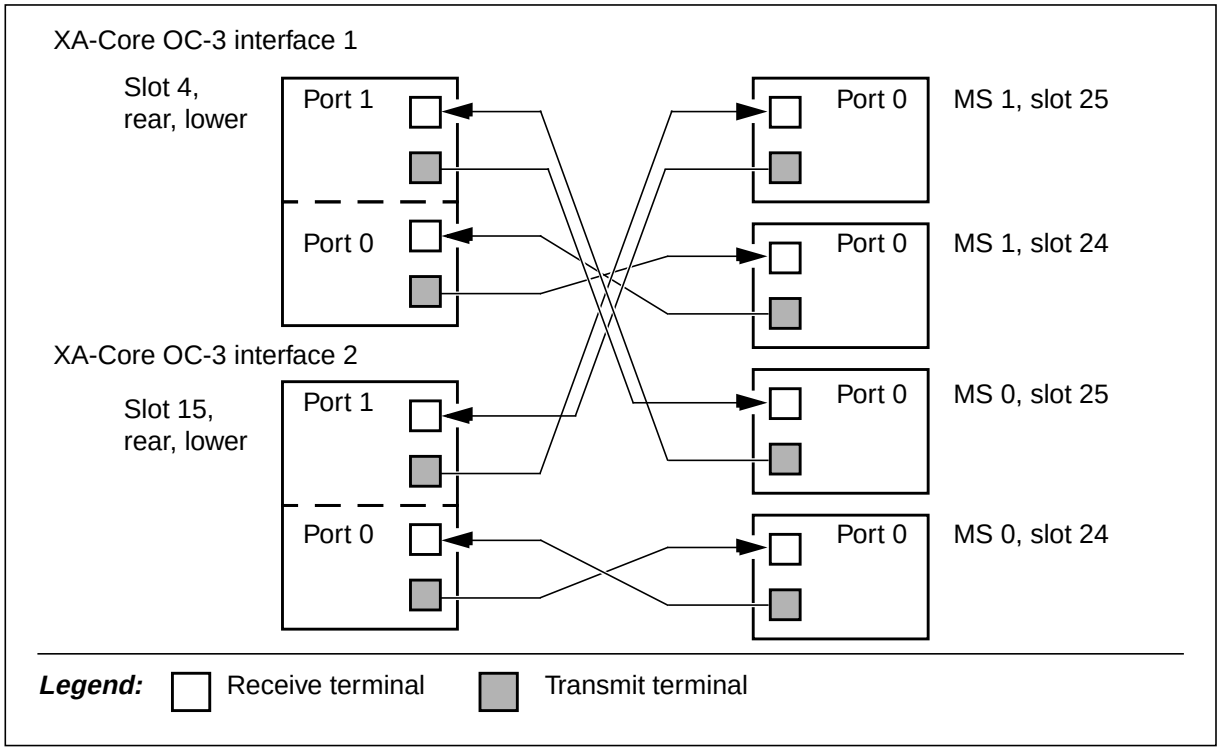
At the XA-Core physical shelf

6 Locate the OC-3 two port interface packlet on the physical shelf. Use the packlet location information from 3.

7 Examine the fiber optic cables on the OC-3 two port interface packlet. Look for visible damage or disconnection of the cables or cable connectors. Make sure that the link connections fit into the correct OC-3 interface and MS interface paddleboard ports. Use the following diagrams to check the link connections.

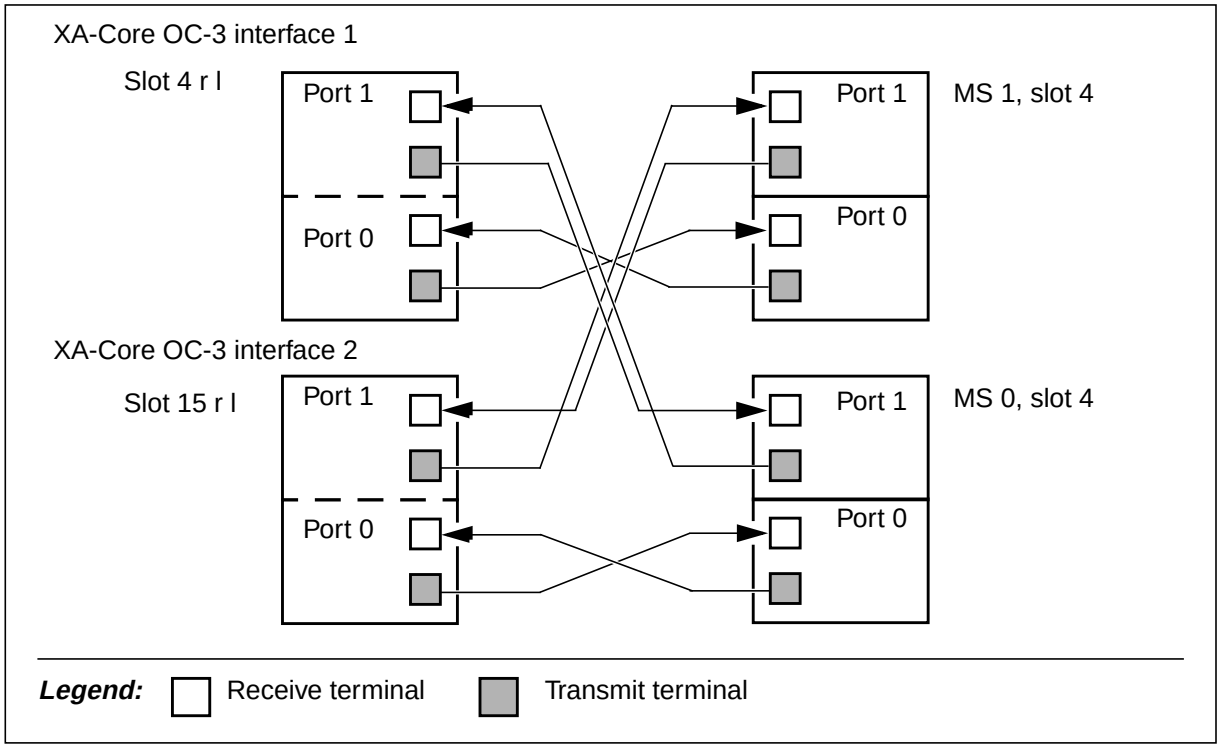
XAC TOD
major (continued)

XA-Core and MS fiber optic cable connections (SuperNode)

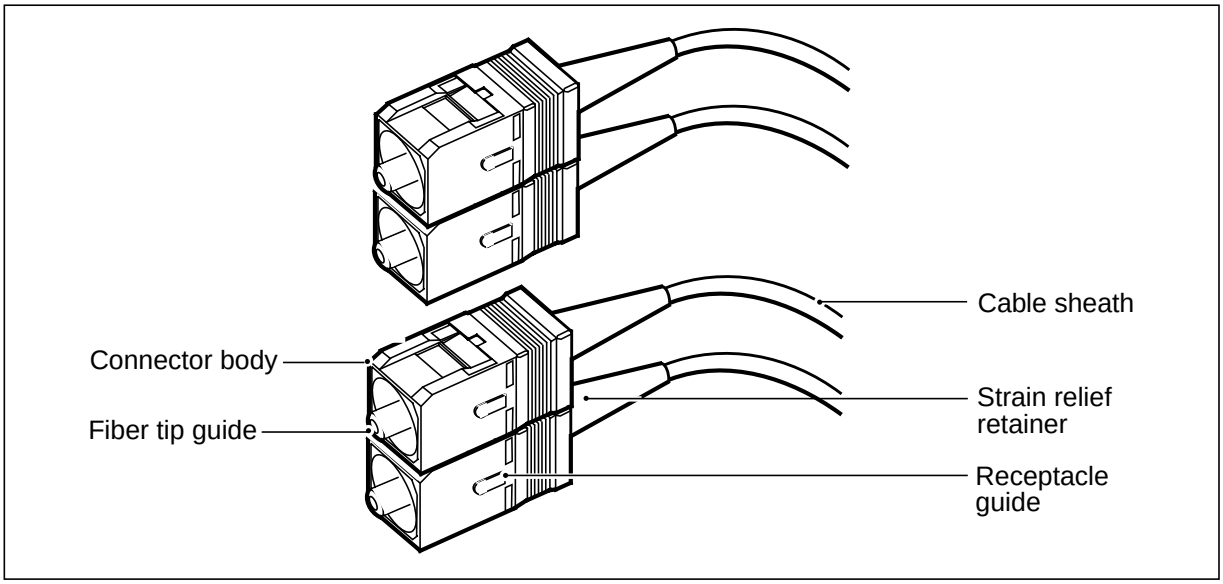


XAC TOD
major (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



Paired fiber optic cable connectors



XAC TOD
major (continued)

If OC-3 fiber optic cables or connectors are	Do
damaged	step 8
not visibly damaged or disconnected	step 9
not correctly connected to the MS	step 10

8 Disconnect the fiber optic cables from the OC-3 two port interface packlet and the OC-3 two-port interface paddleboard as follows:

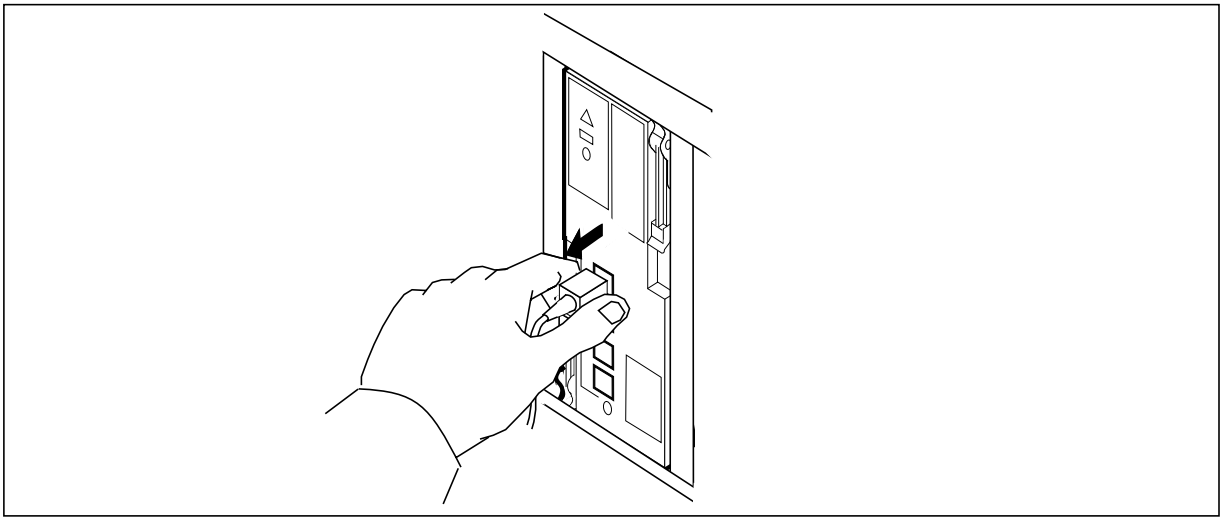
a Hold the connector by the receptacle body only

b Carefully pull the fiber optic connector away from the receptacle.

c Cover the ends of the fiber optic cable with dust caps.

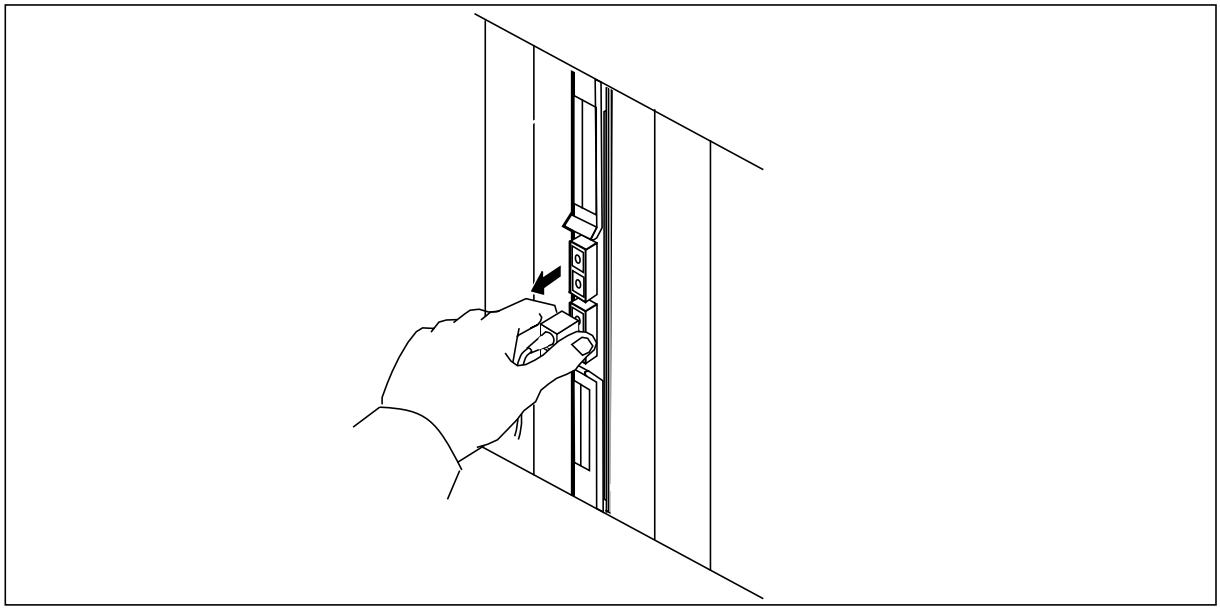
d Place the cables in a safe location away from the packlet

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



XAC TOD
major (continued)

Disconnect the OC-3 fiber optic cables from the OC-3 two port interface paddleboard ports



If you are	Do
replacing the OC-3 two port interface packlet	step 9
replacing the fiber optic cables	step 10

9 Perform the OC-3 two interface packlet replacement procedure. Refer to the correct NTP located in this document. Return to this point when complete.

10 Connect the replacement fiber optic cables to the correct OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports. Use the link connection diagrams shown in this step.

a Hold the connector by the body only.

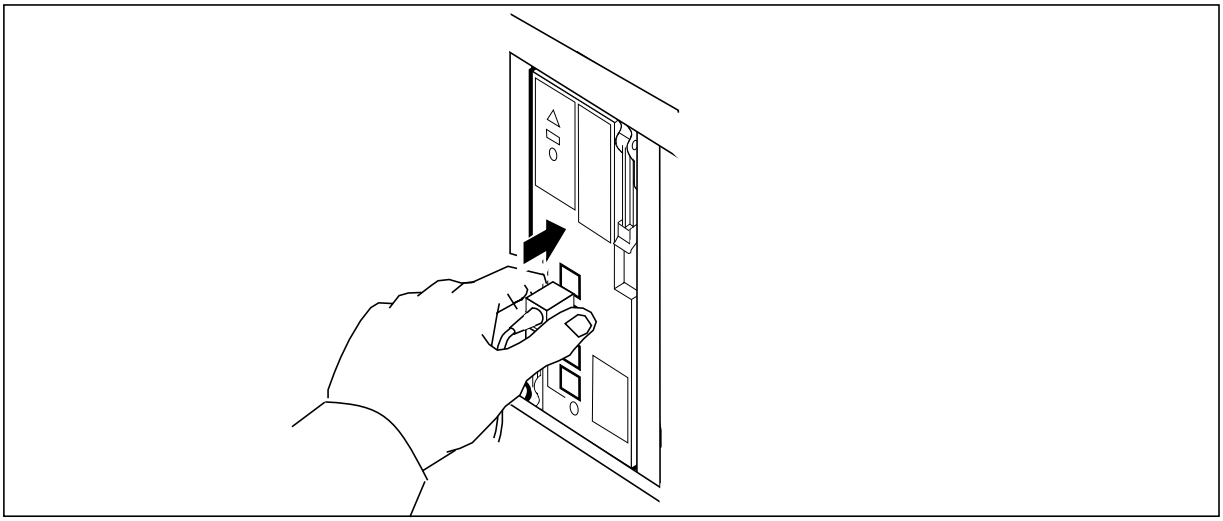
b Remove the fiber optic cable dust caps.

c Clean the tips of the fiber optic cables. Use the correct fiber optic cleaning procedure.

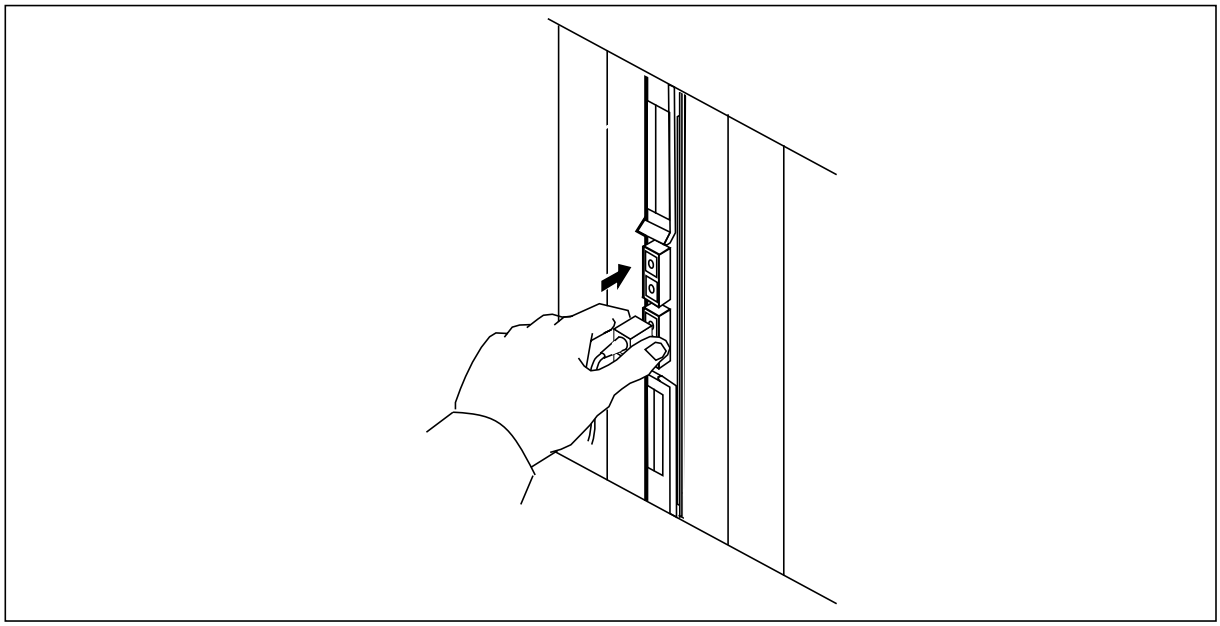
d Push the connector into the correct receptacle until the connector is fit into position.

XAC TOD
major (continued)

Connect the fiber optic cables to the OC-3 two port interface packlet ports



Connect the fiber optic cables to the OC-3 two port interface paddleboard ports



11 Return the OC-3 two port interface packlet to service. At the CMIC MAP level, type

>RTS <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC TOD
major (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

```
>RTS 4 r l
```

Example of system response:

```
RTS 4 rear upper passed
```

At the XA-Core MAP terminal

12 Confirm that the alarm is clear. Examine the CMIC MAP level.

If the TOD major alarm is	Do
changed to a different alarm	step 15
not clear	step 16
clear	step 17

13 Examine the MS MAP. Perform the following steps:

a Display the MS MAP level. At the CMIC MAP level type

>MS

and press the Enter key.

b Access the MS Shelf MAP level. The Shelf MAP level displays the status of all CPs in the shelf. At the MS MAP level, type

>SHELF

and press the Enter key.

c Access the MS Card MAP level for the OC-3 two port interface paddleboards. The card MAP level displays the status of the OC-3 two port interface paddleboards. At the MS MAP level, type

>CARD <nn>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the MS physical shelf slot - 1 to 26

Example of command:

>CARD 24

d Record the status of the OC-3 two port interface paddleboards (see the MS Card MAP level diagram in this step).

The following is a sample MAP display.

XAC TOD
major (continued)

MS Card MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


MS
 0 Quit          Message Switch      Clock      Shelf  0      Inter-MS Link 0 1
          MS 0       .              M Free             .                   - -
          MS 1       .              Slave              F                   - -
 4
 5        Shelf  0                   1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 6 Tst_   Card   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7 Bsy_   Chain
 8 RTS_   MS 0   . . . - . - - - - - - - - - - - - - - - - . . . . .
 9        MS 1   . . . - . - - - - - - - - - - - - - - - - . . . . .
10 LoadMS_
11       Card 24 CMIC Interface Card       Port: 0
12 SwMast MS 0          .                        .
13 Shelf  MS 1          .                        S
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

If the MS Card MAP level indicates	Do
OC-3 two port interface paddleboard ports are OOS	step 14
a different alarm	step 15
no faults or alarms	step 17

14 Perform the correct MS CP replacement procedure. Return to this point when complete.

If the TOD alarm is	Do
changed to a different alarm	step 15
not clear	step 16
clear	step 17

XAC TOD
major (end)

15 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

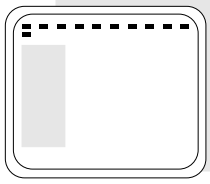
If the alarm is	Do
not clear	step 16
clear	step 17

16 Call the next level of support.

17 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC TOD minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
TOD	.	.	.	.	.	.	.	.	.

Indication

A TOD alarm code appears under the XAC header of the alarm banner. The alarm code indicates the time-of-day (TOD) minor alarm.

Meaning

An OC-3 two port interface packlet has lost TOD clock synchronization for the following reasons:

- an XA-Core OC-3 two port interface packlet TOD device cannot synchronize TOD signals from the message switch (MS).
- a single MS OC-3 TOD device on single message switch is out of service.

Impact

There is no immediate change in subscriber service. An OC-3 two port interface packlet cannot obtain an accurate TOD signal.

Common procedures

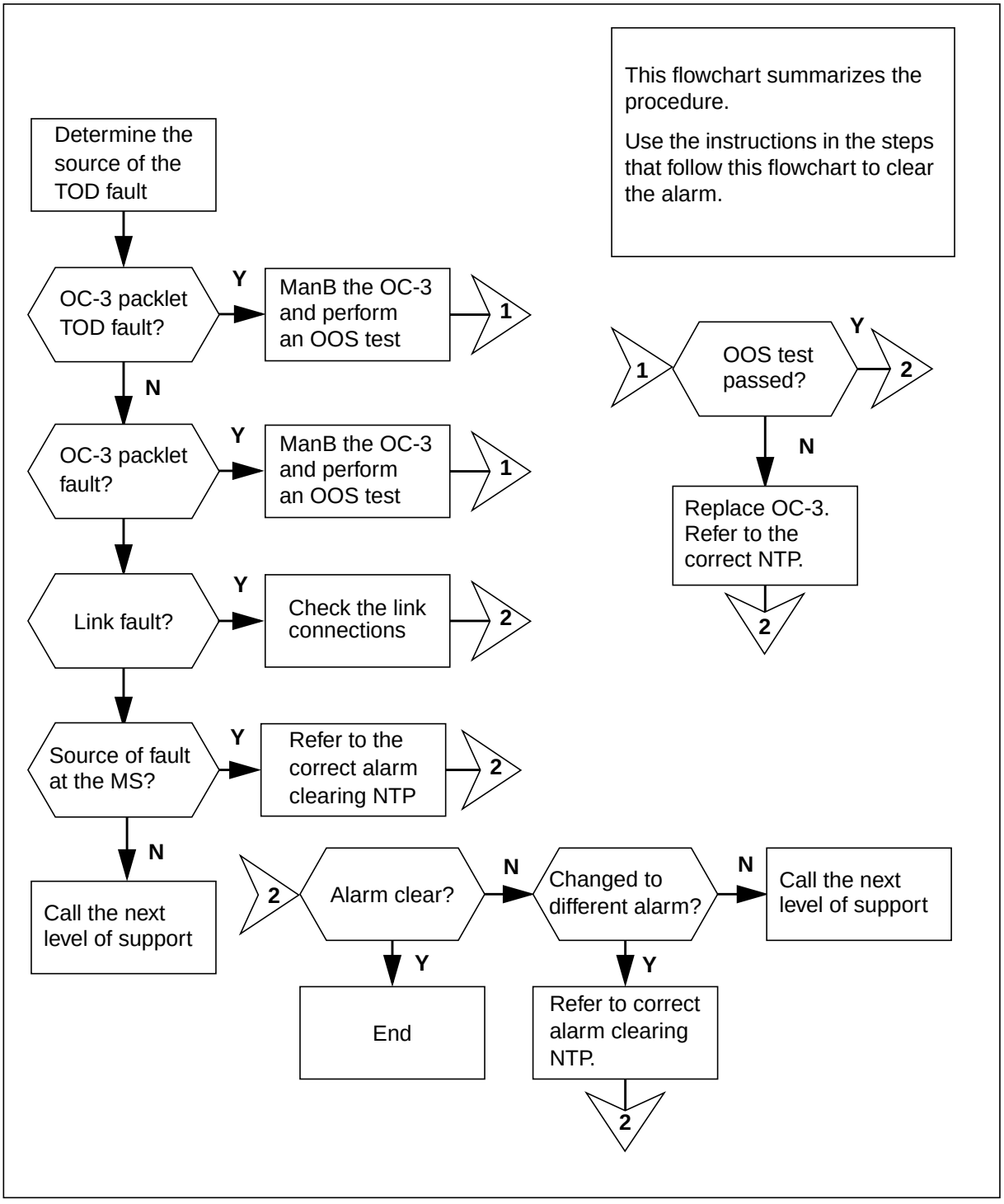
There are no common procedures.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC TOD
minor (continued)

Summary of clearing a TOD minor alarm



XAC TOD
minor (continued)

To clear a TOD minor alarm

ATTENTION
Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

WARNING
Possible fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

XAC TOD
minor (continued)

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the loss of TOD.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a TOD minor alarm condition	step 2
a different alarm condition	step 15
that the TOD minor alarm condition is clear	step 17

2 Access the CMIC MAP level. At the CI MAP level, type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and state of the OC-3 two port interface packlets, the links and the IOP circuit packs (CPs).

Note: The CMIC MAP level displays alarms and TOD status as follows:

- an alarm under the XAC header in the alarm banner
- an equipment alarm under the PKLT header of the subsystem status summary field (SSSF)
- a status code appears under the TOD header in the command interpreter output area

The following is a sample MAP display.

XAC TOD
minor (continued)

CMIC MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
 TOD       .       .       .       .       .       .       .       .       .


CMIC
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO       PKLT
 2               123456789012345678  456789012345   .      .       .        TODfl
 3          Sta: -.-----..-.---.-..-  .--.--------.   0      0       0        0
 4          Dep:
 5          Typ:                     *          *
 6 Tst_     Slot:Side:  Packlet:     Status:  Link0:   Link1:     TOD
 7 Bsy_       4  Rear    Lower       .          .        .        s
 8 RTS_       15 Rear    Lower       .          .        .        .
 9           CMIC:
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates	Do
an XA-Core TOD is SysB	step 4
an XA-Core OC-3 two port interface packlet TOD is CBsy	step 6
a different alarm	step 15
no alarm and all OC-3 XA-Core and MS TODs are in service	step 17

4 Manually busy the OOS 0C-3 two-port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

XAC TOD
minor (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
BSY 4 rear lower complete
```

Note: *If needed, use the Force option to place the packlet in a ManB state. Refer to the XA-Core MAP commands documentation.*

If the packlet is	Do
in a ManB state	step 5
not in a ManB state	step 16

5 Perform an OOS test on the 0C-3 two-port interface packlet. At the CMIC MAP level type

>TST <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>TST 4 r l

If the OOS test	Do
did not pass	step 9
passed	step 11

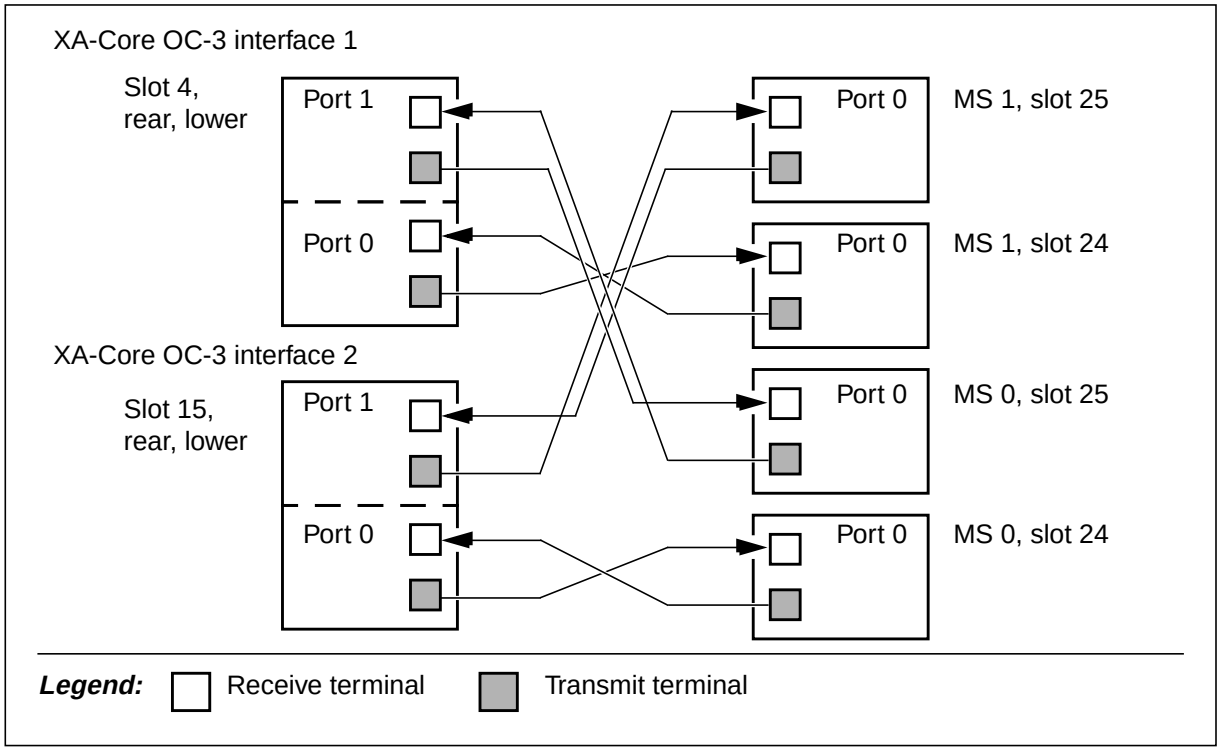
At the XA-Core physical shelf

6 Locate the OC-3 two port interface packlet on the physical shelf. Use the packlet location information from 3.

7 Examine the fiber optic cables on the OC-3 two port interface packlet. Look for visible damage or disconnection of the cables or cable connectors. Make sure that the link connections fit into the correct OC-3 interface and MS interface paddleboard ports. Use the following diagrams to check the link connections.

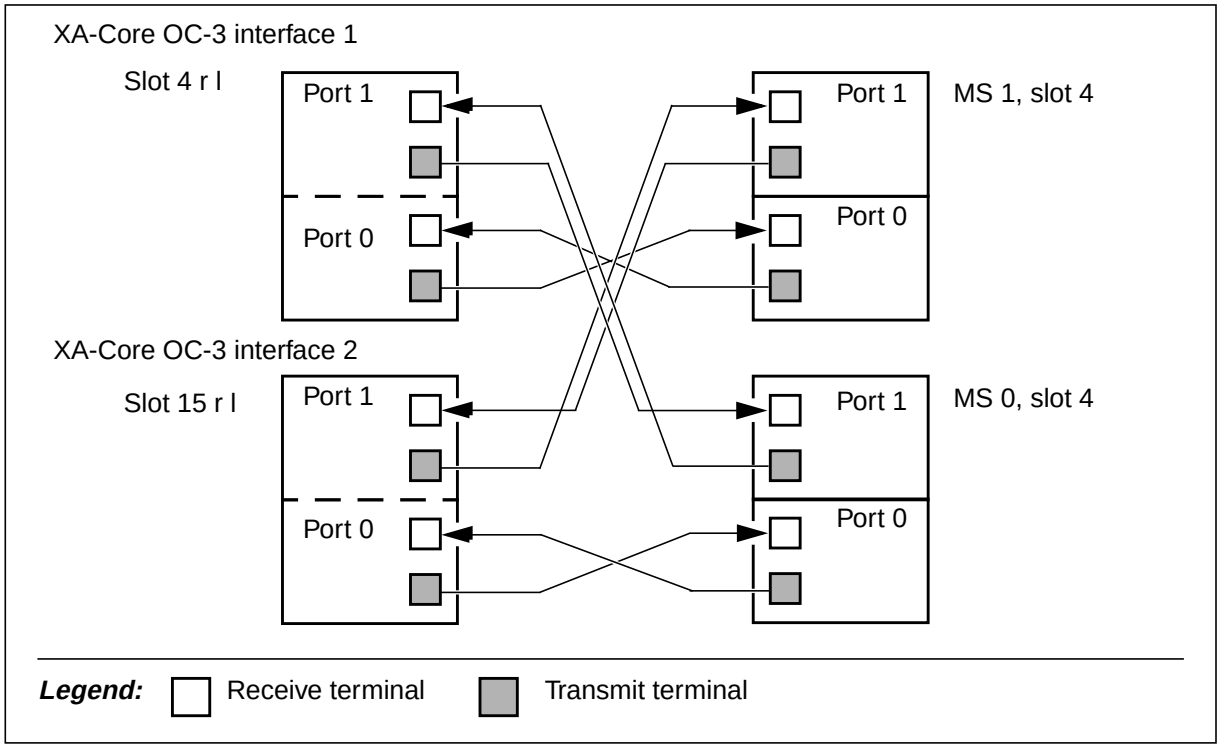
XAC TOD
minor (continued)

XA-Core and MS fiber optic cable connections (SuperNode)

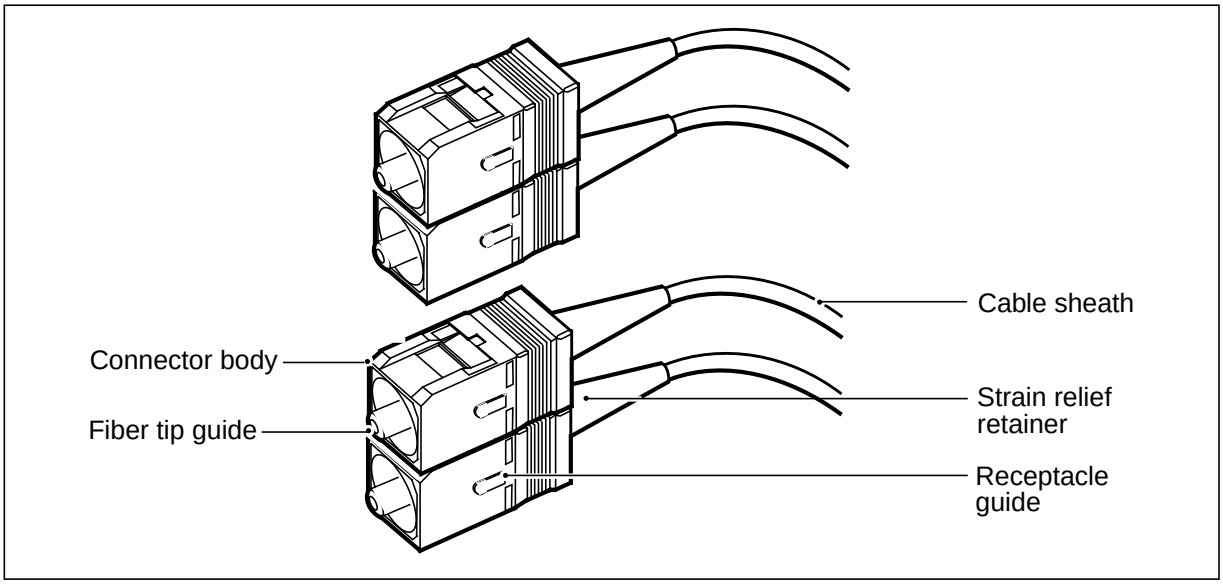


XAC TOD
minor (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



Paired fiber optic cable connectors



XAC TOD
minor (continued)

If OC-3 fiber optic cables or connectors are	Do
damaged	step 8
not visibly damaged or disconnected	step 9
not correctly connected to the MS	step 10

8 Disconnect the fiber optic cables from the OC-3 two port interface packlet and the OC-3 two-port interface paddleboard as follows:

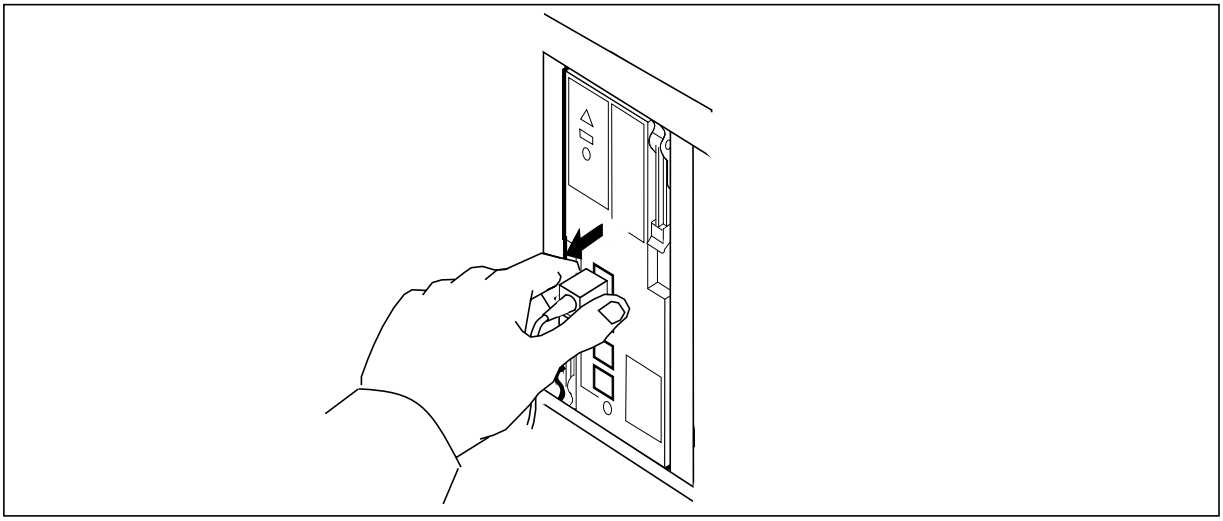
a Hold the connector by the receptacle body only

b Carefully pull the fiber optic connector away from the receptacle.

c Cover the ends of the fiber optic cable with dust caps.

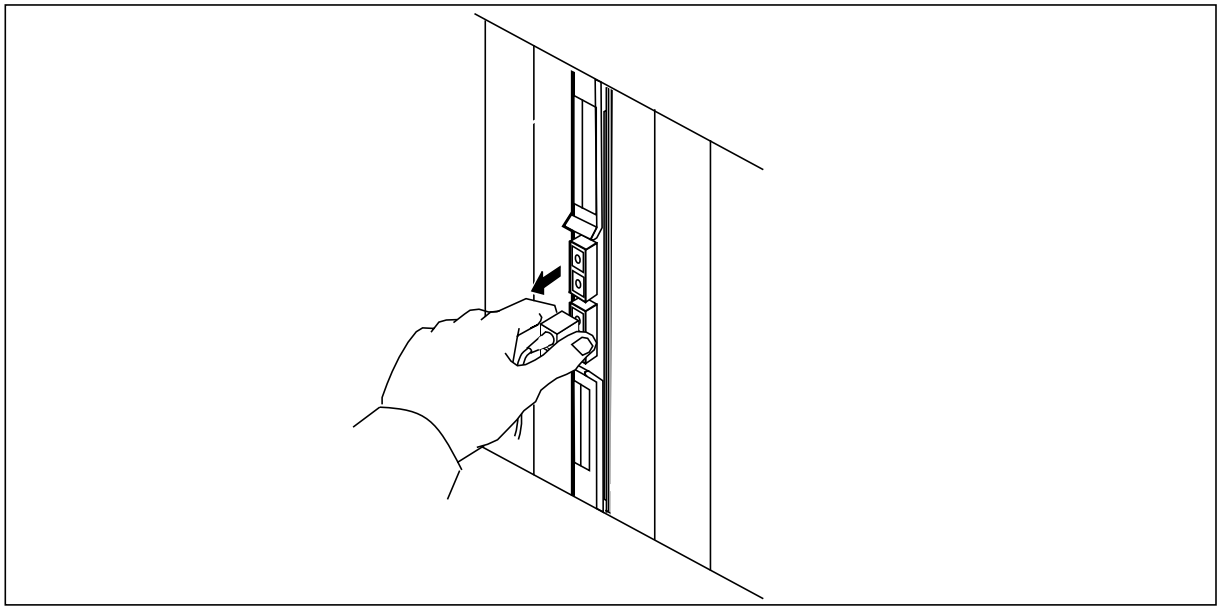
d Place the cables in a safe location away from the packlet

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



XAC TOD
minor (continued)

Disconnect the OC-3 fiber optic cables from the OC-3 two port interface paddleboard ports



If you are	Do
replacing the OC-3 two port interface packlet	step 9
replacing the fiber optic cables	step 10

9 Perform the OC-3 two port interface packlet replacement procedure. Refer to the correct NTP located in this document. Return to this point when complete.

10 Connect the replacement fiber optic cables to the correct OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports. Use the link connection diagrams shown in this step.

a Hold the connector by the body only.

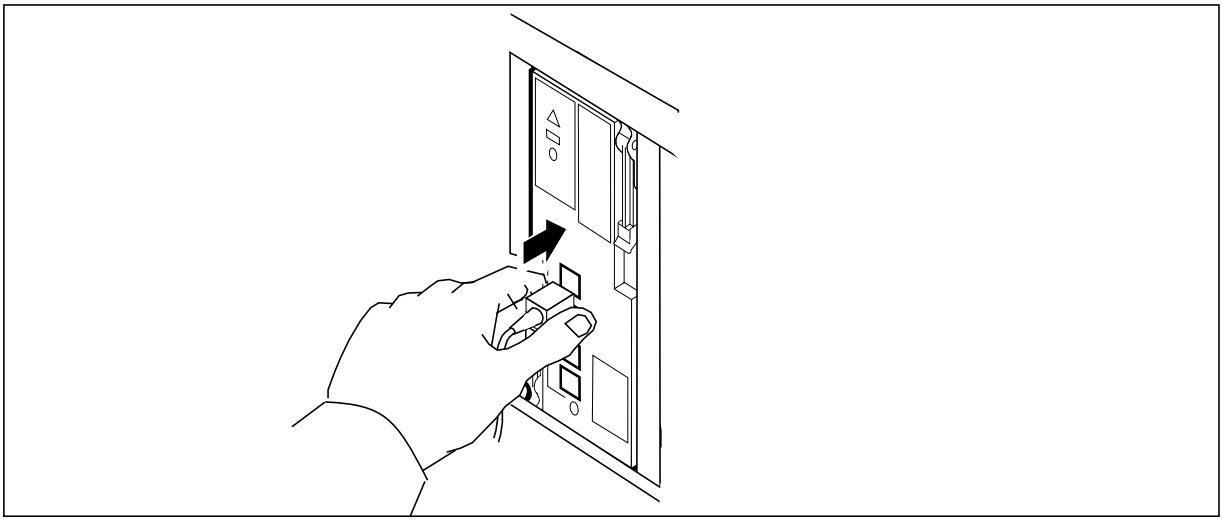
b Remove the fiber optic cable dust caps.

c Clean the tips of the fiber optic cables. Use the correct fiber optic cleaning procedure.

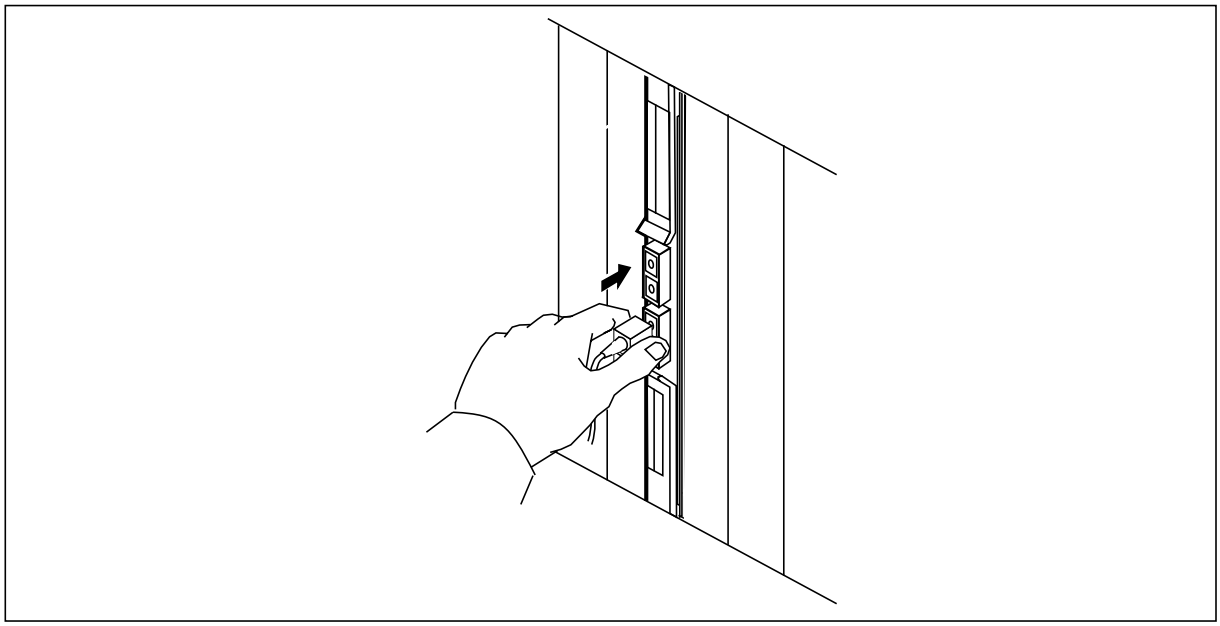
d Push the connector into the correct receptacle until the connector is fit into position.

XAC TOD
minor (continued)

Connect the fiber optic cables to the OC-3 two port interface packlet ports



Connect the fiber optic cables to the OC-3 two port interface paddleboard ports



11 Return the OC-3 two port interface packlet to service. At the CMIC MAP level, type

>RTS <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

XAC TOD
minor (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear upper passed
```

At the XA-Core MAP terminal

12 Confirm that the alarm is clear. Examine the CMIC MAP level.

If the TOD Minor alarm is	Do
changed to a different alarm	step 15
not clear	step 16
clear	step 17

13 Examine the MS MAP. Perform the following steps:

a Display the MS MAP level. At the CMIC MAP level type

>MS

and press the Enter key.

b Access the MS Shelf MAP level. The Shelf MAP level displays the status of all CPs in the shelf. At the MS MAP level, type

>SHELF

and press the Enter key.

c Access the MS Card MAP level for the OC-3 two port interface paddleboards. The card MAP level displays the status of the OC-3 two port interface paddleboards. At the MS MAP level, type

>CARD <nn>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the MS physical shelf slot - 1 to 26

Example of command:

>CARD 24

d Record the status of the OC-3 two port interface paddleboards (see the MS Card MAP level diagram in this step).

The following is a sample MAP display.

XAC TOD
minor (continued)

MS Card MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


MS
 0 Quit          Message Switch      Clock      Shelf  0      Inter-MS Link 0 1
 2          MS 0       .            M Free             .                   - -
 3          MS 1       .            Slave              F                   - -
 4
 5          Shelf  0                 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 6 Tst_     Card   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7 Bsy_     Chain
 8 RTS_     MS 0   . . . - . - - - - - - - - - - - - - - - - . . . . .
 9          MS 1   . . . - . - - - - - - - - - - - - - - - - . . . . .
10 LoadMS_
11          Card 24 CMIC Interface Card       Port: 0
12 SwMast   MS 0         .                         .
13 Shelf    MS 1         .                         S
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

If the MS Care MAP level indicates	Do
OC-3 two port interface paddleboard ports are OOS	step 14
a different alarm	step 15
no faults or alarms	step 17

14 Perform the correct MS CP replacement procedure. Return to this point when complete.

If the TOD alarm is	Do
changed to a different alarm	step 15
not clear	step 16
clear	step 17

XAC TOD
minor (end)

15 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

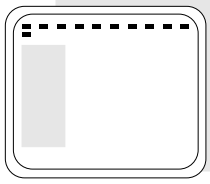
If the alarm is	Do
not clear	step 16
clear	step 17

16 Call the next level of support.

17 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

XAC WgSlot minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
Wgslot	.	.	.	.	.	.	.	.	.

Indication

A WgSlot (wrong slot) minor alarm message appears under the XAC header of the alarm banner. The message indicates a wrong slot minor alarm.

The system generates the WgSlot alarm if either of the following conditions occurs:

- system software detects one or more CPs in the wrong XA-Core shelf slot positions.
- system software detects that a shelf slot configured for a CP is empty.

If there are no existing alarms, the alarm banner displays the WgSlot alarm. An existing alarm condition masks the WgSlot alarm banner message if the alarm condition is higher in the alarm hierarchy. You can perform an alarm query to review active alarms. The subsystem status summary field (SSSF) displays a BadPEC notice.

Meaning

The message indicates that a circuit pack (CP) is in a wrong physical shelf slot. The XA-Core system software detects a mismatch between the circuit pack product engineering code (PEC) now in the physical slot and the PECINV table.

Impact

The circuit pack type cannot operate in the physical shelf slot. Operating company personnel must insert the circuit pack in the physical shelf slot matched for the circuit pack type.

Common procedures

There are no common procedures.

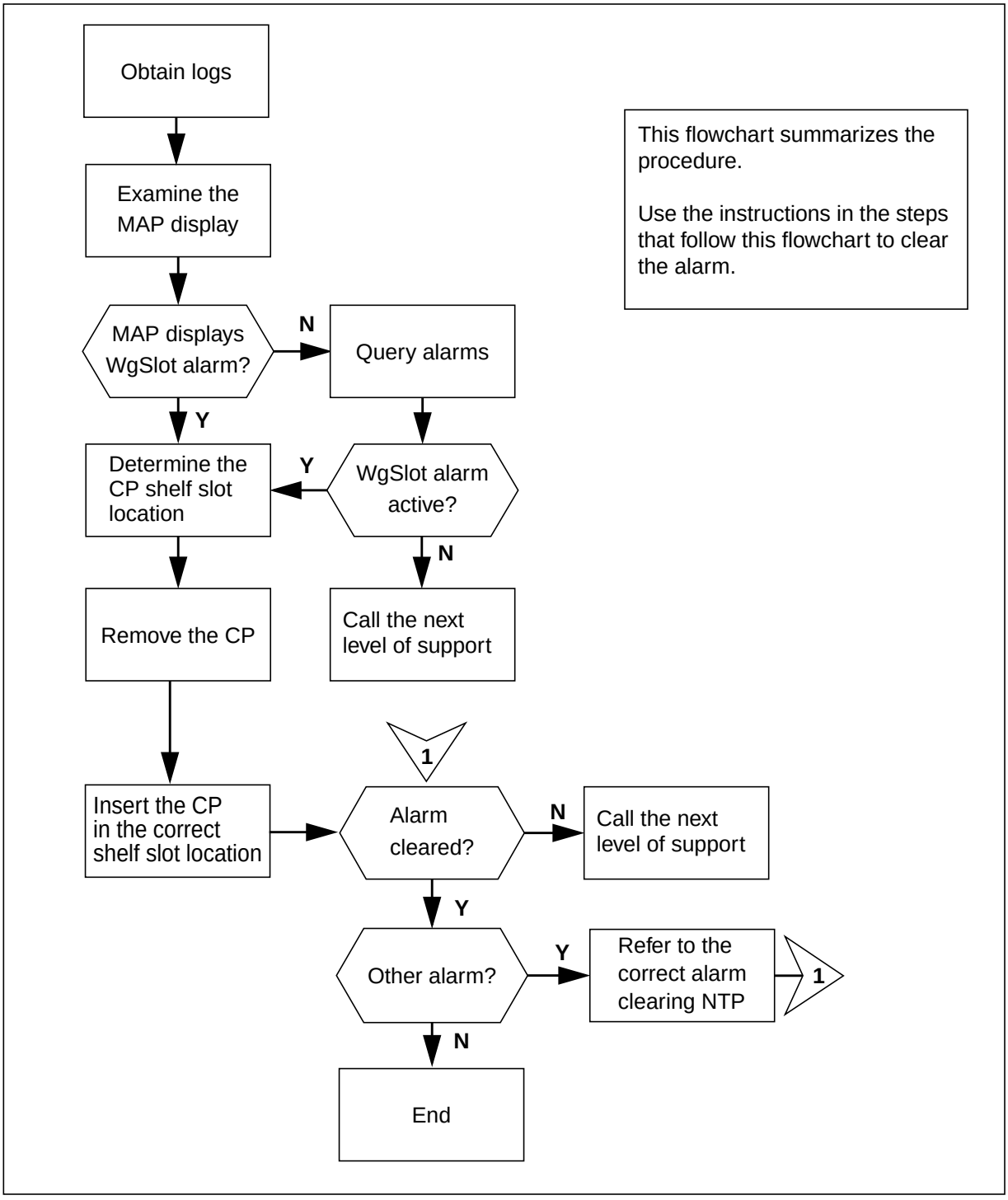
XAC WgSlot
minor (continued)

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC WgSlot minor (continued)

Summary of clearing a WgSlot minor alarm



XAC WgSlot
minor (continued)

How to clear a WgSlot minor alarm

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Collect information from the XA-Core log report system.The log messages provide information about the source of the Tape alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the MAP indicates	Do
a WgSlot condition	step 2
another alarm event	step 7
that the WgSlot condition is clear	step 9

XAC WgSlot minor (continued)

2 Access the correct XA-Core MAP level using the information from 1. Examine the state and location of the CP or packlet.

Note: The MAP terminal can display alarms as follows:

- a WgSlot minor alarm appears under the XAC header in the alarm banner
- an equipment alarm appears under an equipment header in the subsystem status summary field (SSSF)

The following is a sample MAP display.

PE MAP level

```
 XAC      MS      TOD      Net      PM      CCS      Lns     Trks     Ext     APPL
WgSlot     .       .        .       .        .        .       .       .       .


PE                    Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit               123456789012345678  456789012345   .      badPEC  .      .
 2                Sta: -.-S--.-.--.-.-.-  .--.--------.   0      1       0      0
 3                Dep:
 4                Typ:    *           *
 5                 PE:
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10
11
12
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP level indicates	Do
a WgSlot alarm	step 3
a different alarm	step 7
the alarm is clear and all CPs and packlets are in service	step 9

3 Find the correct CP physical slot location. Perform a query by typing

>QUERY <type> <subsystem_name>

and press the Enter key. The MAP level displays the correct physical slot location for the subsystem type.

where

XAC WgSlot
minor (end)

<type> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<subsystem_name> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>QUERY type pe

The Type field displays an asterisk (*) to indicate the correct slot locations for the CP.

4 Remove the CP from the incorrect physical shelf slot.

5 Insert the CP in the correct physical shelf slot.

6 Confirm that the alarm is clear. Examine the alarm banner on the MAP screen.

If the Wgslot alarm is	Do
changed to another alarm	step 7
not clear	step 8
clear	step 9

7 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

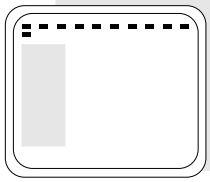
If the alarm is	Do
not clear	step 8
clear	step 6

8 Call the next level of support.

9 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

XAC XATrap major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
XATrap M	.	.	.	.	.	.	.	.	.

Indication

An XATrap major alarm code appears under the XAC header of the alarm banner. The alarm code indicates a XATrap major alarm.

Meaning

The XATrap major alarm indicates that the frequency and number of processor interruptions exceeds threshold values. A trap is a report of an interruption or change in the normal flow of system software processing. The processor cannot completely execute a command because of a software fault. The XATrap major alarm does not have a matching equipment alarm.

Impact

There is a change in subscriber service. There is a reduction in subscriber service response time because fault detection software is using system resources and processor time to correct faults. A restart is imminent.

Common procedures

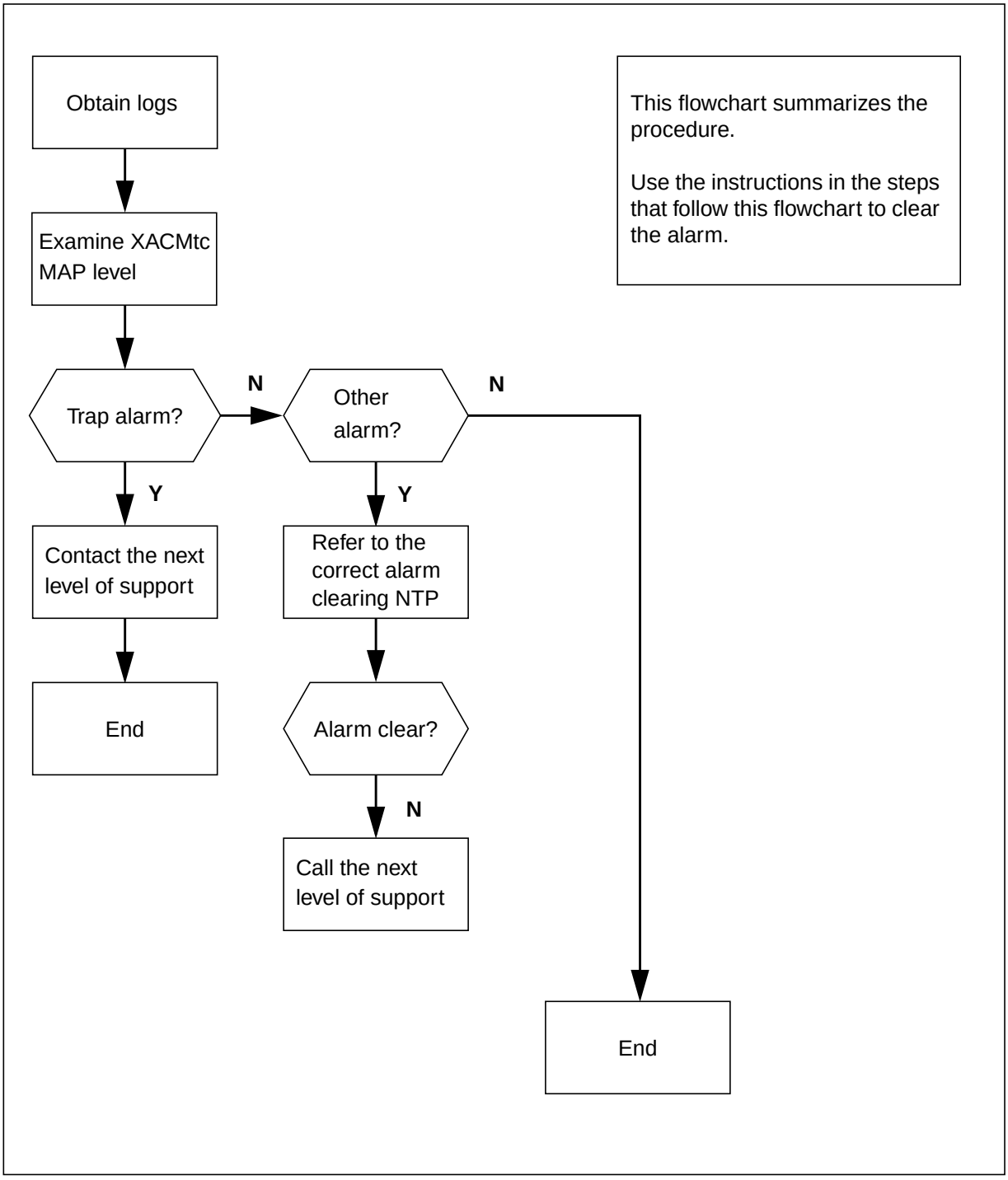
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

XAC XATrap
major (continued)

Summary of clearing an XATrap major alarm



XAC XATrap
major (continued)

How to clear an XATrap major alarm

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Collect information from the XA-Core log report system. The log messages provide information about the source of the XATrap alarm.

a Access the log utility feature. At the CI MAP level, type

>LOGUTIL

and press the Enter key.

b Access the XA-Core logs. At the Logutil prompt type

>OPEN XAC

and press the Enter key.

c Examine and record the appropriate log reports.

d Return to the CI MAP prompt. At the Logutil prompt type

>QUIT

and press the Enter key.

If the log indicates	Do
a trap major condition	step 2
a different alarm condition	step 5
the XATrap major alarm condition is clear	step 6

XAC XATrap
major (continued)

2 Access the XACMtc MAP level. At the CI MAP level, type

MAPCI;MTC;XAC;XACMTC

and press the Enter key.

If the XA-Core XACMtc MAP is	Do
accessible	step 3
not accessible	step 6

3 Examine the XACMtc MAP level. Record the rate and total number of traps. The trap rate indicates the frequency of faults that occur per minute. The trap total is the number of faults over a period of time.

The following is a sample MAP display.

XACMtc MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
XATrap     .       .        .       .        .        .       .       .       .
  M

XACMtc          Front:   111111111    Rear: 111111   SM     PE    IO      PKLT
 0 Quit         123456789012345678    456789012345   .      .     .       .
 2       Sta: -.-.--.-.-----..-     .--.--------.    0      0     0       0
 3       Dep:
 4       Typ: ***MTC************   ***MTC******
 5
 6       Traps:       Per Minute:  = 0          Total = 1
 7       AutoLdev:    Primary      = Slot 2 front, Lower Packlet
 8                    Secondary    = Slot 17 rear, Upper Packlet
 9       Image:       Restartable = No image test
10                    Next image test restart type = WARM
11 Image Last XARExTst: executed at hh:mm:ss on mmm dd yyyy
12 RExTst_
13 RExInt_
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP indicates that there is	Do
a different alarm	step 4
an XATrap major alarm	step 5
no alarm	step 6

XAC XATrap **major** (end)

4 Perform the correct alarm clearing procedure. Refer to the correct NTP. Return to this point when complete.

If the alarm is	Do
not clear	step 5
clear	step 6

5 Call the next level of support.

6 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

2 Introduction to card replacement

Chapter summary

This chapter contains procedures for replacing circuit packs (CPs) and packlets in XA-Core shelves in SuperNodes and SuperNode SEs (SNSEs). It also contains procedures for adding and removing PE circuit packs and Ethernet packlets.

Each procedure provides the following information:

- application information
- common procedures
- summary flowchart
- step-action instructions

Application information

The Application information section describes when to use the procedure. The Application information section also lists the versions of the CP or packlet.

Common procedures

The common procedures section refers you to another set of instructions located elsewhere in the documentation. The common procedures describe how to perform related maintenance activities.

Summary flowchart

The summary flowchart shows the primary activities, decision points, and paths to correctly replace the CP or packlet. Use the summary flowchart to preview the replacement activities and to prepare for the replacement procedure.

Step-action instructions

The step instructions are a sequence of activities that describe how to replace a CP or packlet. The instructions also provide examples of MAP command syntax and MAP terminal responses.

On occasion, a step instruction can refer to a common procedure or to another document. After completion of the common or related procedure, return to the original point in the step-action instructions and continue.

XA-Core hardware components

This section provides a short description of the major XA-Core hardware components.

XA-Core has the following major hardware components:

- C42 equipment cabinet
- shelf module
- circuit packs and packlets
- cooling unit

C42 equipment cabinet

The C42 equipment cabinet contains the XA-Core shelf module, CPs, packlets and cooling unit. All cabinet versions have a frame supervisory panel (FSP), four shelf units and a cooling unit.

XA-Core is available in one of three cabinet configurations:

- SuperNode-XA cabinet
- SuperNode SE (SNSE) cabinet
- XA-Extension cabinet

Figure 2-1 C42 SuperNode-XA cabinet layout

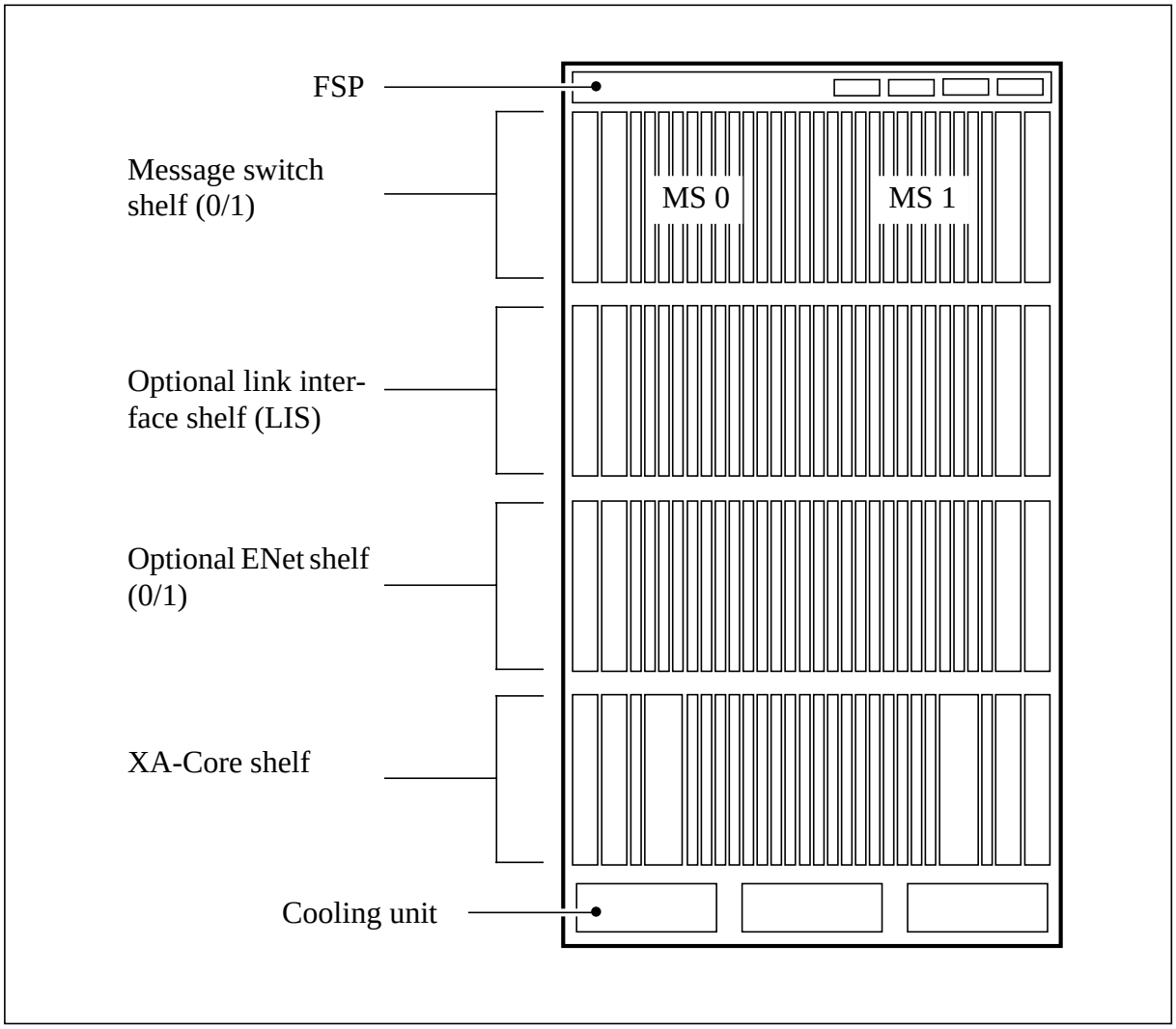


Figure 2-2 C42 SNSE-XA cabinet layout

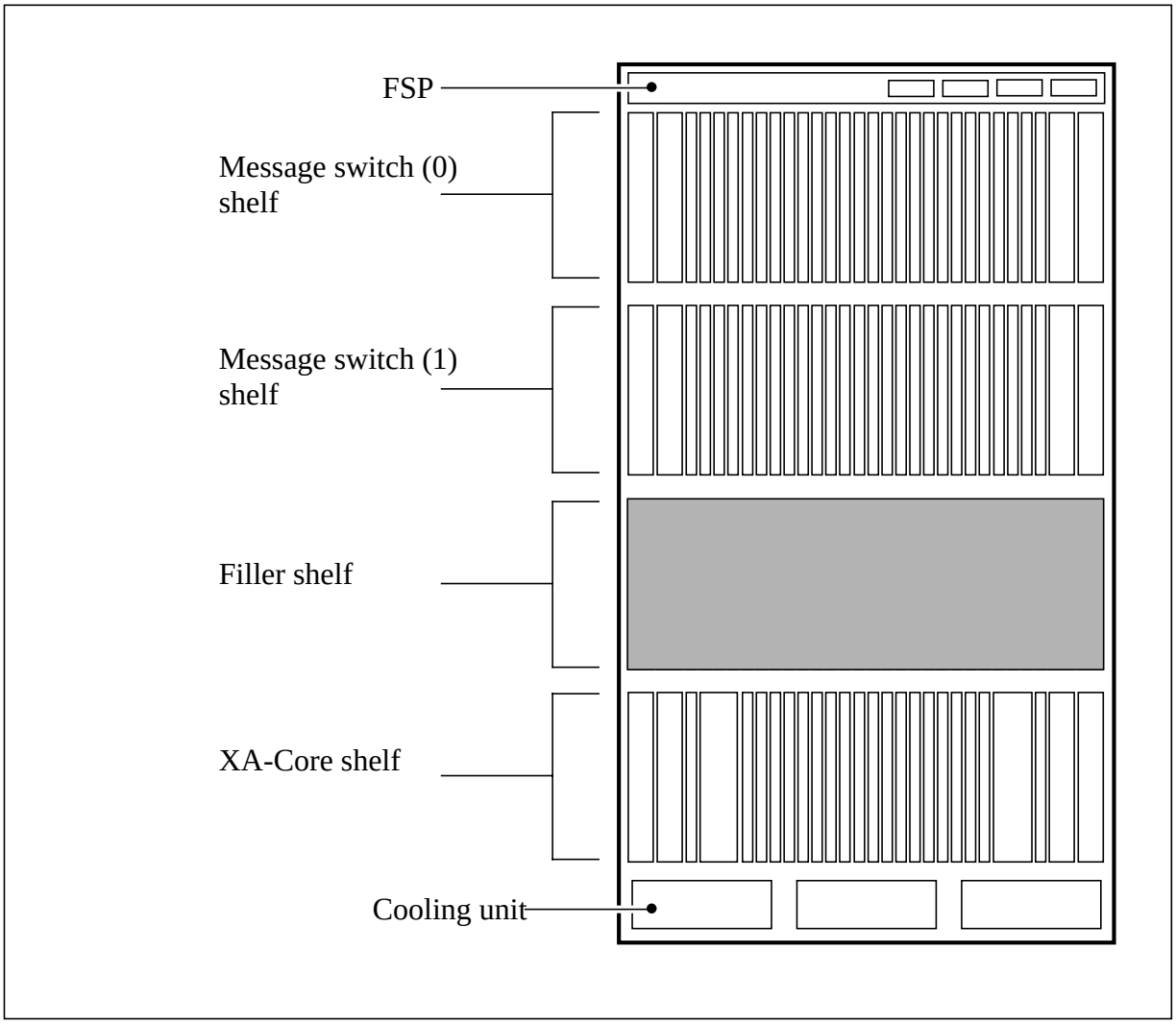
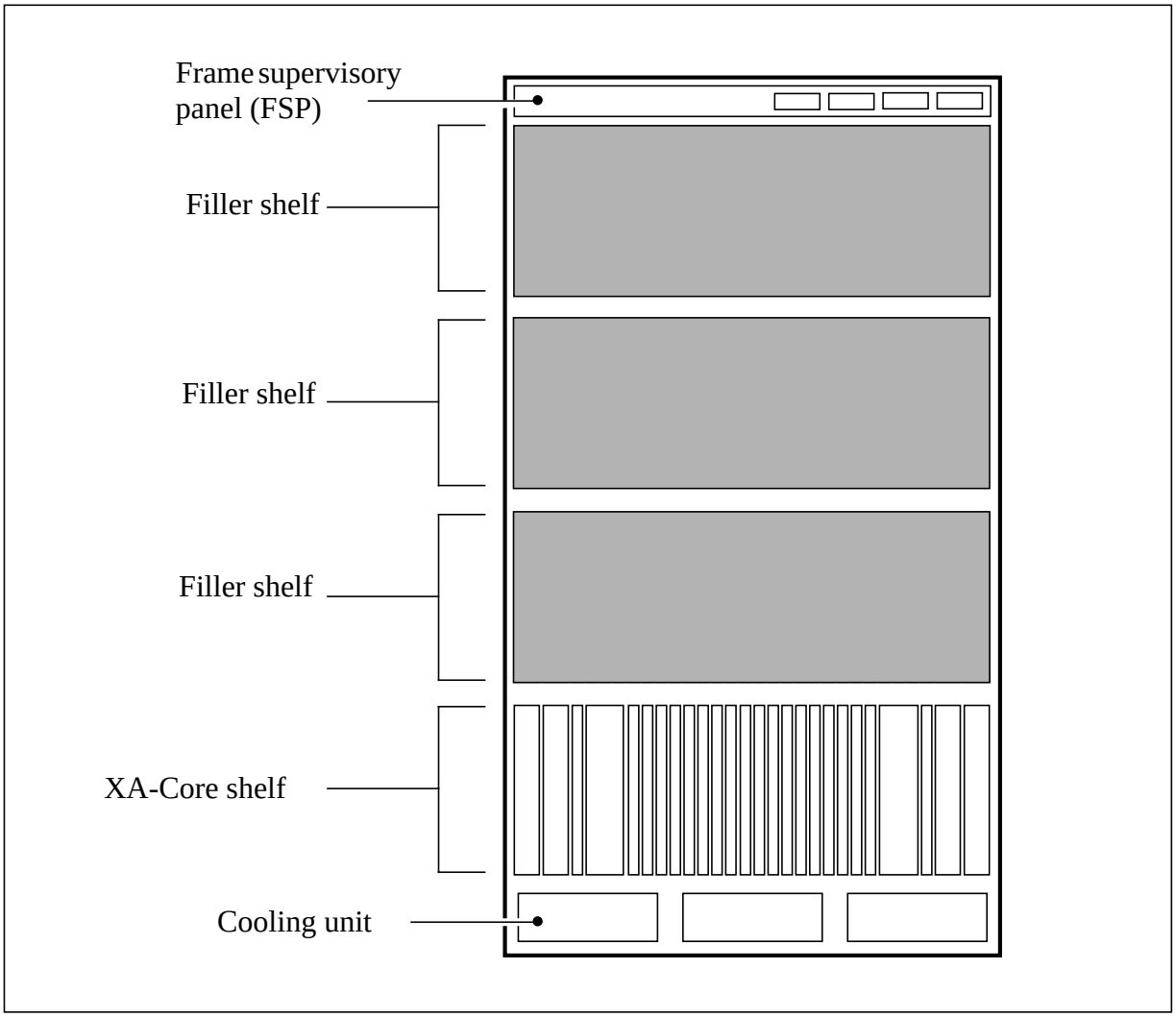


Figure 2-3 C42 XA-Extension cabinet layout



XA-Core shelf module

The XA-Core shelf module houses all CPs and packlets. The CPs connect to a midplane connector.

The shelf has two sides:

- front (primary)
- rear (secondary)

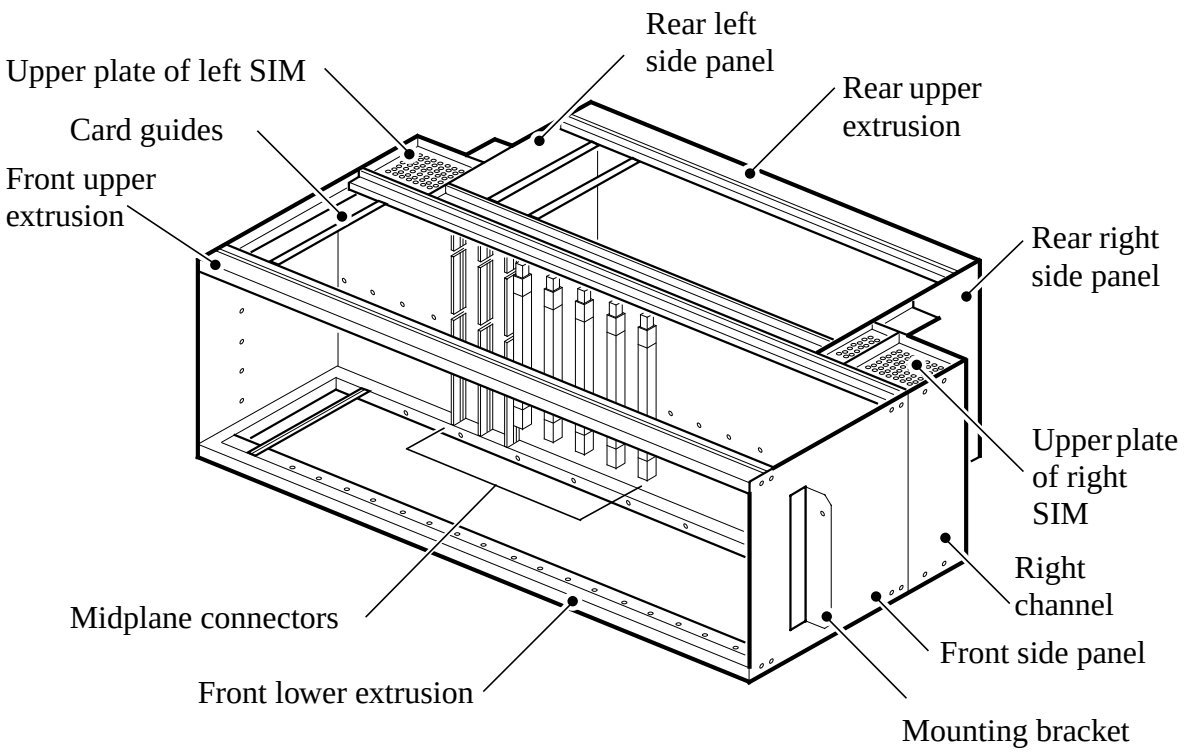
The front side houses IOP CPs that contain non-cable supporting packlets such as the Disk and Tape. The rear side contains IOP CPs that contain all cable-supporting packlets such as the OC-3 dual port interface and the RTIF.

Each CP installs into a vertical slot integrated within the shelf. Each slot holds one type of CP. The CPs plug into a series of connectors placed along the interior axis of the shelf. Together, these connectors form the midplane connector level.

The midplane is a printed circuit board (PCB) assembly that provides the inter-connection between the processor elements (PEs) and peripheral devices. The midplane is not a field replaceable unit (FRU). Any failures traceable to the midplane requires replacement of the XA-Core shelf.

Slots at the front (primary side) of the shelf are numbered as (left to right) 01F to 18F. Slots at the rear (secondary side) of the shelf are numbered as (left to right) 03R to 16R. There are a total of 30 slots for both front and rear sides.

Figure 2-4 XA-Core shelf



Note 1: Only representative card guides, T-bars, support plates, and connector stack-ups are shown.
Note 2: The XA-Core shelf contains thirty 50mm I/O, PE, and MEM modules, and two 40.5mm SIM modules.

Circuit packs and packlets

Each replacement procedure in this chapter applies to a single CP or packlet. There are two different types of slots that contain three types of circuit packs and packlets:

1. ***Shared memory slots***: contain the shared memory (SM) CPs
2. ***Element slots***: contain the processor element (PE) and IOP circuit packs. The IOP CPs contain the disk, tape, OC-3 dual port interface, reset terminal interface (RTIF) packlets.

Two shelf interface modules (SIMs) provide a power interface to the shelf. The SIMs are an extension of the midplane and are removable for maintenance purposes.

Shelf layout

This section describes CP and packlet placement for both the SuperNode and SuperNode SE (SNSE) configurations.

Shelf provisioning depends on the configuration and office requirements. In both SuperNode and SNSE versions, the primary side contains non-cable bearing (disk/tape) circuit packlets. The secondary side contains slots for SM, cable/non-cable bearing IOPs and up to five slots for additional PEs or IOPs.

Special termination filler modules electrically terminate empty slots at the midplane. Filler modules help to dissipate heat within the C42 cabinet.

There are two sizes of circuit packs:

- ***Single-width***: IOP CPs occupy one slot width and have a single slot location number. These IOP CPs typically contain the OC-3 dual port interface and RTIF packlets.
- ***Dual-width***: IOP CPs occupy two slot widths and have more than one slot location number. These IOP CPs typically contain the Disk and Tape packlets.

The following table shows a summary of the CP and packlet version and descriptions.

Table 2-1 Equipment provisioning summary

PEC	Version	Name	Description
NTLX02	AA/ CA	Processor element (PE) circuit pack	256 MByte processor element
NTLX03	AA/AB	Input/Output processor (IOP) circuit pack	Single-width IOP for OC-3 & RTIF packlets
NTLX03	BA/BB	Input/Output processor (IOP) circuit pack	Dual-width IOP for Disk & Tape packlets
NTLX05	AA/AB	OC-3 two port interface CMIC packlet	XA-Core to message switch interconnect (CMIC) packlet
NTLX05	BA	OC-3 two port interface AMDI packlet	ATM multi-mode data interface (AMDI) packlet--interfaces to the ATM edge switch
NTLX06	AA/ AB	Disk packlet	4 GByte disk drive packlet (AA) 8 GByte disk drive packlet (AB)
NTLX07	AA	Tape packlet	1.3 GByte digital audio tape (DAT) drive packlet
NTLX08	AA/AB	Reset terminal interface (RTIF) packlet	RS232/422 serial interface packlet
NTLX09	AA	Ethernet single port interface (ETHR) packlet	Ethernet packlet-core to LAN hub/IP network
NTLX11	AA	Fan drawer	Cooling unit fan drawer
NTLX12	AA	Shelf interface module (SIM) circuit pack	Power supply and power filter. Two are always provided.
NTLX14	CA	Shared memory (SM) circuit pack	384 MBytes
NTLX20	AA	Filler circuit pack	Single-width slot filler circuit pack
NTLX20	BA	Terminating filler circuit pack	Single-width plug-in module

Shelf layout: XA-Core in a SuperNode

This section describes the shelf layout for an XA-Core shelf in a SuperNode.

In CSP15, the XA-Core shelf supports the following PE configurations: 2+1, 3+1, and 5+1.

- In the 2+1 configuration, there are PE circuit packs in slots 4 front, 5 front, and 16 front. All three PE circuit packs operate in a load sharing mode.
- In the 3+1 configuration, there are PE circuit packs in slots 4 front, 5 front, 13 front, and 16 front. All four PE circuit packs operate in a load sharing mode.
- In the 5+1 configuration, there are PE circuit packs in slots 4 front, 5 front, 6 front, 12 front, 13 front, and 16 front. All six PE circuit packs operate in a load sharing mode.

> ***Note:*** In each PE configuration, the spare processing power is the equivalent of one PE unit. A PE unit is the processing power of a PE circuit pack that uses PowerPC 604 processors. The NTLX02AA and the NTLX02CA use such processors.

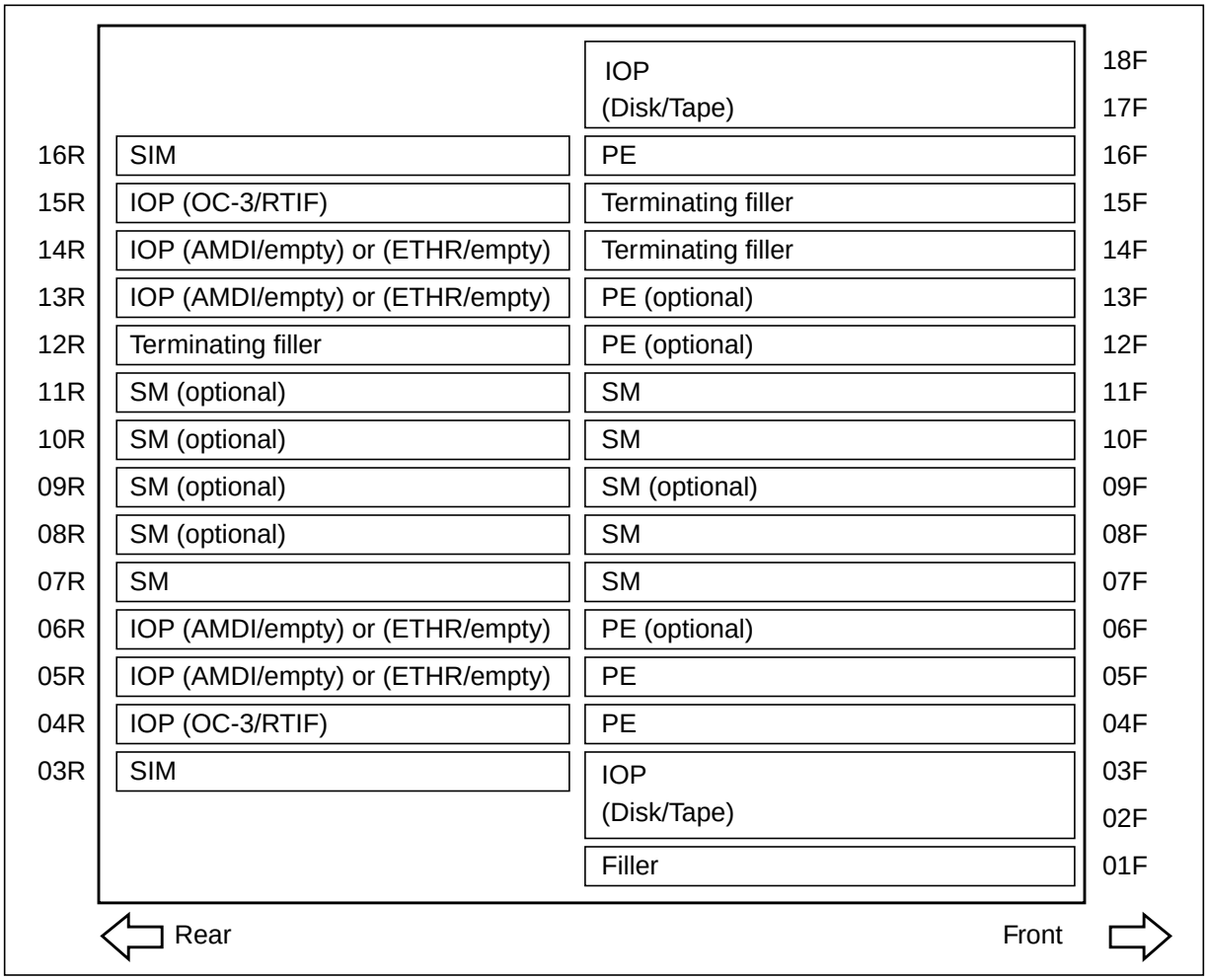
The minimum configuration requires that five SM cards be present in slots 7 front, 7 rear, 8 front, 10 front, and 11 front. Other supported configurations are:

- seven SM cards (slots 7 front, 7 rear, 8 front, 10 front, 11 front, 10 rear, and 9 rear)
- ten SM cards (slots 7 front, 7 rear, 8 front, 10 front, 11 front, 10 rear, 9 rear, 8 rear, 9 front, and 11 rear)

The IOP cards in slots 5R, 6R, 13R, and 14R are optional.

The following figure shows the SuperNode shelf layout.

Figure 2-5 Shelf layout for an XA-Core in a SuperNode



Shelf layout: XA-core in a single-cabinet SuperNode SE (SNSE)

This section describes the XA-Core configured on a SuperNode SE (SNSE) shelf layout. In this scenario, the XS-Core is configured in a SNSE cabinet, not in an extension cabinet.

In CSP15, the XA-Core shelf supports the following PE configurations: 2+1, 3+1, and 5+1.

- In the 2+1 configuration, there are PE circuit packs in slots 4 front, 5 front, and 16 front. All three PE circuit packs operate in a load sharing mode.
- In the 3+1 configuration, there are PE circuit packs in slots 4 front, 5 front, 13 front, and 16 front. All four PE circuit packs operate in a load sharing mode.
- In the 5+1 configuration, there are PE circuit packs in slots 4 front, 5 front, 13 front, 14 front, 16 front, and 12 rear. All six PE circuit packs operate in a load sharing mode.

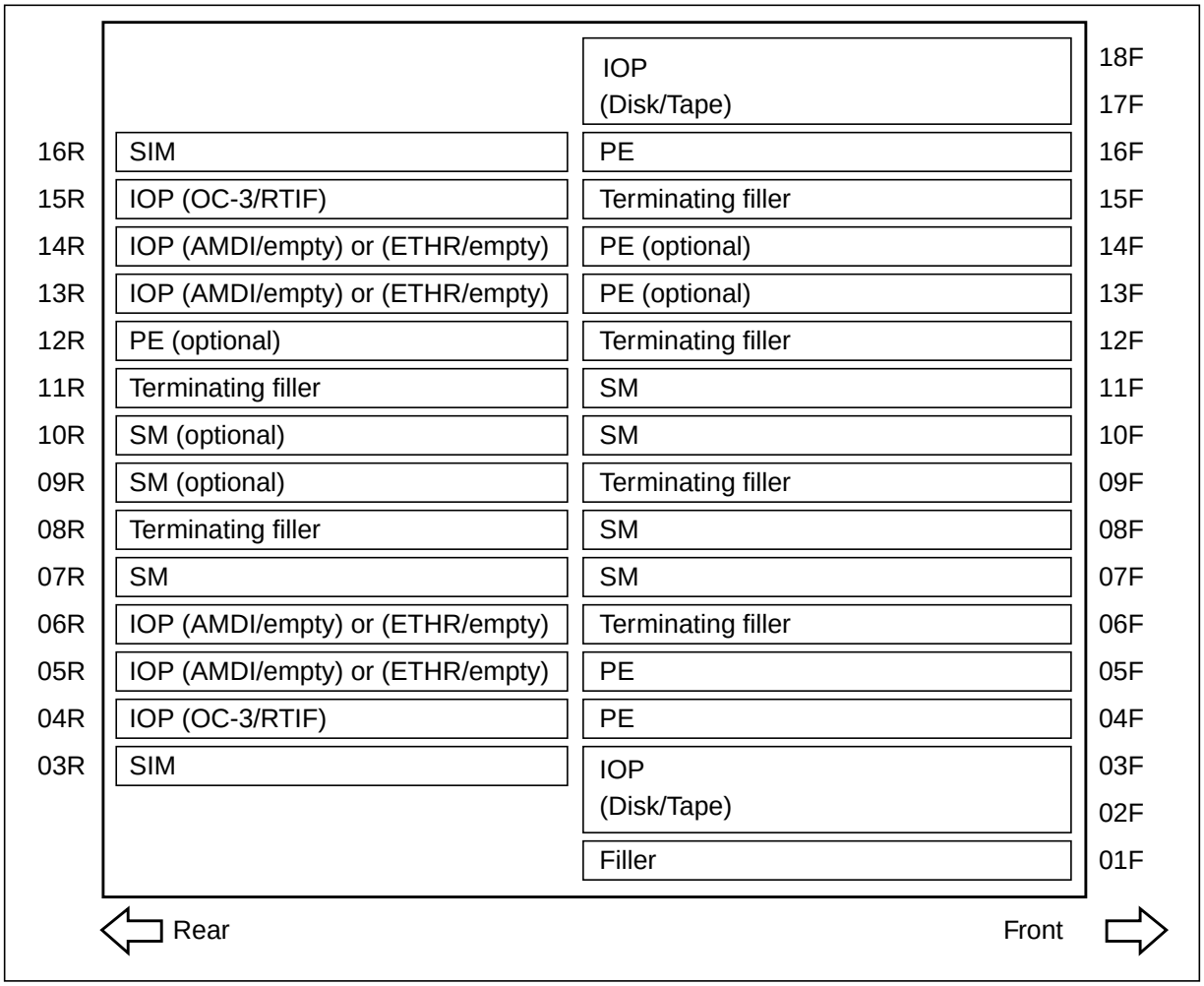
  Note: In each PE configuration, the spare processing power is the equivalent of one PE unit. A PE unit is the processing power of a PE circuit pack that uses PowerPC 604 processors. The NTLX02AA and the NTLX02CA use such processors.

The minimum configuration requires that five SM cards be present in slots 7 front, 7 rear, 8 front, 10 front, and 11 front. An additional supported configuration is seven SM cards (slots 7 front, 7 rear, 8 front, 10 front, 11 front, 10 rear, and 9 rear). The SNSE supports a maximum of seven SM cards.

The IOP cards in slots 5R, 6R, 13R, and 14R are optional.

The following figure shows the SuperNode SE shelf layout.

Figure 2-6 Shelf layout for an XA-Core in a single-cabinet SuperNode SE



Addition, removal, and replacement of circuit packs and packlets

We use the terms addition and removal to indicate actions that increase or decrease the capabilities of the XA-Core shelf. In CSP15 the shelf supports three PE configurations (2+1, 3+1, and 5+1). Also, the shelf can contain four Ethernet packlets, or two, or none. Addition and rermoval refer to changing the number of PE circuit packs or Ethernet packlets in the shelf.

The most common reasons for replacing a CP or packlet are for repair, or for XA-Core system upgrade. If you are going to remove an item for the purpose of replacing it, you must evaluate the effect that the removal will have on the system. For example, removing the last remaining and active PE terminates all system processes and causes an outage. If a task can cause an outage, the XA-Core MAP terminal displays a warning message. You can either continue, end the task or refer to a second level of support.

The XA-Core fault detection system software notifies you of hardware fault events. You can determine a suitable course of action based on instructions or notifications provided by the system. When the XA-Core system detects a fault, one or more of the following activities automatically take place:

- the operational measurement (OM) system records the frequency or duration of the event(s)
- the alarm system provides audible and visual notification
- the MAP terminal displays the source of the fault as determined by software
- the log system provides a log report for the event

Remove and replace a CP if it shows the following behavior:

- it cannot be brought into, or returned to service
- the red triangular light emitting diode (LED) on the faceplate remains lit despite all attempts to correct the problem
- the MAP terminal displays notice of a critical or major hardware alarm

Light emitting diode (LED) interpretation

The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Generally, the LEDs show that the CP is working or not working or if it is safe to remove the CP.

All CPs have two LEDs: red and green. On the OC-3 CMIC and AMDI packlets, the RTIF packlet, and the ETHR packlet, there are three LEDs: red, green, and yellow.

The combination of lit or unlit LEDs indicate the CP's working status. Table 2-2 summarizes the LED interpretation for CPs equipped with two LEDs. Table 2-3 summarizes the LED interpretation for CPs equipped with three LEDs.

The LEDs also indicate a trouble condition that can be unique to the function of the CP. The LED interpretation tables are included in each of the

replacement procedures and are indicative of the CP's role in the XA-Core system.

Table 2-2 Two-LED visual indicator interpretation

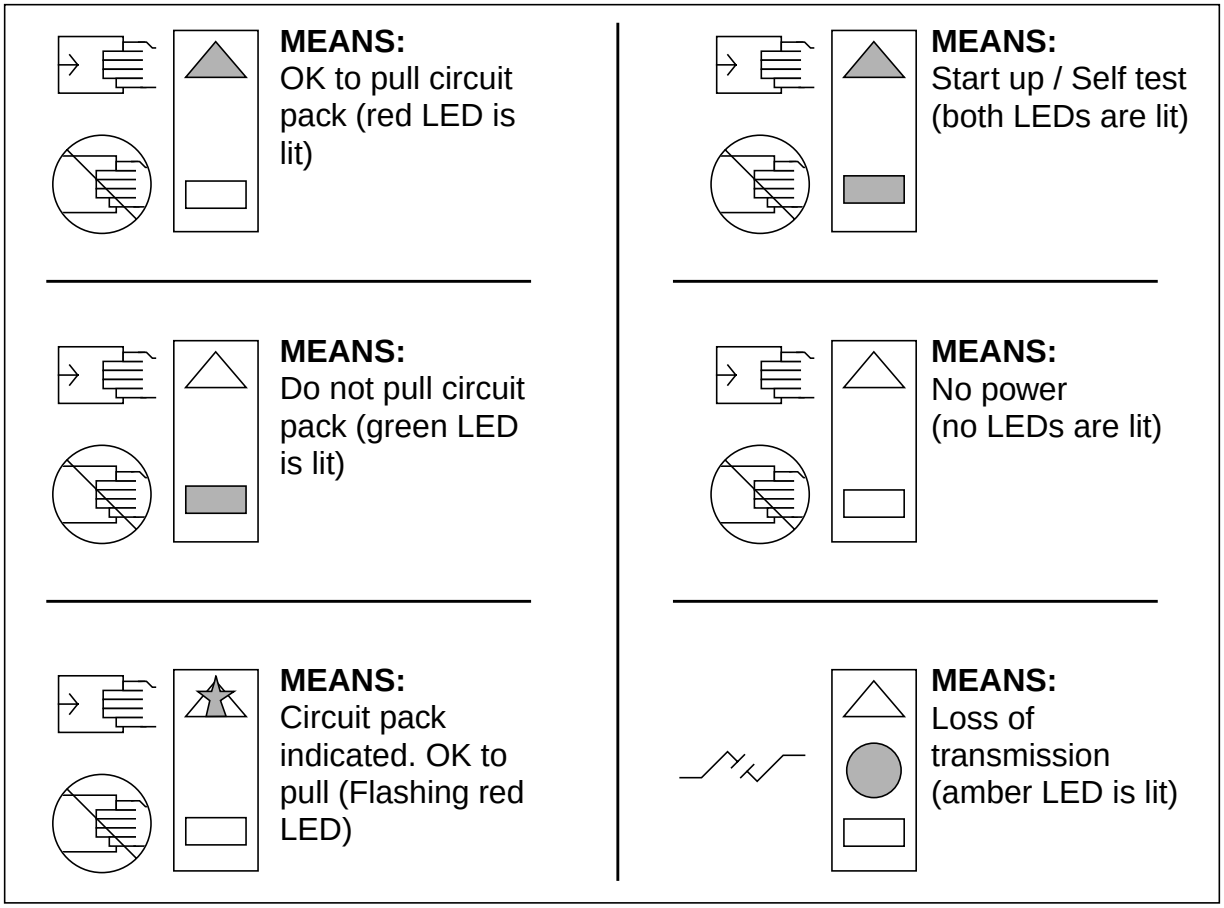
LED Status		Reason	Action	Safe to Remove?
Green	**Red**			
Off	Off	Dual-primary power failure	Call the next level of support. Do not remove the CP.	No
		CP power failure	Examine alarm status on the MAP terminal. Replace the CP.	Yes
		LED failure on one or two LEDs	Examine alarm status on the MAP terminal. Replace the CP.	Yes
		CP not properly inserted	Examine CP working status on MAP. Re-insert the CP.	Yes
Off	On	Self-test failure	Examine alarm status on the MAP terminal. Replace the CP.	Yes
		Maintenance software rejects the CP	Examine alarm status on the MAP terminal. Replace the CP.	Yes
On	Off	The CP is functioning properly	Verify CP working status on MAP. Do not remove the CP.	No
On	On	CP undergoing self test	Examine the MAP terminal. Wait for a change in LED status. Do not remove the CP.	No
Off	Wink	Indicate command issued	Locate CP on the physical shelf. The CP can be removed.	Yes

Table 2-3 Three-LED visual indicator strategy

LED Status			Reason	Action	Safe to Remove?
Green	**Red**	**Amber**			
Off	Off	Off	LED fault on one or more LEDs	Determine the working status from the MAP terminal. Do not remove the CP if the MAP terminal shows active status.	No
			Dual-primary power fault	Call the next level of support. Do not remove the CP.	No
			Improperly inserted	Determine the working status from the MAP terminal. Re-insert the CP.	Yes
			Packlet power fault	Examine MAP alarm status and replace the CP.	Yes
Off	Off	On	External communication fault	Check input links or refer to next level of support. Do not remove the CP.	No
Off	On	Off	Self-test fault	Examine MAP alarm status and replace the CP.	Yes
			Rejected by Maintenance software	Examine MAP alarm status and replace the CP.	Yes
Off	On	On	Self-test fault	Examine MAP alarm status and replace the CP.	Yes
			Rejected by Maintenance software	Examine MAP alarm status and replace the CP	Yes
			Communication fault	Check input links. Replace the CP.	Yes
On	Off	Off	Packlet is functioning properly	Verify working status on MAP. Do not remove the CP.	No
On	Off	On	External communication fault	Check input links. Do not remove the CP.	No
On	On	On	Self test	Examine the MAP terminal. Do not remove the CP.	No
On	Wink	Off	Indicate command issued	Examine physical shelf. Locate and remove the CP.	Yes

The following diagram shows how to determine the meaning of the LED labels.

Figure 2-7 LED label interpretation



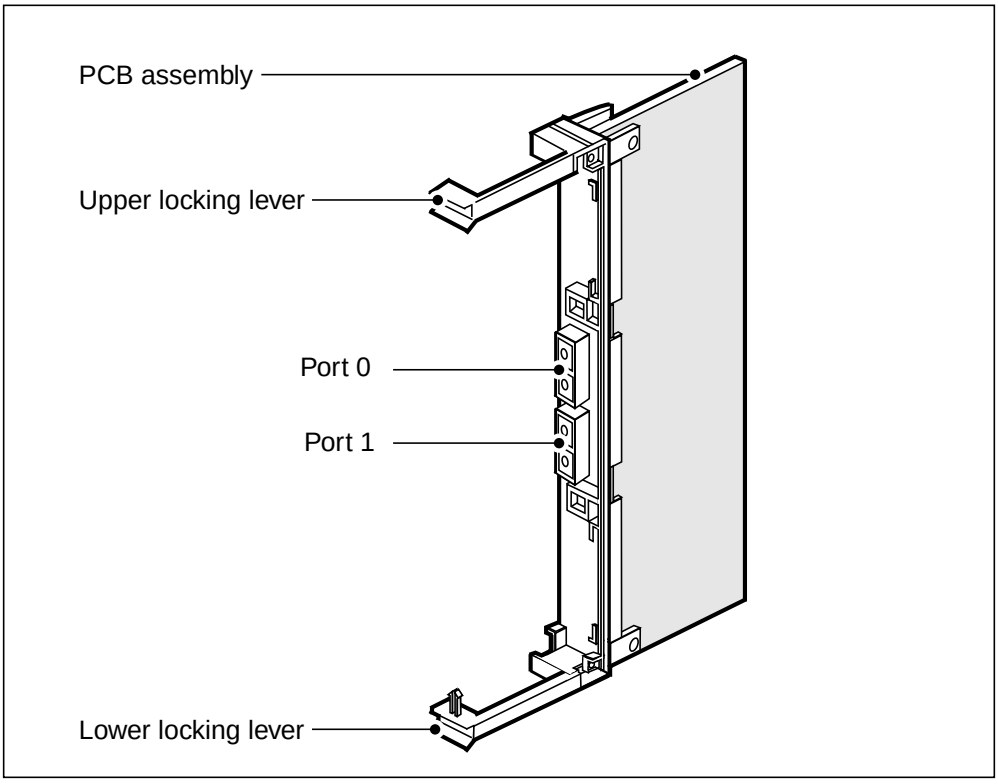
NT9X63 OC-3 two port interface paddleboard in a SuperNode or SuperNode SE Message Switch

Application

Use this procedure to replace the NT9X63 OC-3 two port interface paddleboard in a SuperNode or SuperNode SE Message Switch shelf. Use this procedure for circuit pack (CP) versions shown in the following table.

PEC	Suffix	Card name
NT9X63	AA	OC-3 two port interface paddleboard
NT9X63	AB	OC-3 two port interface paddleboard

OC-3 two port interface paddleboard front and side view



Common procedures

The OC-3 two port interface paddleboard replacement procedure refers to the Failure to switch clock mastership common procedure.

NT9X63 OC-3 two port interface paddleboard (continued)

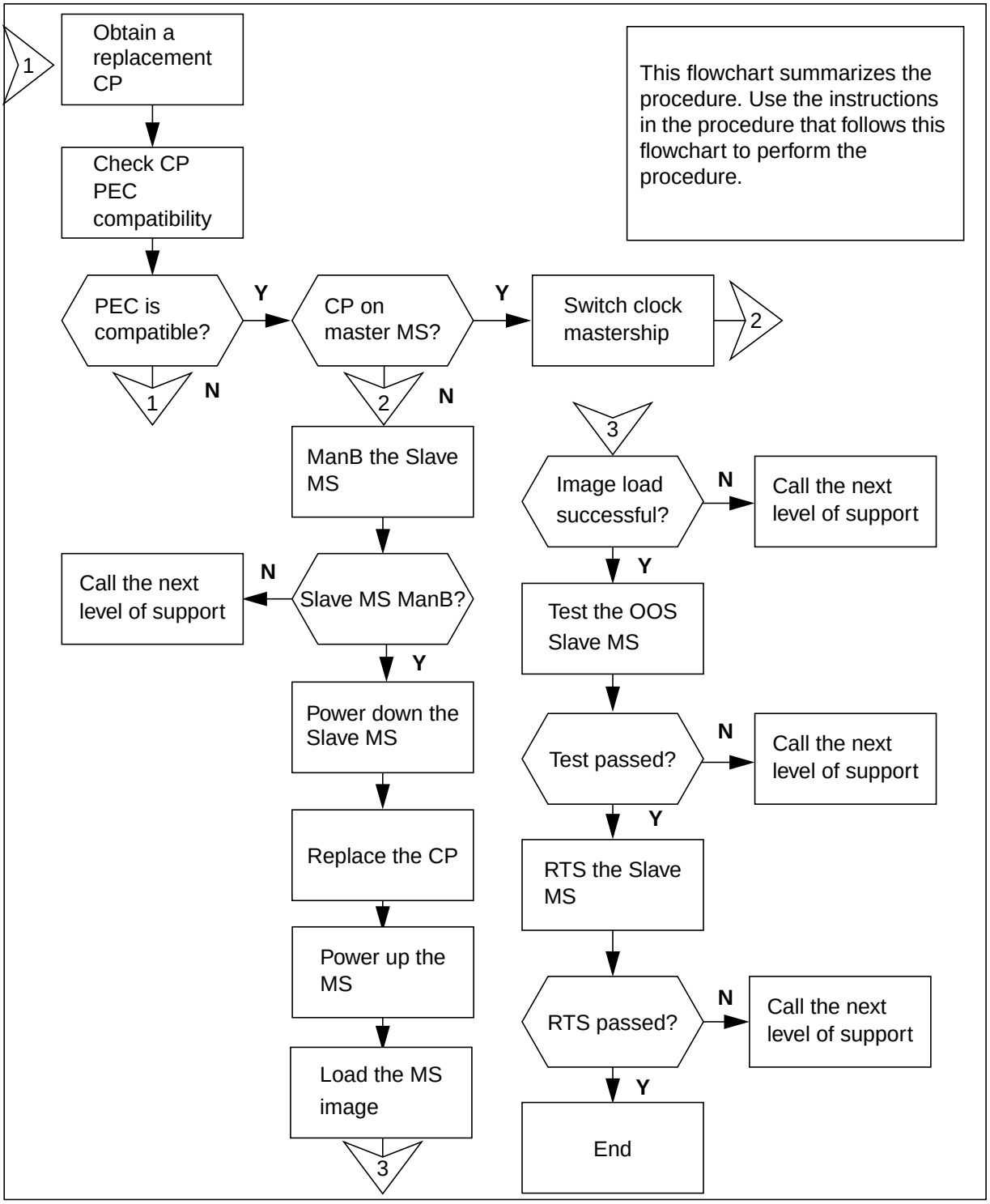
Do not go to a common procedure unless indicated in the step-action procedure.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NT9X63 OC-3 two port interface paddleboard (continued)

Summary of OC-3 paddleboard replacement in a SuperNode or SuperNode SE Message Switch



NT9X63 OC-3 two port interface paddleboard (continued)

How to replace an NT9X63 OC-3 paddleboard

ATTENTION

Use this procedure as indicated from a step in a maintenance procedure or by your maintenance support group.

At the MAP terminal

1 Get a replacement OC-3 two port interface paddleboard CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

2 Access the MS MAP level. At the MAP terminal type

>MAPCI;MTC;MS

and press the Enter key.

The following is a sample MAP display.

MS MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .       .        .        .       .        .        .       .        .       .


MS                    Message Switch      Clock      Shelf  0      Inter-MS Link 0 1
 0 Quit          MS 0        S            M Free             C                    - -
 2               MS 1        S            Slave              C                    - -
 3
 4              MS:
 5
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10 LoadMS_
11
12 SwMast
13 Shelf
14 QueryMS
15
16
17 InterMS_
18 Clock

 XMAP0
Time  14:12   >
```

3 Examine the MS MAP level. Record the MS clock configuration displayed under the Clock header. Determine if the CP that you must replace is in the Slave or Master MS. The Master MS controls the clocking for the Slave MS. The following text displayed under the Clock header indicates the Slave MS unit:

- Slave
- S Flt

- S OOS
- S Free

The following text displayed under the Clock header indicates the Master MS unit:

- Master
- M Free
- M Flt

If the MS that contains the CP is	Do
the Master MS	step 4
the Slave MS	step 8

4 Switch clock mastership. At the MS MAP level type

>SWMAST

and press the Enter key

Example of system response:

```
Request to Switch Clock Mastership MS: 0 submitted.
```

Request to Switch Clock Mastership MS: 0 passed.

If the SWMAST command is	Do
successful	step 5
not successful	step 6

5 Wait 10 min. to make sure that the change in MS mastership does not cause any alarm.

If the MS is	Do
stable	step 7
not stable	step 22

6 Perform the procedure Failure to switch clock mastership in this document. Complete the procedure and return to this point.

7 Determine if the slave MS is in a ManB state. Examine the MS MAP level.

Note: The letter M on the right of the MS 0 or MS 1 header on the MS MAP level identifies a ManB MS.

If the MS is	Do
not ManB	step 8
ManB	step 9

8 ManB the Slave MS. At the MS MAP level type

NT9X63 OC-3 two port interface paddleboard (continued)

>BSY <ms_number>

and press the Enter key

where

<ms_number> is the number of the slave MS (0 or 1).

If the MS is	Do
in a ManB state	step 9
not in a ManB state	step 22

At the MS shelf:

9

WARNING
Risk of equipment damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

Examine the Slave MS shelf. Determine if the red LED on the NT9X13 CPU is lit.

If the CPU LED is	Do
lit	step 10
not lit	step 22

10

CAUTION
Risk of loss of service
Make sure that you only power down the Slave MS. If you power down the Master MS, an outage occurs.

Power down the Slave MS as follows:

a Locate the NT9X30 power converter CP in slot 4F. Press down and release the power switch located on the faceplate of the MS NT9X30 power converter.

b Locate the NT9X31 power converter CP in slot 1F. Press down and release the power switch located on the faceplate of the MS NT9X31 power converter.

NT9X63 OC-3 two port interface paddleboard (continued)

c Locate the power converter CPs in slots 33F and 36F. Press down at the same time and release the power switches located on the faceplates of the MS power converters.

11 Locate the OC-3 two port interface paddleboard CP on the Slave MS shelf.

12 Label the OC-3 fiber optic cable connections on the OC-3 two port interface paddleboard CP. Label the cable pair in the transmit port in accordance with office standards. Label the cable pair in the receive port in accordance with office standards.

13

WARNING
Risk of fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance.

Disconnect the fiber optic cables from the faceplate of the OC-3 two port interface paddleboard CP. Use the diagrams shown in this step.

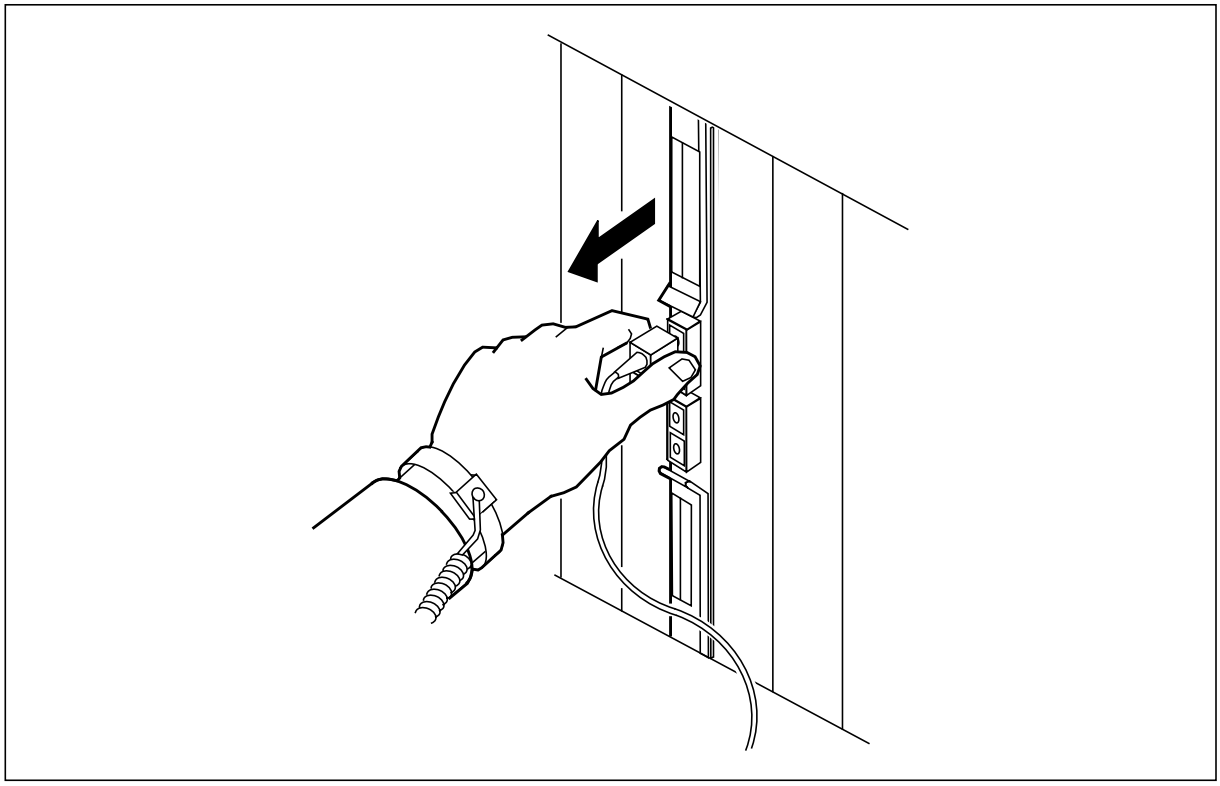
a Hold the connector by the receptacle body only.

b Carefully pull the fiber optic connector away from the receptacle.

c Place the fiber optic cable in a safe location away from the physical shelf.

NT9X63 OC-3 two port interface paddleboard (continued)

Disconnect the fiber optic cable from the OC-3 two port interface paddleboard



14 Remove the OC-3 two port interface paddleboard from the MS shelf. Use the diagrams shown in this step.

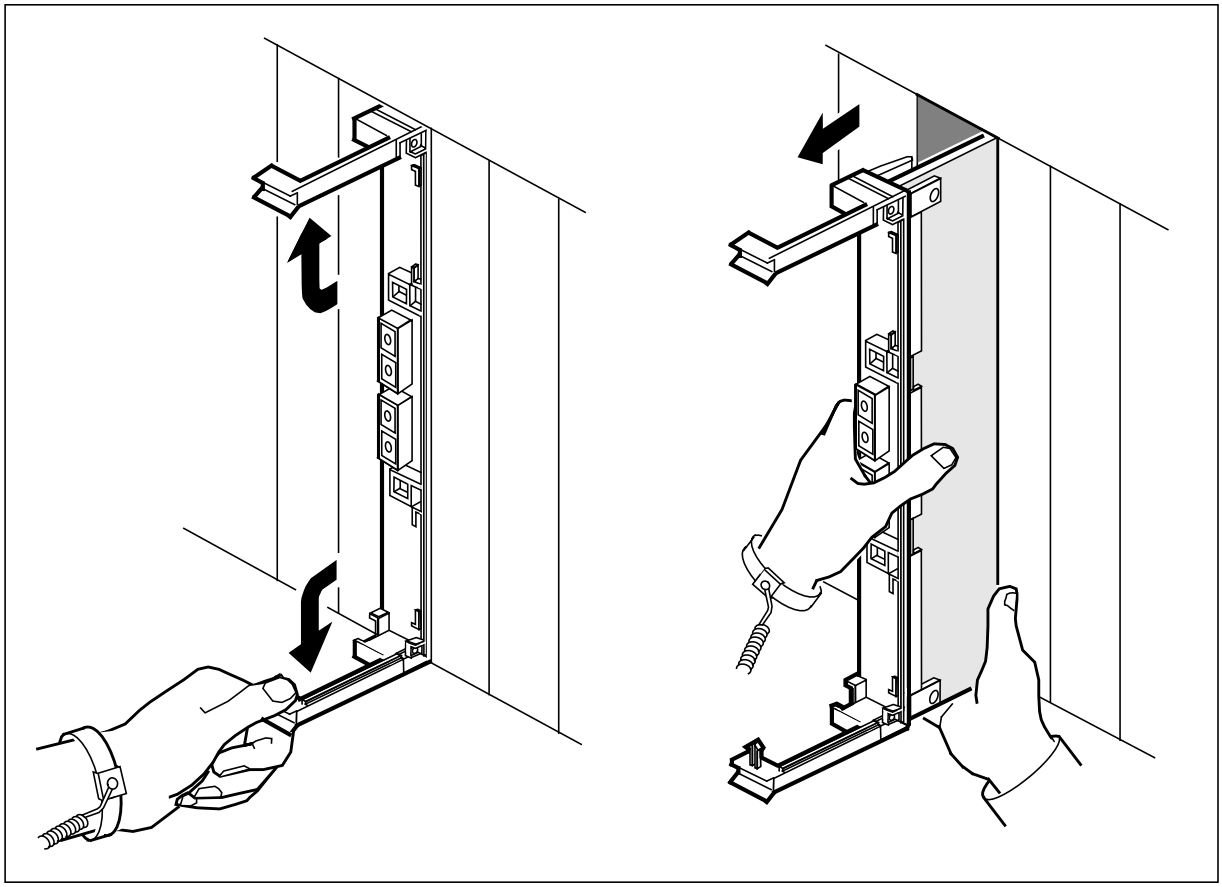
a Open the locking levers on the CP

b Carefully pull the CP toward you by the locking levers until it extends half way from the shelf opening

c Hold the CP by the faceplate with one hand and support the bottom edge with the other hand. Remove the CP completely from the shelf.

NT9X63 OC-3 two port interface paddleboard (continued)

Remove the OC-3 two port interface paddleboard from the Slave MS shelf



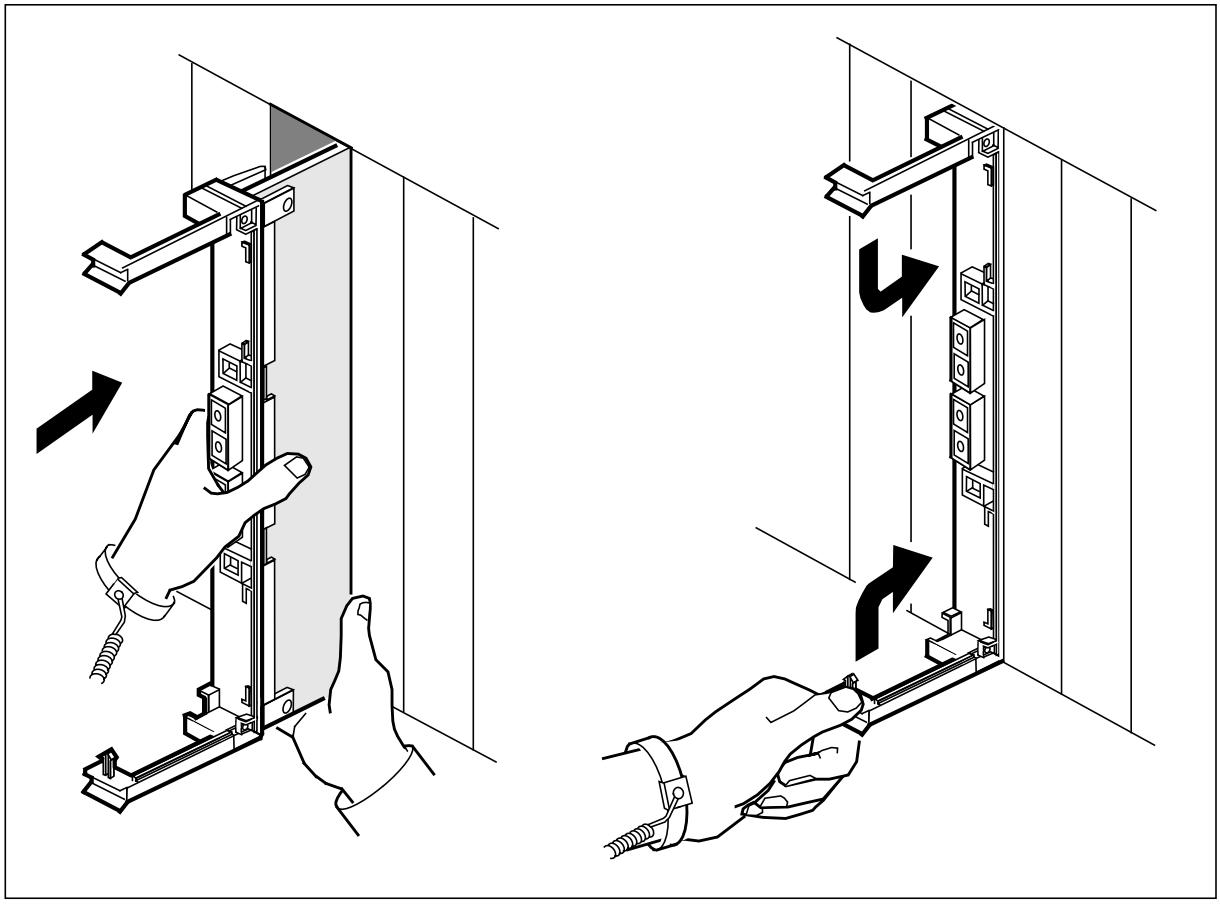
15 Place the OC-3 two port interface paddleboard CP in ESD protective packaging.

16 Insert the replacement OC-3 two port interface paddleboard CP into the slot. Use the diagrams shown in this step.

- **a** Remove the replacement OC-3 dual port interface packlet from the ESD protective packaging.
- **b** Open the upper and lower locking levers on the packlet.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other.
- **d** Align the packlet with the lower IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.
- **e** Use your fingers or thumbs to push on the upper and lower edges of the faceplate.
- **f** Close the locking levers to secure the CP. Do not force the locking levers to close.

NT9X63 OC-3 two port interface paddleboard (continued)

Insert the OC-3 two port interface paddleboard into the Slave MS shelf



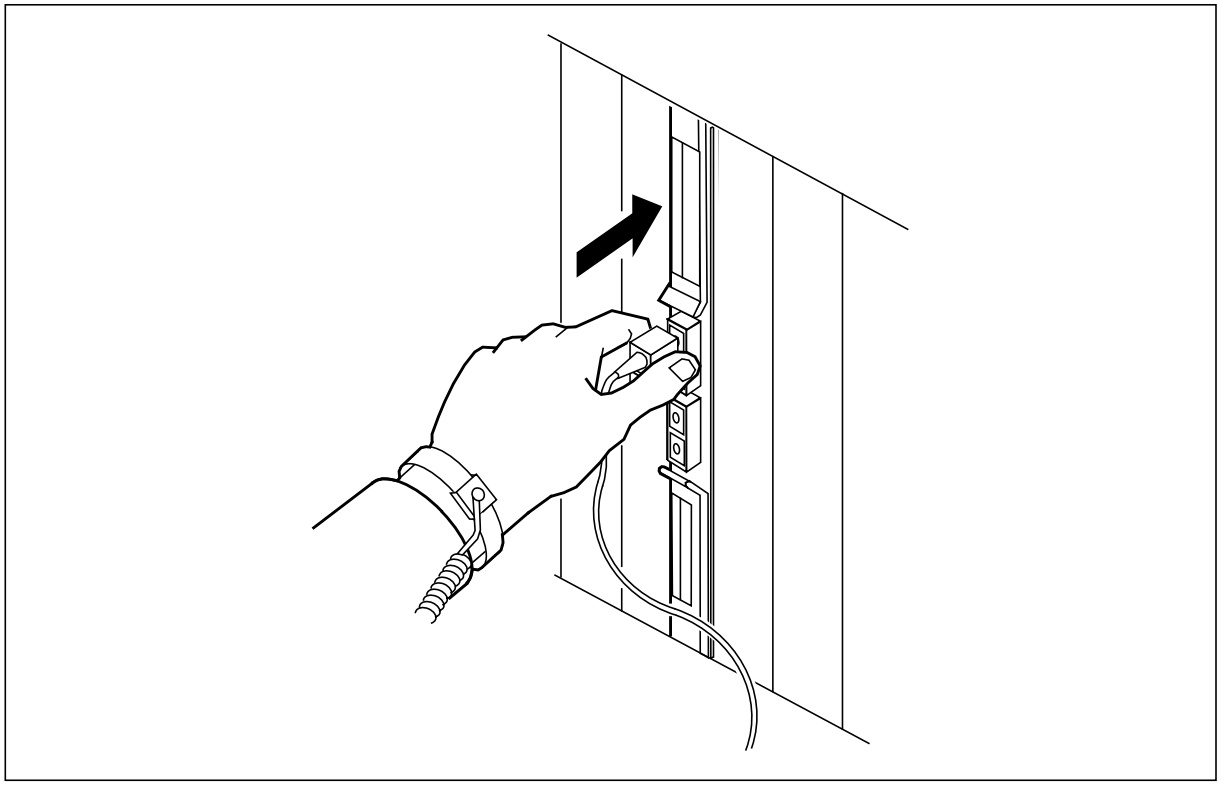
17 Connect the fiber optic cables to the OC-3 two port interface paddleboard CP. Use the diagrams shown in this step.

a Hold the connector by the receptacle body only.

b Carefully insert the fiber optic connector into the correct receptacle.

NT9X63 OC-3 two port interface paddleboard (continued)

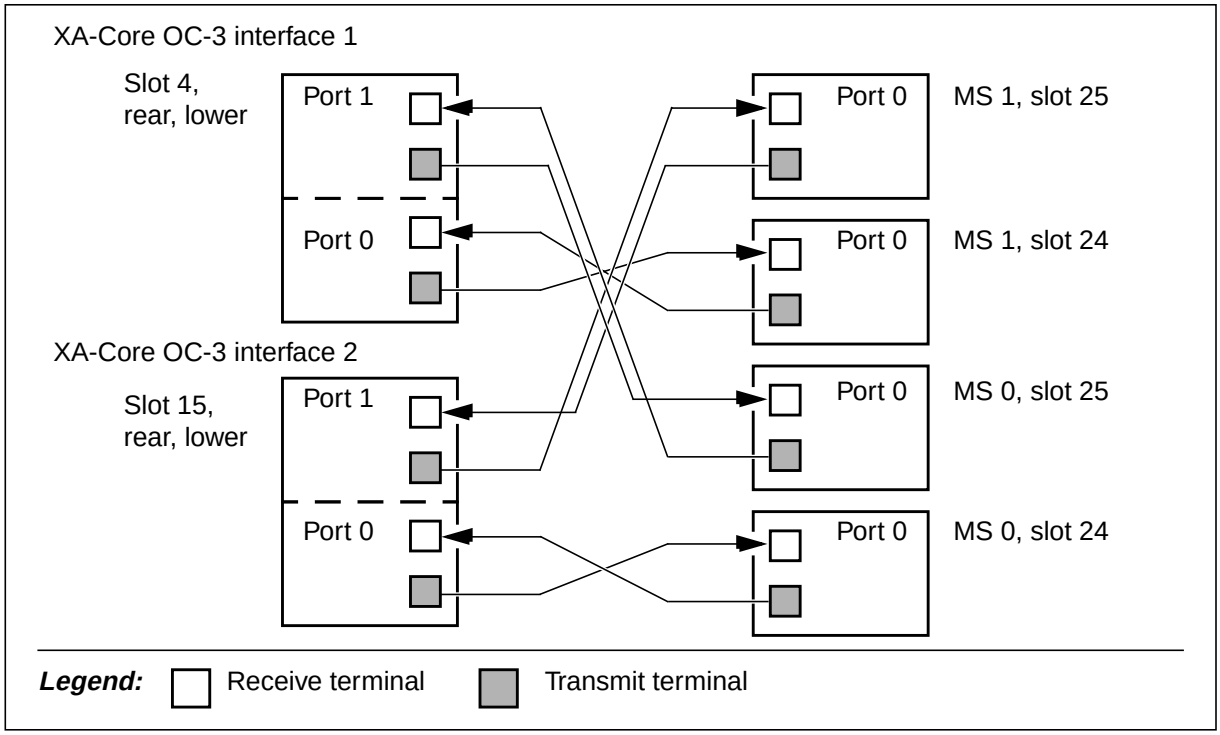
Connect the fiber optic cable to the OC-3 two port interface paddleboard



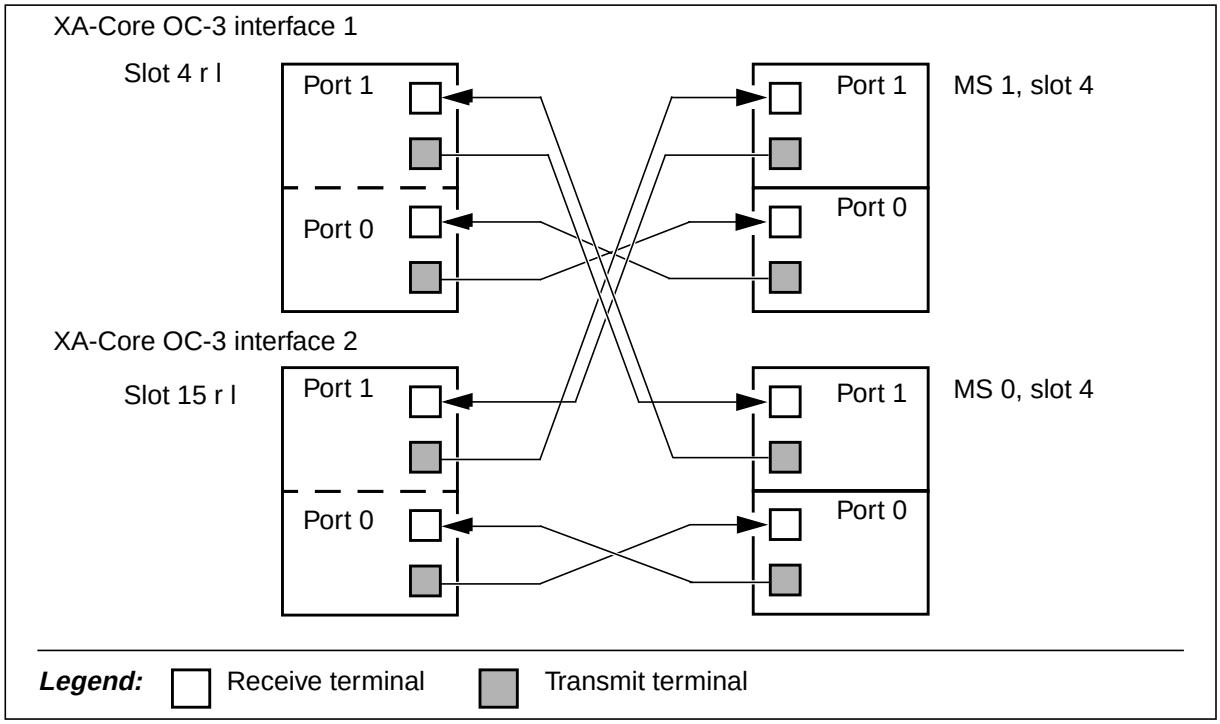
18 Examine the fiber optic cable connections. Make sure that the fiber optic connectors fit correctly into the OC-3 two-port interface packlet and OC-3 two-port interface paddleboard ports. Use the diagrams in this step to check the link connections.

NT9X63 OC-3 two port interface paddleboard (continued)

XA-Core and MS fiber optic cable connections (SuperNode)



XA-Core and MS fiber optic cable connections (SuperNode SE)



NT9X63 OC-3 two port interface paddleboard (continued)

19 Power up the Slave MS as follows:

a Locate the power converters in slots 33F and 36F. Lift and release the power switches at the same time. The power switches are on the faceplates of the MS power converters.

b Locate the NT9X31 power converter CP in slot 1F. Lift and release the power switch located on the faceplate of the MS NT9X31 power converter CP.

c Locate the NT9X30 power converter CP in slot 4F. Lift and release the power switch located on the faceplate of the MS NT9X30 power converter CP.

At the MAP terminal

20 Reload the image on the Slave MS. At the MS MAP perform the following:

a Reload the most recent MS image file. At the MS MAP level type:

>LOADMS <ms_number>

and press the Enter key

where

<ms_number> is the number of the manual-busy MS (0 or 1)

Example of a MAP response:

```
Active boot file CSP04AX_MS from S01DVOL1 on DISK
will be loaded
Do you want to proceed with loading?
Please confirm ("YES", "Y", "NO", or "N"):
```

b Confirm the image load command. At the MS MAP level type

>YES

and press the Enter key

Example of a MAP response

```
Request to Load MS: 0 submitted.
Request to Load MS: 0 passed.
Loading completed, entry point is #0604FC0
```

If the LOADMS command	Do
passed	step 21
failed	step 22

21 Return the Slave MS to service. At the MS MAP level type

>RTS <ms_number>

and press the Enter key

where

<ms_number> is the number of the manual-busy MS (0 or 1)

NT9X63 OC-3 two port interface paddleboard (end)

Example of a MAP response:

```
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS 0.
```

If the RTS command	Do
failed	step 22
passed	step 23

22 Call the next level of support.

23 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as indicated.

NTLX02 PE circuit pack in a SuperNode and SuperNode SE XA-Core

Application

This section contains procedures for replacing NTLX02 processor element (PE) circuit packs, and also for increasing and decreasing the number of PE circuit packs in the XA-Core to upgrade or downgrade the PE configuration. The following table indicates where each procedure begins.

Activity	Procedure begins on
PE replacement	page 32
Adding PEs to upgrade the PE configuration	page 40
Removing PEs to downgrade the PE configuration	page 44

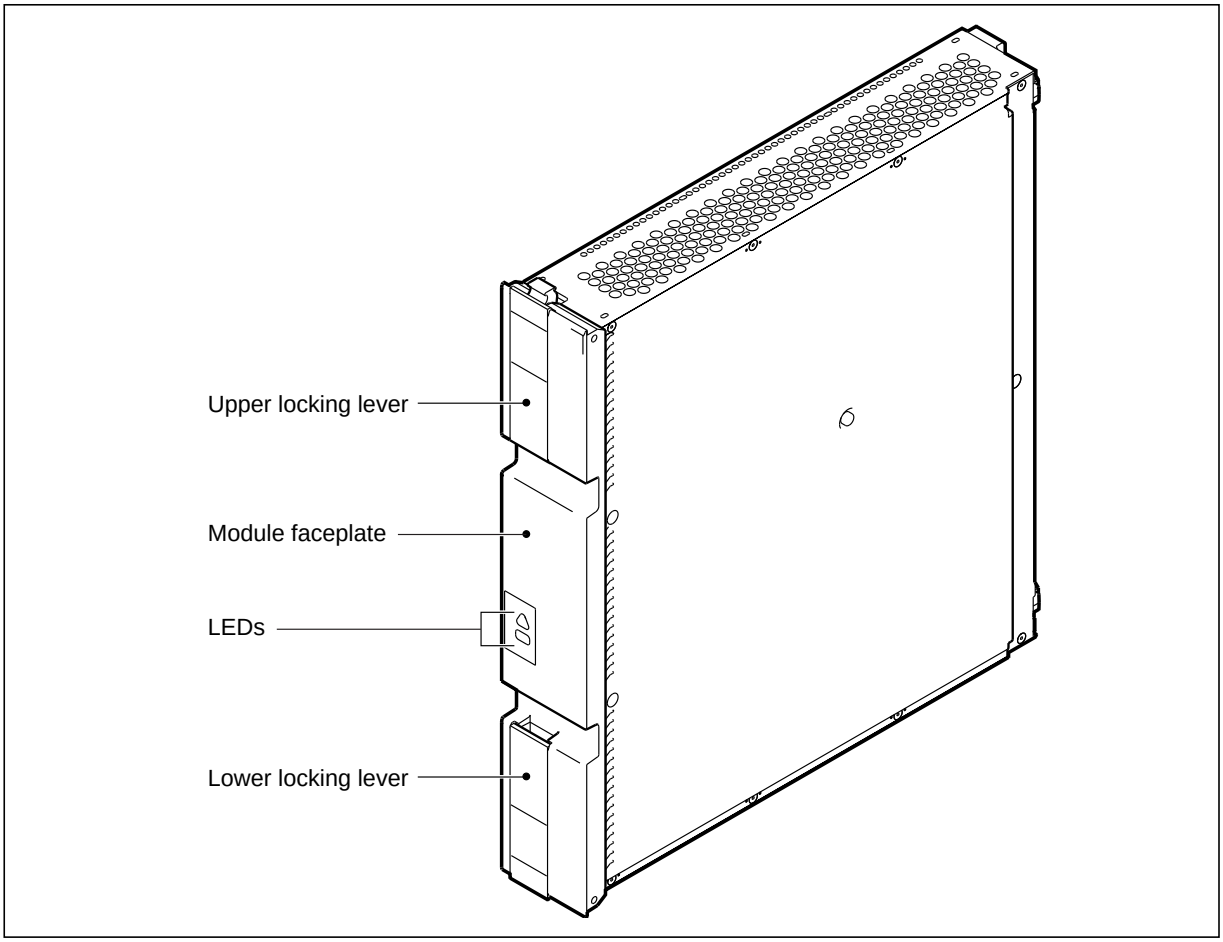
The following table lists the correct XA-Core PE CP versions.

PEC	Suffix	Circuit pack name
NTLX02	AA	Processor Element PPC604/256MB Module
NTLX02	CA	Processor Element PPC604/256MB Module

Note: In releases following CSP13, only the NTLX02CA version of the PE circuit pack is supported.

NTLX02 PE circuit pack (continued)

NTLX02 Processor element (PE) CP front and side views



Common procedures

There are no common procedures.

Light emitting diode (LED) visual indicators

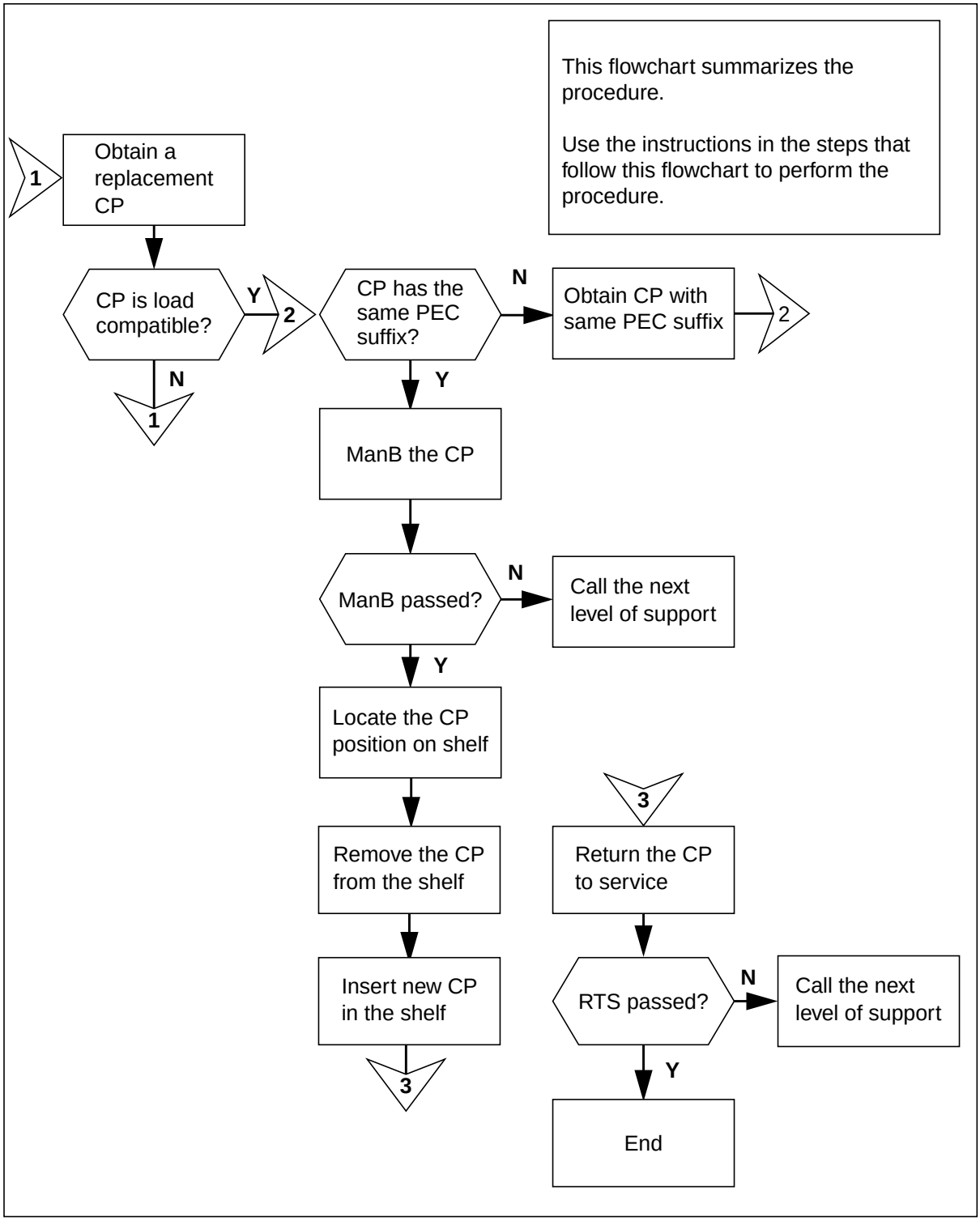
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action: replacing a PE circuit pack

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NTLX02 PE circuit pack (continued)

Summary of NTLX02 PE CP replacement procedure



NTLX02 PE circuit pack (continued)

How to replace an NTLX02 PE CP

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Get a replacement CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

2 Access the XA-Core PE MAP level. At the MAP terminal type

>MAPCI;MTC;XAC;PE

and press the Enter key.

3 Examine the PE MAP display. Record the status and the shelf location of the PE CP that you need to replace.

The following is a sample MAP display.

NTLX02 PE circuit pack (continued)

PE MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .       .        .        .       .        .        .       .       .        .


PE                    Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit               123456789012345678  456789012345   .      PEfl    .      .
 2                Sta: -.-..-..-..-..-.-  .--.--------.   0      0       0      0
 3                Dep:
 4                Typ:    **       *  *
 5                 PE:
 6 Tst_
 7 Bsy_
 8 RTS_
 9
10 LoadFW
11
12 Uneq_
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

4 ManB the PE CP. At the PE MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 f

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

Example of system response

```
Bsy 4 front complete
```

NTLX02 PE circuit pack (continued)

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

5 Indicate the ManB PE CP. At the PE MAP type

>INDICAT card <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>INDICAT card 4 f

Example of system response:

```
Indicate 4 front passed
```

At the XA-Core physical shelf

6 Locate the PE CP on the XA-Core physical shelf. Use the CP location information recorded from the PE MAP in 3. Look for a winking, red triangular LED (from 5).

7 Remove the PE CP from the physical shelf. Use the diagrams shown in this step.

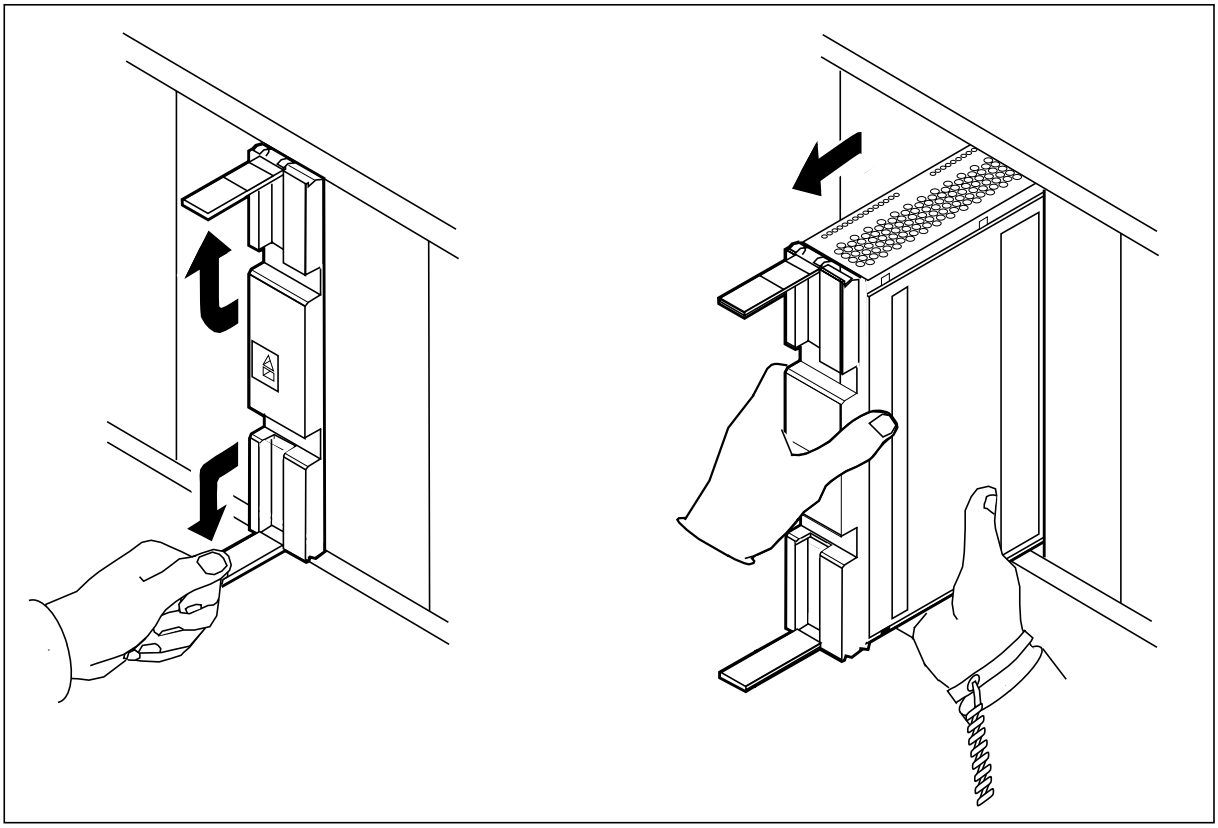
a Open the locking levers on the CP.

b Hold the CP by the locking levers. Pull the CP half way from the shelf opening toward you.

c Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

NTLX02 PE circuit pack (continued)

NTLX02 PE removal from the XA-Core shelf



8 Place the CP in ESD protective packaging.

9 Insert the replacement PE CP into the physical shelf slot. Use the diagrams shown in this step.

a Open the locking levers on the replacement PE CP.

b Hold the CP by the faceplate with one hand and support the bottom edge with the other.

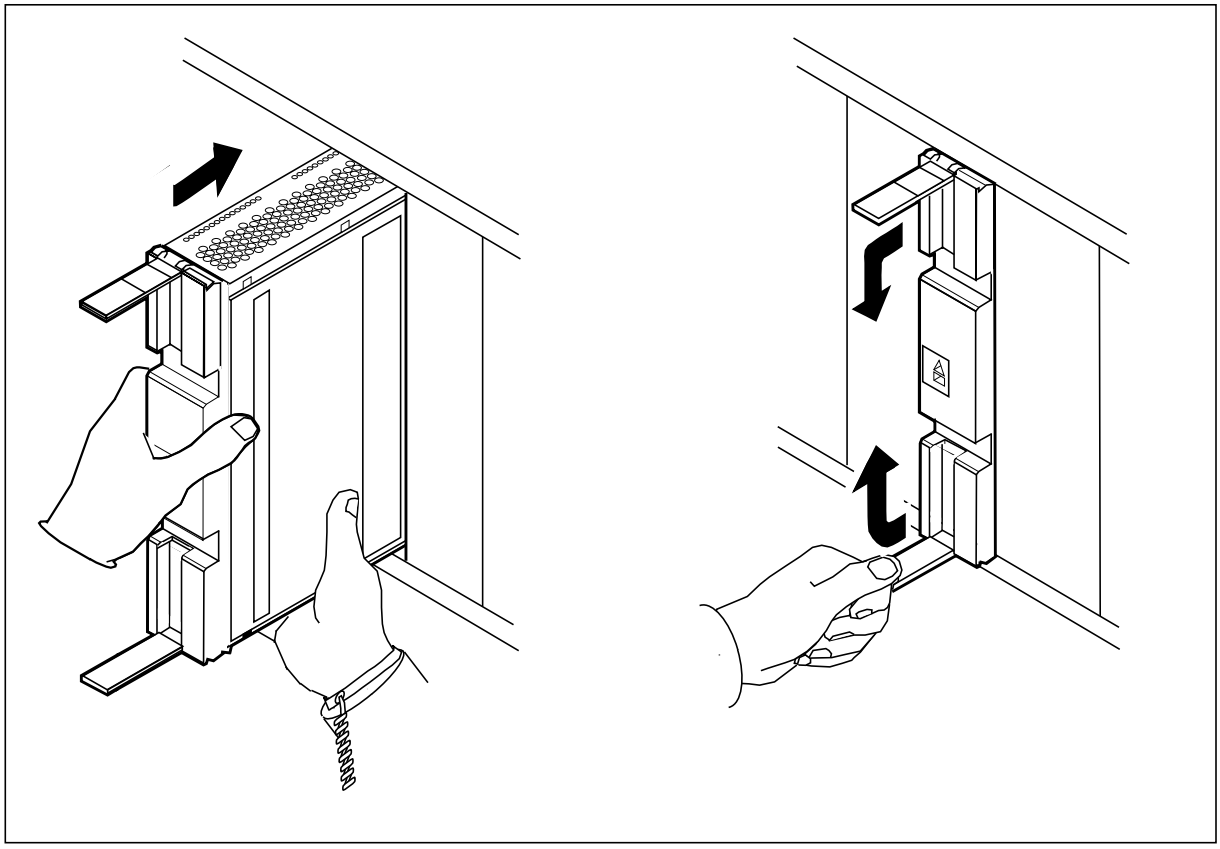
c Align the CP with the physical shelf slot. Slide the CP into the physical slot. Do not force the CP into the physical slot.

d Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the faceplate until the CP is fit into position.

e Close the locking levers to lock the CP in the physical shelf. Do not force the locking levers to close.

NTLX02 PE circuit pack (continued)

NTLX02 PE CP insertion in the XA-Core shelf



At the MAP terminal

10 Return the PE CP to service. At the PE MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 4 f

NTLX02 PE circuit pack (continued)

Example of system response:

```
RTS 4 front passed
```

If the replacement PE CP is	Do
not returned to service	step 11
returned to service	step 12

11 Call the next level of support.

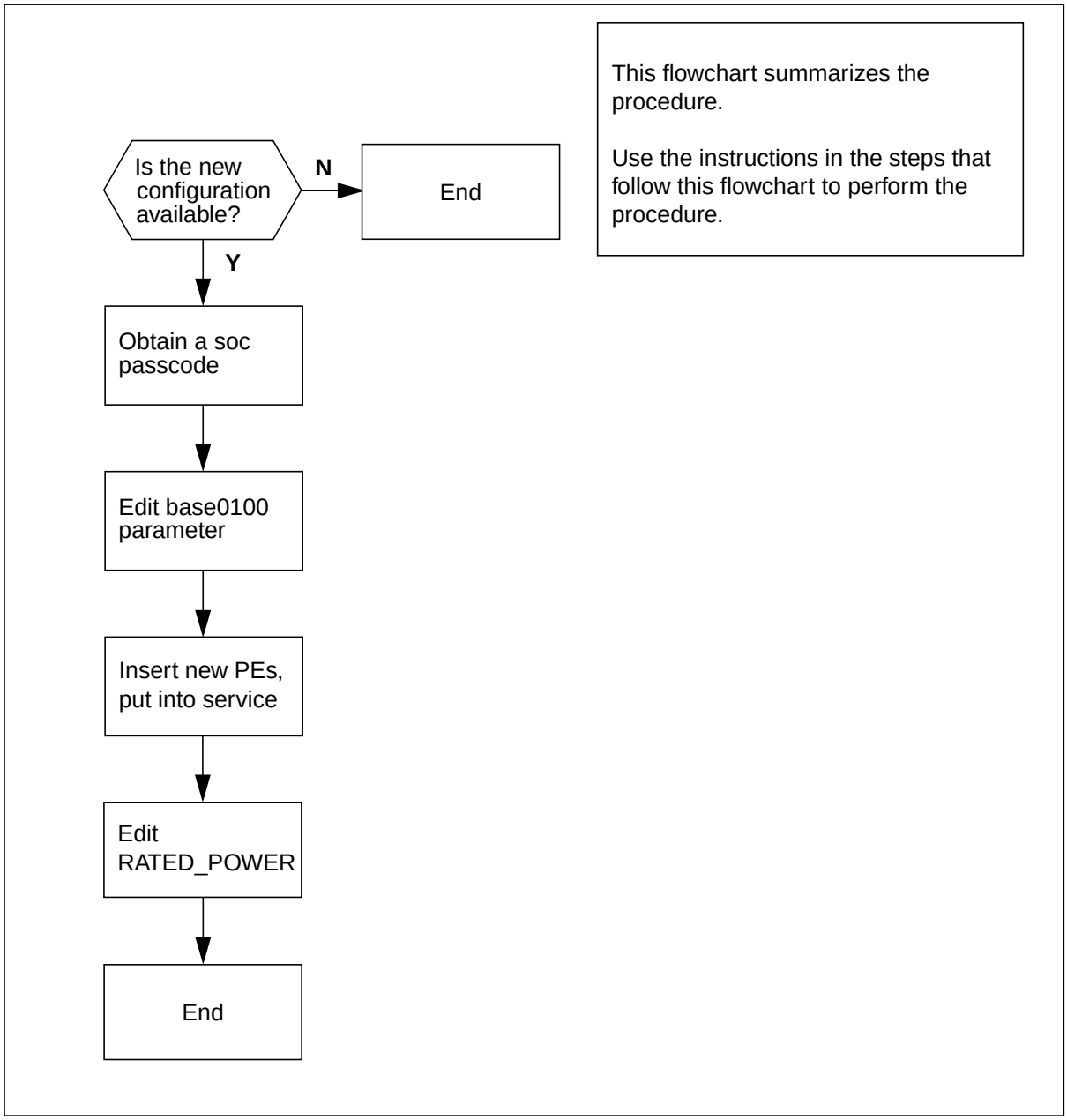
12 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX02 PE circuit pack (continued)

Action: adding PE circuit packs to upgrade the PE configuration

The following flowchart is only a summary of this procedure. To add PE circuit packs to upgrade the PE configuration, use the instructions in the step-action procedure that follows the flowchart.

Summary of procedure for adding PE circuit packs to upgrade the PE configuration



NTLX02 PE circuit pack (continued)

How to add PE circuit packs to upgrade the PE configuration

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Contact the next level of support to check that the planned PE configuration is available in your market.

Note: Certain PE configurations may not be available in certain markets.

2 Contact the next level of support to obtain a "Software Optionality Control (SOC) passcode". This is a password that you will need to use in Step 4.

At the MAP terminal

3 Access the XA-Core PE MAP level. At the MAP terminal type

>MAPCI;MTC;XAC;PE

and press the Enter key.

4 Use Software Optionality Control (SOC) to set the base0100 parameter to the appropriate value for the final PE configuration.

a At the CI prompt, type

>SOC

and press the Enter key.

b Type

>ASSIGN LIMIT <new_limit> <SOC_passcode> TO BASE0100

NTLX02 PE circuit pack (continued)

and press the Enter key.

where

<new_limit> is 4 if you are upgrading to a 3+1 PE configuration, or 6 if you are upgrading to a 5+1 PE configuration

<SOC_passcode> is the Software Optionality Control passcode that you previously obtained from Nortel Networks

c Type

>QUIT

and press the Enter key.

5 For each PE circuit pack that is to be added, perform the following substeps. Perform the substeps for one PE circuit pack at a time.

a At the XA-Core shelf, insert the new PE circuit pack.

b To put the newly inserted PE card into service, Type

>RTS <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Note: If the **RTS** command fails and the PE MAP displays the message, “Wrong configuration”, that indicates there is a limit on the number of PE circuit packs in the XA-Core shelf. The limit prohibits the upgrade

6 Perform the following substeps to set the RATED_POWER office parameter to its new value.

a At the CI prompt, type

>TABLE OFCENG

and press the Enter key.

b At the CI prompt, type

>POS RATED_POWER

and press the Enter key.

c At the CI prompt, type

>RWOK ON

and press the Enter key.

d At the CI prompt, type \

>CHA <new_value>

and press the Enter key.

where

<new_value> is 3 if you are upgrading to a 3+1 PE configuration, or 5 if you are upgrading to a 5+1 PE configuration

e At the CI prompt, type

>Y

and press the Enter key.

f At the CI prompt, type

>Y

and press the Enter key.

g At the CI prompt, type

>RWOK OFF

and press the Enter key.

7 You have completed this procedure.

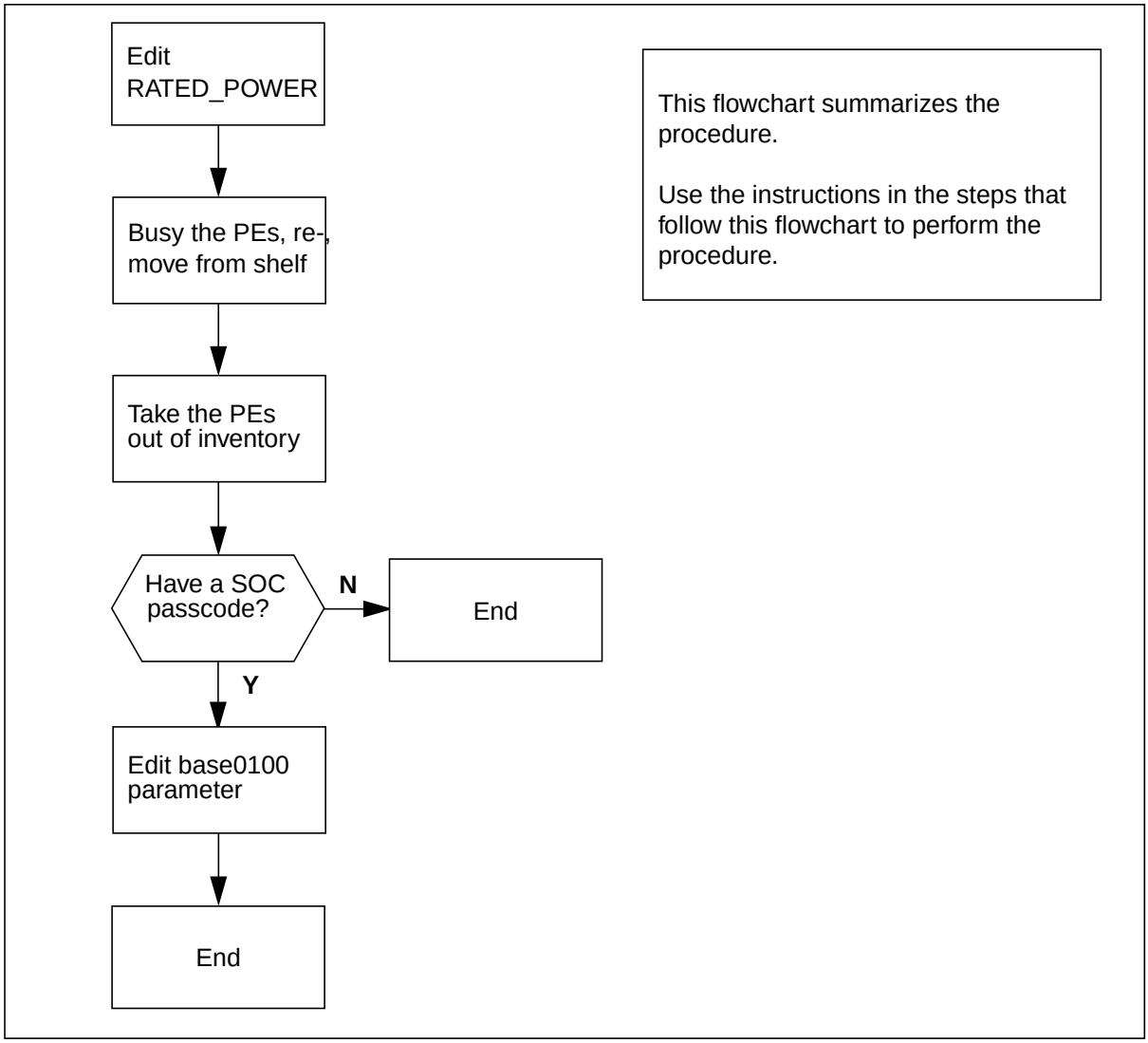
NTLX02 PE circuit pack (continued)

Action: removing PE circuit packs to downgrade the PE configuration

The following flowchart is only a summary of this procedure. To remove PE circuit packs to downgrade the PE configuration, use the instructions in the step-action procedure that follows the flowchart.

Note: If you downgrade to a lower PE configuration, the XA-Core shelf will then have less power than you purchased. The value of the base0100 parameter reflects the power level that you purchased. You will be able to edit the base0100 value to reflect the downgraded power level only if you have a Software Optionality Control (SOC) passcode from Nortel Networks.

Summary of procedure for removing PE circuit packs to downgrade the PE configuration



NTLX02 PE circuit pack (continued)

How to remove PE circuit packs to downgrade the PE configuration

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At the MAP terminal

1 Access the XA-Core PE MAP level. At the MAP terminal type

>MAPCI;MTC;XAC;PE

and press the Enter key.

2 Perform the following substeps to set the RATED_POWER office parameter to its new value.

a At the CI prompt, type

>TABLE OFCENG

and press the Enter key.

b At the CI prompt, type

>POS RATED_POWER

and press the Enter key.

c At the CI prompt, type

>RWOK ON

and press the Enter key.

d At the CI prompt, type \

NTLX02 PE circuit pack (continued)

>CHA <new_value>

and press the Enter key.

where

<new_value> is 3 if you are downgrading to a 3+1 PE configuration, or 2 if you are upgrading to a 2+1 PE configuration

e At the CI prompt, type

>Y

and press the Enter key.

f At the CI prompt, type

>Y

and press the Enter key.

g At the CI prompt, type

>RWOK OFF

and press the Enter key.

3 For each PE circuit pack that is to be removed, perform the following substeps. Perform the substeps for one PE circuit pack at a time.

a To busy the circuit pack, type

>BSY <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

b To blink the red LED, type

>INDICAT <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Note: If the **RTS** command fails and the PE MAP displays the message, “Wrong configuration”, that indicates there is a limit on the number of PE circuit packs in the XA-Core shelf. The limit prohibits the upgrade

4 Remove from the XA-Core shelf the PE cards that have been busied.

5 To take the removed PE cards out of the inventory, type the following command for each removed card.

>UNEQ_ <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

If	Do
you have a SOC passcode	step 6
you do not have a SOC passcode	step 7

6 Use Software Optionality Control (SOC) to set the base0100 parameter to the appropriate value for the final PE configuration.

a At the CI prompt, type

>SOC

and press the Enter key.

b Type

>ASSIGN LIMIT <new_limit> <SOC_passcode> TO BASE0100

and press the Enter key.

where

<new_limit> is 4 if you are downgrading to a 3+1 PE configuration, or 3 if you are downgrading to a 2+1 PE configuration

<SOC_passcode> is the Software Optionality Control passcode

c Type

>QUIT

and press the Enter key.

7 You have completed this procedure.

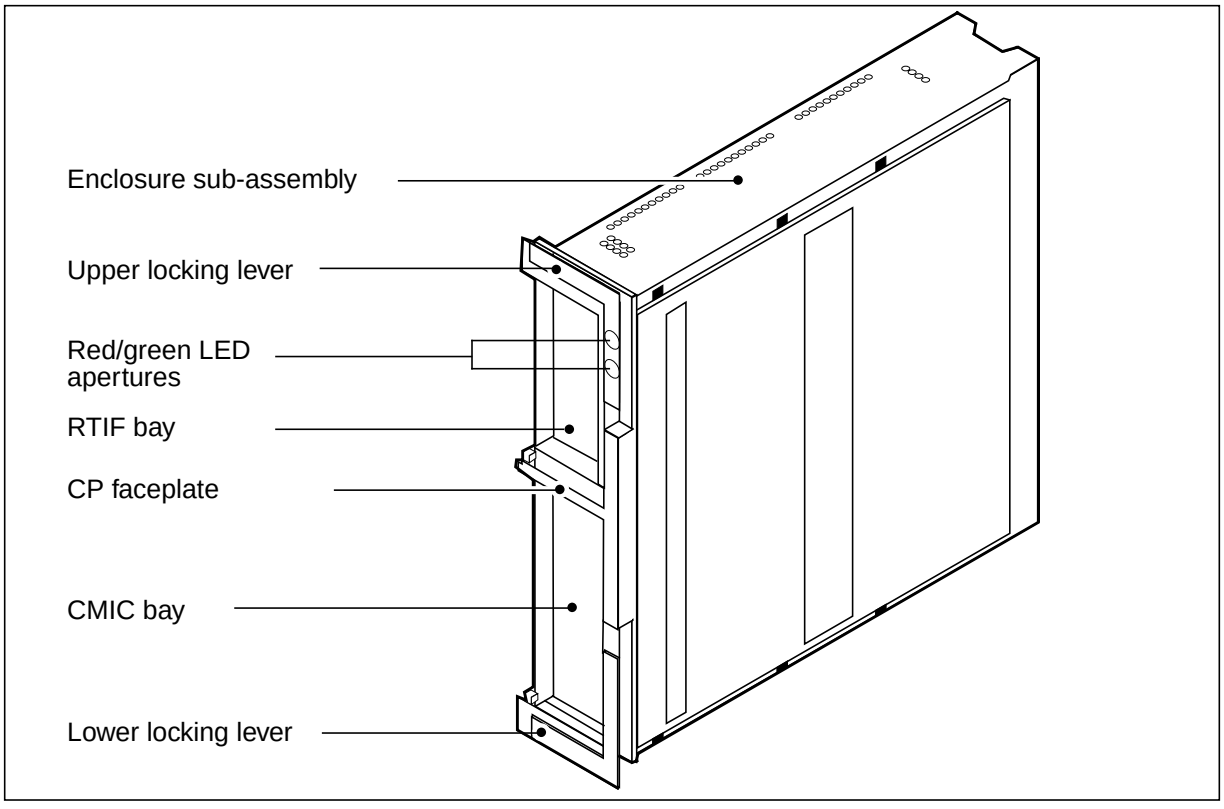
NTLX03 single width IOP circuit pack in a SuperNode and SuperNode SE XA-Core

Application

Use this procedure to replace the NTLX03 single-width Input/Output processor (IOP) circuit pack (CP). The single-width IOP CP contains the reset terminal interface (RTIF) and OC-3 two port interface packlets (dependent packlets). When not equipped with CMIC or RTIF packlets, the lower position is available for AMDI packlets, and Ethernet packlets. Remove the packlets from the NTLX03 first. The following table lists the correct single-width IOP CP versions.

PEC	Suffix	CP name
NTLX03	AA, AB	Single width Input/Output Processor (IOP) CP

NTLX03AA single width IOP CP front and side views



Common procedures

There are no common procedures.

NTLX03 single width IOP circuit pack (continued)

Light emitting diode (LED) visual indicators

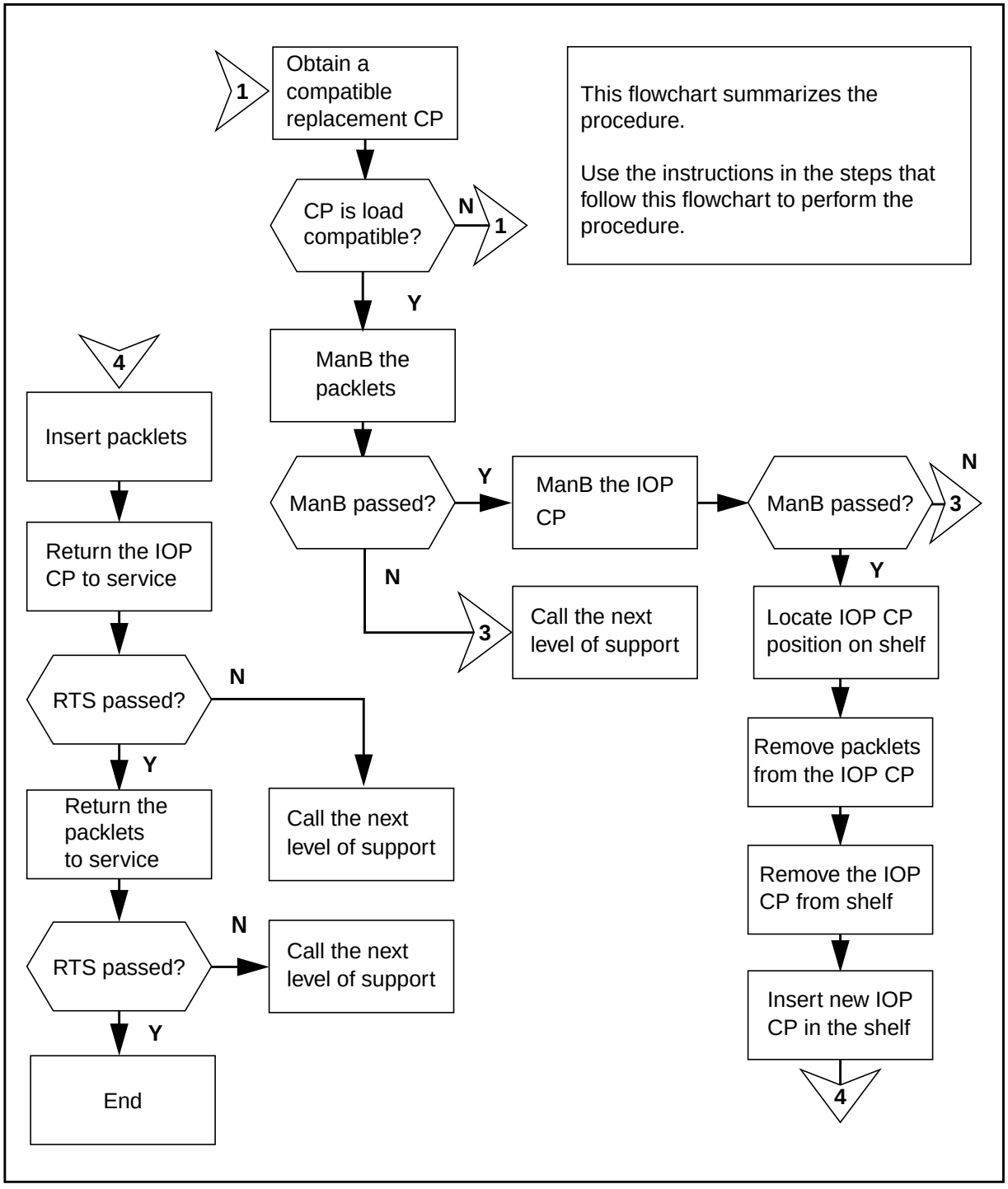
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NTLX03 single width IOP circuit pack (continued)

Summary of NTLX03 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX03 single width IOP circuit pack (continued)

How to replace an NTLX03 single width IOP CP

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Get a replacement CP. The replacement CP must have the product engineering code (PEC) NTLX03AA or NTLX03AB. (The AA and AB versions can coexist in the XA-Core, so you can replace an AA with an AB or vice versa.)

At the XA-Core MAP

2 Access the XA-Core IO MAP level. At the MAP terminal type

>MAPCI;MTC;XAC;IO

and press the Enter key.

3 Examine the IO MAP level. Determine the location of the IOP CP that you need to replace. Record the IOP CP location on the physical shelf, side and

NTLX03 single width IOP circuit pack (continued)

slot. Make sure that redundant components are InSv before removing the IOP CP that you need to replace.

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 IOPflt   .        .       .       .       .       .       .       .       .

IO
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO     PKLT
 2               123456789012345678    456789012345   .     .     IOPfl  .
 3          Sta: -.-.--..-.------..-    S--.--------.  0     0     1      2
 4          Dep:
 5          Typ:  *              *     *         *
 6 Tst_     Slot:  Slot:   Status:    Packlet-Upper:           Lower:
 7 Bsy_       2    Front      .              Tape .            Disk .
 8 RTS_       17   Front      .              Tape .            Disk .
 9            4    Rear       S              RTIF C            CMIC C
10            15   Rear       .              RTIF .            CMIC .
11            IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the redundant IOP, OC-3 or RTIF are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 28

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

NTLX03 single width IOP circuit pack (continued)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f

Example of system response:

```
RTS 2 front completed
```

If the redundant IOP, OC-3 and RTIF are	Do
in service	step 5
not in service	step 28

5 ManB the OC-3 two port interface packlet contained in the IOP CP. Perform the following steps.

a Exit from the IO MAP level and access the CMIC MAP level. At the IO MAP level type

>CMIC

and press the Enter key.

b ManB the OC-3 two port interface packlet. At the CMIC MAP level type

>BSY <nn> <s> <p>

or

>BSY <nn> <s> <p> FORCE

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

or

>BSY 4 r l FORCE

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

NTLX03 single width IOP circuit pack (continued)

To confirm the command type:

>Y

Example of system response:

```
BSY 4 rear upper completed
```

If the packlet is	Do
in a ManB state	step 6
not in a ManB state	step 28

6 ManB the RTIF packlet contained in the IOP CP. Perform the following steps.

a Exit from the CMIC MAP level and access the RTIF MAP level. At the CMIC MAP level type

>RTIF

and press the Enter key.

b ManB the RTIF packlet. At the RTIF MAP level type

>BSY <nn> <s> <p>

or

>BSY<nn> <s> <p> FORCE

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

or

>BSY 4 r u FORCE

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
BSY 4 rear upper completed
```

If the packlet is	Do
in a ManB state	step 7
not in a ManB state	step 28

7 ManB the IOP CP that is set for replacement. Perform the following steps

a Exit from the RTIF MAP level and access the IO MAP level. At the RTIF MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

or

>BSY<nn> <s> FORCE

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

or

>BSY 4 r FORCE

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

NTLX03 single width IOP circuit pack (continued)

Example of system response:

```
BSY 4 rear completed
```

If the IOP CP is	Do
in a ManB state	step 8
not in a ManB state	step 28

8 Indicate the ManB IOP CP. At the IO MAP level, type

>INDICAT card <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>INDICAT card 4 r

Example of system response:

```
Indicate 4 rear complete
```

At the XA-Core physical shelf:

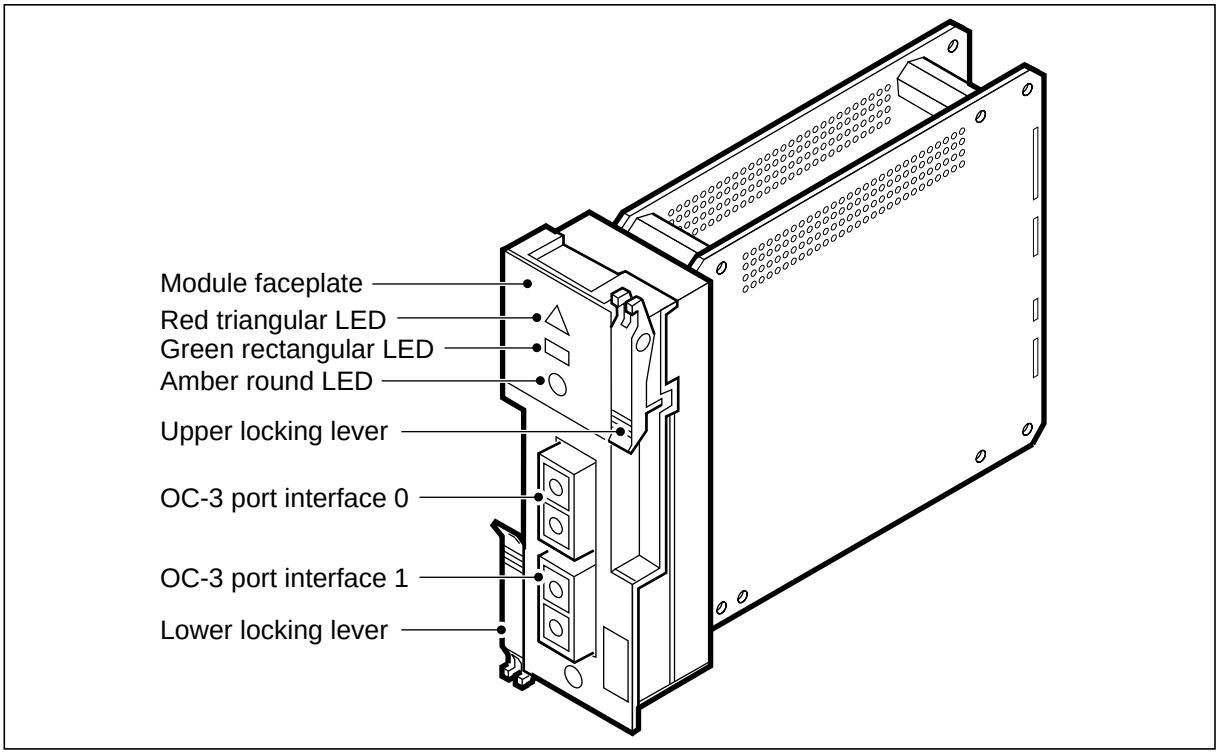
9 Locate the IOP CP on the XA-Core physical shelf. Refer to the IOP CP location recorded from 3. Examine the CP faceplates on the XA-Core physical shelf.

Look for a flashing, red triangular LED on the IO CP. Look for lit red LEDs on the related packlets.

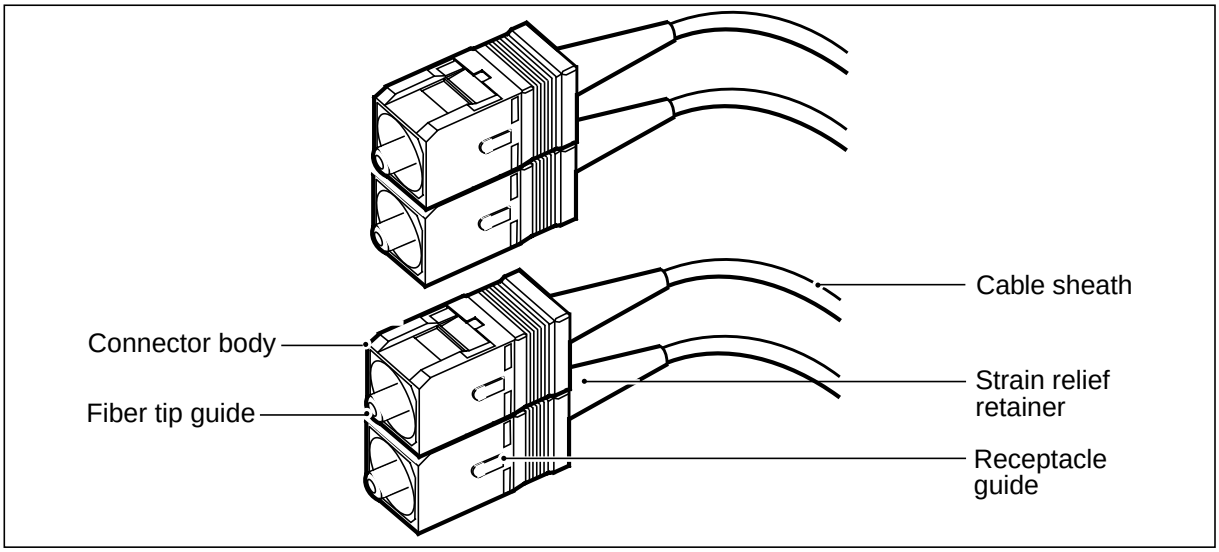
10 Locate the OC-3 two port interface packlet in the IOP CP. Label the OC-3 fiber optic cable connections on the OC-3 two port interface packlet in accordance with office standards.

NTLX03 single width IOP circuit pack (continued)

OC-3 two port interface packlet



Paired fiber optic cable connectors



NTLX03 single width IOP circuit pack (continued)

11

WARNING
Fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance.

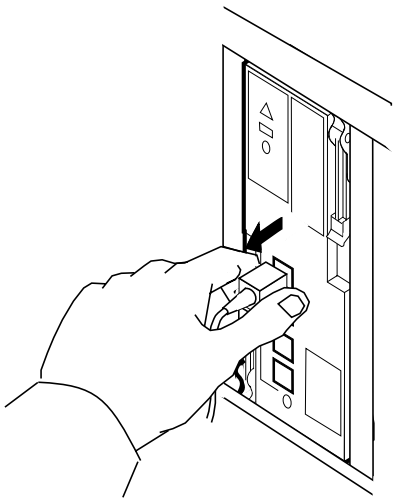
Disconnect the fiber optic cables from the faceplate of the OC-3 two port interface packlet.

a Hold the connector by the receptacle body only.

b Carefully pull the fiber optic connector away from the receptacle.

c Place the fiber optic cable in a safe location away from the physical shelf.

Disconnect the fiber optic cables from the OC-3 two port interface packlet



12 Remove the OC-3 two port interface packlet from the IOP CP. Perform the following steps:

a Open the upper and lower locking levers on the packlet.

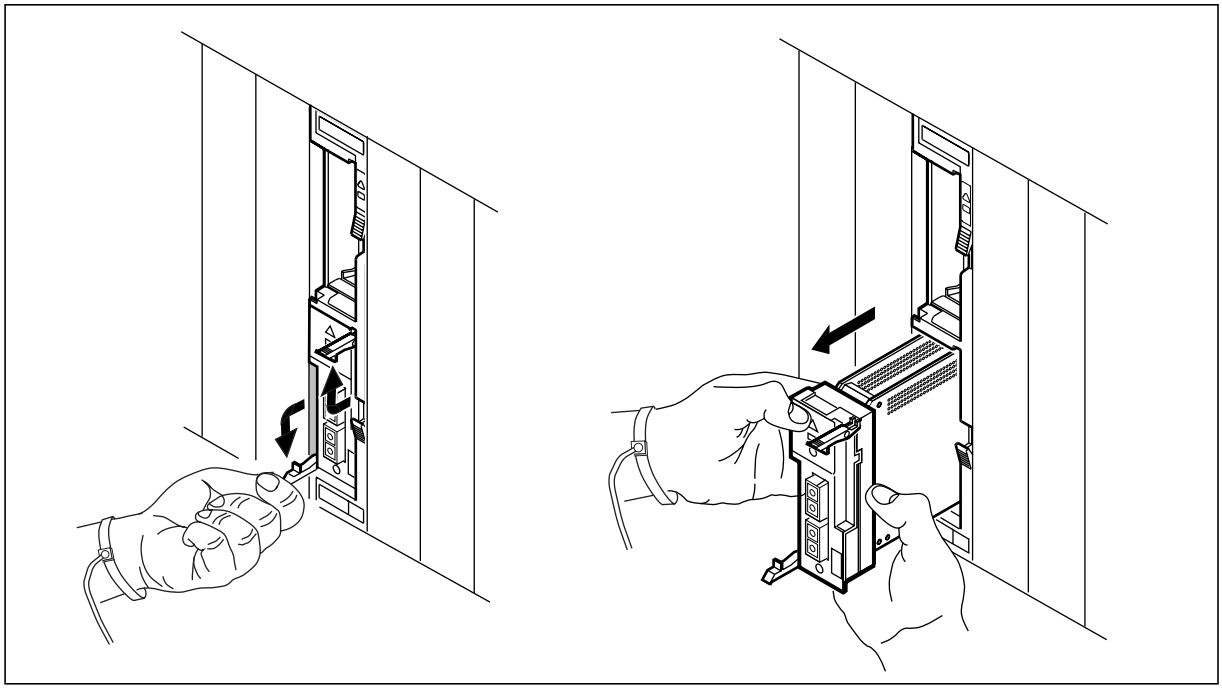
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Place the packlet in ESD protective packaging.

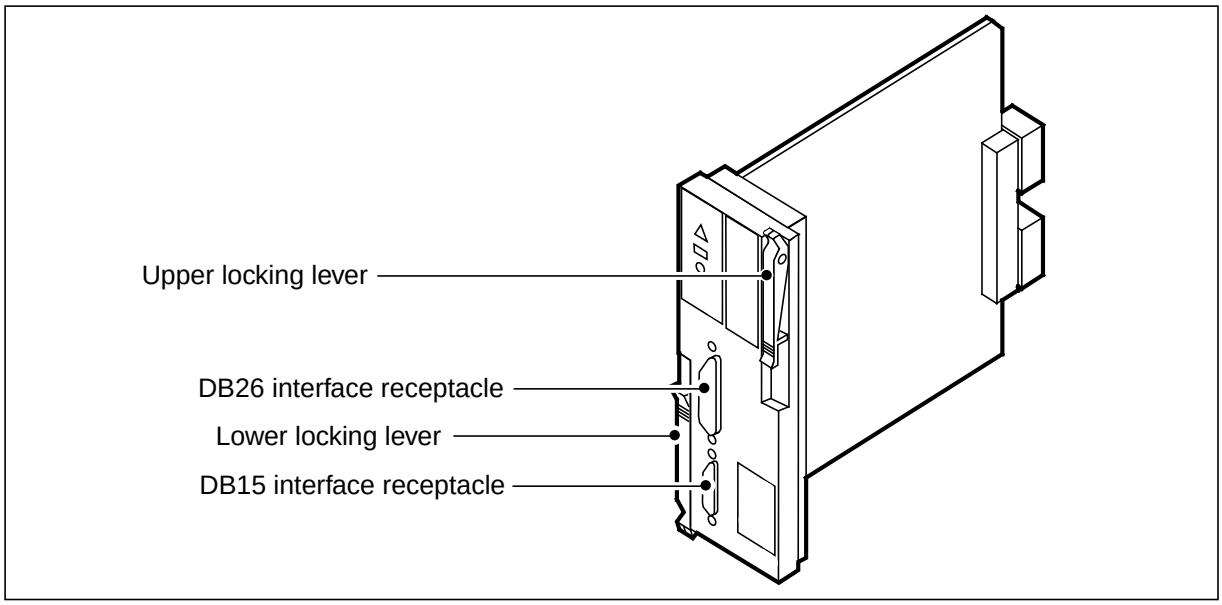
NTLX03 single width IOP circuit pack (continued)

Remove the OC-3 two port interface packlet from the IOP CP



13 Locate the RTIF packlet in the IOP CP. Label the local and remote port cable connections on the RTIF packlet in accordance with office standards.

Reset terminal interface (RTIF) packlet



NTLX03 single width IOP circuit pack (continued)

14 Disconnect the remote port cable from the RTIF packlet (see illustrations in this step).

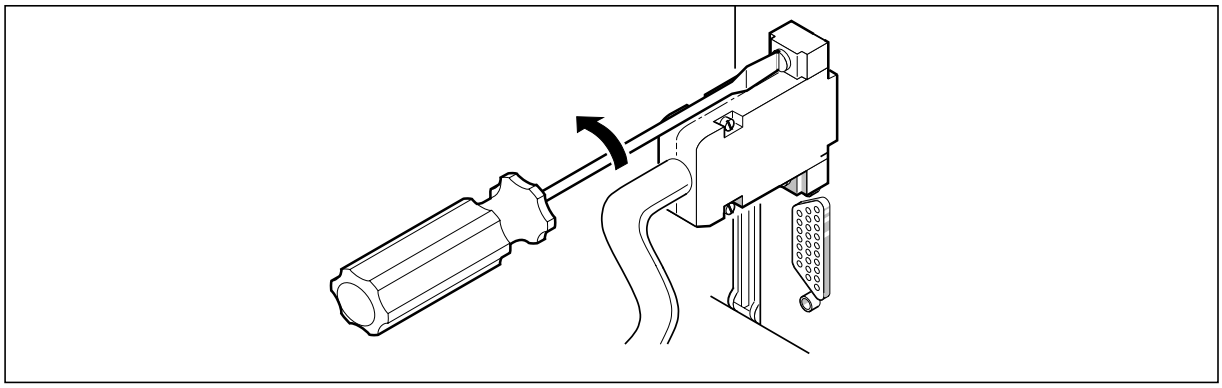
a Loosen the connector retaining screws from the RTIF ports.

b Hold the connector by the body only.

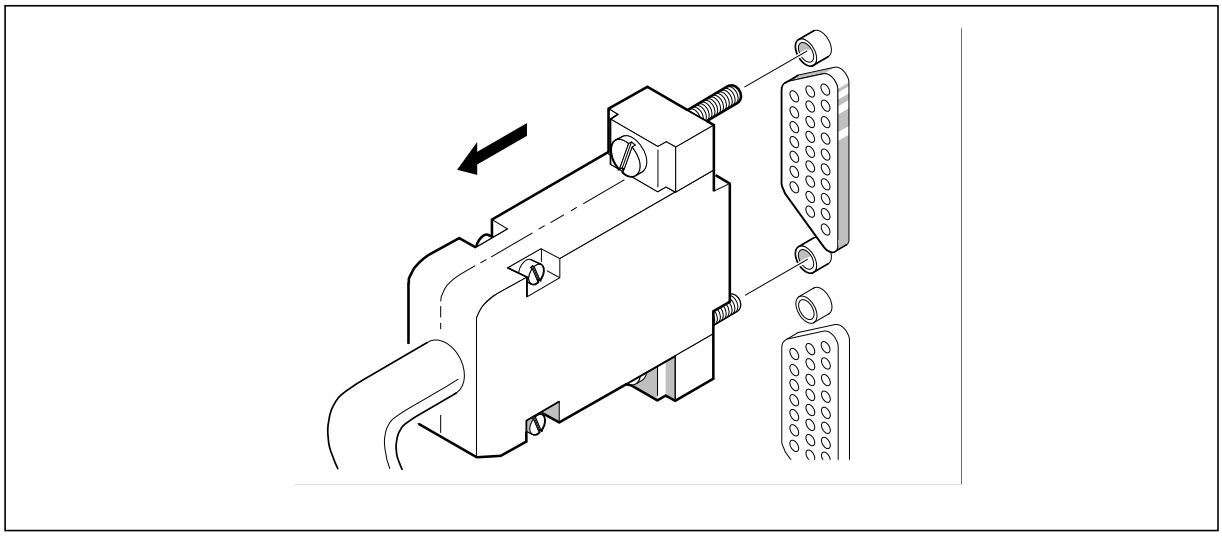
c Carefully pull the connectors away from the port receptacles.

d Place the cables in a safe location away from the packlet.

Loosen the RTIF port connectors from the RTIF ports



Remove all RTIF port connectors from the RTIF ports



NTLX03 single width IOP circuit pack (continued)

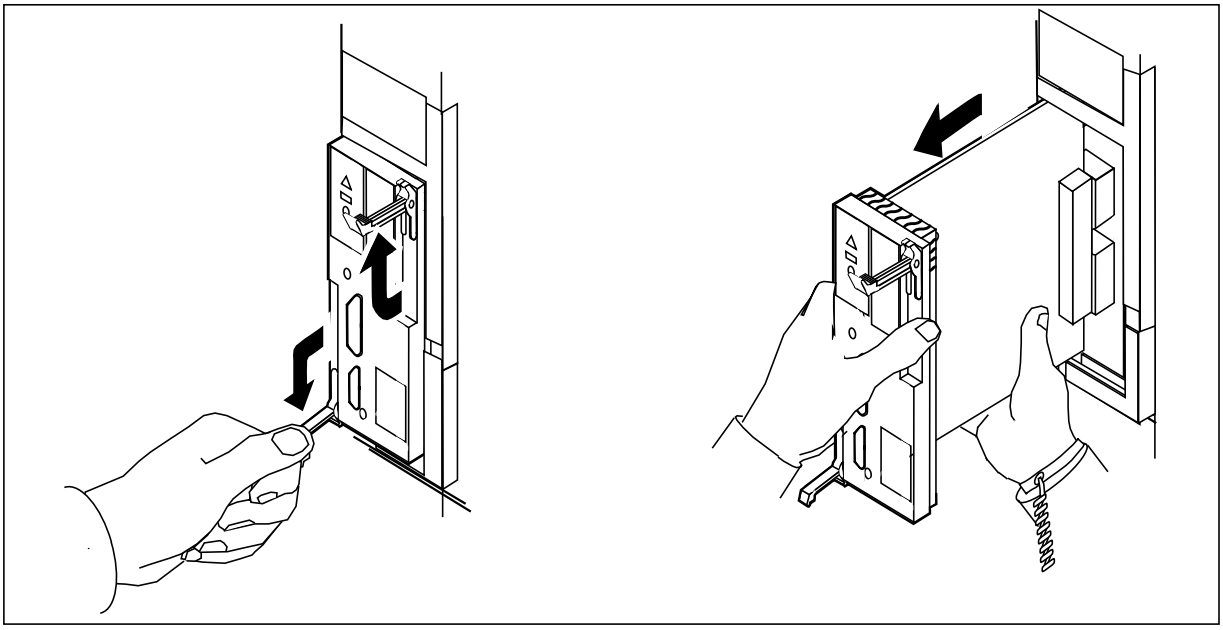
15 Disconnect the local port cable from the RTIF packlet.

- **a** Loosen the connector retaining screws from the RTIF ports.
- **b** Hold the connector by the body only.
- **c** Carefully pull the connectors away from the port receptacles.
- **d** Place the cables in a safe location away from the packlet.

16 Remove the RTIF packlet from the IOP CP. Perform the following steps:

- **a** Open the locking levers on the RTIF packlet.
- **b** Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.
- **d** Place the packlet in ESD protective packaging.

Remove the RTIF packlet from the IOP CP



NTLX03 single width IOP circuit pack (continued)

17 Remove the IOP CP from the physical shelf.

Note: Make sure that you remove all packlets from the IOP CP before you perform this step.

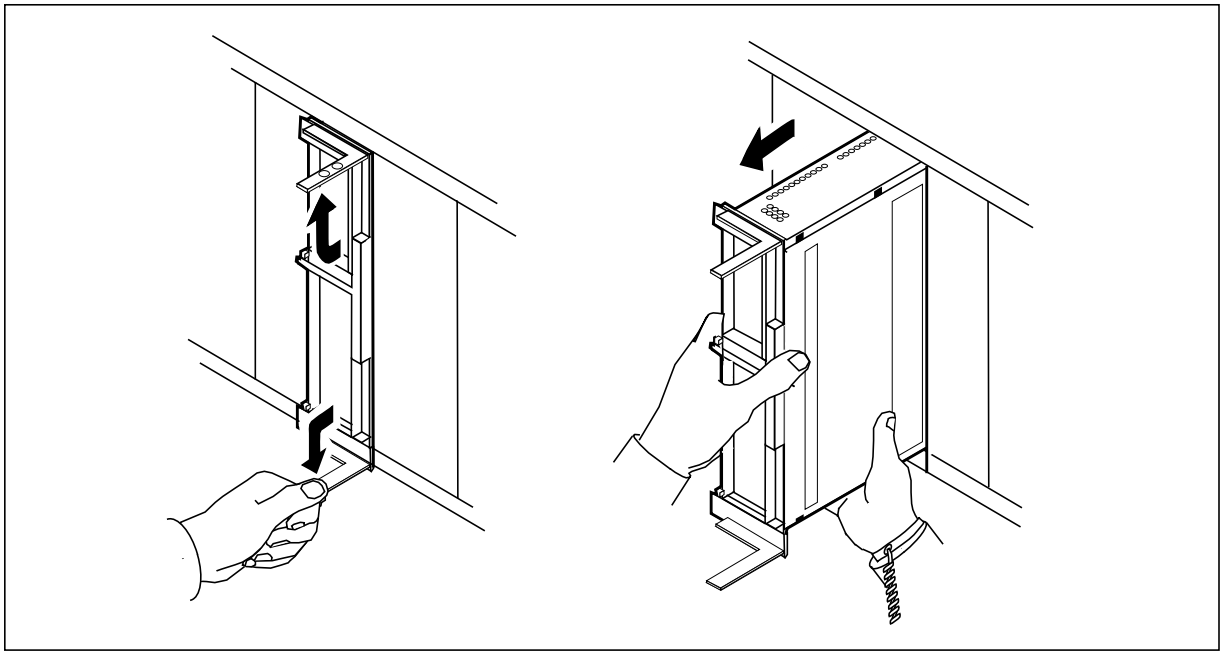
a Open the upper and lower locking levers on the CP.

b Carefully pull the CP toward you by the locking levers until it extends half way from the shelf opening.

c Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

d Place the CP in ESD protective packaging.

Remove the IOP CP from the XA-Core shelf



NTLX03 single width IOP circuit pack (continued)

18 Insert the replacement IOP CP in the physical shelf.

a Open the upper and lower locking levers on the replacement CP.

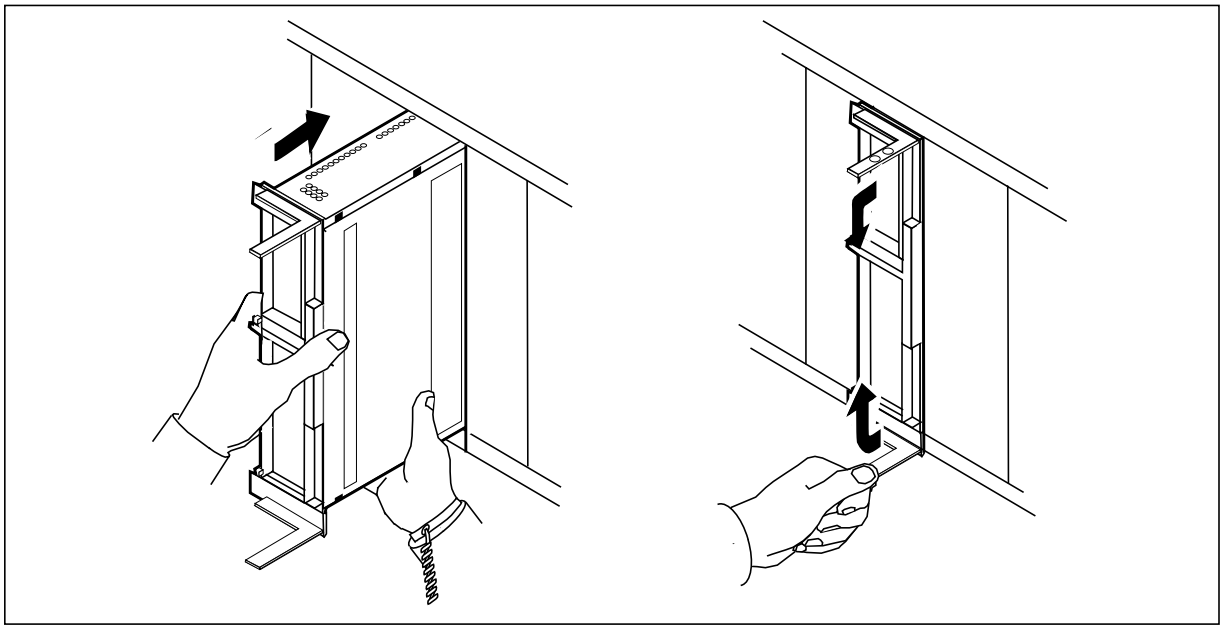
b Hold the CP by the faceplate with one hand and support the bottom edge with the other.

c Align the CP with the slot in the shelf. Carefully slide the CP into the physical slot.

d Use your fingers or thumbs and push on the upper and lower edges of the faceplate.

e Close the upper and lower locking levers to secure the CP in the physical shelf. Do not force the locking levers to close.

Insert the IOP CP in the XA-Core shelf

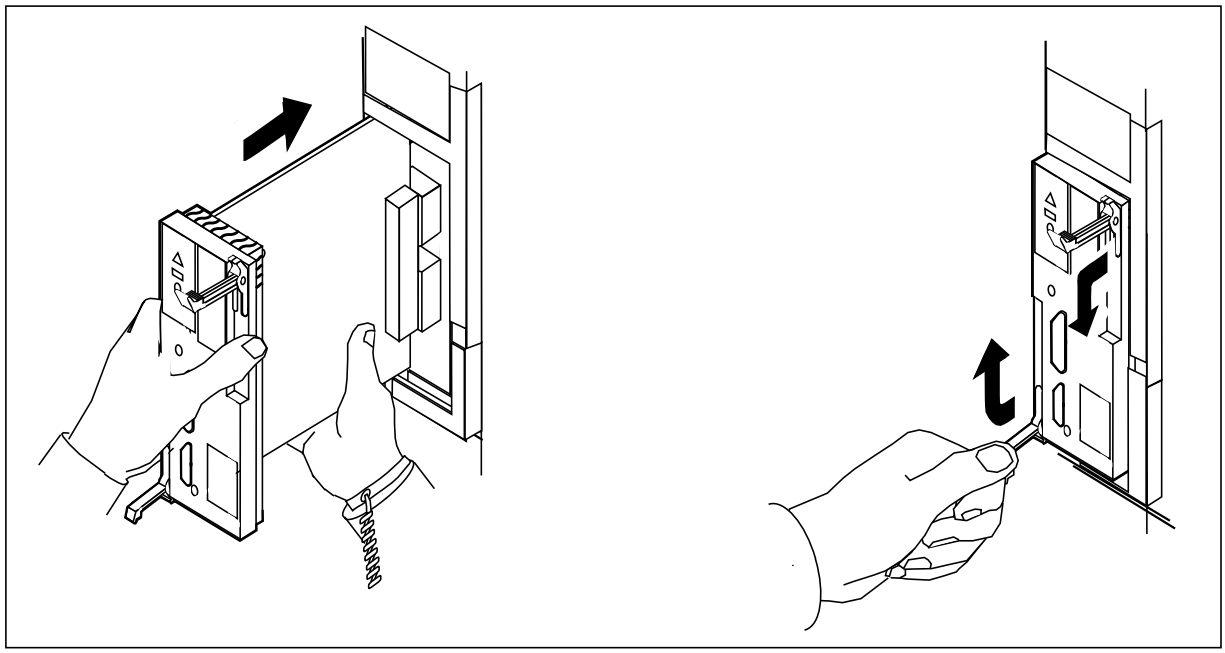


NTLX03 single width IOP circuit pack (continued)

19 Insert the original RTIF packlet in the upper slot of the replacement IOP CP.

- **a** Remove the original RTIF packlet from the ESD protective packaging.
- **b** Open the locking levers on the RTIF packlet.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other.
- **d** Align the RTIF packlet with the upper IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.
- **e** Use your fingers or thumbs to push on the upper and lower edges of the faceplate.
- **f** Close the locking levers to secure the circuit packlet. Do not force the locking levers to close.

Insert the RTIF packlet into the IOP CP



20 Connect the local cable to the correct RTIF port receptacle.

- **a** Hold the connector by the receptacle body only.
- **b** Align the connector to the correct RTIF port receptacle.
- **c** Push the connector into the receptacle.
- **d** Tighten the connector retaining screws.

NTLX03 single width IOP circuit pack (continued)

21 Connect the remote cable to the correct RTIF port receptacle (see illustrations in this step).

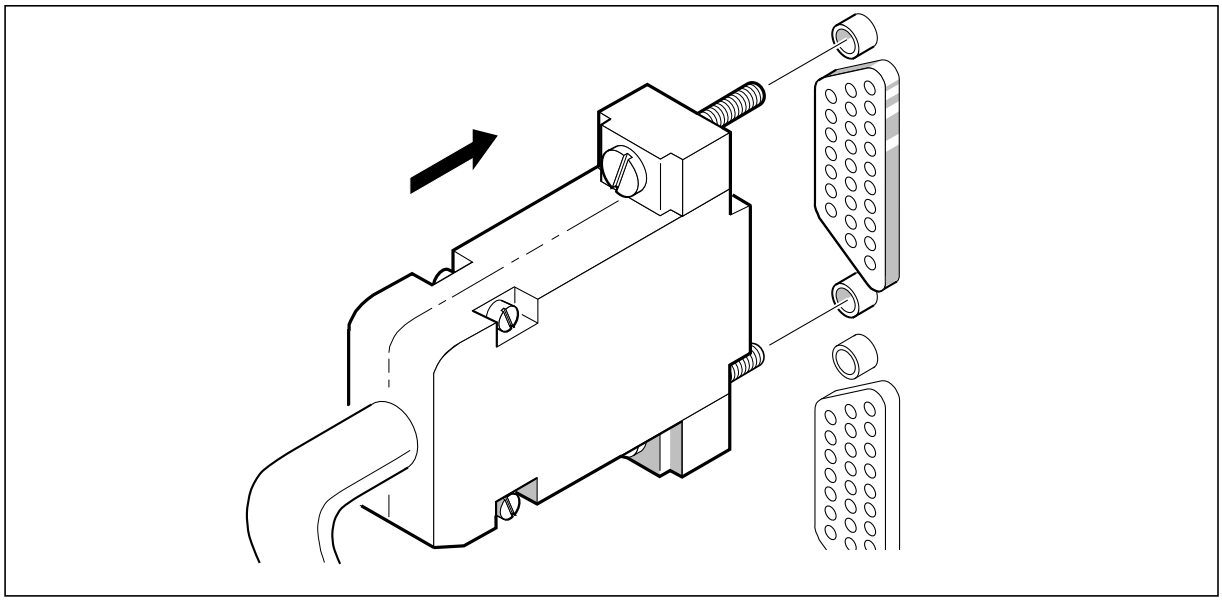
a Hold the connector by the receptacle body only.

b Align the connector to the correct RTIF port receptacle.

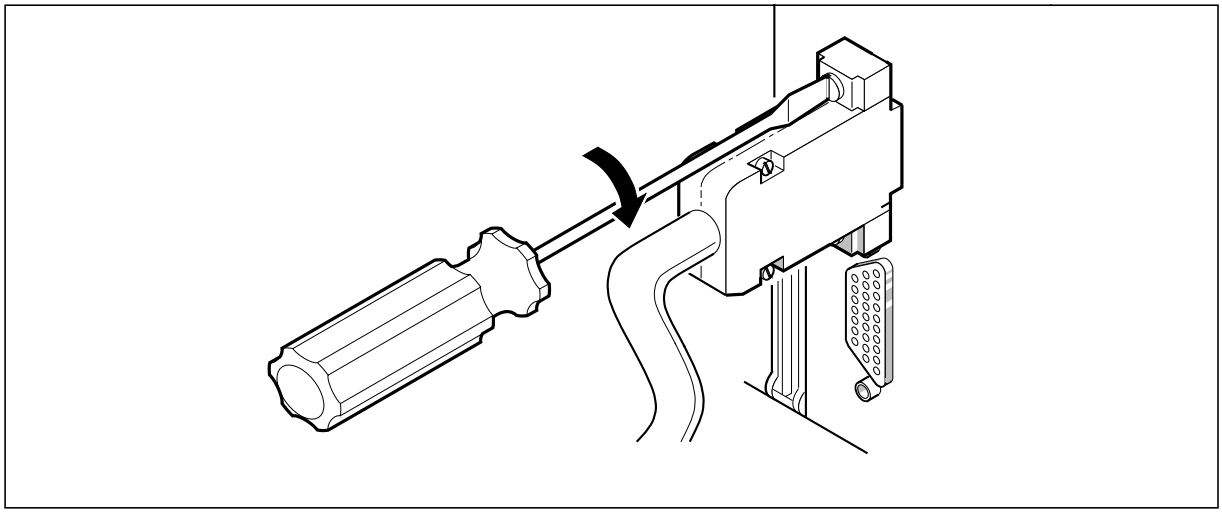
c Push the connector into the receptacle.

d Tighten the connector retaining screws.

Insert the RTIF port connectors in the RTIF port receptacles



Tighten the RTIF port connectors to the RTIF port receptacles

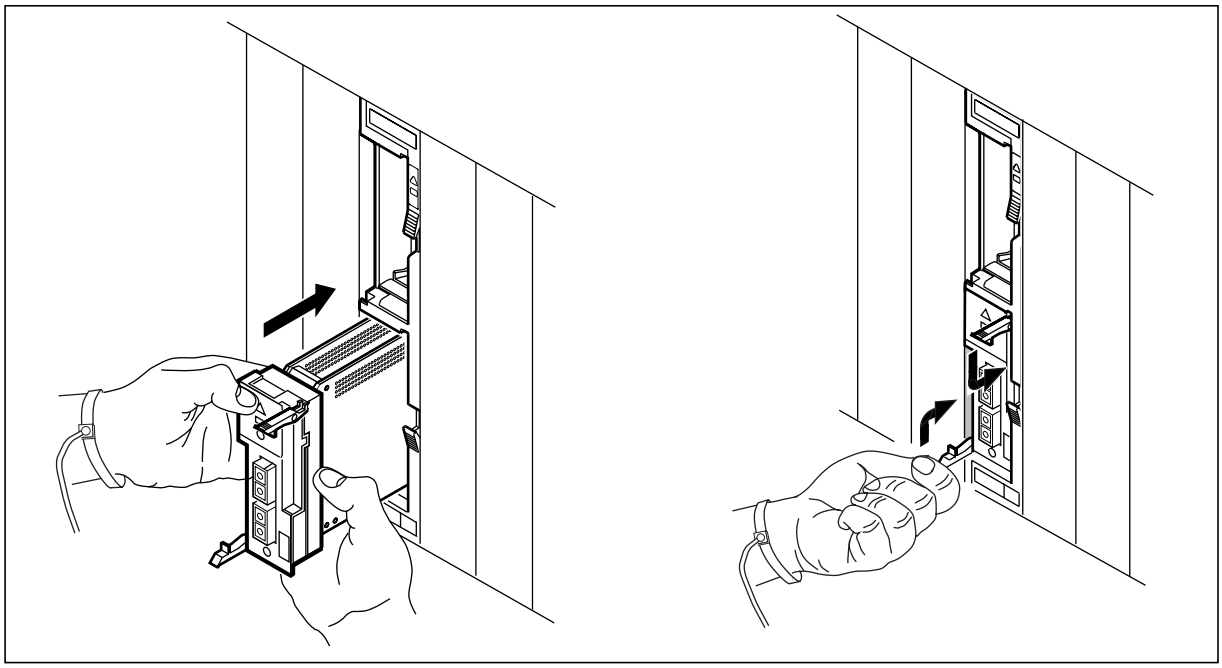


NTLX03 single width IOP circuit pack (continued)

22 Insert the original OC-3 two port interface packlet in the lower IOP CP slot (see the illustrations in this step).

- **a** Remove the original packlet from the ESD protective packaging.
- **b** Open the upper and lower locking levers on the packlet.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other.
- **d** Align the packlet with the lower IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.
- **e** Use your fingers or thumbs to push on the upper and lower edges of the faceplate.
- **f** Close the locking levers to secure the packlet. Do not force the locking levers to close.

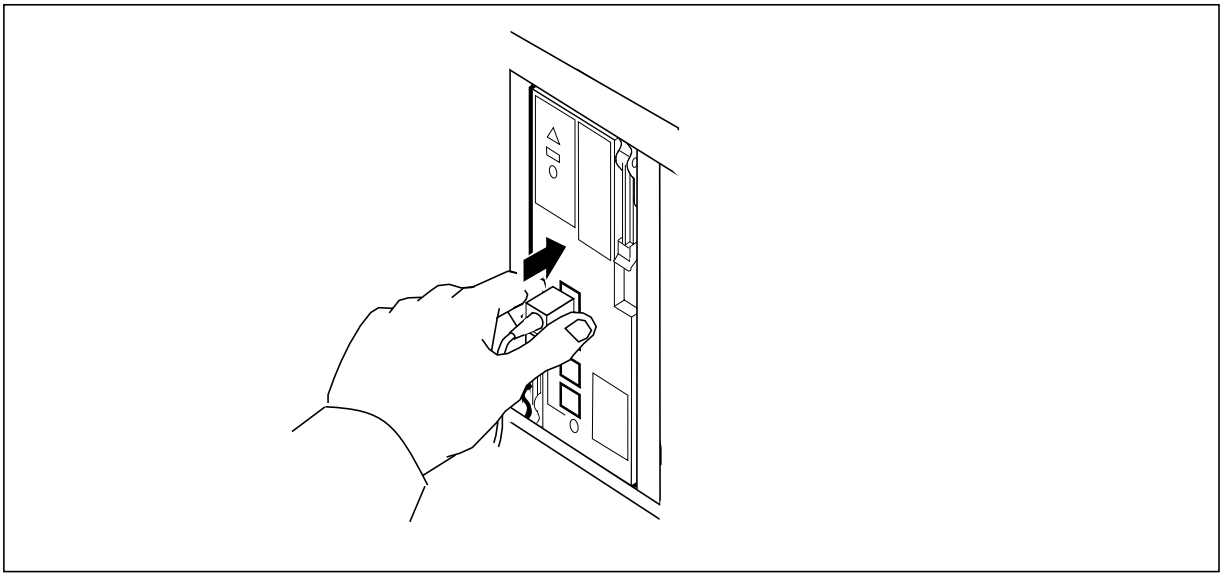
Insert the OC-3 two port interface packlet into the IOP CP



23 Connect the fiber optic cables to the correct OC-3 two port interface ports (see the illustration in this step).

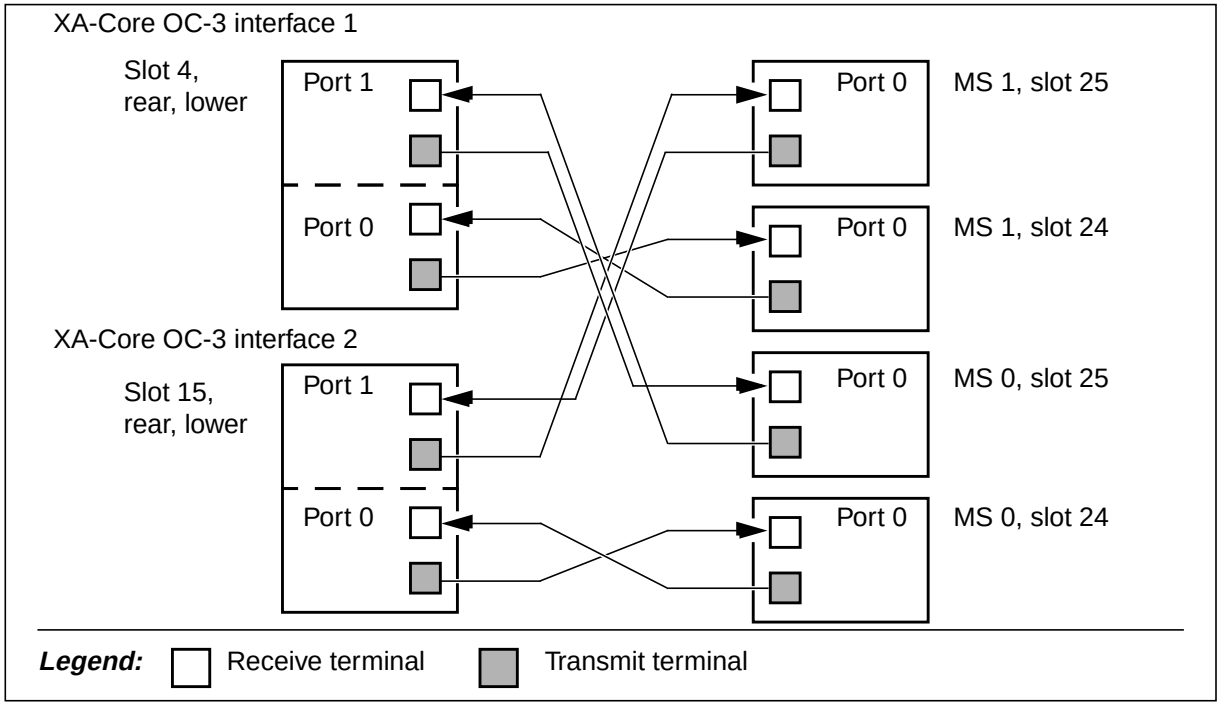
- **a** Remove the dust caps from the fiber optic cable.
- **b** Clean the fiber optic cables in accordance with office standards.
- **c** Hold the fiber optic cable connector by the body only.
- **d** Carefully insert the fiber optic cable connector into the correct receptacle.

Connect the OC-3 two port interface fiber optic cable



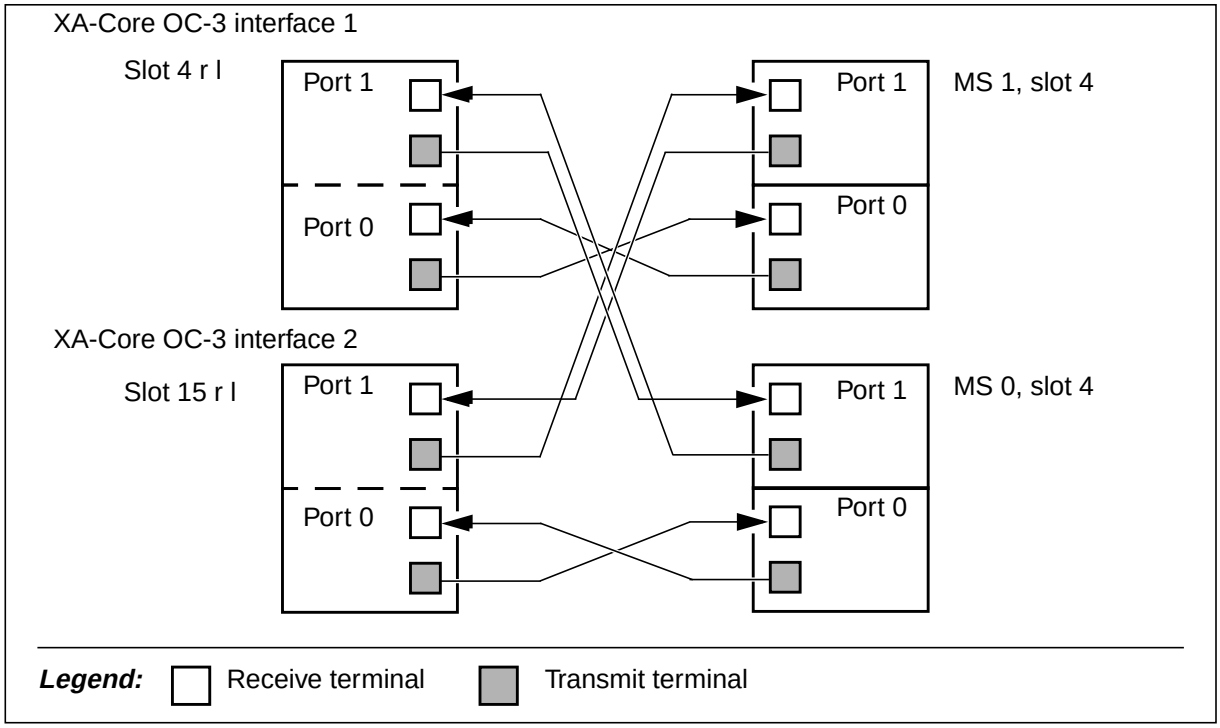
24 Examine the fiber optic cables and connectors. Make sure that the link connections fit into the correct OC-3 interface ports. Use the diagrams in this step to check the link connections.

XA-Core and MS fiber optic cable connections (SuperNode)



NTLX03 single width IOP circuit pack (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



At the XA-Core MAP

25 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear passed
```

If the IOP CP is	Do
in service	step 26
not in service	step 28

NTLX03 single width IOP circuit pack (continued)

26 Return the OC-3 two port interface packlet to service. Perform the following steps.

a Exit from the IO MAP level and access the CMIC MAP level. At the IO MAP level type

>CMIC

and press the Enter key.

b Return the OC-3 two port interface packlet to service. At the CMIC MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower passed
```

If the OC-3 two port interface packlet is	Do
in service	step 27
not in service	step 28

NTLX03 single width IOP circuit pack (end)

27 Return the RTIF packlet to service. Perform the following steps.

a Exit from the CMIC MAP level and access the RTIF MAP level. At the CMIC MAP level type

>RTIF

and press the Enter key.

b Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 7 r l

Example of system response:

```
RTS 4 rear upper passed
```

If the RTIF packlet is	Do
not in service	step 28
in service	step 29

28 Call the next level of support

29 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

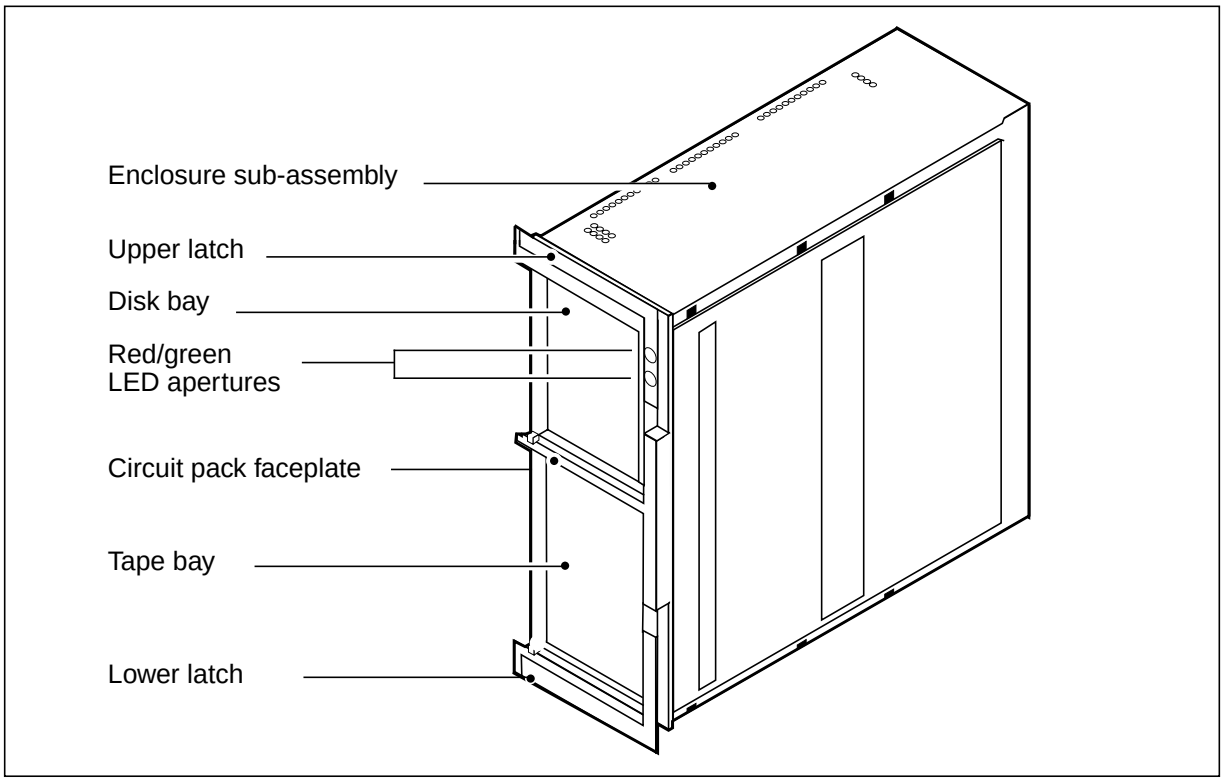
NTLX03 dual width IOP circuit pack in a SuperNode and SuperNode SE XA-Core

Application

Use this procedure to replace the NTLX03 dual-width Input/Output processor (IOP) circuit pack (CP). The dual-width IOP CP contains tape and disk packlets. Remove the packlets from the NTLX03 first. The following lists the valid XA-Core dual-width IOP CPs

PEC	Suffix	Circuit pack name
NTLX03	BA, BB	Dual width Input/Output Processor (IOP) circuit pack

NTLXO3BA dual-width IOP CP front and side views



Common procedures

There are no common procedures.

NTLX03 dual width IOP circuit pack (continued)

Light emitting diode (LED) strategy

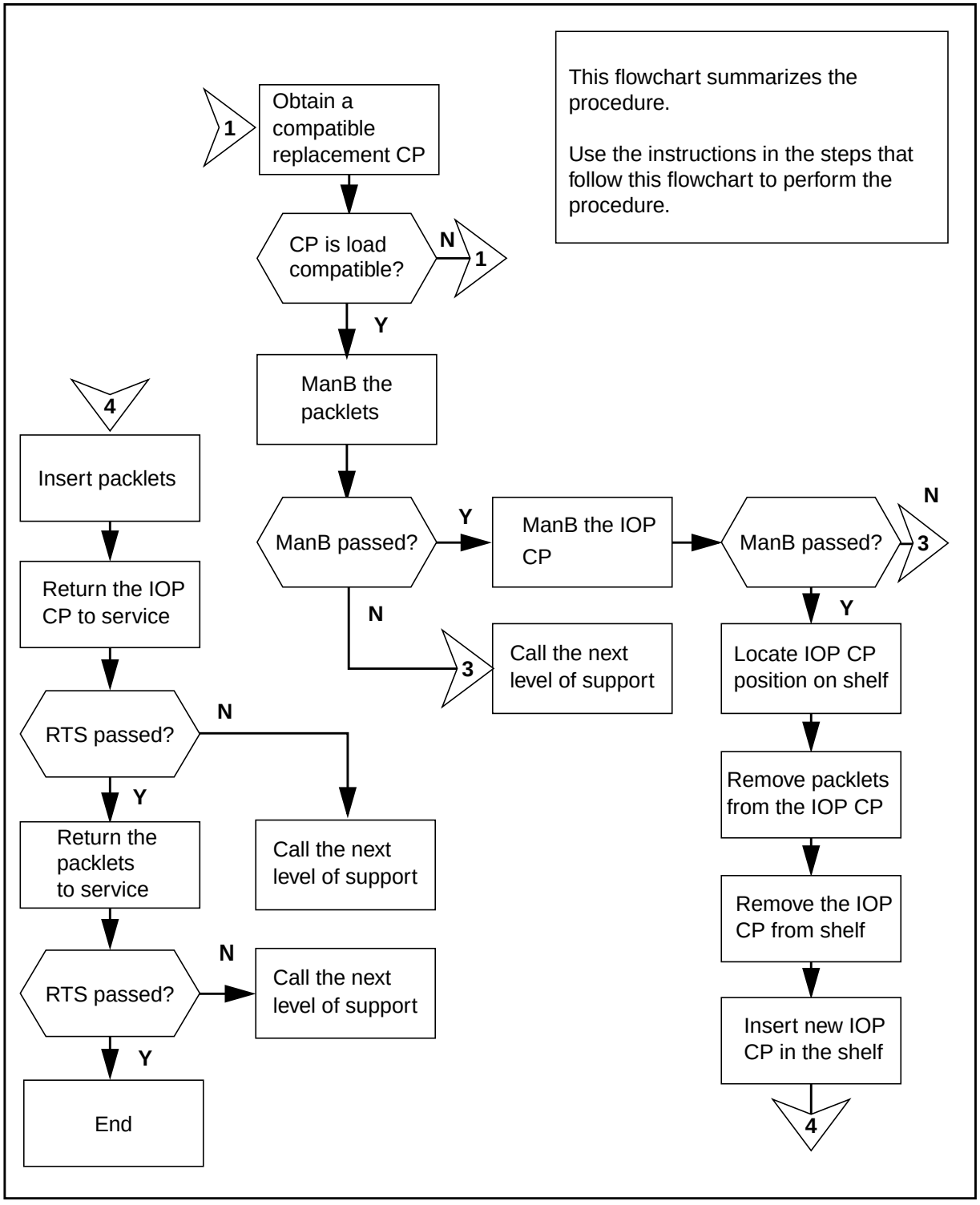
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NTLX03 dual width IOP circuit pack (continued)

Summary of NTLX03 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX03 dual width IOP circuit pack (continued)

How to replace an NTLX03 circuit pack

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Get a replacement CP. The replacement CP must have the product engineering code (PEC) NTLX03BA or NTLX03BB. (The BA and BB versions can coexist in the XA-Core, so you can replace a BA with a BB or vice versa.)

At the MAP terminal:

2 Access the XA-Core IO MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;IO

and press the Enter key.

3 Examine the IO MAP display. Determine the location of the IOP CP that you need to replace. Record the IOP CP location on the physical shelf, side and

NTLX03 dual width IOP circuit pack (continued)

slot. Make sure that redundant components are InSv before removing the IOP CP that you need to replace.

The following is a sample MAP display.

IO MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 IOPflt   .       .       .       .       .       .       .        .       .

IO
 0 Quit          Front:   111111111    Rear: 111111   SM    PE    IO     PKLT
 2               123456789012345678    456789012345   .     .     IOPfl  .
 3          Sta: -S-.---.-.-----..-    .--.--------.   0     0     1      2
 4          Dep:
 5          Typ:  *              *     *         *
 6 Tst_     Slot:  Slot:   Status:    Packlet-Upper:           Lower:
 7 Bsy_       2    Front      S              Tape C            Disk C
 8 RTS_       17   Front      .              Tape .            Disk .
 9            4    Rear       .              RTIF .            CMIC .
10            15   Rear       .              RTIF .            CMIC .
11            IO:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the redundant IOP, disk or tape are	Do
in a ManB state	step 4
in a SysB state	step 5
in an InSv state	step 31

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

NTLX03 dual width IOP circuit pack (continued)

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 17 f

Example of system response:

```
RTS 17 front completed
```

If the redundant IOP, Disk and Tape are	Do
in service	step 5
not in service	step 31

5 Make sure that the redundant Disk packlet contains the active image backup file.

a Exit from the IO MAP level and access the CI MAP level prompt. At the IO MAP level type

>QUIT ALL

and press the Enter key.

b Access the image table of contents (ITOCCI) MAP interface. At the CI MAP level prompt type

>ITOCCI

and press the Enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

c List the image files for the XA-Core in the ITOC, type:

>LISTBOOTFILE XA

and press the Enter key.

Example of a MAP response:

```
Image Table Of Contents for XA:

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ --------------------
-----------

 0 * 05/04/1999 19:16:21 F02LIMAGE IMG0504CX_CM
 0   05/01/1999 19:21:19 F02LIMAGE IMG0501CU_CM
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each*

image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.

d Determine which device contains the active image files. Examine the device name under the Generic Device header in the ITOC listing. The device name indicates the location of the disk device.

e Exit from the ITOCCI MAP interface and display the CI MAP level prompt. At the ITOCCI MAP interface prompt, type

>QUIT

and press the Enter key.

If the redundant disk device	Do
does not contain the active image	step 6
contains the active image	step 8

6 Perform a manual dump of the active image to the redundant disk device. At the CI MAP level prompt, type

>AUTODUMP MANUAL

and press the Enter key.

7 Wait for a system response to indicate that the manual image dump is successful.

If the manual image dump to the redundant disk device is	Do
successful	step 8
not successful	step 31

8 Determine if the Tape packlet that you want to remove contains a mounted tape. Perform the following steps:

a Access the Tape MAP level. At the CI MAP level prompt type:

>MAPCI;MTC;XAC;TAPE

and press the Enter key.

b Examine the Tape MAP level. Record the location of the Tape packlet that you want to remove.

Note: The Tape MAP level displays the following information in the command interpreter output area:

- the user name under the User Name header
- the tape drive status under the Drive header (mounted/unmounted)

The following is a sample MAP display.

NTLX03 dual width IOP circuit pack (continued)

Tape MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
 IOP       .       .       .       .       .       .       .       .       .

Tape            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       IOPflt TAPE C.
 2              Sta: -S-.--..-.---.-..-  .----------.   0      0       1      2
 3              Dep:  F
 4              Typ:  *              *
 5              Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 6 Tst_            2    Front    Upper      C          .               unmounted
 7 Bsy_           17    Front    Upper      .          User1           mounted
 8 RTS_           TAPE:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

9 Record the user name and drive state as shown on the Tape MAP level. There are four possible tape device user conditions:

- The system is using the tape device. The Tape MAP level displays “System” as the user name. The system software is performing an activity such as an ONP or software upgrade. The tape drive state is mounted.
- Another user is performing a backup or restore at a different location. The tape drive state is mounted.
- You are the user of the tape device. The tape drive state is mounted.
- There are no users. The tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the system software is the user	step 10
another user is using the tape device	step 11
you are the user of the tape device	step 14
there are no users	step 15

NTLX03 dual width IOP circuit pack (continued)

10 Wait for the system software to complete the ONP or upgrade process. When the system software activities are complete, the MAP deletes the “System” user name and the tape drive state changes to unmounted.

If the system software process is complete and the Tape MAP level indicates that	Do
the tape is not rewound and the tape drive state is mounted	step 13
the tape is rewound and the tape drive state is unmounted	step 15

11 Notify the other user that you intend to remove the Tape packlet. The other user needs to complete tape device activities and perform an EJECTTAPE. Wait for the Tape MAP level to delete the other user name and indicate that the tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the tape is not rewound and that the tape drive state is mounted	step 12
the tape is rewound and that the tape drive state is unmounted	step 15

12 Call the other user to make sure that all tape drive activities are complete.

If the other user has	Do
completed tape drive activities and rewound the tape	step 15
not completed tape drive activities	step 31

13 Clear the tape drive state on the Tape MAP level. Manually busy the Tape packlet and return the Tape packlet to service.

a Manually busy the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 2 f u

NTLX03 dual width IOP circuit pack (continued)

Example of system response:

```
BSY 2 front upper complete
```

b Return the Tape packlet to service. At the Tape MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 14
the tape is not rewound and the tape drive state is mounted	step 31

14 Access the DISKUT MAP interface and rewind the tape.

a At the Tape MAP level type:

>QUIT all

and press the enter key.

b Access the DISKUT MAP level. At the CI MAP prompt type:

>DISKUT

and press the enter key.

c Rewind the tape. At the DISKUT MAP level type:

>EJECTTAPE <device>

and press the enter key.

where

<device> is the name of the tape device.

Note: The system rejects the EJECTTAPE command if the system cannot identify you as the user of the tape device.

Example of command use:

>EJECTTAPE F02UTAPE

Example of system response:

```
Rewind of tape F02UTAPE on node <node_name> is
completed. The tape device is not available to the user
now
```

d Exit from the DISKUT MAP level. At the DISKUT MAP prompt, type

>QUIT

and press the enter key.

e Access the XA-Core Tape MAP level. At the CI MAP prompt, type

>MAPCI;MTC;XAC:TAPE

and press the enter key.

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 15
the tape is not rewound and the tape drive state is mounted	step 31

15 ManB the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Note: The Tape packlet is in the same physical shelf and slot location as the replacement IOP CP.

Example of command use:

>BSY 2 f u

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

NTLX03 dual width IOP circuit pack (continued)

Example of system response:

```
Bsy 2 front upper complete.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the Tape packlet is	Do
in a ManB state	step 16
not in a ManB state	step 31

16 ManB the Disk packlet contained in the IOP CP. Perform the following steps:

a Exit from the Tape MAP level and access the Disk MAP level. At the Tape MAP level type

>DISK

and press the Enter key.

b ManB the Disk packlet. At the Disk MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 2 f l

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
BSY 2 front lower completed
```

NTLX03 dual width IOP circuit pack (continued)

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

If the Disk packlet is	Do
in a ManB state	step 17
not in a ManB state	step 31

17 ManB the IOP CP. Perform the following steps

a Exit from the Disk MAP level and display the IO MAP level. At the Disk MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 2 f

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 2 front completed.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the IOP CP is	Do
in a ManB state	step 18
not in a ManB state	step 31

NTLX03 dual width IOP circuit pack (continued)

18 Indicate the ManB IOP CP. At the IO MAP level, type

>INDICAT card <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command usage:

>INDICAT card 2 f

Example of system response:

```
Indicate 2 front passed.
```

At the XA-Core physical shelf

19

WARNING
Static electricity damage
Make sure that you wear a wrist-strap connected to a grounding point on the FSP. The wrist-strap protects against electrical static discharge (ESD).

Locate the IOP CP on the physical shelf. Refer to the IOP CP location recorded from 3. Examine the CP faceplates on the XA-Core physical shelf.

Look for a flashing, red triangular LED on the IOP CP. A winking, red LED is a result of using the indicate command. Look for lit red LEDs on the packlets.

20 Remove the Disk packlet from the IOP CP. Perform the following steps:

a Locate the Disk packlet in the IOP CP.

b Open the upper and lower locking levers on the packlet.

c Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

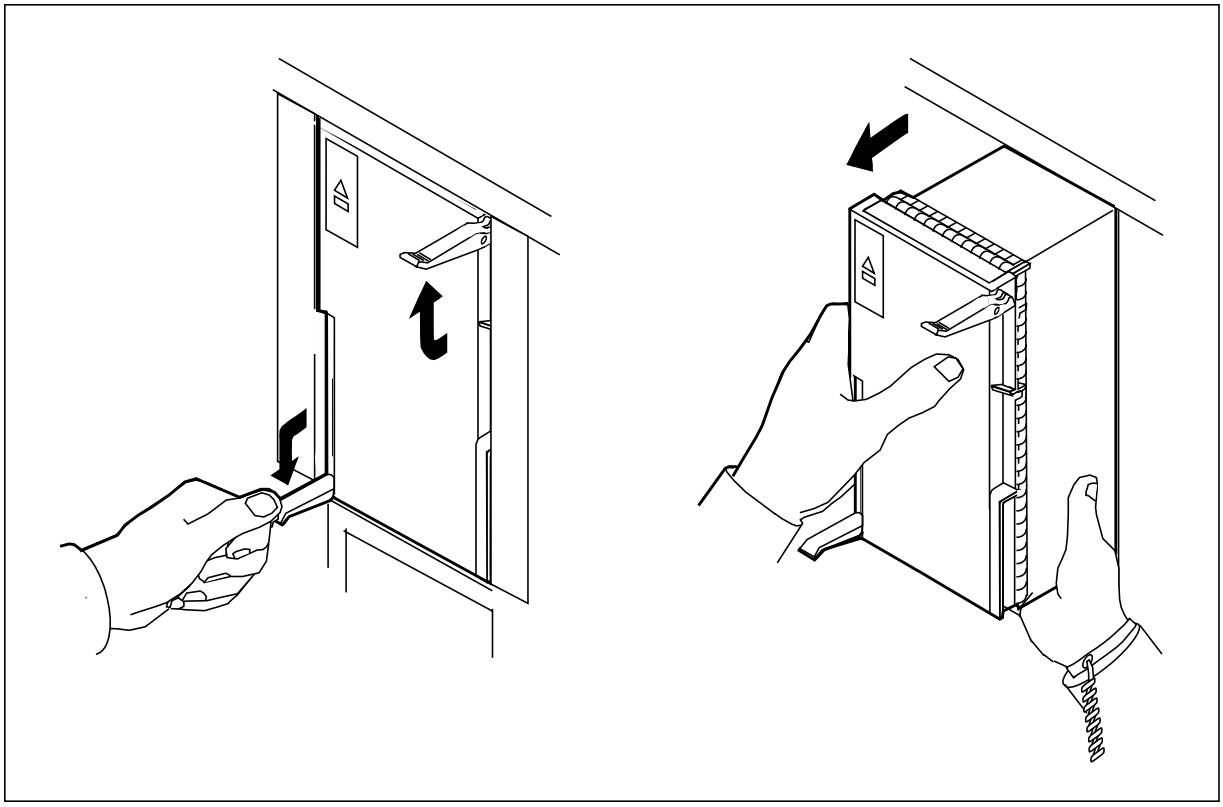
d Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

e Close the upper and lower locking levers on the packlet to prevent breakage.

f Place the packlet in ESD protective packaging.

NTLX03 dual width IOP circuit pack (continued)

Remove the Disk packlet from the IOP CP



21 Remove the Tape cassette from the Tape packlet if necessary. If there is no tape in the IOP CP, continue to 22. Perform the following steps:

a Locate the Tape packlet in the IOP CP.

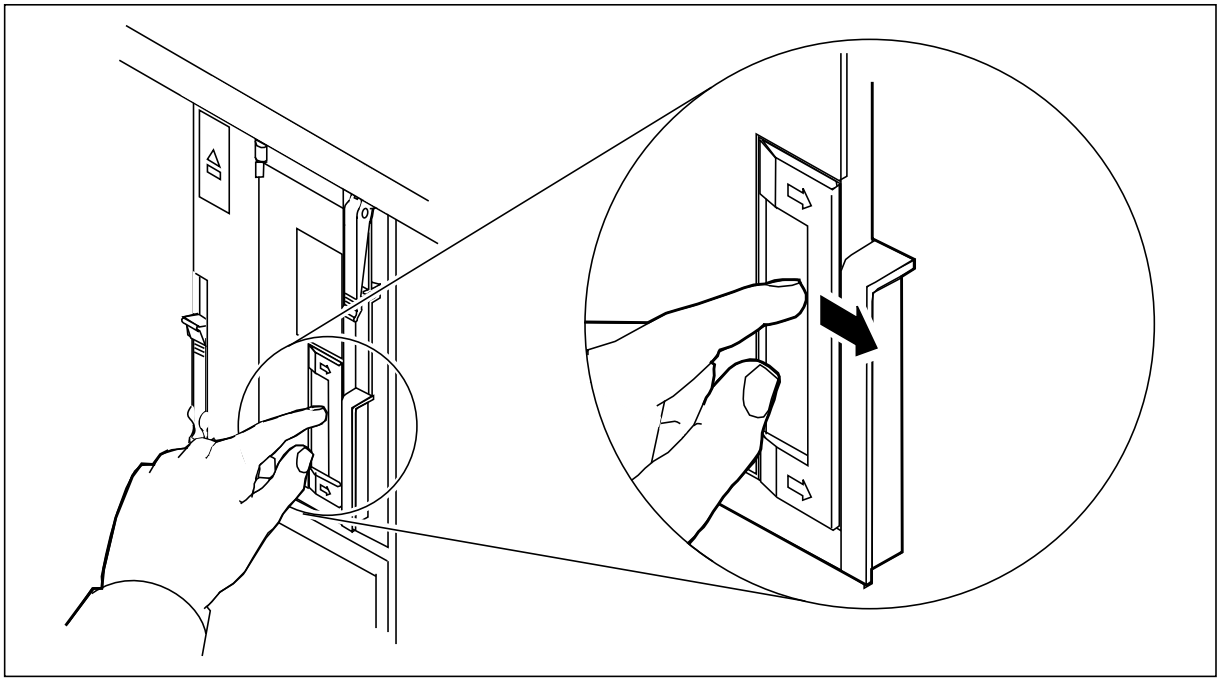
b Push the door lock in the direction of the arrow to unlock. The cassette door swings open.

c Press the tape eject button. The tape cassette partially ejects and is ready for removal.

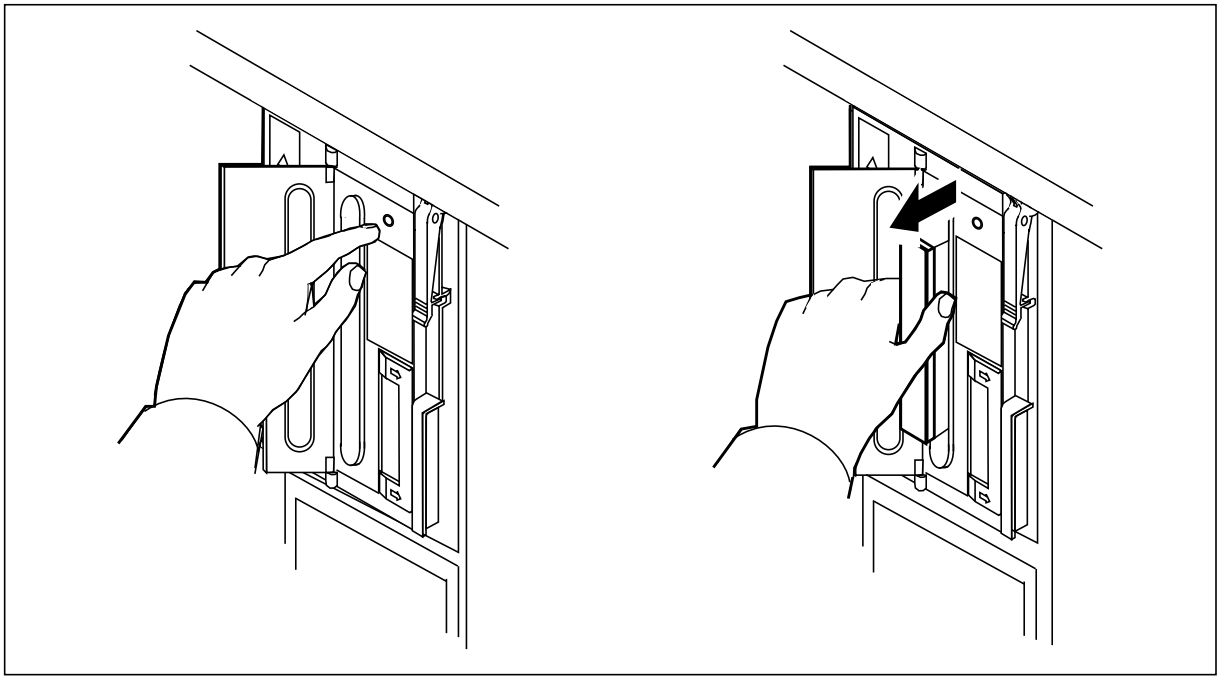
d Close the tape cassette door. Carefully push on the door until it locks in place.

NTLX03 dual width IOP circuit pack (continued)

Open the Tape cassette door



Eject and remove the Tape cassette



NTLX03 dual width IOP circuit pack (continued)

22 Remove the Tape packlet from the IOP CP. Perform the following steps:

a Open the upper and lower locking levers on the packlet.

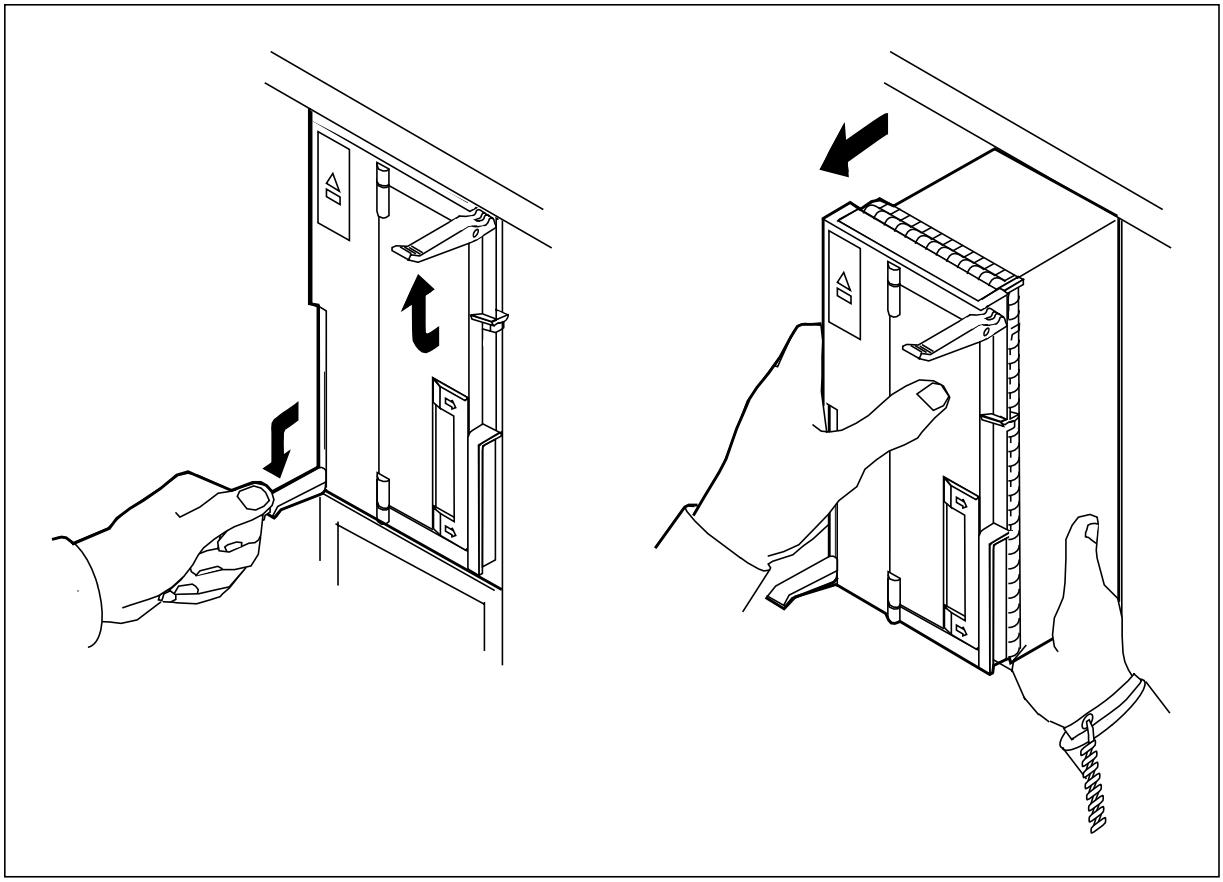
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Close the upper and lower locking levers on the packlet to prevent breakage.

e Place the packlet in ESD protective packaging.

Remove the Tape packlet from the IOP CP



NTLX03 dual width IOP circuit pack (continued)

23 Remove the IOP CP from the physical shelf.

Note: Make sure that you remove all packlets from the IOP CP before you perform this step.

a Open the upper and lower locking levers on the CP.

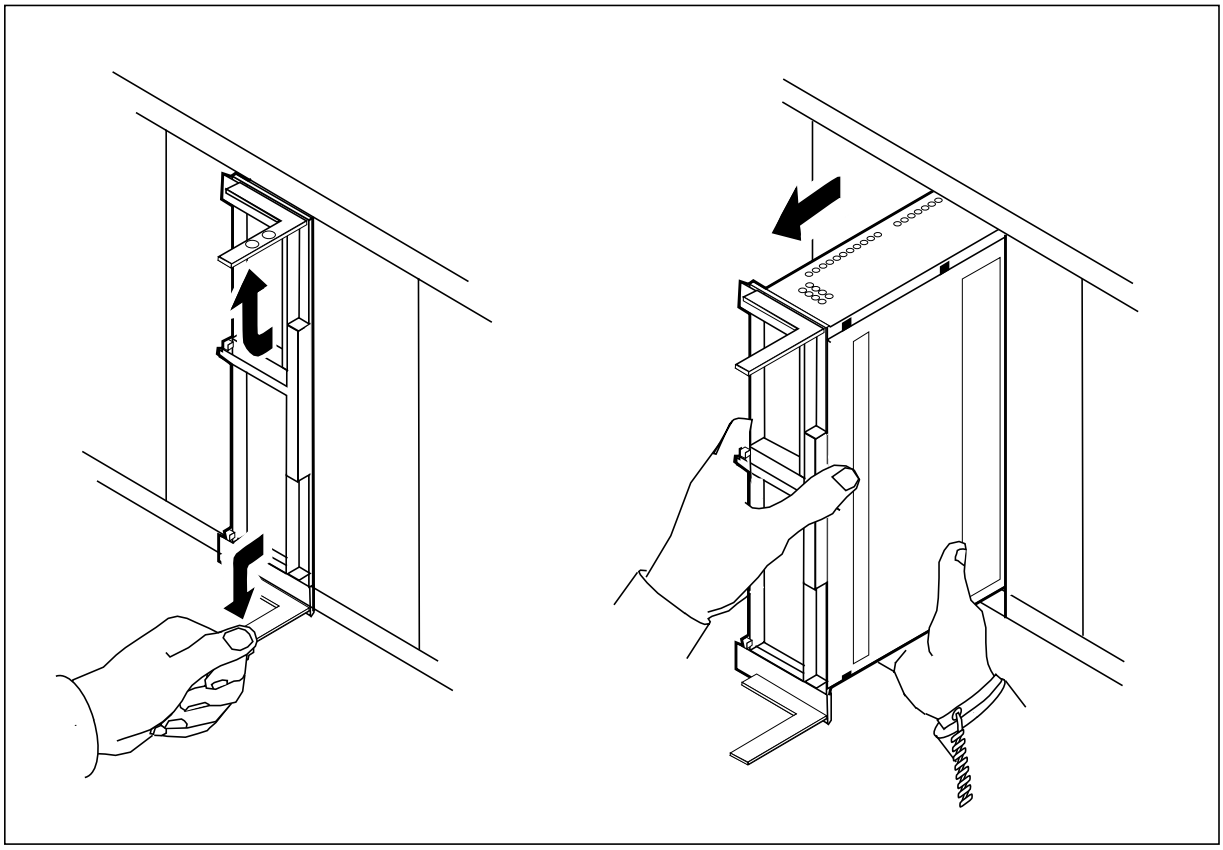
b Carefully pull the CP toward you by the locking levers until it extends half way from the shelf opening.

c Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

d Close the upper and lower locking levers on the CP to prevent breakage.

e Place the CP in ESD protective packaging.

Remove the dual width IOP CP from the XA-Core shelf

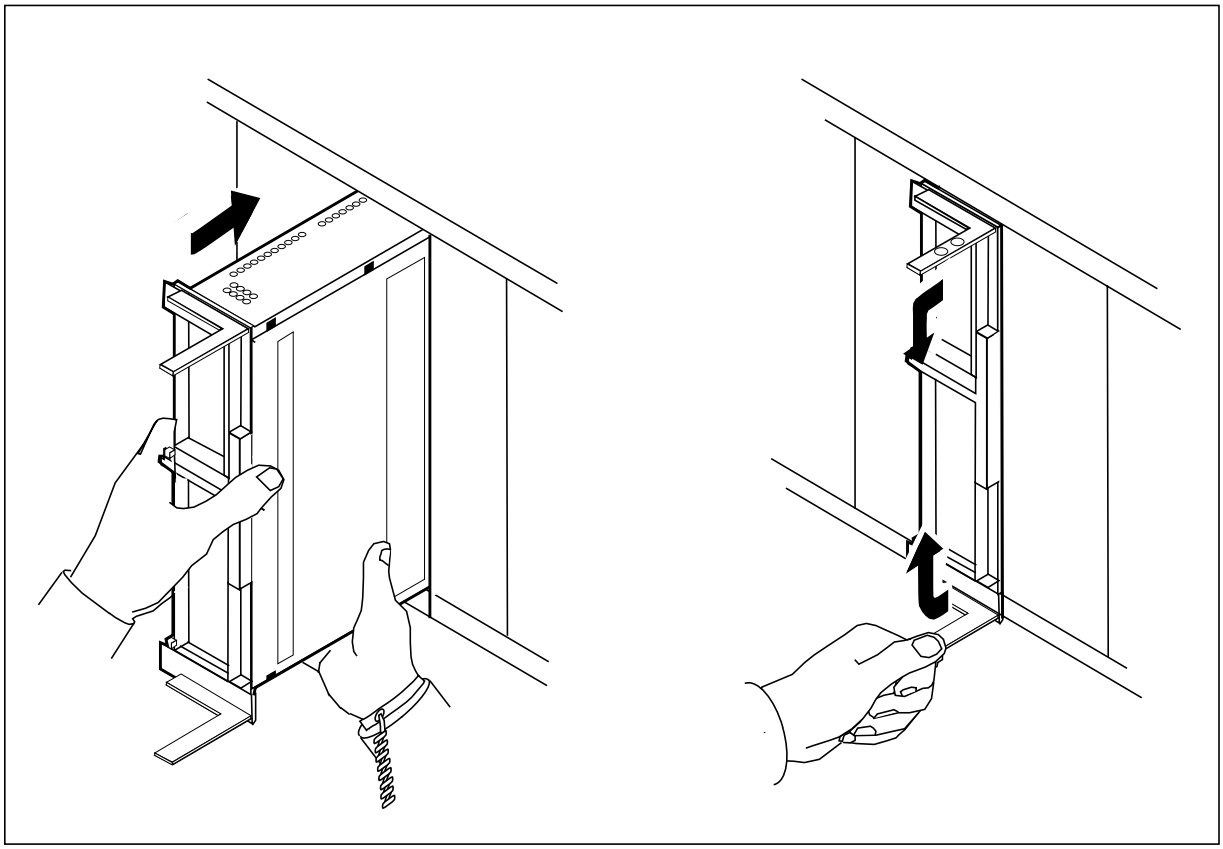


NTLX03 dual width IOP circuit pack (continued)

24 Insert the replacement IOP CP in the physical shelf.

- **a** Open the upper and lower locking levers on the replacement CP.
- **b** Hold the CP by the faceplate with one hand and support the bottom edge with the other.
- **c** Align the CP with the slot in the shelf. Carefully slide the CP into the physical slot.
- **d** Use your fingers or thumbs and push on the upper and lower edges of the faceplate.
- **e** Close the upper and lower locking levers to secure the CP in the physical shelf. Do not force the locking levers to close.

Insert the dual width IOP CP in the XA-Core shelf



25 Insert the original Tape packlet in the upper slot of the replacement IOP CP.

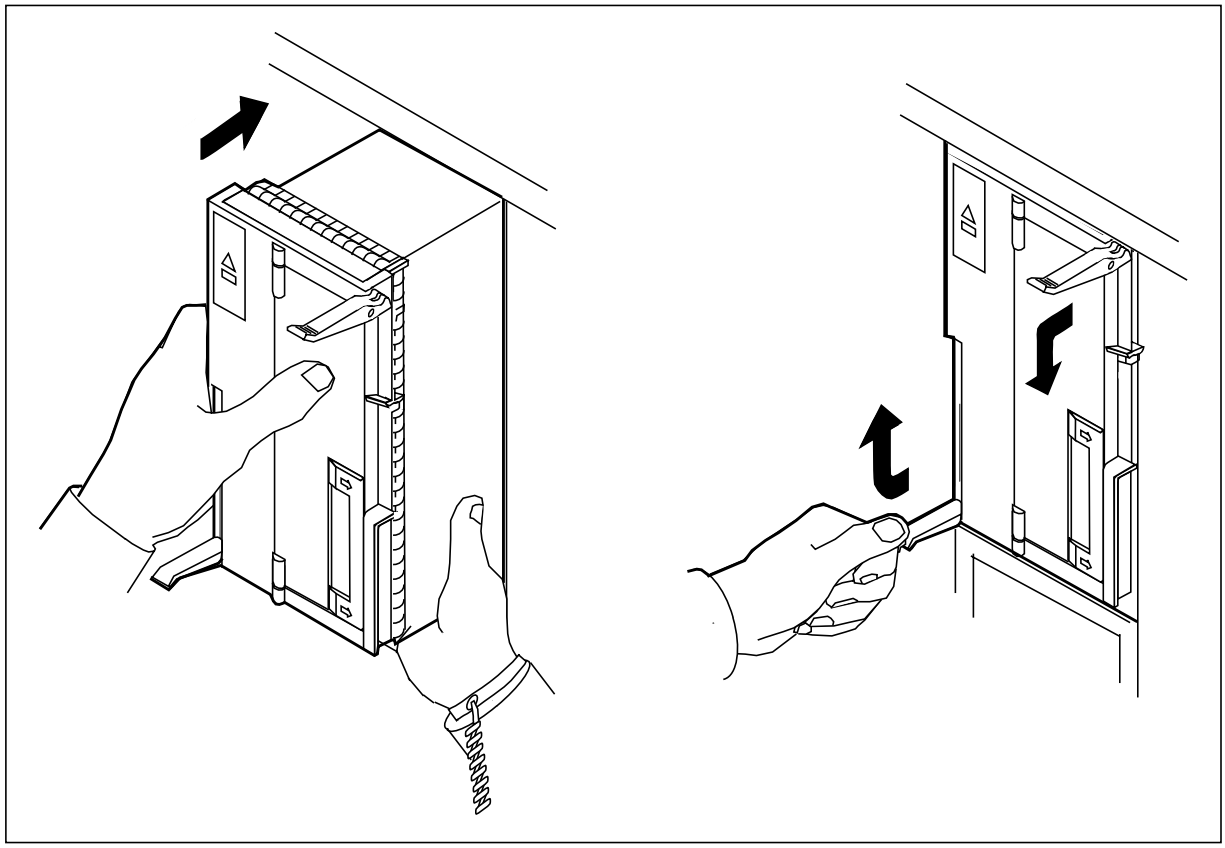
- **a** Remove the original Tape packlet from the ESD protective packaging.
- **b** Open the locking levers on the Tape packlet.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other.
- **d** Align the packlet with the upper IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

NTLX03 dual width IOP circuit pack (continued)

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers to secure the circuit packlet. Do not force the locking levers to close.

Insert the Tape packlet in the IOP CP



26 Insert the original Disk packlet into the lower IOP CP slot. Perform the following steps:

a Open the locking levers on the original Disk packlet.

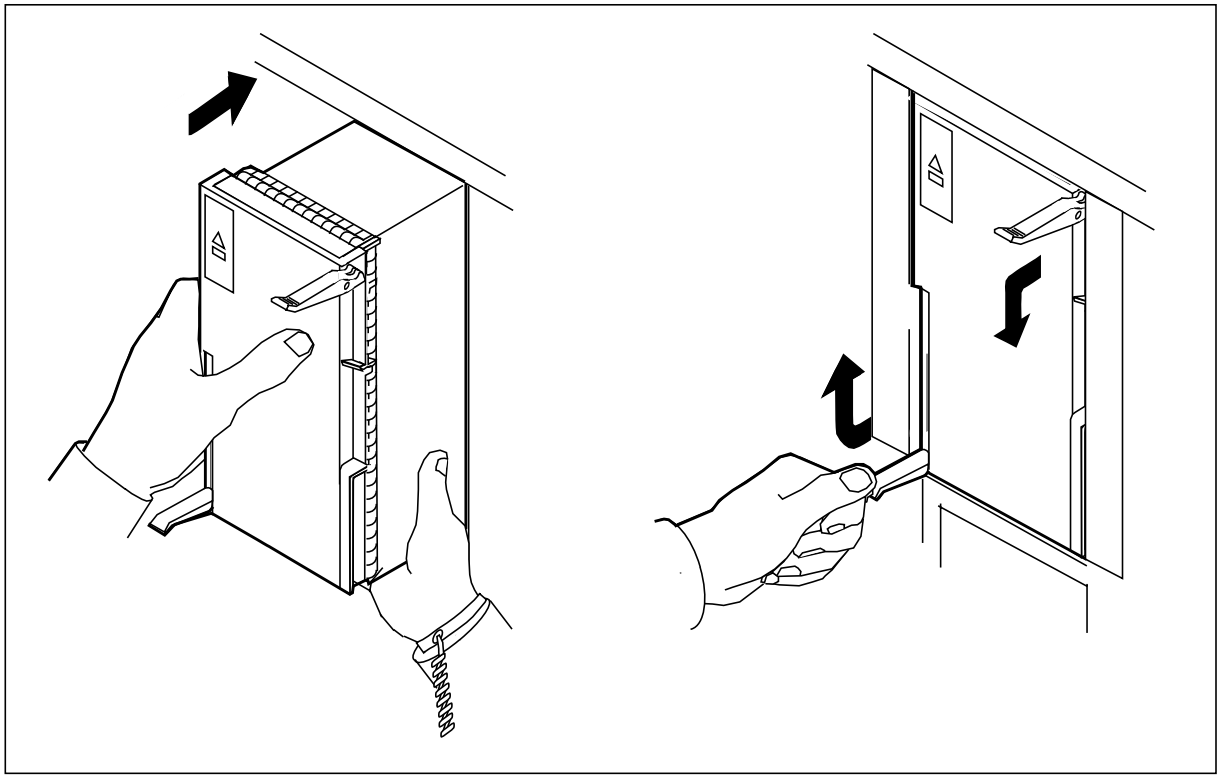
b Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

c Align the packlet with the slot in the shelf and slide the packlet into the physical slot. Do not force the packlet into the slot.

d Use your fingers or thumbs to push on the upper and lower edges of the packlet faceplate.

e Close the locking levers on the packlet. Do not force the locking levers to close.

Insert the Disk packlet in the IOP CP



At the MAP terminal:

27 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command usage:

>RTS 2 f

Example of system response:

```
RTS 2 front passed.
```

If the IOP CP is	Do
in service	step 28
not in service	step 31

NTLX03 dual width IOP circuit pack (continued)

28 Return the Tape packlet to service. Perform the following steps:

a Access the XA-Core TAPE MAP level. At the IO MAP level type

>TAPE

and press the Enter key

b Return the Tape packlet to service. At the TAPE MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape packlet is	Do
in service	step 29
not in service	step 31

29 Return the Disk packlet to service. Perform the following steps:

a Exit from the Tape MAP level and access the Disk MAP level. At the TAPE MAP level type

>DISK

and press the Enter key.

b Return the Disk packlet to service. At the DISK MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f l

Example of system response:

```
RTS of 2 front lower passed
```

If the Disk packlet is	Do
in service	step 30
not in service	step 31

30 Confirm that the IOP CP and all packlets returned to service. Examine the Alarm banner and subsystem summary status field (SSSF) displayed on the MAP level

If the MAP displays	Do
an alarm	step 32
a "." under the IO status header	step 33

31 Call the next level of support

32 Perform the correct alarm clearing procedure.

33 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX05 OC-3 two port interface packlet in a SuperNode and SuperNode SE XA-Core

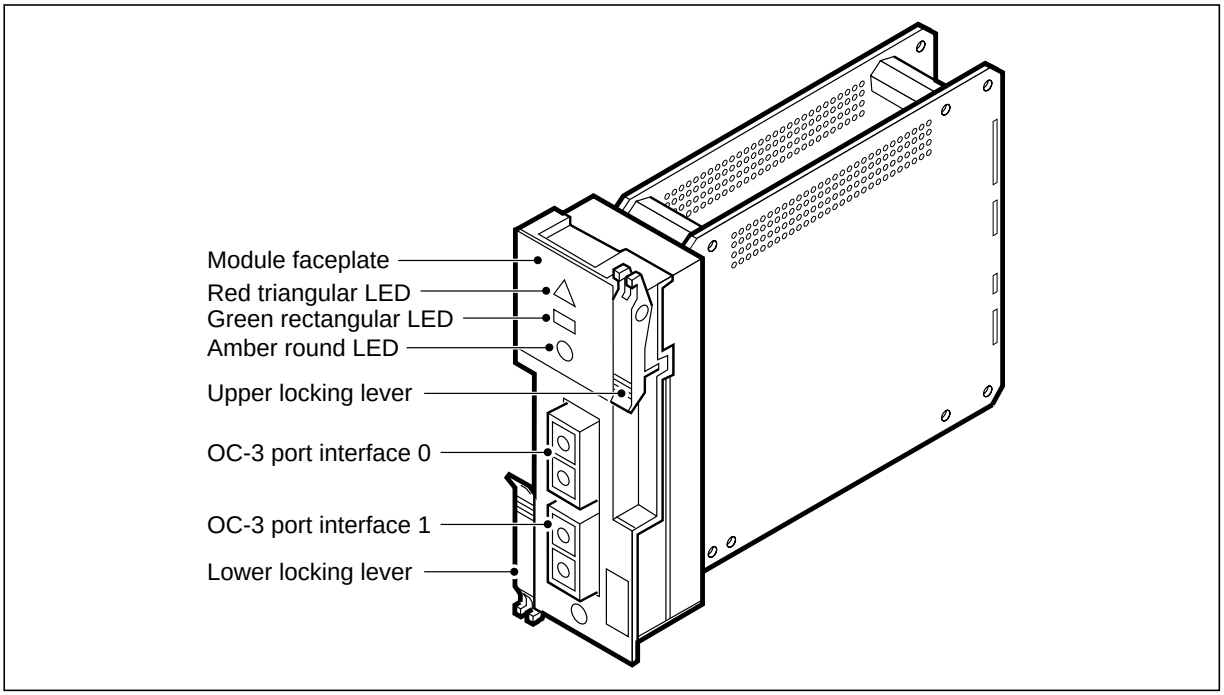
Application

Use this procedure to replace the NTLX05 OC-3 two port interface packlet in a single-width IOP circuit pack (CP). The single-width IOP CP contains the reset terminal interface (RTIF) and OC-3 two port interface packlets.

The following lists the valid OC-3 two port interface packlets.

PEC	Suffix	Card name
NTLX05	AA	OC-3 two port interface packlet

NTLX05 OC-3 two port interface packlet front and side views



Common procedures

Do not go to a common procedure unless directed to do so in the step-action procedure.

NTLX05 OC-3 two port interface packlet (continued)

Light emitting diode (LED) strategy

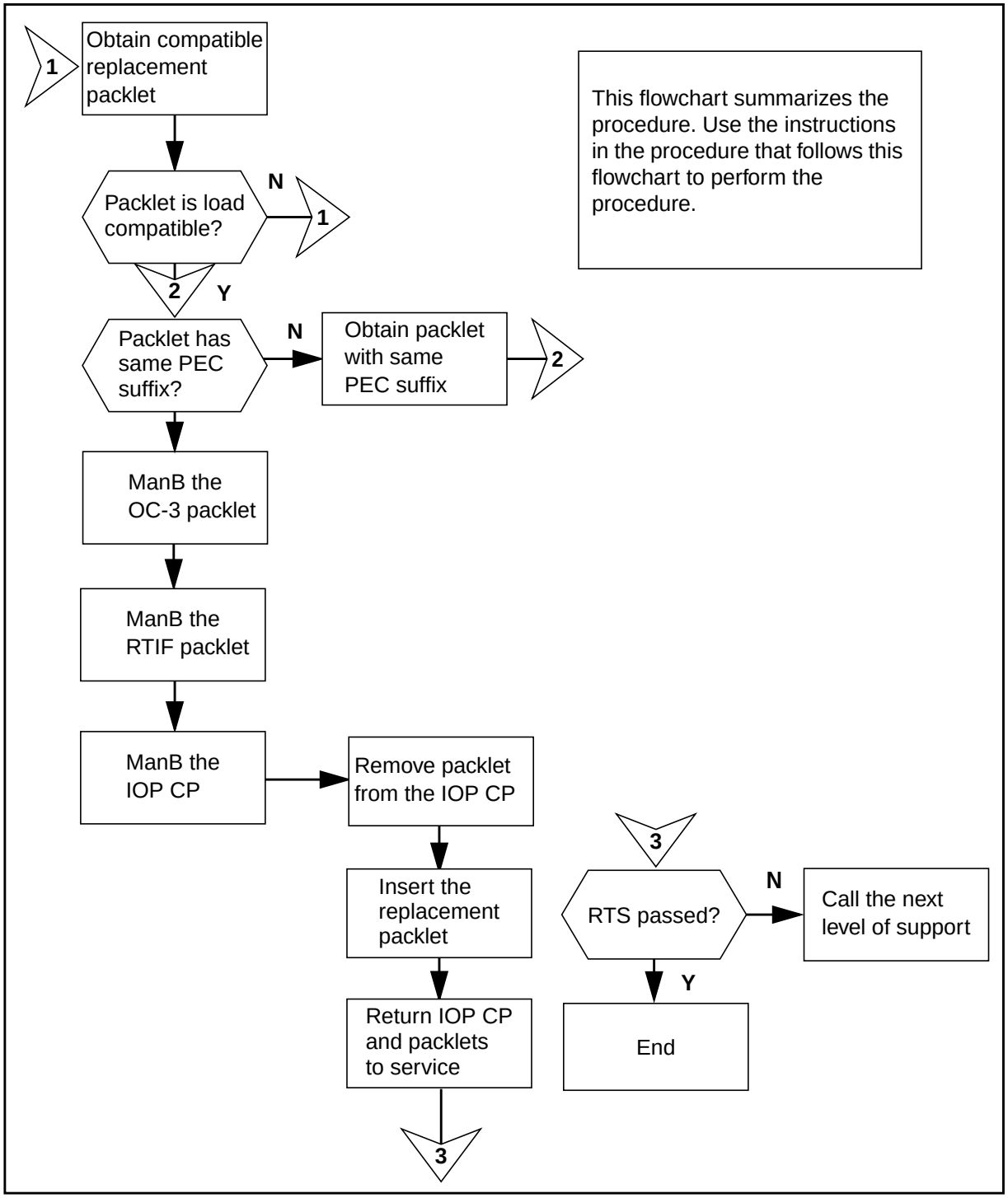
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the packlet, use the methods in the step instructions that follow the flowchart.

NTLX05 OC-3 two port interface packlet (continued)

Summary of NTLX05 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX05 OC-3 two port interface packlet (continued)

How to replace an NTLX05 circuit packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location:

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core CMIC MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;CMIC

and press the Enter key.

3 Examine the CMIC MAP level. Record the location and status of the OC-3 two port interface packlet that you need to replace. Make sure that redundant components are InSv before removing the OC-3 two port interface packlet that you need to replace.

The following is a sample MAP display.

NTLX05 OC-3 two port interface packlet (continued)

CMIC MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
MScomm     .       .        .        .       .        .       .       .       .
  M

CMIC                 Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit              123456789012345678  456789012345   .      .       .      CMICfl
 2                Sta: -.----..-.---.-..- .--.--------.  0      0       0      1
 3                Dep:                    F
 4                Typ:                    *           *
 5                Slot:Side:  Packlet:     Status:  Link0:   Link1:     TOD
 6 Tst_             4  Rear     Lower      S        C        C          C
 7 Bsy_            15  Rear     Lower      .        .        .          .
 8 RTS_           CMIC:
 9
10
11
12
13 Route_
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the redundant IOP, OC-3 or RTIF are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 17

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

NTLX05 OC-3 two port interface packlet (continued)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP, RTIF and OC-3 devices are	Do
in service	step 5
not in service	step 17

5 Place the OC-3 two-port interface packlet in a ManB state. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

Example of system response

```
Bsy 4 rear lower complete
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 6
not in a ManB state	step 17

NTLX05 OC-3 two port interface packlet (continued)

6 Indicate the ManB OC-3 two port interface packlet. At the CMIC MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 4 r l

Example of system response:

```
Indicate 4 rear lower passed
```

7 Place the RTIF packlet in a ManB state.

a Access the RTIF MAP level. At the CMIC MAP level type

>RTIF

and press the Enter key

b At the RTIF MAP level type:

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 4 r u

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

NTLX05 OC-3 two port interface packlet (continued)

Example of system response

```
Bsy 4 rear upper complete
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 6
not in a ManB state	step 17

8 ManB the IOP CP. Perform the following steps

a Exit from the RTIF MAP level and display the IO MAP level. At the RTIF MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 4 rear passed.
```

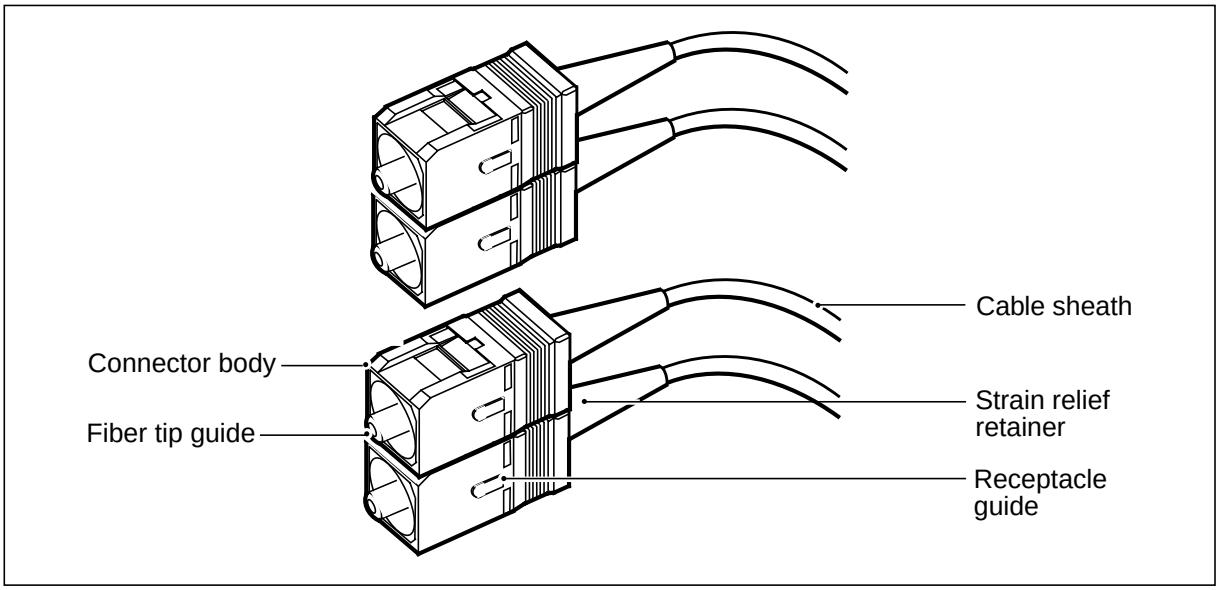
If the IOP CP is	Do
in a ManB state	step 6
not in a ManB state	step 17

NTLX05 OC-3 two port interface packlet (continued)

At the XA-Core physical shelf

9 Locate the OC-3 two port interface packlet in the IOP CP. Label the fiber optic cable connections on the OC-3 two port interface packlet according to office standards.

Paired SC fiber optic cable connectors



10

WARNING
Fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance.

Disconnect the fiber optic cables from the faceplate of the OC-3 two port interface packlet.

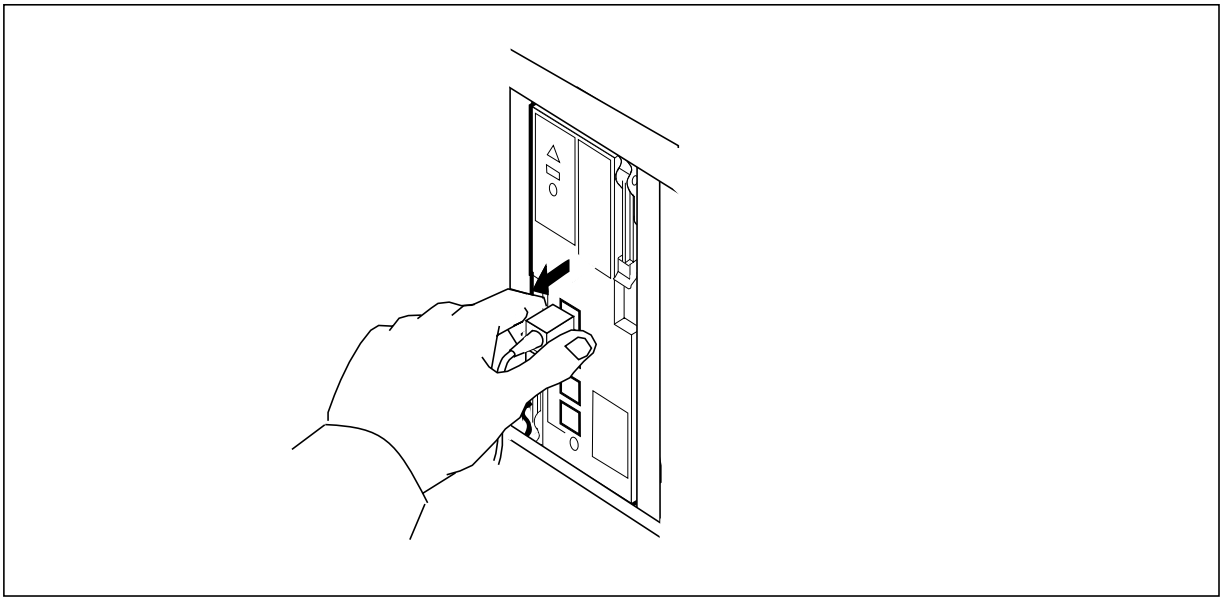
a Carefully pull the fiber optic connector away from the receptacle. Hold the connector by the body only.

b Cover the ends of the fiber optic cable with dust caps.

c Place the fiber optic cables in a safe location away from the packlet.

NTLX05 OC-3 two port interface packlet (continued)

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



11

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Remove the OC-3 two port interface packlet from the IOP CP. Perform the following steps:

a Open the upper and lower locking levers on the packlet.

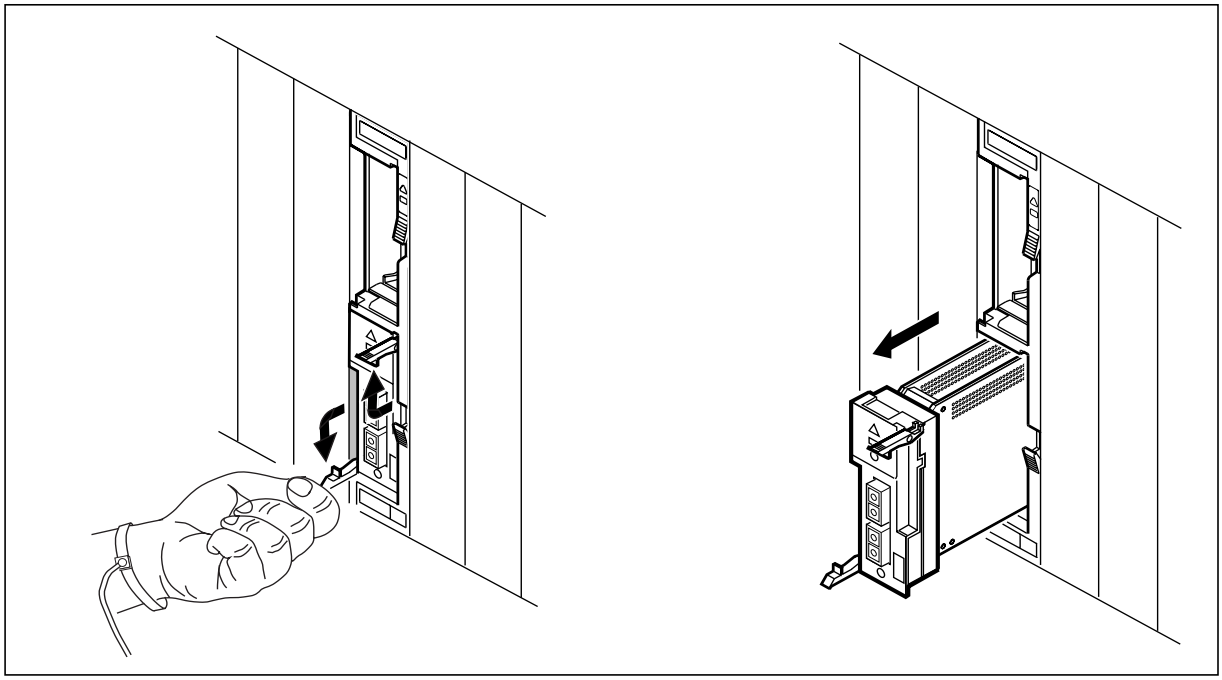
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Place the packlet in ESD protective packaging.

NTLX05 OC-3 two port interface packlet (continued)

Remove the OC-3 two port interface packlet from the IOP CP



12

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Insert the replacement OC-3 two port interface packlet in the lower IOP CP slot.

a Remove the replacement OC-3 two port interface packlet from the ESD protective packaging.

b Open the upper and lower locking levers on the packlet.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

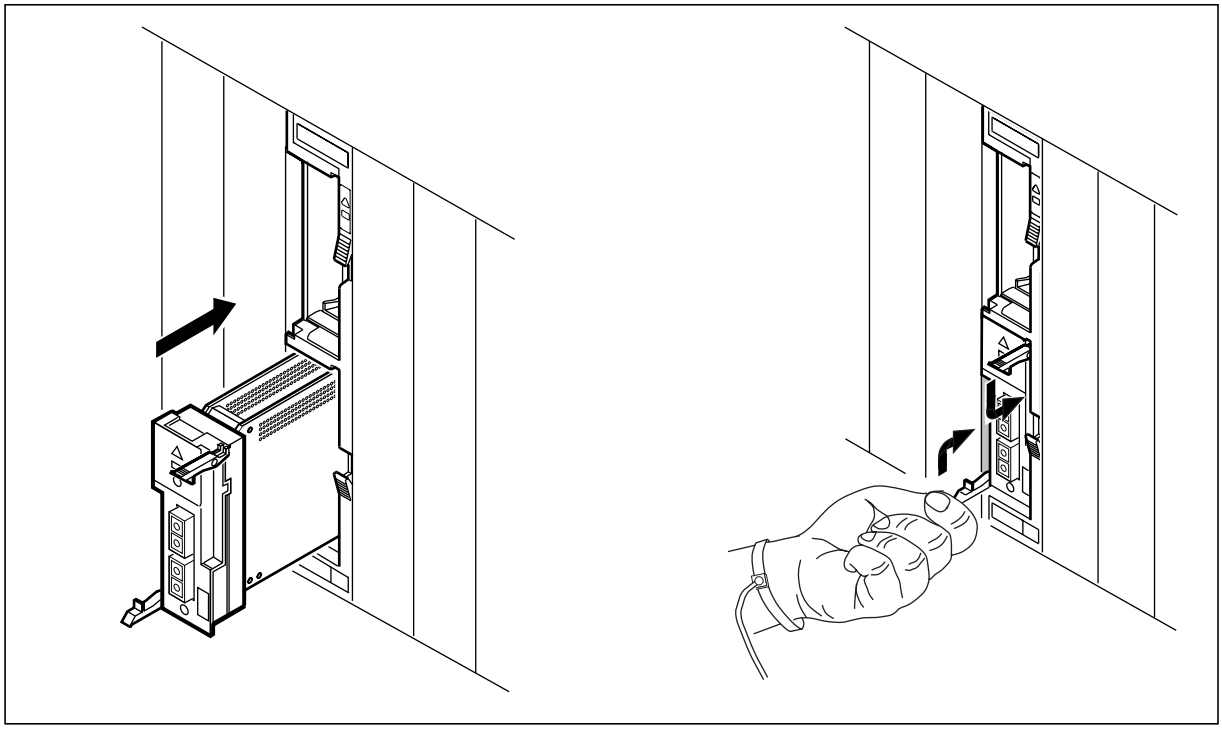
d Align the packlet with the lower IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers to secure the packlet. Do not force the locking levers to close.

NTLX05 OC-3 two port interface packlet (continued)

Insert the OC-3 two port interface packlet into the IOP CP



13 Connect the replacement or original fiber optic cables to the correct OC-3 two port interface ports.

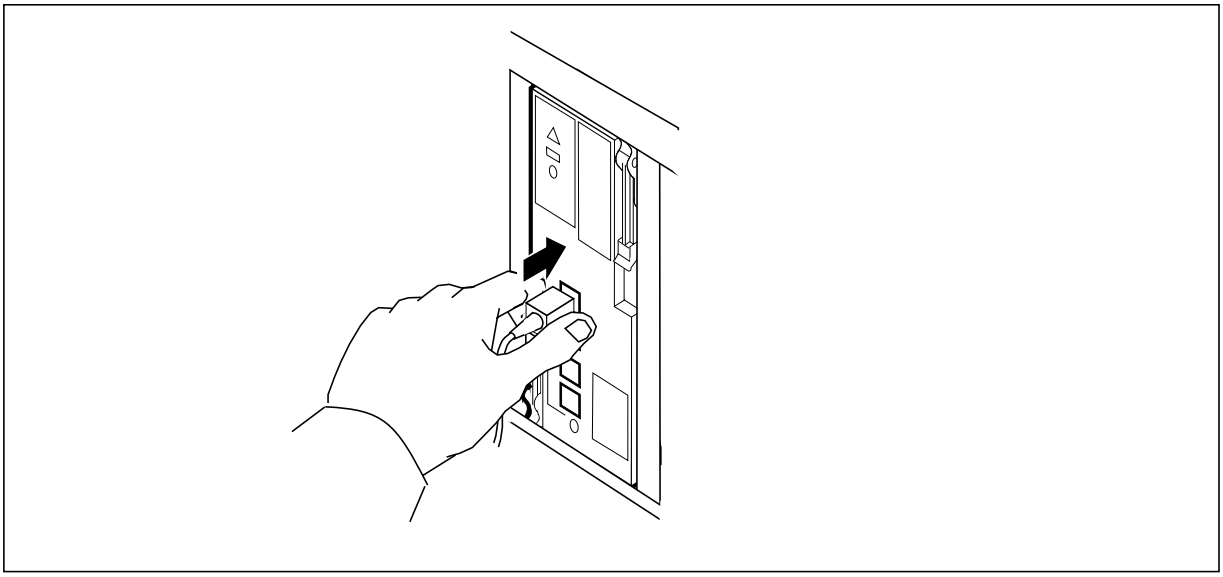
a Remove the dust caps from the fiber optic cable tips. Clean the tips of the fiber optic cables. Use the recommended cleaning methods.

b Hold the fiber optic cable connector by the body only.

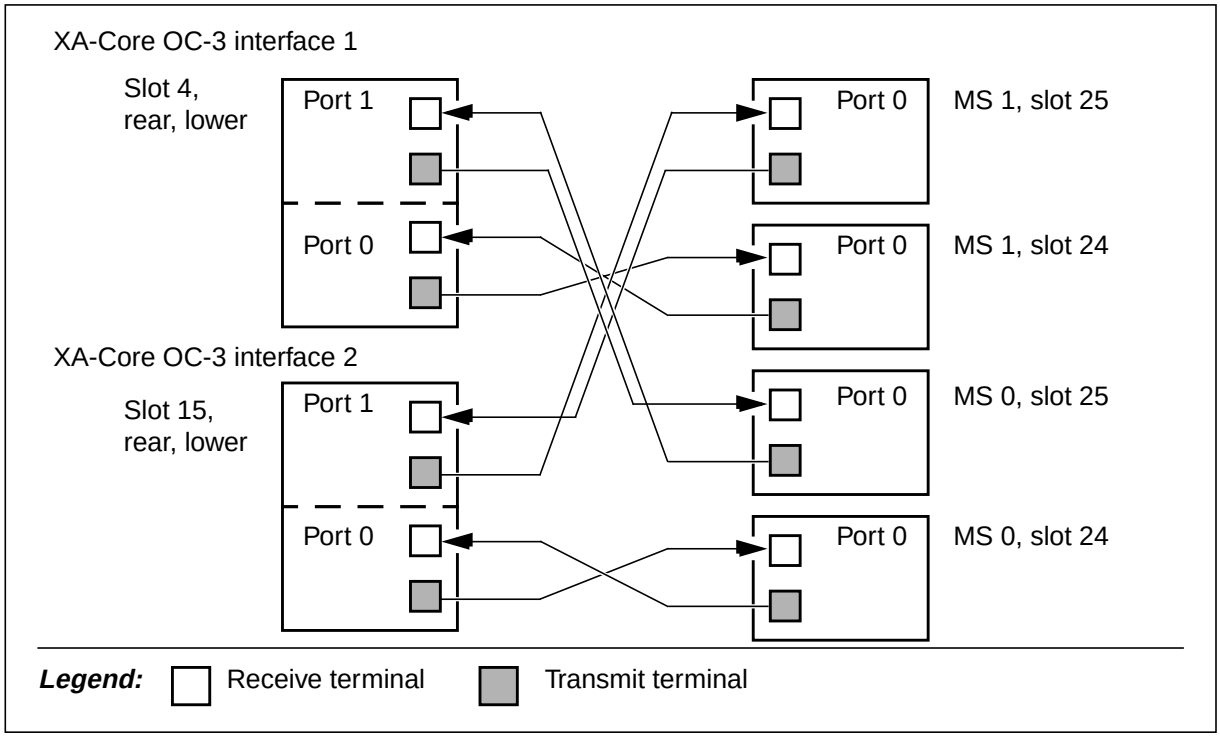
c Carefully insert the fiber optic cable connectors into the correct receptacles. See the diagrams in this step.

NTLX05 OC-3 two port interface packlet (continued)

Connect the OC-3 two port interface fiber optic cables

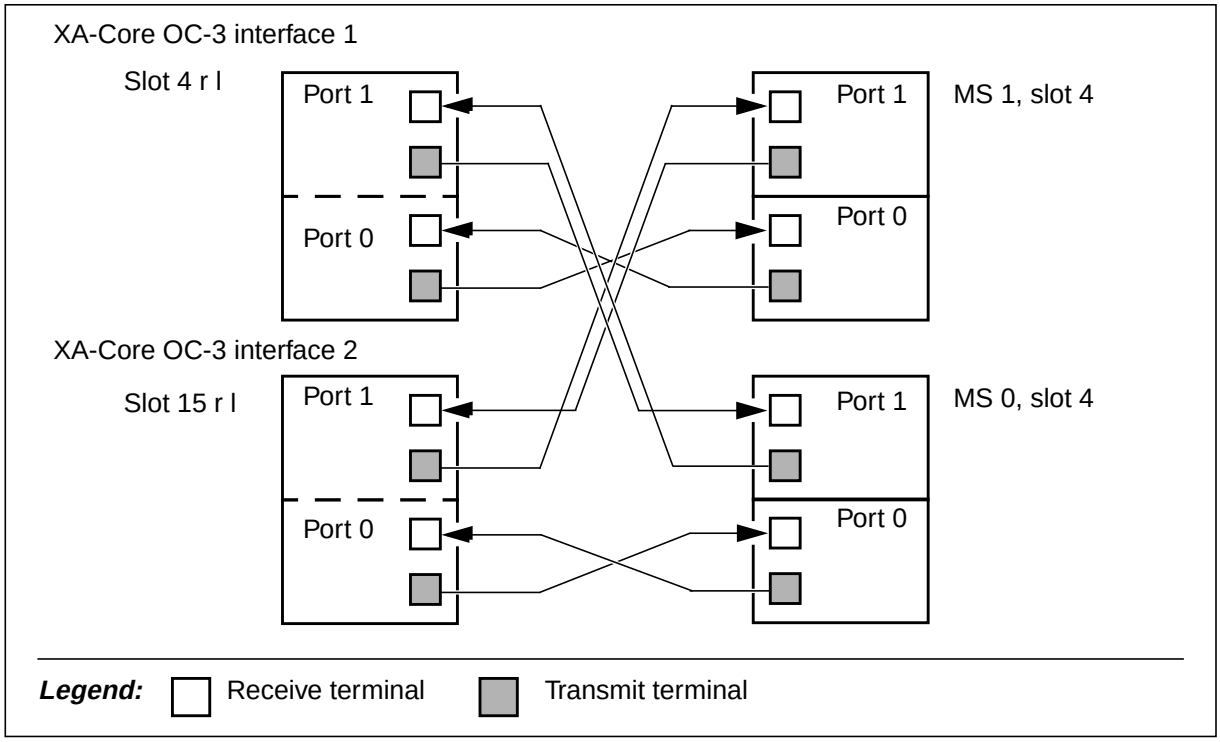


XA-Core and MS fiber optic cable connections (SuperNode)



NTLX05 OC-3 two port interface packlet (continued)

XA-Core and MS fiber optic cable connections (SuperNode SE)



At the MAP

14 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the IOP CP is	Do
in service	step 15
not in service	step 17

NTLX05 OC-3 two port interface packlet (continued)

15 Return the OC-3 two port interface packlet to service. Perform the following steps.

a Exit from the IO MAP level and access the CMIC MAP level. At the IO MAP level type

>CMIC

and press the Enter key.

b Return the OC-3 two port interface packlet to service. At the CMIC MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower completed
```

If the OC-3 two port interface packlet is	Do
in service	step 16
not in service	step 17

16 Return the RTIF packlet to service. Perform the following steps.

a Exit from the CMIC MAP level and access the RTIF MAP level. At the CMIC MAP level type

>RTIF

and press the Enter key.

b Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

NTLX05 OC-3 two port interface packlet (end)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

Example of system response:

```
RTS 4 rear upper completed
```

If the RTIF packlet is	Do
not in service	step 17
in service	step 18

17 Call the next level of support.

18 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX05 OC-3 AMDI two port interface packlet in a SuperNode and SuperNode SE XA-Core

Application

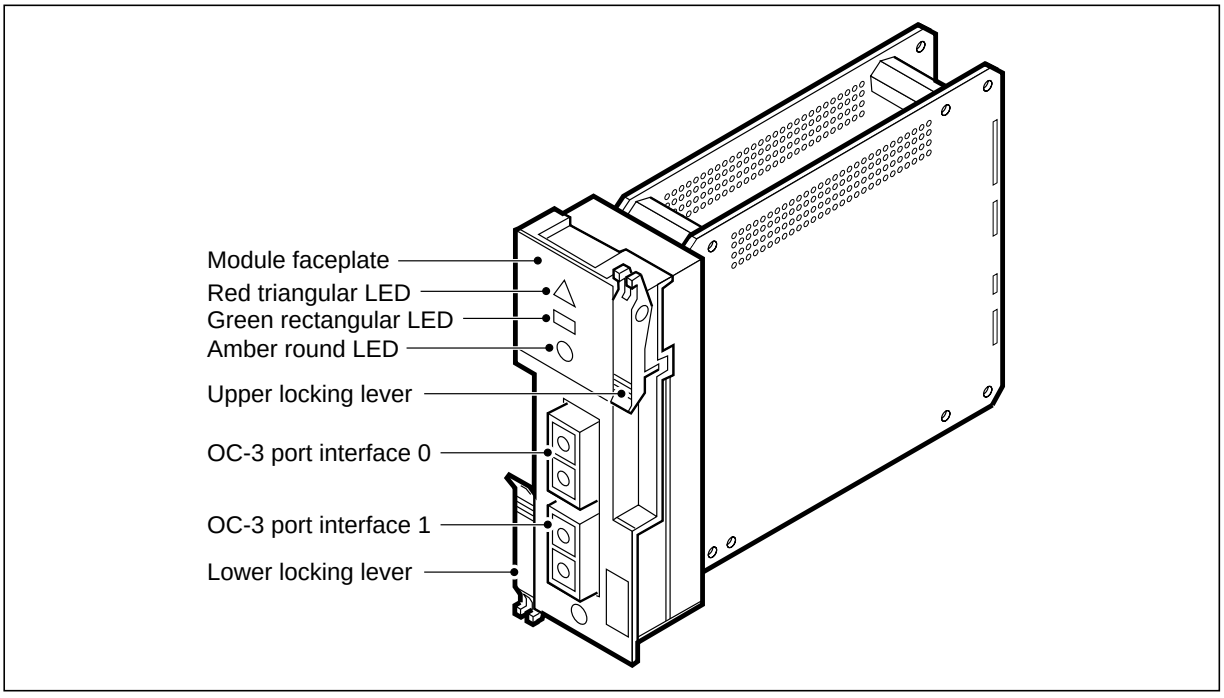
Use this procedure to replace the NTLX05 OC-3 AMDI two port interface packlet in a single-width IOP circuit pack (CP).

This procedure may also be used to replace the NTLX05AB packlet when used to support AMDI services.

The following lists the valid OC-3 two port interface packlets.

PEC	Suffix	Card name
NTLX05	BA	OC-3 AMDI two port interface packlet

NTLX05 OC-3 two port interface packlet front and side views



Common procedures

Do not go to a common procedure unless directed to do so in the step-action procedure.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Light emitting diode (LED) strategy

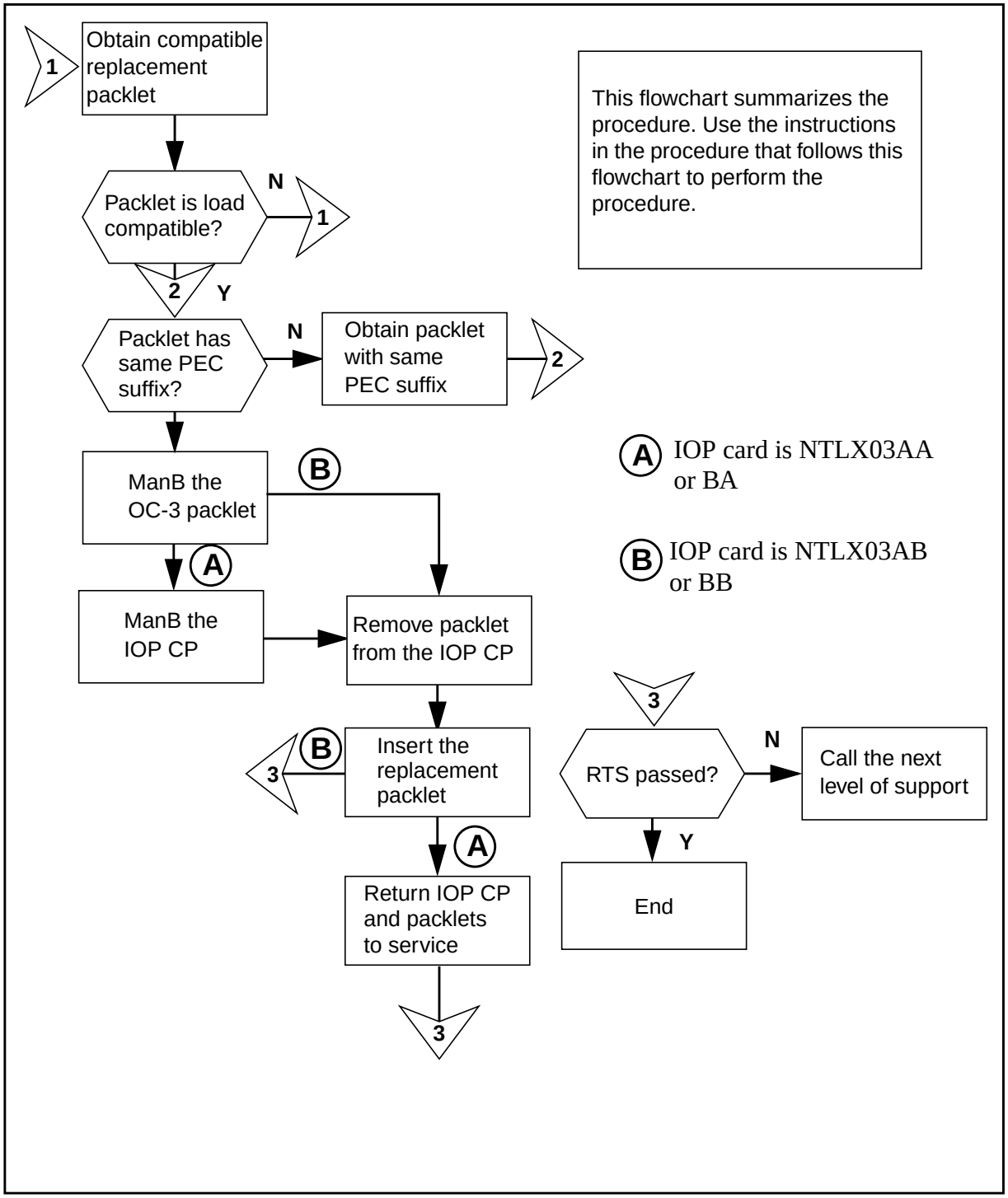
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the packlet, use the methods in the step instructions that follow the flowchart.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Summary of NTLX05 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX05 OC-3 AMDI two port interface packlet (continued)

How to replace an NTLX05 circuit packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location:

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core AMDI MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;AMDI

and press the Enter key.

3 Examine the AMDI MAP level. Record the location and status of the OC-3 two port interface packlet that you need to replace. Make sure that redundant components are InSv before removing the OC-3 two port interface packlet that you need to replace.

The following is a sample MAP display.

NTLX05 OC-3 AMDI two port interface packlet (continued)

AMDI MAP level

```
XAC     MS     IOD     Net     PM     CCS     Lns     Trks     Ext     APPL
AMDI    .      .       .       .      .       .       .        .       .
*M*
AMDI                    Front:     111111111   Rear:  111111  SM   PE   IO PKLT
 0 Quit                  123456789012345678   456789012345  .    .    .lINKfl
 2                 Sta:   . .- ..-.. -  ..    ..........-... 0    0    0    0
 3                 Dep:                        F
 4                 Typ:
 5                 Slot: Side: Packlet:  Status:  Link0:  Link1:
 6                  05   Rear  lower     .        S         -
 7 Tst_             06   Rear  lower     .        .         -
 8 Bsy_             13   Rear  lower     .        .         -
 9 RTS_             14   Rear  lower     .        .         -
10 LoadFW_         AMDI:
11 Uneq_
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  ADMIN
 Time  14:12
```

If the redundant IOP or AMDI devices are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 17

NTLX05 OC-3 AMDI two port interface packlet (continued)

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP and AMDI devices are	Do
in service	step 5
not in service	step 17

5 Place the OC-3 AMDI two-port interface packlet in a ManB state. At the AMDI MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

NTLX05 OC-3 AMDI two port interface packlet (continued)

To confirm the command type:

>Y

Example of system response

```
Bsy 4 rear lower complete
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 6
not in a ManB state	step 17

6 Indicate the ManB OC-3 two port interface packlet. At the AMDI MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 4 r l

Example of system response:

```
Indicate 4 rear lower passed
```

7

If the IOP card is	Do
NTLX03AA or BA	step 8
NTLX03AB or BB	step 9

NTLX05 OC-3 AMDI two port interface packlet (continued)

8 ManB the IOP CP. Perform the following steps

a Exit from the AMDI MAP level and display the IO MAP level. At the AMDI MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 4 rear passed.
```

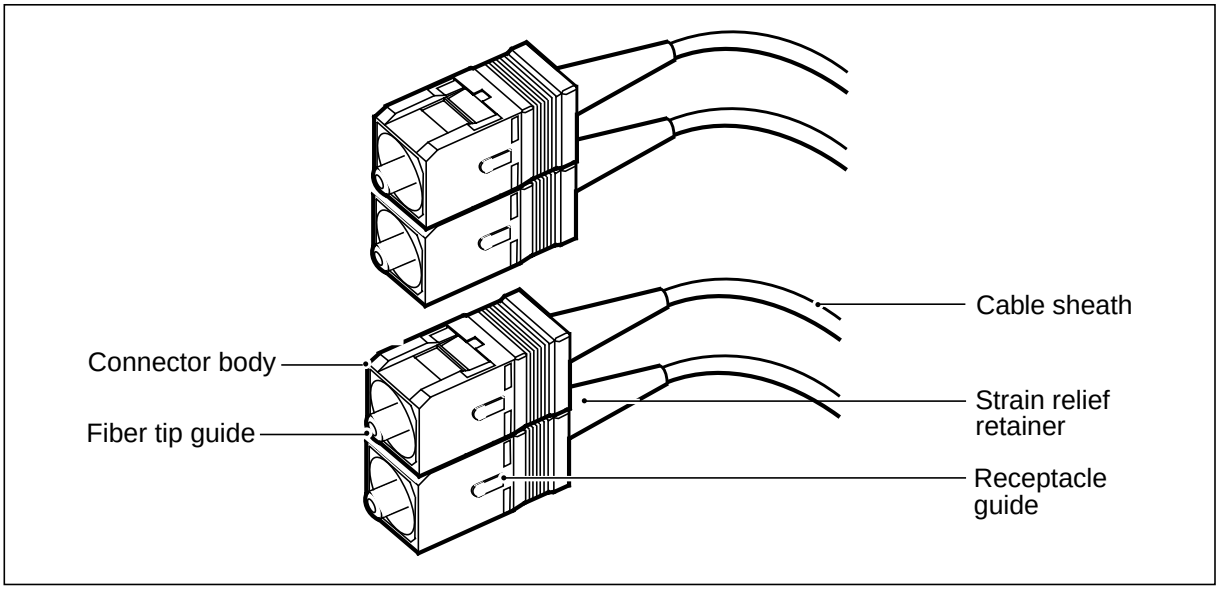
If the IOP CP is	Do
in a ManB state	step 9
not in a ManB state	step 17

At the XA-Core physical shelf

9 Locate the OC-3 two port interface packlet in the IOP CP. Label the fiber optic cable connections on the OC-3 two port interface packlet according to office standards.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Paired SC fiber optic cable connectors



10

WARNING
Fiber cable damage
Handle the fiber optic cables with caution. Do not crimp or bend the fiber optic cables to a radius of less than 25mm (1 in.). Do not touch the tip of the fiber optic filament. Dirt or oil from the skin transferred to the fiber tip surface reduces communication performance.

Disconnect the fiber optic cables from the faceplate of the OC-3 two port interface packlet.

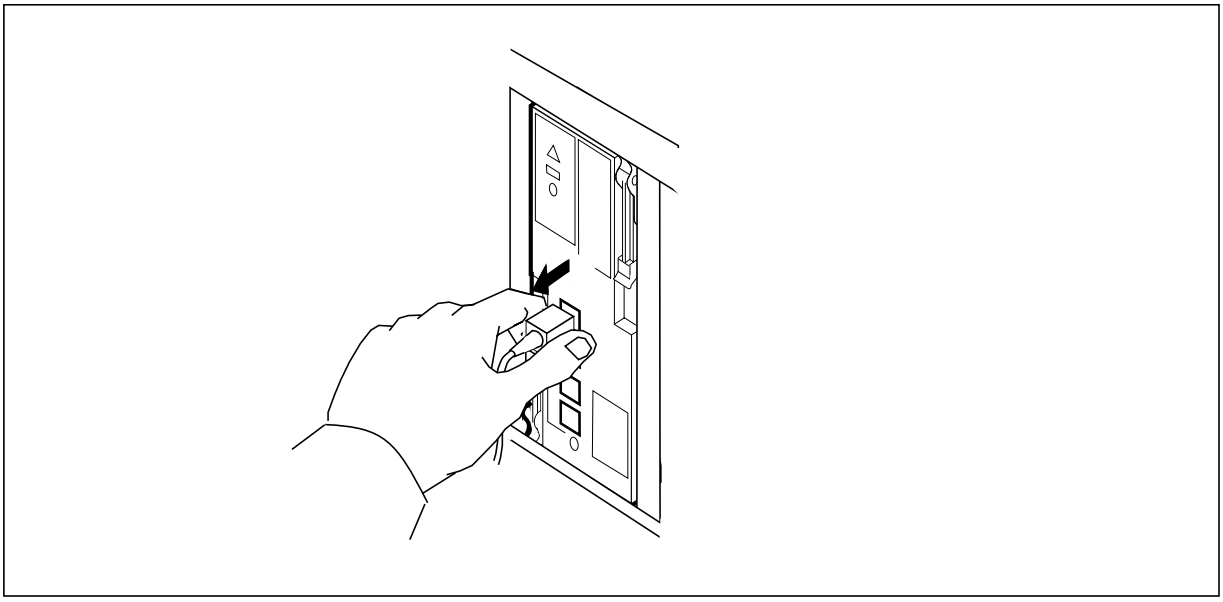
a Carefully pull the fiber optic connector away from the receptacle. Hold the connector by the body only.

b Cover the ends of the fiber optic cable with dust caps.

c Place the fiber optic cables in a safe location away from the packlet.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Disconnect the fiber optic cables from the OC-3 two port interface packlet ports



11

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Remove the OC-3 two port interface packlet from the IOP CP. Perform the following steps:

a Open the upper and lower locking levers on the packlet.

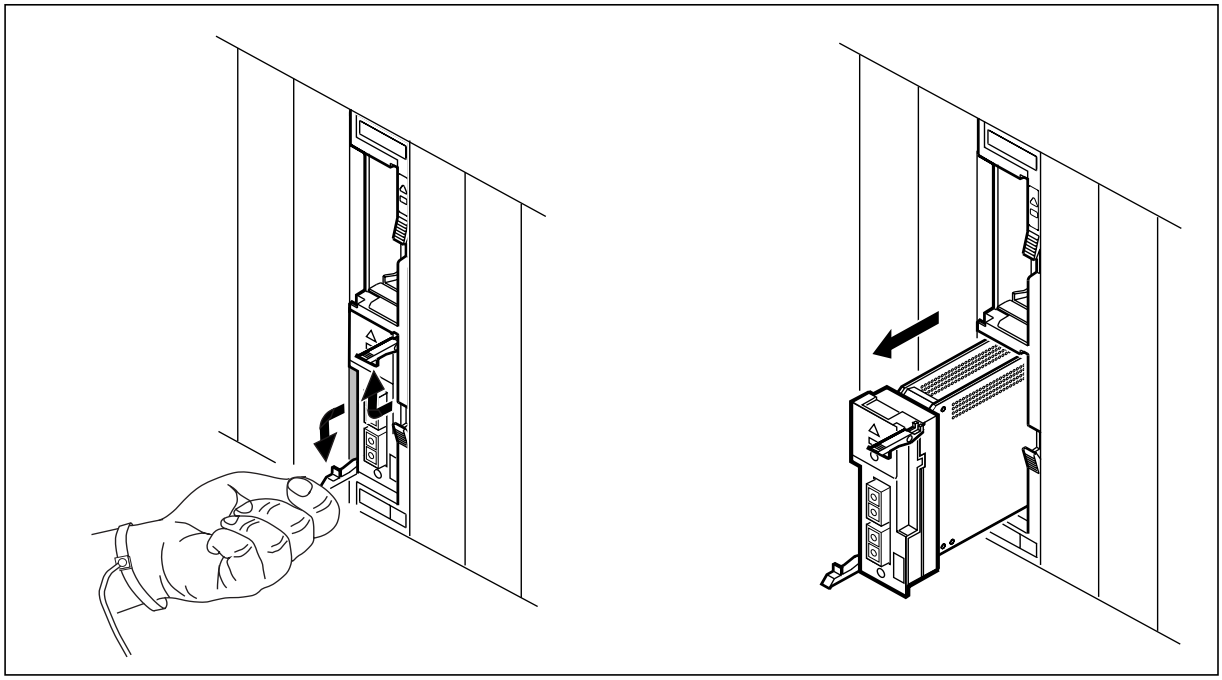
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Place the packlet in ESD protective packaging.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Remove the OC-3 two port interface packlet from the IOP CP



12

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Insert the replacement OC-3 two port interface packlet in the lower IOP CP slot.

a Remove the replacement OC-3 two port interface packlet from the ESD protective packaging.

b Open the upper and lower locking levers on the packlet.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

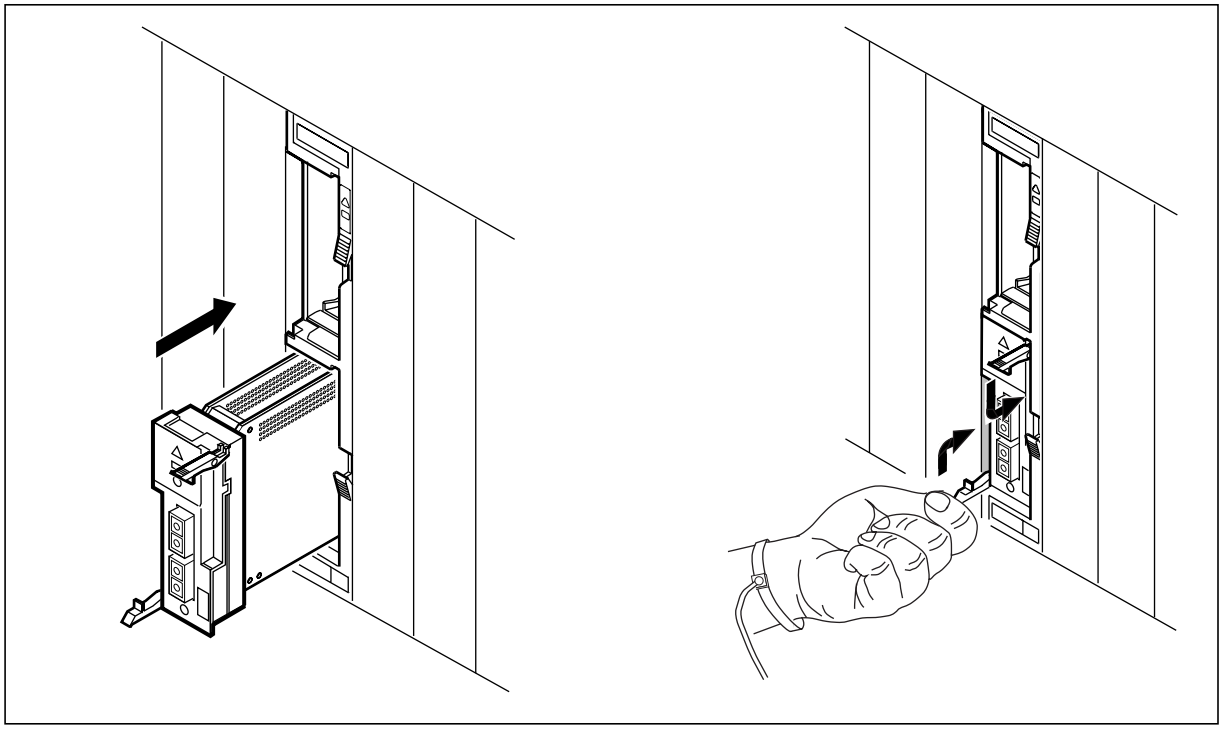
d Align the packlet with the lower IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers to secure the packlet. Do not force the locking levers to close.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Insert the OC-3 two port interface packlet into the IOP CP



13 Connect the replacement or original fiber optic cables to the correct OC-3 two port interface ports.

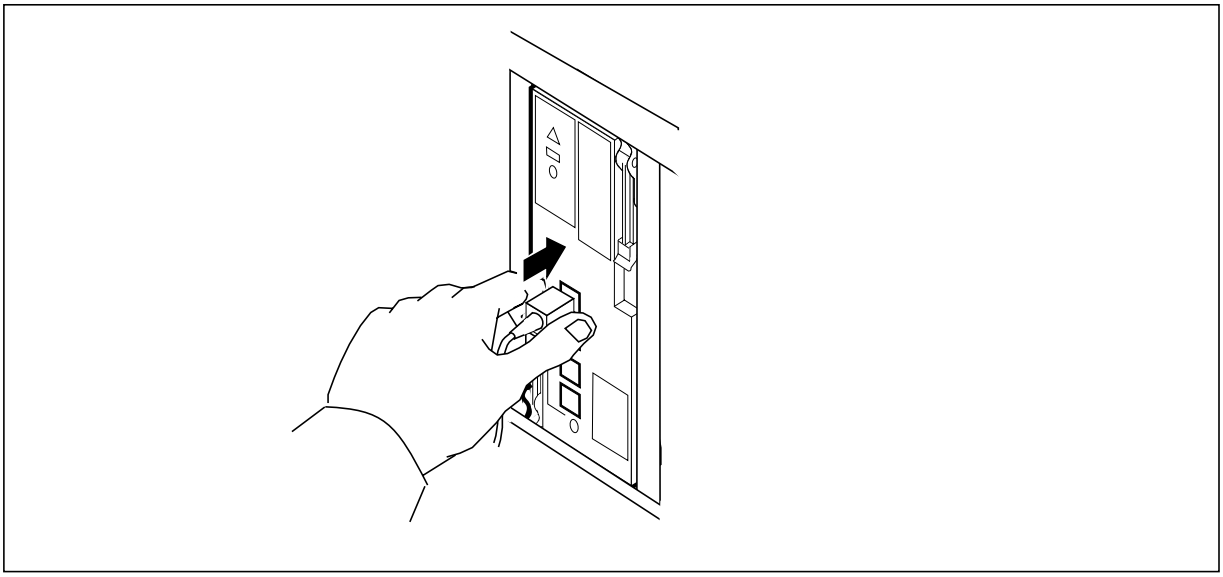
a Remove the dust caps from the fiber optic cable tips. Clean the tips of the fiber optic cables. Use the recommended cleaning methods.

b Hold the fiber optic cable connector by the body only.

c Carefully insert the fiber optic cable connectors into the correct receptacles. See the diagrams in this step.

NTLX05 OC-3 AMDI two port interface packlet (continued)

Connect the OC-3 two port interface fiber optic cables



14

If the IOP card is	Do
NTLX03AA or BA	step 15
NTLX03AB or BB	step 16

At the MAP

15 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 r

NTLX05 OC-3 AMDI two port interface packlet (end)

Example of system response:

```
RTS 4 rear completed
```

If the IOP CP is	Do
in service	step 16
not in service	step 17

16 Return the OC-3 AMDI two port interface packlet to service. Perform the following steps.

a Exit from the previous MAP level and access AMDI MAP level. At the previous MAP level type

>AMDI

and press the Enter key.

b Return the OC-3 two port interface packlet to service. At the AMDI MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower completed
```

If the OC-3 two port interface packlet is	Do
not in service	step 17
in service	step 18

17 Call the next level of support.

18 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX06 disk packlet in a SuperNode and SuperNode SE XA-Core

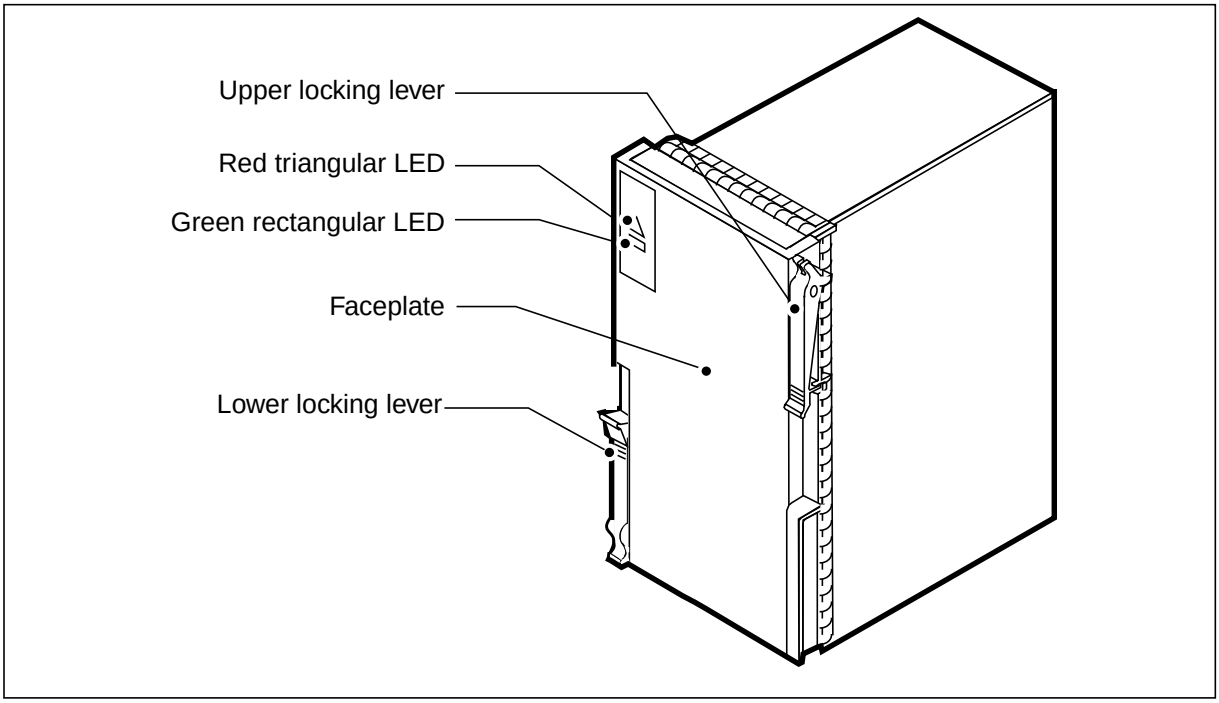
Application

Use this procedure to replace the NTLX06 disk packlet. The NTLX03AB dual-width Input/Output processor (IOP) circuit pack (CP) contains tape and disk packlets.

The following lists the valid disk packlets.

PEC	Suffix	Circuit packlet name
NTLX06	AA	Disk 4 GigaByte packlet
NTLX06	AB	Disk 8 GigaByte packlet

NTLX06 disk packlet front and side views



Common procedures

Do not go to a common procedure unless instructed in the step-action procedure.

NTLX06 disk packlet (continued)

Light emitting diode (LED) strategy

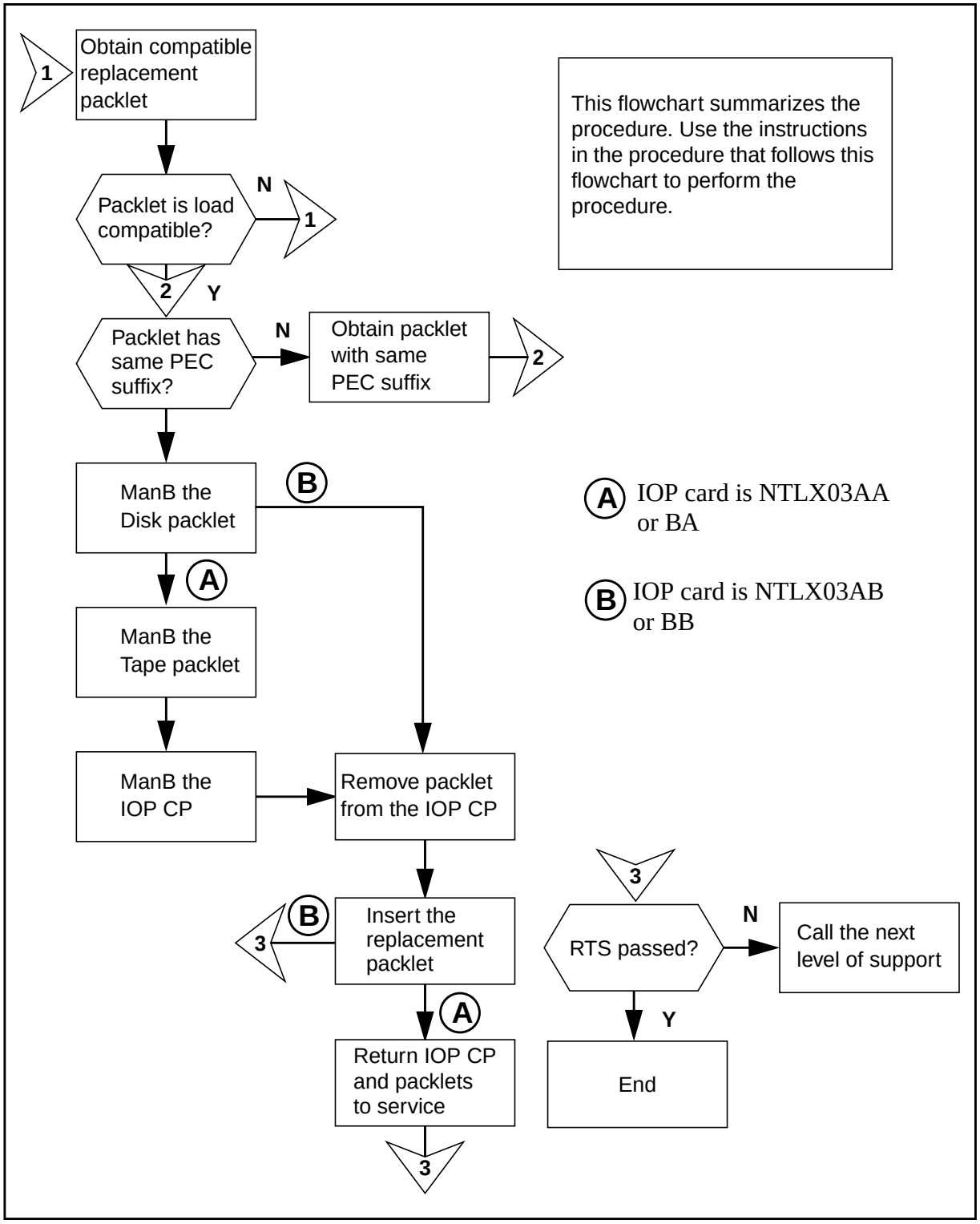
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the packlet, use the instructions in the step-action procedure that follows the flowchart.

NTLX06 disk packlet (continued)

Summary of NTLX06 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX06 disk packlet (continued)

How to replace an NTLX06 disk packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core Disk MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;DISK

and press the Enter key.

3 Examine the Disk MAP level. Record the location and status of the Disk packlet that you need to replace. Make sure that redundant components are InSv before removing the Disk packlet that you need to replace.

NTLX06 disk packlet (continued)

The following is a sample MAP display.

Disk MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
DISK       .       .       .       .       .       .       .       .       .

Disk                 Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit              123456789012345678  456789012345   .      .       .      DISK M
 2                Sta: -.-.--..-.-----..-  .--.--------.  0      0       0      1
 3                Dep:                  F
 4                Typ:  *               *
 5                Slot: Side:     Packlet:  Status:
 6 Tst_            2    Front     Lower     .
 7 Bsy_           17    Front     Lower     M
 8 RTS_
 9                 DISK:
10
11 Format
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the redundant IOP, Disk or Tape devices are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 29

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP, Disk and Tape devices are	Do
in service	step 5
not in service	step 29

5 Make sure that the redundant Disk packlet contains the active image backup file.

a Exit from the Disk MAP level and access the CI MAP prompt. At the Disk MAP level type

>QUIT ALL

and press the Enter key.

b Access the image table of contents (ITOCCI) MAP interface. At the CI MAP level prompt type

>ITOCCI

and press the Enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

c List the image files for the XA-Core in the ITOC, type:

>LISTBOOTFILE XA

and press the Enter key.

Example of a MAP response:

```
Image Table Of Contents for XA:

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- --------------------
-----------

 0 * 05/04/1999 19:16:21 F02LIMAGE IMG0504CX_CM
 0   05/01/1999 19:21:19 F02LIMAGE IMG0501CU_CM
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number*

NTLX06 disk packlet (continued)

of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.

d Determine which device contains the active image files. Examine the device name under the Generic Device header in the ITOC listing. The device name indicates the location of the disk device.

e Exit from the ITOCCI MAP interface and display the CI MAP level prompt. At the ITOCCI MAP interface prompt, type

>QUIT

and press the Enter key.

If the redundant disk device	Do
does not contain the active image	step 6
contains the active image	step 8

6 Perform a manual dump of the active image to the redundant disk device. At the CI MAP prompt, type

>AUTODUMP MANUAL

and press the Enter key.

7 Wait for a system response to indicate that the manual image dump is successful.

If the manual image dump to the redundant disk device is	Do
successful	step 8
not successful	step 29

8 Determine if the Tape packlet contains a mounted tape. Perform the following steps:

a Access the Tape MAP level. At the CI MAP level prompt type:

>MAPCI;MTC;XAC;TAPE

and press the Enter key.

b Examine the Tape MAP level. Record the location of the Tape packlet that you want to remove.

Note: The Tape MAP level displays the following information in the command interpreter output area:

- the user name under the User Name header
- the tape drive status under the Drive header (mounted/unmounted)

The following is a sample MAP display.

NTLX06 disk packlet (continued)

Tape MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .       .        .        .       .        .        .       .       .       .


Tape            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      .
 2              Sta: -.-.--..-.---.-..-  .----------.   0      0       0      0
 3              Dep:
 4              Typ:  *              *
 5              Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 6 Tst_            2    Front    Upper      .          User1           mounted
 7 Bsy_           17    Front    Upper      .                          Unmounted
 8 RTS_           TAPE:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

9 Record the user name and drive state as shown on the Tape MAP level. There are four possible tape device user conditions:

- The system is using the tape device. The Tape MAP level displays “System” as the user name. The system software is performing an activity such as an ONP or software upgrade. The tape drive state is mounted.
- Another user is performing a backup or restore at a different location. The tape drive state is mounted.
- You are the user of the tape device. The tape drive state is mounted.
- There are no users. The tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the system software is the user	step 10
another user is using the tape device	step 11
you are the user of the tape device	step 14
there are no users	step 16

NTLX06 disk packlet (continued)

10 Wait for the system software to complete the ONP or upgrade process. When the system software activities are complete, the MAP deletes the “System” user name and the tape drive state changes to unmounted.

If the system software process is complete and the Tape MAP level indicates that	Do
the tape is not rewound and the tape drive state is mounted	step 13
the tape is rewound and the tape drive state is unmounted	step 16

11 Notify the other user that you intend to busy the Tape packlet. The other user needs to complete tape device activities and perform an EJECTTAPE. Wait for the Tape MAP level to delete the other user name and indicate that the tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the tape is not rewound and that the tape drive state is mounted	step 12
the tape is rewound and that the tape drive state is unmounted	step 16

12 Call the other user to make sure that all tape device activities are complete.

If the other user has	Do
completed tape drive activities and rewound the tape	step 16
not completed tape drive activities	step 29

13 Clear the tape drive state on the Tape MAP level. Manually busy the Tape packlet and return the Tape packlet to service.

a Manually busy the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 2 f u

Example of system response:

```
BSY 2 front upper complete
```

b Return the Tape packlet to service. At the Tape MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 16
the tape is not rewound and the tape drive state is mounted	step 29

14 Access the DISKUT MAP interface and rewind the tape.

a At the Tape MAP level type:

>QUIT all

and press the enter key.

b Access the DISKUT MAP level. At the CI MAP prompt type:

>DISKUT

and press the enter key.

c Rewind the tape. At the DISKUT MAP level type:

>EJECTTAPE <device>

and press the enter key.

where

<device> is the name of the tape device.

Note: The system rejects the EJECTTAPE command if the system cannot identify you as the user of the tape device.

Example of command use:

NTLX06 disk packlet (continued)

>EJECTTAPE F02UTAPE

Example of system response:

```
Rewind of tape F02UTAPE on node <node_name> is
completed. The tape device is not available to the user
now
```

d Exit from the DISKUT MAP level. At the DISKUT MAP prompt, type

>QUIT

and press the enter key.

e Access the XA-Core Tape MAP level. At the CI MAP prompt, type

>MAPCI;MTC;XAC:TAPE

and press the enter key.

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 16
the tape is not rewound and the tape drive state is mounted	step 29

15

If the IOP card is	Do
NTLX03AA or BA	step 16
NTLX03AB or BB	step 17

16 ManB the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Note: The Tape packlet is in the same physical shelf and slot location as the replacement IOP CP.

Example of command use:

>BSY 2 f u

NTLX06 disk packlet (continued)

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 2 front upper passed.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the Tape packlet is	Do
in a ManB state	step 17
not in a ManB state	step 29

17 ManB the Disk packlet contained in the IOP CP. Perform the following steps:

a Exit from the Tape MAP level and access the Disk MAP level. At the Tape MAP level type

>DISK

and press the Enter key.

b ManB the Disk packlet. At the Disk MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 2 f l

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

NTLX06 disk packlet (continued)

>Y

Example of system response:

```
BSY 2 front lower completed
```

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

If the Disk packlet is	Do
in a ManB state	step 20
not in a ManB state	step 29

18 Indicate the ManB Disk packlet. At the Disk MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the e side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 2 f l

Example of system response:

```
Indicate 2 front lower passed.
```

19

If the IOP card is	Do
NTLX03AA or BA	step 20
NTLX03AB or BB	step 21

20 ManB the IOP CP. Perform the following steps

a Exit from the Disk MAP level and display the IO MAP level. At the Disk MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

NTLX06 disk packlet (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 2 f

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"):
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 2 front completed.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the IOP CP is	Do
in a ManB state	step 21
not in a ManB state	step 29

NTLX06 disk packlet (continued)

At the XA-Core physical shelf

21 Locate the Disk packlet on the physical shelf. Refer to the packlet location recorded from 3. Examine the IOP CP and packlet faceplates on the XA-Core physical shelf.

Look for a winking, red triangular LED on the packlet. A winking, red LED is a result of using the indicate command..

22 Remove the Disk packlet from the IO CP. Perform the following steps:

a Open the upper and lower locking levers on the packlet.

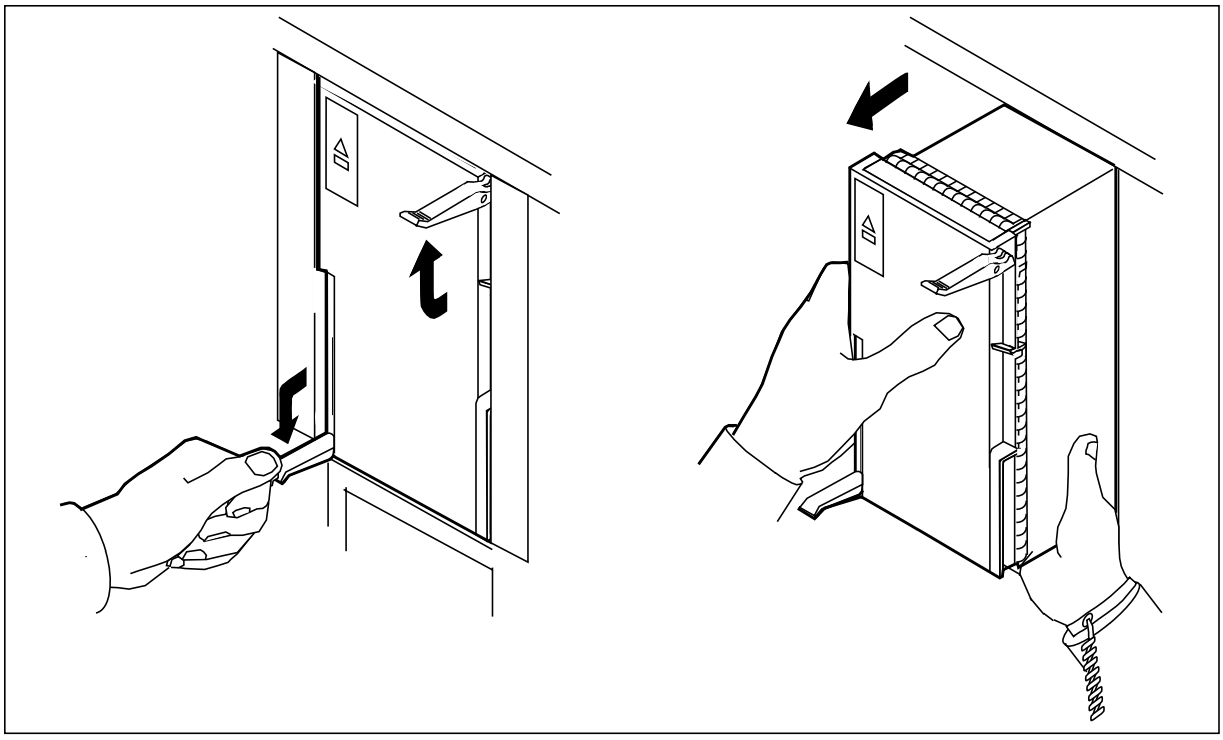
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Close the upper and lower locking levers on the packlet to prevent breakage.

e Place the packlet in ESD protective packaging.

Remove the Disk packlet from the IOP CP



NTLX06 disk packlet (continued)

23 Insert the replacement Disk packlet into the lower IOP CP slot. Perform the following steps:

a Open the locking levers on the replacement Disk packlet.

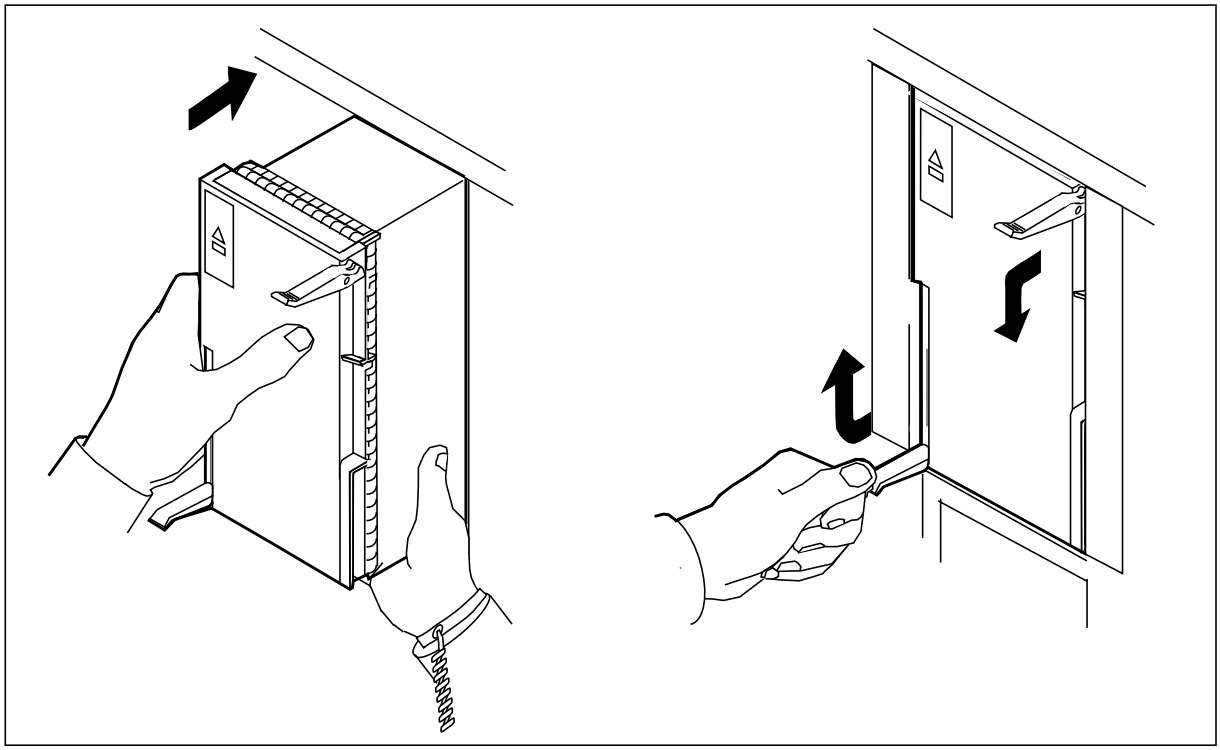
b Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

c Align the packlet with the slot in the shelf and slide the packlet into the physical slot. Do not force the packlet into the slot.

d Use your fingers or thumbs to push on the upper and lower edges of the packlet faceplate.

e Close the locking levers on the packlet. Do not force the locking levers to close.

Insert the Disk packlet in the IOP CP



24

If the IOP card is	Do
NTLX03AA or BA	step 25
NTLX03AB or BB	step 26

NTLX06 disk packlet (continued)

At the MAP terminal

25 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command usage:

>RTS 2 f

Example of system response:

```
RTS 2 front passed.
```

If the IOP CP is	Do
in service	step 26
not in service	step 29

26 Return the Disk packlet to service. Perform the following steps:

a Exit from the IO MAP level and access the Disk MAP level. At the IO MAP level type

>DISK

and press the Enter key.

b Return the Disk packlet to service. At the DISK MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f l

Example of system response:

```
RTS 2 front lower passed
```

If the Disk packlet is	Do
not in service	step 29
in service	step 31

27

If the IOP card is	Do
NTLX03AA or BA	step 28
NTLX03AB or BB	step 31

28 Return the Tape packlet to service. Perform the following steps:

a Access the XA-Core TAPE MAP level. At the Disk MAP level type

>TAPE

and press the Enter key

b Return the Tape packlet to service. At the TAPE MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape packlet is	Do
not in service	step 29
in service	step 31

29 Call the next level of support.

30 Perform the correct alarm clearing procedure.

NTLX06 disk packlet (end)

31 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX07 tape packlet in a SuperNode and SuperNode SE XA-Core

Application

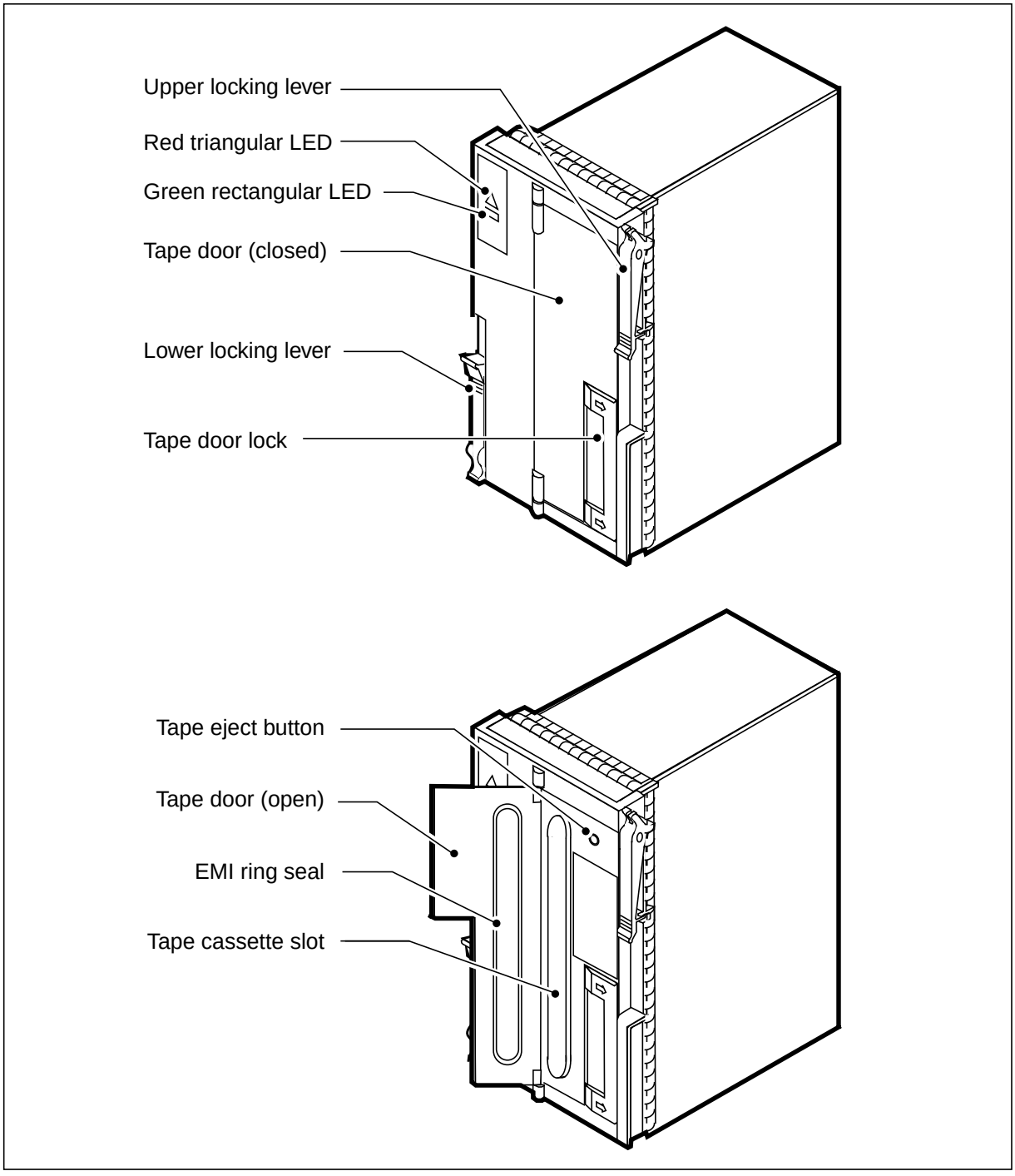
Use this procedure to replace the NTLX07 tape packlet. The NTLX03AB dual-width Input/Output processor (IOP) circuit pack (CP) contains tape and disk packlets.

The following lists the valid tape packlets.

PEC	Suffix	Circuit packlet name
NTLX07	AA	DAT tape drive packlet

NTLX07 tape packlet (continued)

NTLX06 Tape drive packlet front and side views



NTLX07 tape packlet (continued)

Common procedures

Do not go to a common procedure unless instructed in the step-action procedure.

Light emitting diode (LED) strategy

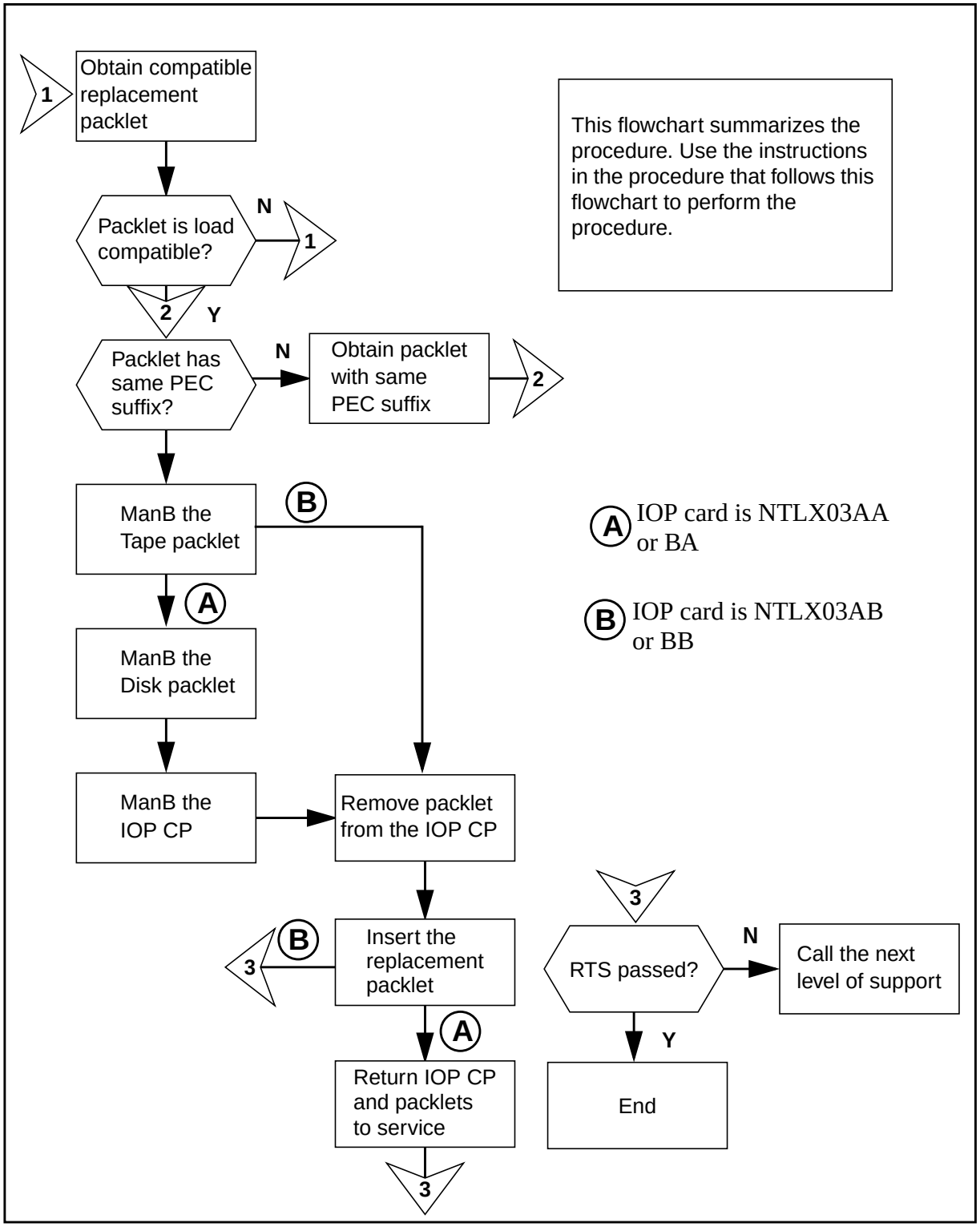
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the packlet, use the instructions in the step-action procedure that follows the flowchart.

NTLX07 tape packlet (continued)

Summary of NTLX07 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX07 tape packlet (continued)

How to replace an NTLX07 tape packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one packlet of the same equipment type at a time. Make sure that the unit you are replacing is inactive and the mate unit is active.

At your current location

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core Tape MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;TAPE

and press the Enter key.

3 Examine the Tape MAP level. Record the location and status of the Tape packlet that you need to replace. Make sure that redundant components are

NTLX07 tape packlet (continued)

InSv before removing the Tape packlet that you need to replace. Determine if the Tape packlet contains a mounted tape.

Note: The Tape MAP level displays the following information in the command interpreter output area:

- the user name under the User Name header
- the tape drive status under the Drive header (mounted/unmounted)

Tape MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 Tape      .        .        .        .        .        .        .         .        .

Tape
 0 Quit          Front:  111111111      Rear: 111111    SM     PE     IO     PKLT
 2               123456789012345678     456789012345    .      .      .      TAPEtb
 3          Sta: -.-----..-.---.-.S-    .-----------.   0      0      0      1
 4          Dep:
 5          Typ:  *              *
 6 Tst_     Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 7 Bsy_        2    Front    Upper      .          USER1           mounted
 8 RTS_       17    Front    Upper      S                          Unmounted
 9            TAPE:
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the redundant IOP, Disk or Tape devices are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 29

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

NTLX07 tape packlet (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 2 f

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP, Disk and Tape devices are	Do
in service	step 5
not in service	step 29

5 Make sure that the redundant Disk packlet contains the active image backup file.

a Exit from the Tape MAP level and access the CI MAP prompt. At the Tape MAP level type

>QUIT ALL

and press the Enter key.

b Access the image table of contents (ITOCCI) MAP interface. At the CI MAP level prompt type

>ITOCCI

and press the Enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

c List the image files for the XA-Core in the ITOC, type:

>LISTBOOTFILE XA

and press the Enter key.

Example of a MAP response:

```
Image Table Of Contents for XA:

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ --------------------
-----------

 0 * 05/04/1999 19:16:21 F02LIMAGE IMG0504CX_CM
 0   05/01/1999 19:21:19 F02LIMAGE IMG0501CU_CM
```

NTLX07 tape packlet (continued)

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

d Determine which device contains the active image files. Examine the device name under the Generic Device header in the ITOC listing. The device name indicates the location of the disk device.

e Exit from the ITOCCI MAP interface and display the CI MAP prompt. At the ITOCCI MAP interface prompt, type

>QUIT

and press the Enter key.

If the redundant disk device	Do
does not contain the active image	step 6
contains the active image	step 8

6 Perform a manual dump of the active image to the redundant disk device. At the CI MAP prompt, type

>AUTODUMP MANUAL

and press the Enter key.

7 Wait for a system response to indicate that the manual image dump is successful.

If the manual image dump to the redundant disk device is	Do
successful	step 8
not successful	step 29

8 Access the XA-Core Tape MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;TAPE

and press the Enter key.

9 Record the user name and drive state as shown on the Tape MAP level. There are four possible tape device user conditions:

- The system is using the tape device. The Tape MAP level displays “System” as the user name. The system software is performing an activity such as an ONP or software upgrade. The tape drive state is mounted.
- Another user is performing a backup or restore at a different location. The tape drive state is mounted.

NTLX07 tape packlet (continued)

- You are the user of the tape device. The tape drive state is mounted.
- There are no users. The tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the system software is the user	step 10
another user is using the tape device	step 11
you are the user of the tape device	step 14
there are no users	step 15

10 Wait for the system software to complete the ONP or upgrade process. When the system software activities are complete, the MAP deletes the “System” user name and the tape drive state changes to unmounted.

If the system software process is complete and the Tape MAP level indicates that	Do
the tape is not rewound and the tape drive state is mounted	step 13
the tape is rewound and the tape drive state is unmounted	step 15

11 Notify the other user that you intend to replace the Tape packlet. The other user needs to complete tape device activities and perform an EJECTTAPE. Wait for the Tape MAP level to delete the other user name and indicate that the tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the tape is not rewound and that the tape drive state is mounted	step 12
the tape is rewound and that the tape drive state is unmounted	step 15

12 Call the other user to make sure that all tape device activities are complete.

If the other user has	Do
completed tape drive activities and rewound the tape	step 15
not completed tape drive activities	step 29

13 Clear the tape drive state on the Tape MAP level. Manually busy the Tape packlet and return the Tape packlet to service.

a Manually busy the Tape packlet. At the Tape MAP level type

NTLX07 tape packlet (continued)

>BSY <nn> <s> <p>

and press the enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 2 f u

Example of system response:

```
BSY 2 front upper complete
```

b Return the Tape packlet to service. At the Tape MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 15
the tape is not rewound and the tape drive state is mounted	step 29

14 Access the DISKUT MAP interface and rewind the tape.

a At the Tape MAP level type:

>QUIT all

and press the enter key.

b Access the DISKUT MAP level. At the CI MAP prompt type:

>DISKUT

and press the enter key.

c Rewind the tape. At the DISKUT MAP level type:

>EJECTTAPE <device>

and press the enter key.

where

<device> is the name of the tape device.

Note: The system rejects the EJECTTAPE command if the system cannot identify you as the user of the tape device.

Example of command use:

>EJECTTAPE F02UTAPE

Example of system response:

```
Rewind of tape F02UTAPE on node <node_name> is
completed. The tape device is not available to the user
now
```

d Exit from the DISKUT MAP level. At the DISKUT MAP prompt, type

>QUIT

and press the enter key.

e Access the XA-Core Tape MAP level. At the CI MAP prompt, type

>MAPCI;MTC;XAC:TAPE

and press the enter key.

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 15
the tape is not rewound and the tape drive state is mounted	step 29

15 ManB the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

NTLX07 tape packlet (continued)

>BSY 17 f u

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 2 front upper passed.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the Tape packlet is	Do
in a ManB state	step 16
not in a ManB state	step 29

16 Indicate the ManB Tape packlet. At the Tape MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 17 f u

Example of system response:

```
Indicate 2 front upper passed.
```

17

If the IOP card is	Do
NTLX03AA or BA	step 18
NTLX03AB or BB	step 20

18 ManB the Disk packlet contained in the IOP CP. Perform the following steps:

NTLX07 tape packlet (continued)

a Exit from the Tape MAP level and access the Disk MAP level. At the Tape MAP level type

>DISK

and press the Enter key.

b ManB the Disk packlet. At the Disk MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 17 f l

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command, type:

>Y

Example of system response:

```
BSY 2 front lower completed
```

Note: If this command reduces redundancy and produces a major alarm, you must use the Force option.

If the Disk packlet is	Do
in a ManB state	step 19
not in a ManB state	step 29

19 ManB the IOP CP. Perform the following steps

a Exit from the Disk MAP level and display the IO MAP level. At the Disk MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

NTLX07 tape packlet (continued)

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 17 f

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 17 front completed.
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the IOP CP is	Do
in a ManB state	step 20
not in a ManB state	step 29

At the XA-Core physical shelf

20

WARNING
Static electricity damage
Make sure that you wear a wrist-strap connected to a grounding point on the FSP. The wrist-strap protects against electrical static discharge (ESD).

Locate the Tape packlet on the physical shelf. Refer to the packlet location recorded from 16. Examine the packlet faceplates on the XA-Core physical shelf.

Look for a winking, red triangular LED on the Tape packlet. A winking, red LED is a result of using the indicate command.

21 If needed, remove the tape cassette from the Tape packlet. Perform the following steps:

a Locate the Tape packlet in the IOP CP.

NTLX07 tape packlet (continued)

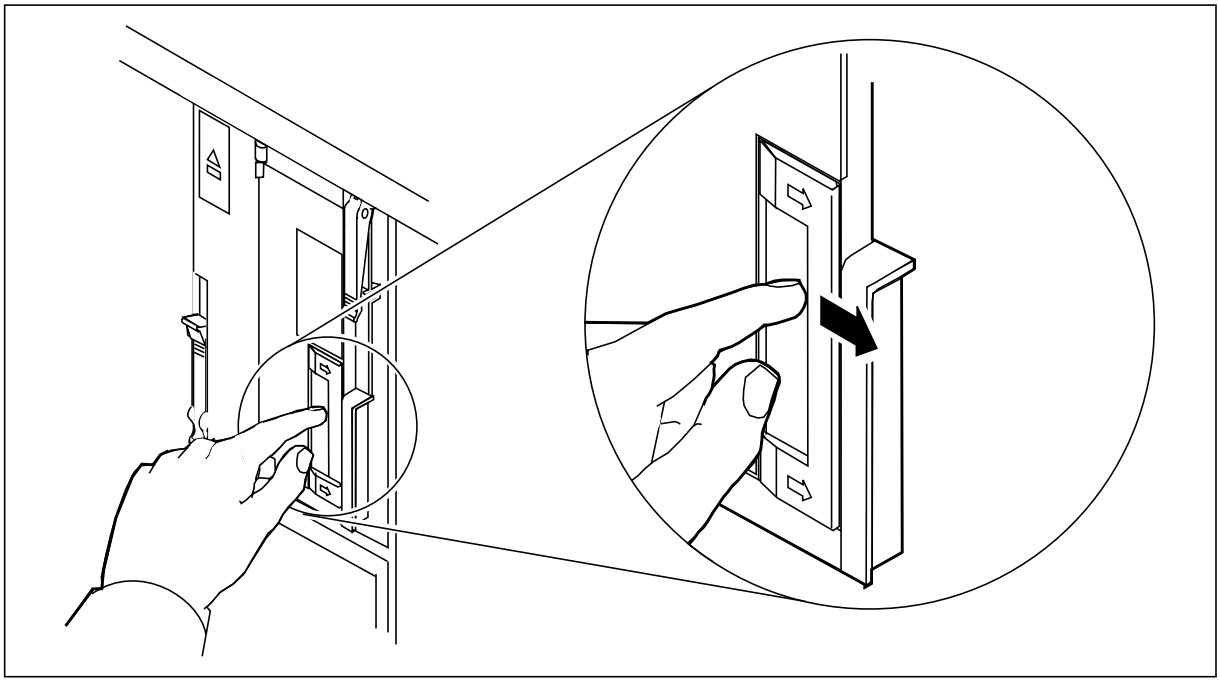
b Push the door lock in the direction of the arrow to unlock. The cassette door swings open.

c Press the tape eject button. The tape cassette partially ejects and is ready for removal.

d Remove the tape cassette and place it in a safe location away from the physical shelf.

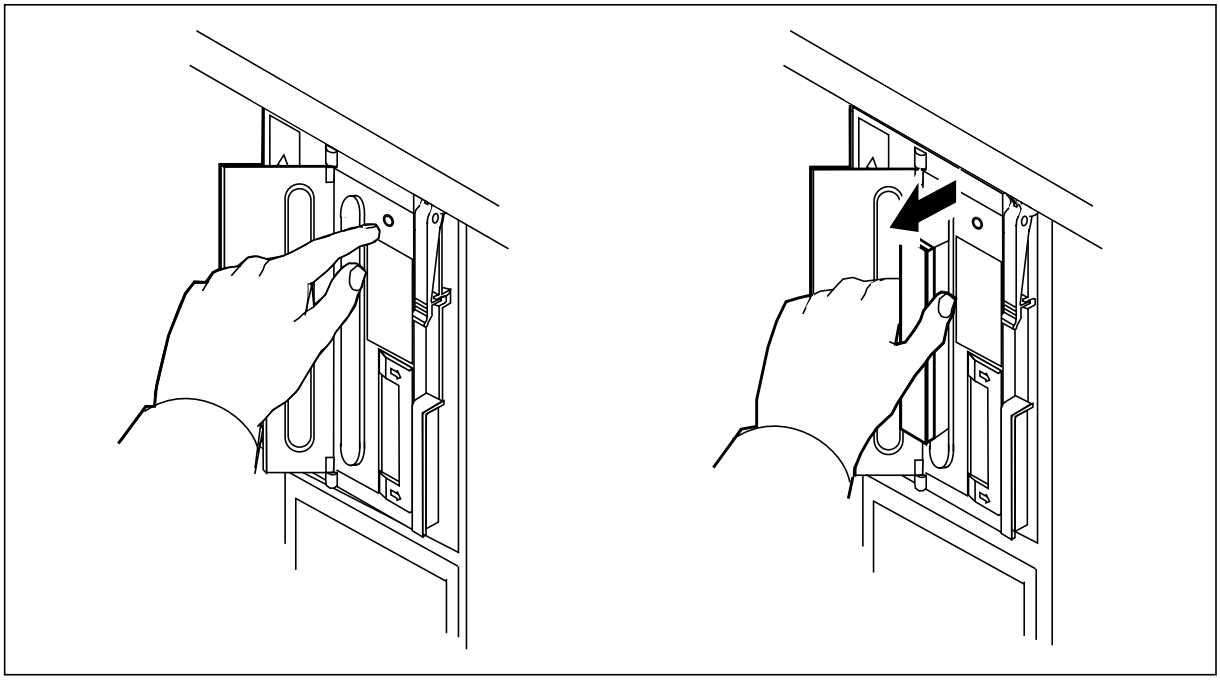
e Move the door to the closed position. Carefully push on the door until it locks in place.

Open the Tape cassette door



NTLX07 tape packlet (continued)

Eject and remove the Tape cassette

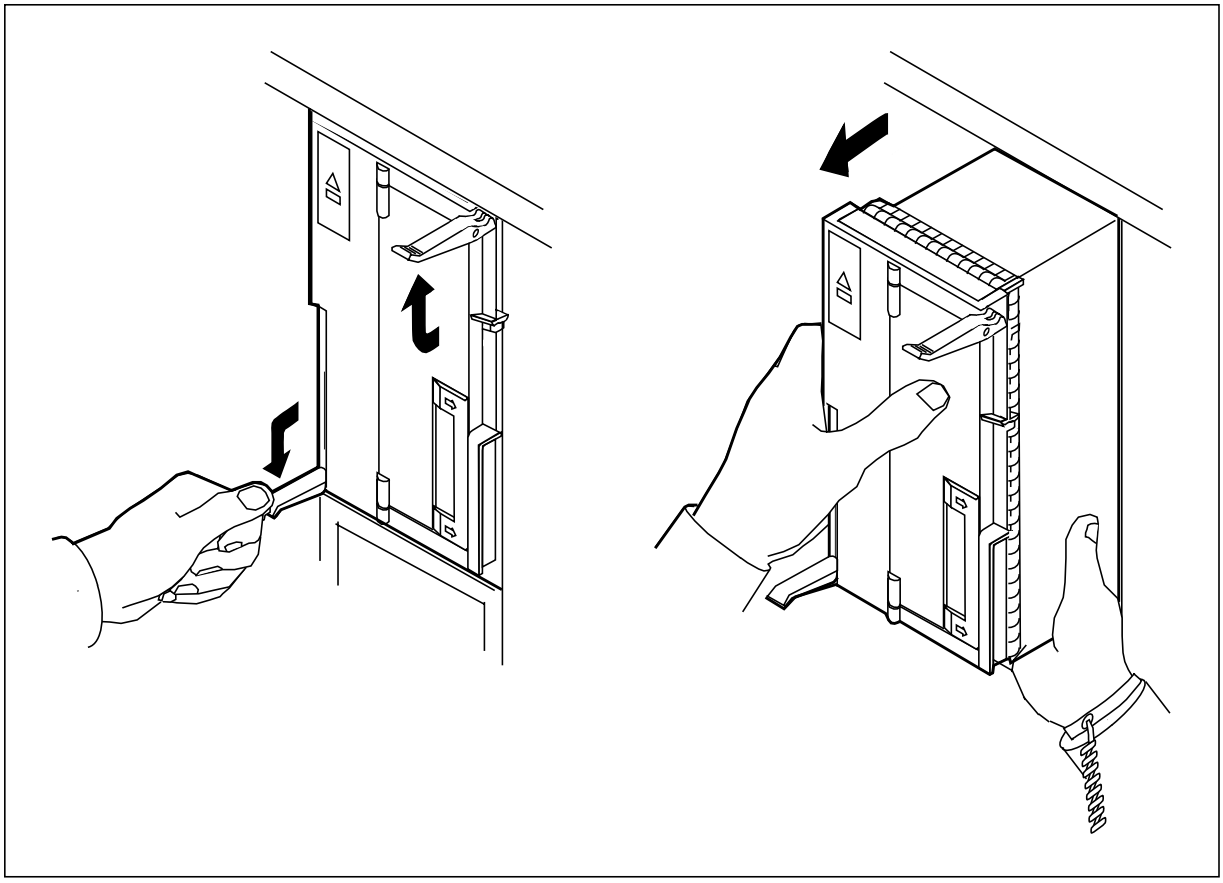


22 Remove the Tape packlet from the IOP CP. Perform the following steps:

- **a** Open the upper and lower locking levers on the packlet.
- **b** Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.
- **c** Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.
- **d** Close the upper and lower locking levers on the packlet to prevent breakage.
- **e** Place the packlet in ESD protective packaging.

NTLX07 tape packlet (continued)

Remove the Tape packlet from the IOP CP



23 Insert the replacement Tape packlet in the upper slot of the replacement IOP CP.

a Remove the replacement Tape packlet from the ESD protective packaging.

b Open the locking levers on the Tape packlet.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

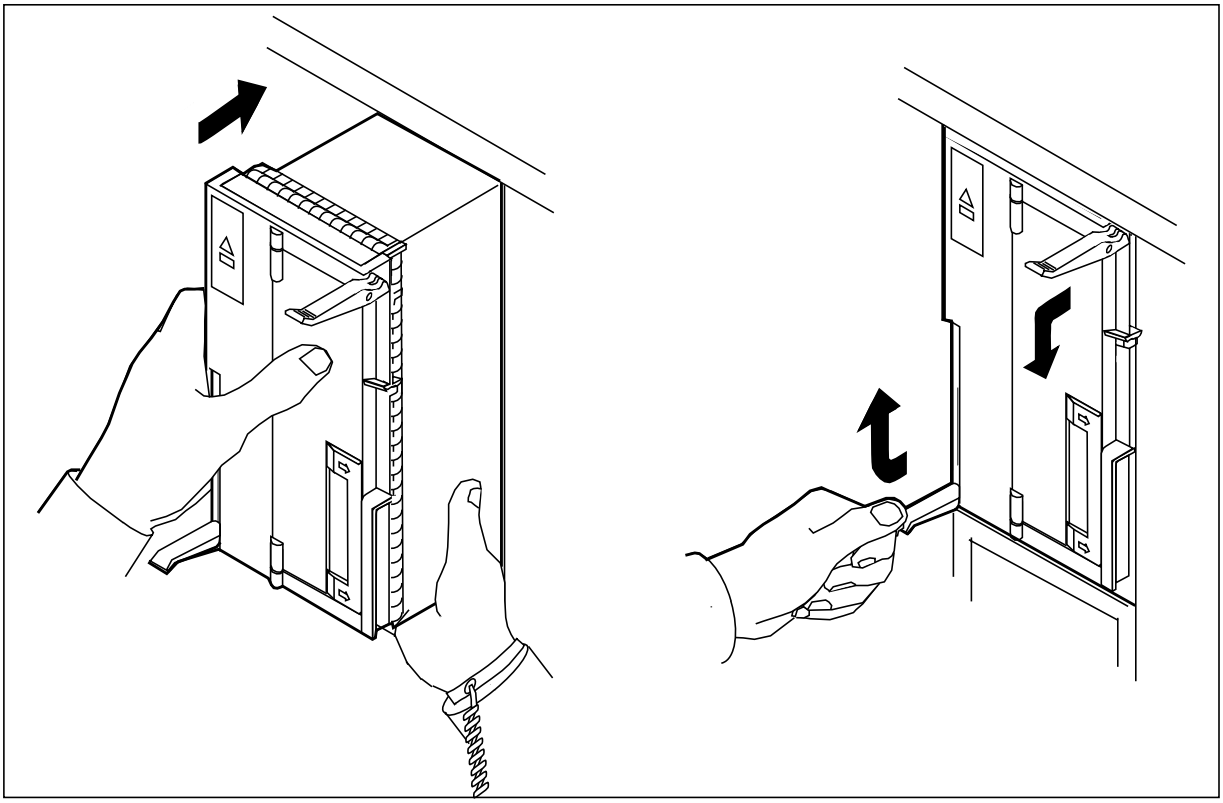
d Align the packlet with the upper IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers to secure the circuit packlet. Do not force the locking levers to close.

NTLX07 tape packlet (continued)

Insert the Tape packlet in the IOP CP



24

If the IOP card is	Do
NTLX03AA or BA	step 25
NTLX03AB or BB	step 26

NTLX07 tape packlet (continued)

At the MAP terminal

25 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command usage:

>RTS 17 f

Example of system response:

```
RTS 17 front passed.
```

If the IOP CP is	Do
in service	step 26
not in service	step 29

26 Return the Tape packlet to service. Perform the following steps:

a Access the XA-Core TAPE MAP level. At the IO MAP level type

>TAPE

and press the Enter key

b Return the Tape packlet to service. At the TAPE MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 17 f u

NTLX07 tape packlet (continued)

Example of system response:

```
RTS 2 front upper passed
```

If the Tape packlet is	Do
not in service	step 29
in service	step 27

27

If the IOP card is	Do
NTLX03AA or BA	step 28
NTLX03AB or BB	step 31

28 Return the Disk packlet to service. Perform the following steps:

a Access the Disk MAP level. At the Tape MAP level type

>DISK

and press the Enter key.

b Return the Disk packlet to service. At the DISK MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 17 f l

Example of system response:

```
RTS 17 front lower passed
```

If the Disk packlet is	Do
not in service	step 29
in service	step 31

29 Call the next level of support

30 Perform the correct alarm clearing procedure.

NTLX07 tape packlet (end)

31 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX08 RTIF packlet in a SuperNode and SuperNode SE XA-Core

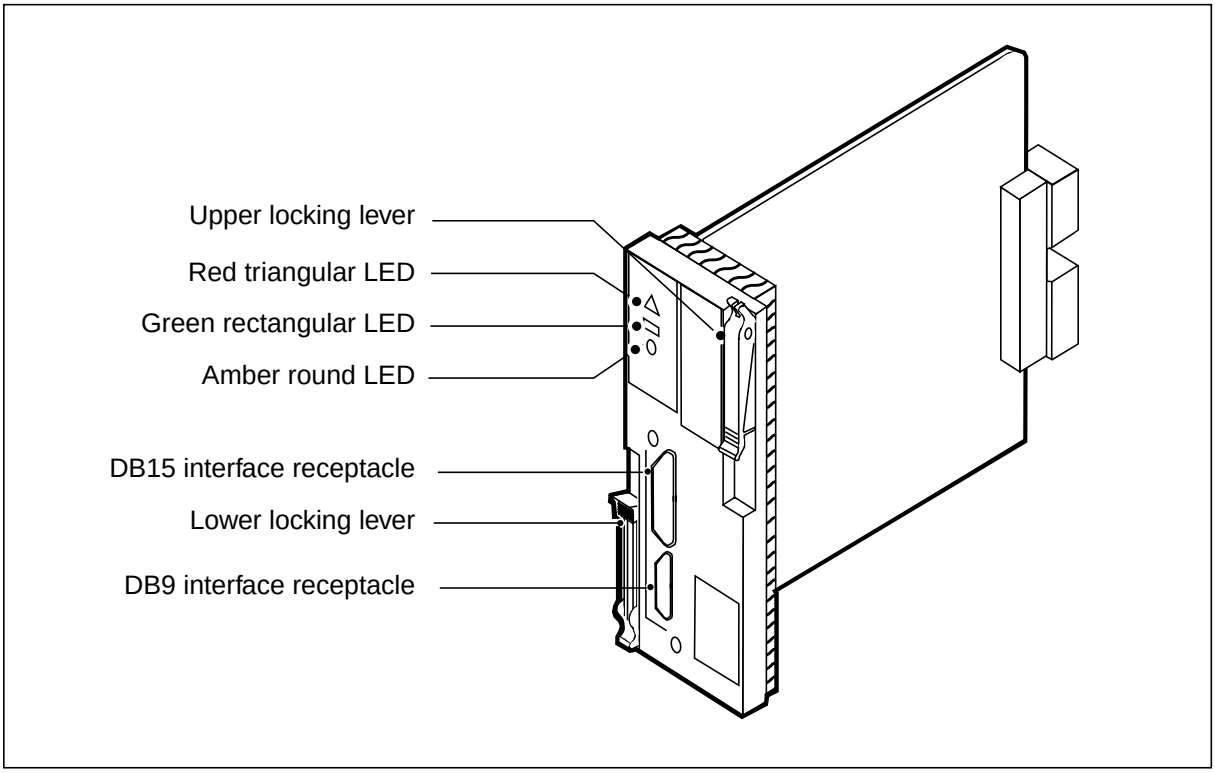
Application

Use this procedure to replace the NTLX08 Reset terminal interface (RTIF) packlet in a single-width IOP circuit pack (CP). The single-width IOP CP contains the RTIF and OC-3 two port interface packlets.

The following table lists the valid RTIF packlets.

PEC	Suffix	Card name
NTLX08	AA	Reset terminal interface (RTIF) packlet
NTLX08	AB	Reset terminal interface (RTIF) packlet

NTLX08 RTIF packlet front and side views



NTLX08 RTIF packlet (continued)

Common procedures

Do not go to a common procedure unless directed to do so in the step-action procedure.

Light emitting diode (LED) strategy

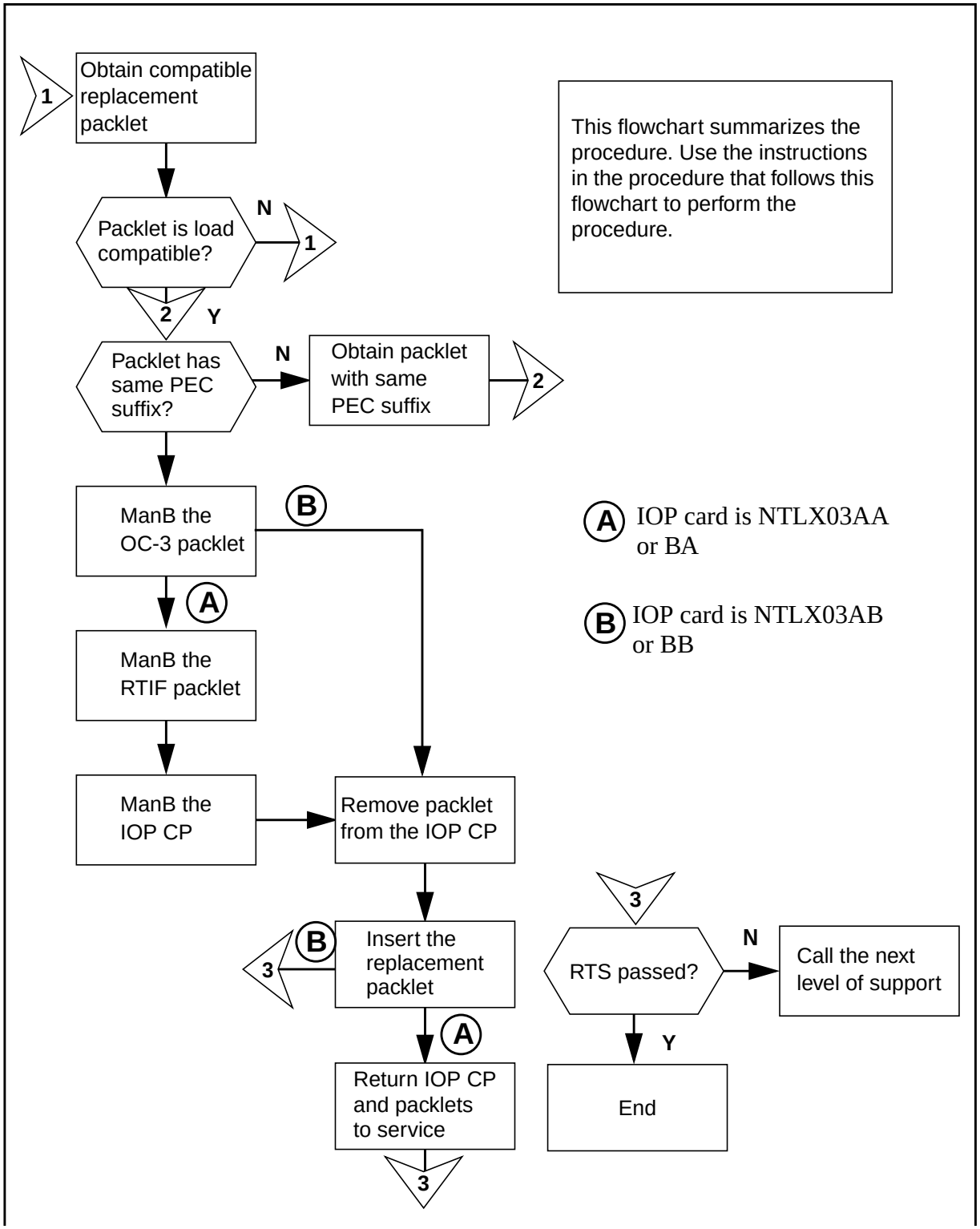
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the packlet, use the instructions in the step-action procedure that follows the flowchart.

NTLX08 RTIF packlet (continued)

Summary of NTLX08 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX08 RTIF packlet (continued)

How to replace an NTLX08 RTIF packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core RTIF MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;RTIF

and press the Enter key.

3 Examine the RTIF MAP level. Record the location and status of the RTIF packlet that you need to replace. Make sure that redundant components are InSv before removing the RTIF packlet that you need to replace.

The following is a sample MAP display.

NTLX08 RTIF packlet (continued)

RTIF MAP level

```
 XAC       MS       IOD      Net      PM       CCS      Lns      Trks      Ext      APPL
 RTIF      .         .        .        .        .        .         .        .         .

RTIF                 Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit              123456789012345678  456789012345   .      .       .       RTIFfl
 2                Sta: -.----..-.---.-..-  .--.--------.   0      0       0       1
 3                Dep:
 4                Typ:                      *
 5                Slot:   Side:    Packlet:    Status:    Local Port:     Remote Port:
 6 Tst_              4    Rear     Upper       S          C               C
 7 Bsy_              15   Rear     Upper       .          .               .
 8 RTS_            RTIF:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time 14:12   >
```

If the redundant IOP, OC-3 or RTIF are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 20

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

NTLX08 RTIF packlet (continued)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP, RTIF and OC-3 packlets are	Do
in service	step 5
not in service	step 20

5

If the IOP card is	Do
NTLX03AA or BA	step 6
NTLX03AB or BB	step 7

6 Place the OC-3 two-port interface packlet in a ManB state. At the CMIC MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

Example of system response

```
Bsy 4 rear lower complete
```

NTLX08 RTIF packlet (continued)

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 7
not in a ManB state	step 20

7 Place the RTIF packlet in a ManB state. At the RTIF MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

Example of system response

```
Bsy 4 rear upper complete
```

Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the packlet is	Do
in a ManB state	step 8
not in a ManB state	step 20

8 Indicate the ManB RTIF packlet. At the RTIF MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key.

where

NTLX08 RTIF packlet (continued)

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 4 r u

Example of system response:

```
Indicate 4 rear upper passed.
```

9

If the IOP card is	Do
NTLX03AA or BA	step 10
NTLX03AB or BB	step 11

10 ManB the IOP CP. Perform the following steps

a Exit from the RTIF MAP level and display the IO MAP level. At the RTIF MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

NTLX08 RTIF packlet (continued)

Example of system response:

```
Bsy 4 rear passed.
```

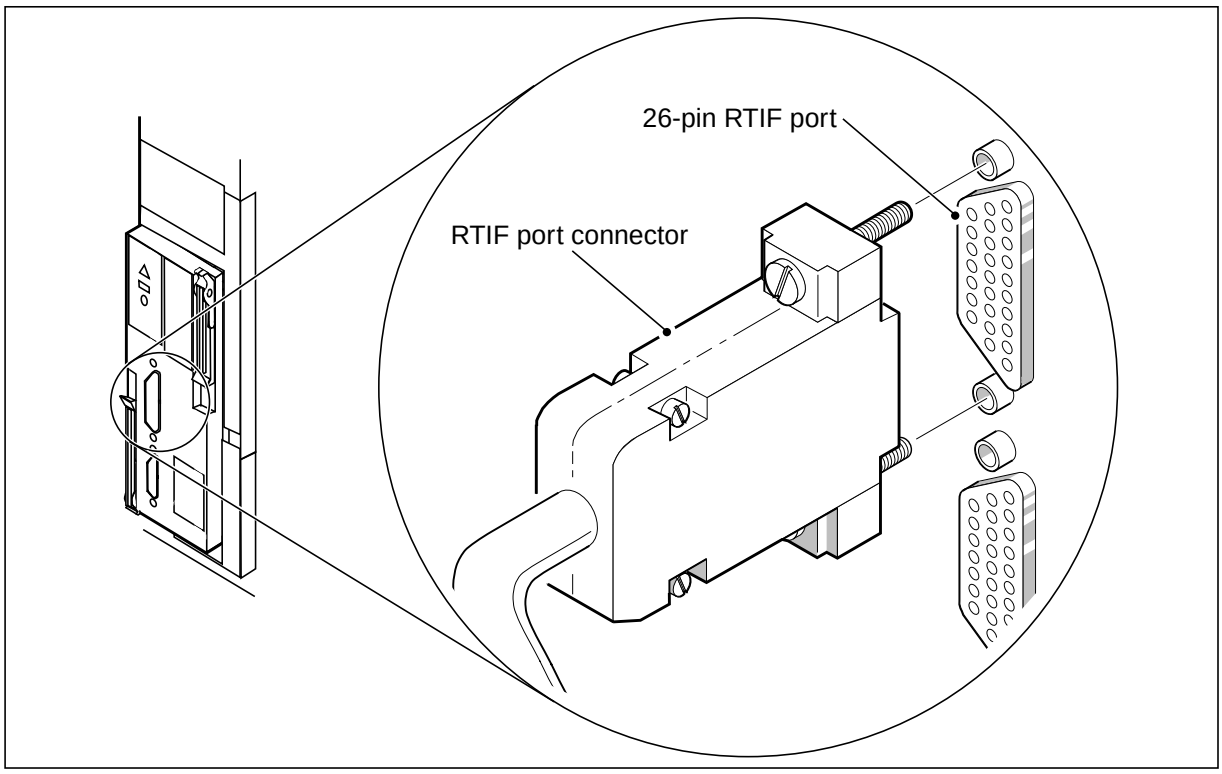
Note: *If this command reduces redundancy and produces a major alarm, you must use the Force option.*

If the IOP CP is	Do
in a ManB state	step 11
not in a ManB state	step 20

At the XA-Core physical shelf

11 Locate the RTIF packlet in the IOP CP. Use the location information from 3. Examine the packlet faceplate and look for a flashing red LED. Label the local and remote port cable connections on the RTIF packlet according to office standards.

RTIF port connectors



12 Disconnect the local and remote port cables from the RTIF packlet.

a Loosen the connector retaining screws from the RTIF ports.

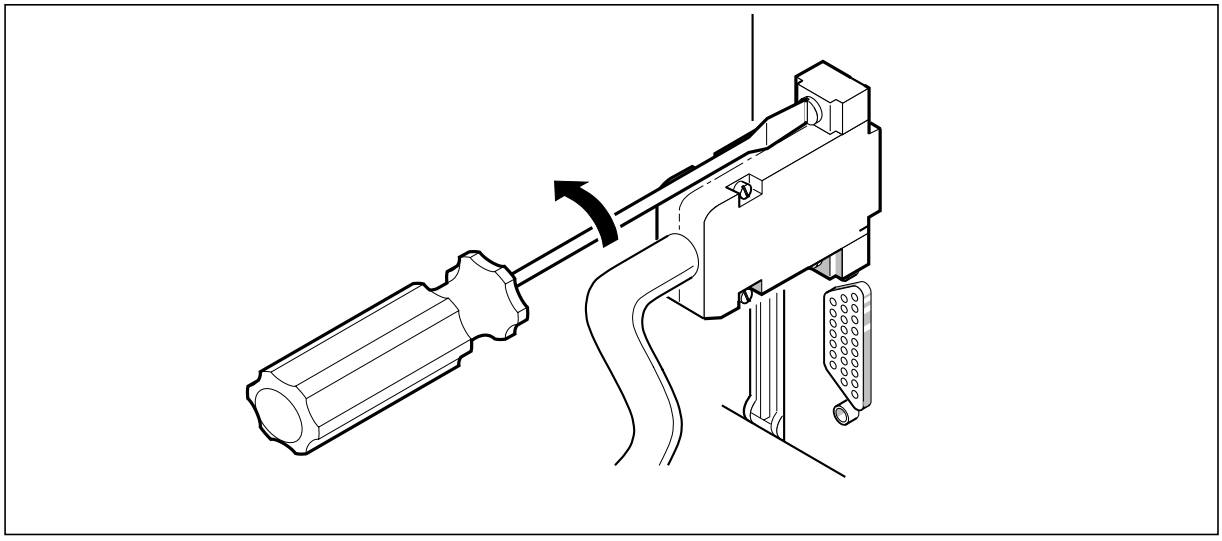
b Hold the connector by the body only.

c Carefully pull the connectors away from the port receptacles.

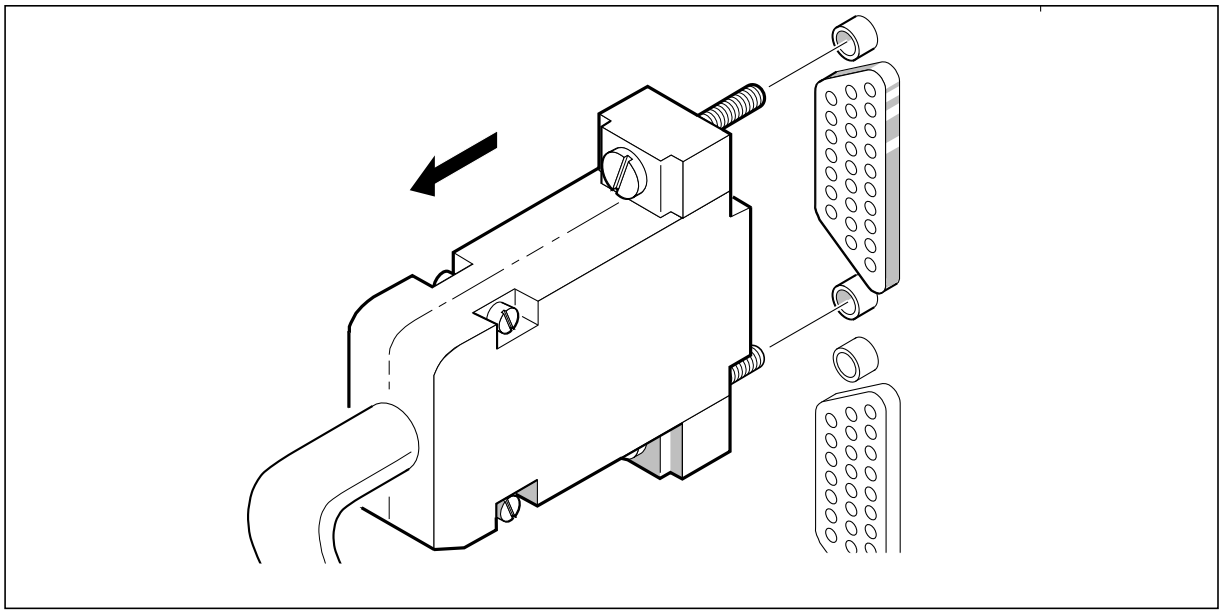
d Place the cables in a safe location away from the packlet.

NTLX08 RTIF packlet (continued)

Loosen the RTIF port connectors



Remove the RTIF port connectors



13 Remove the RTIF packlet from the IOP CP. Perform the following steps:

a Open the locking levers on the RTIF packlet.

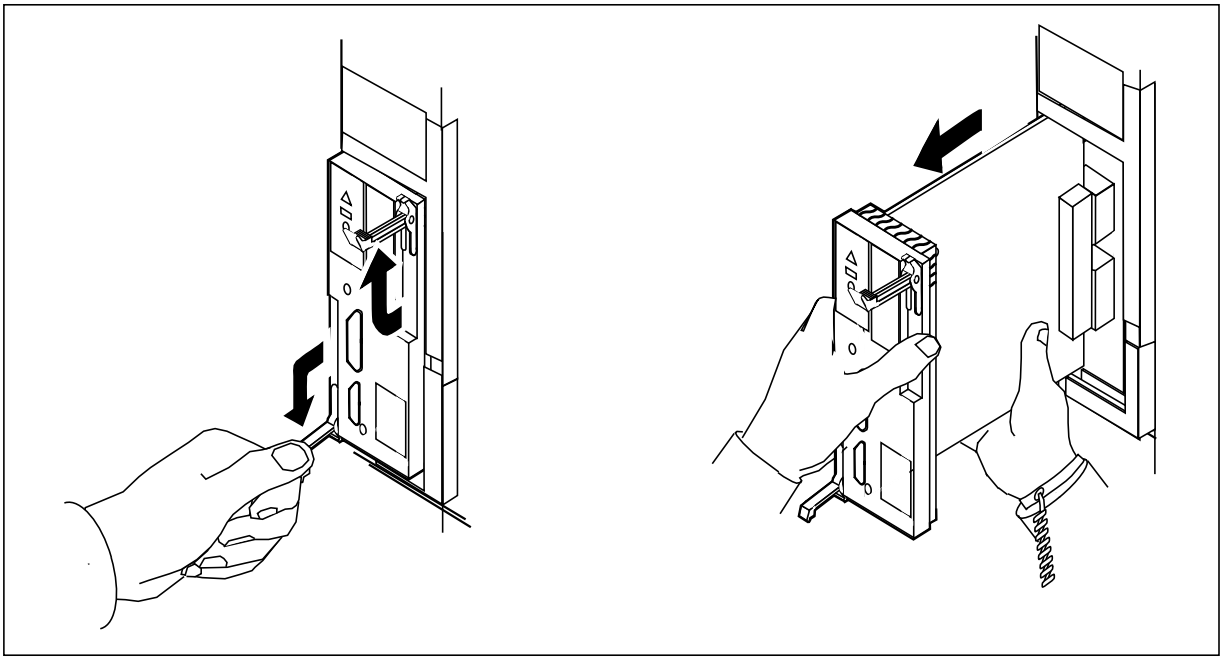
b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Place the packlet in ESD protective packaging.

NTLX08 RTIF packlet (continued)

Remove the RTIF packlet from the IOP CP



14 Insert the replacement RTIF packlet in the upper slot of the IOP CP. Use the diagrams in this step.

a Remove the replacement RTIF packlet from the ESD protective packaging.

b Open the locking levers on the replacement RTIF packlet.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

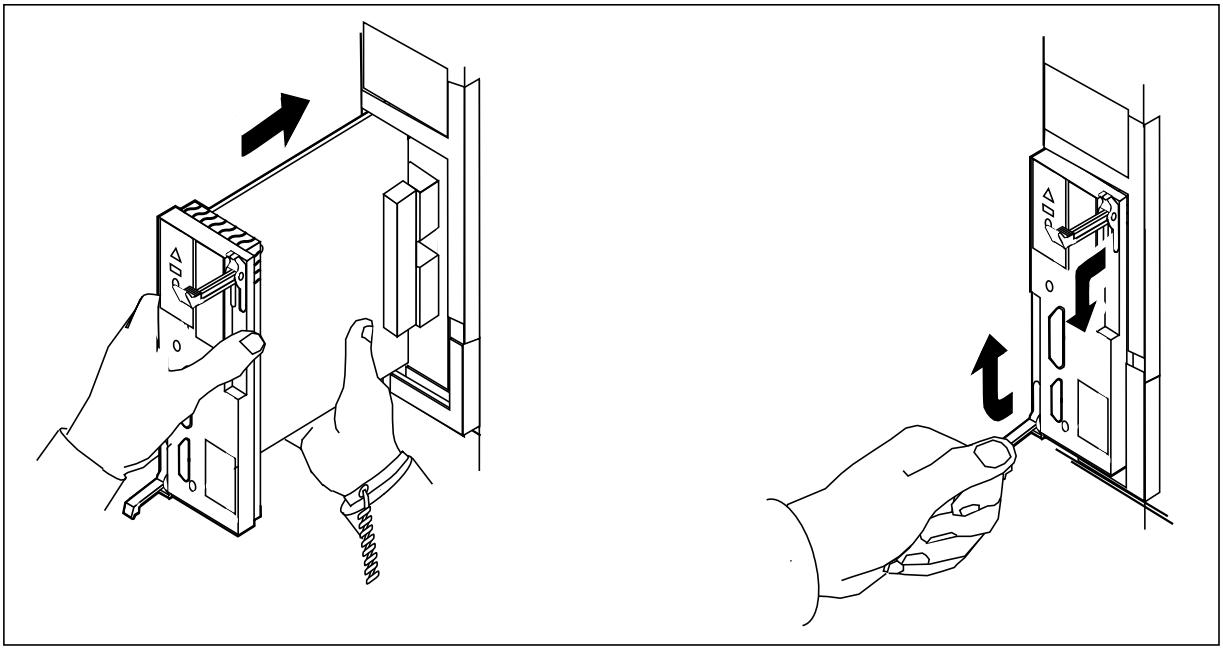
d Align the packlet with the upper IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers on the RTIF packlet. Do not force the locking levers to close.

NTLX08 RTIF packlet (continued)

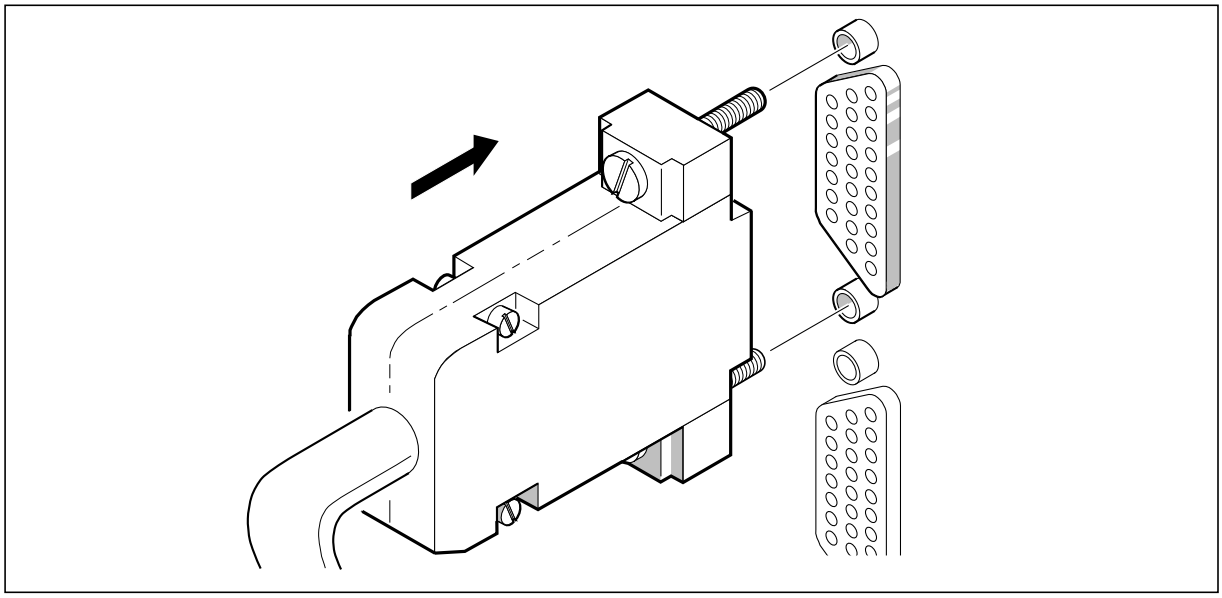
Insert the RTIF packlet into the IOP CP



15 Connect the local and remote cables to the RTIF packlet.

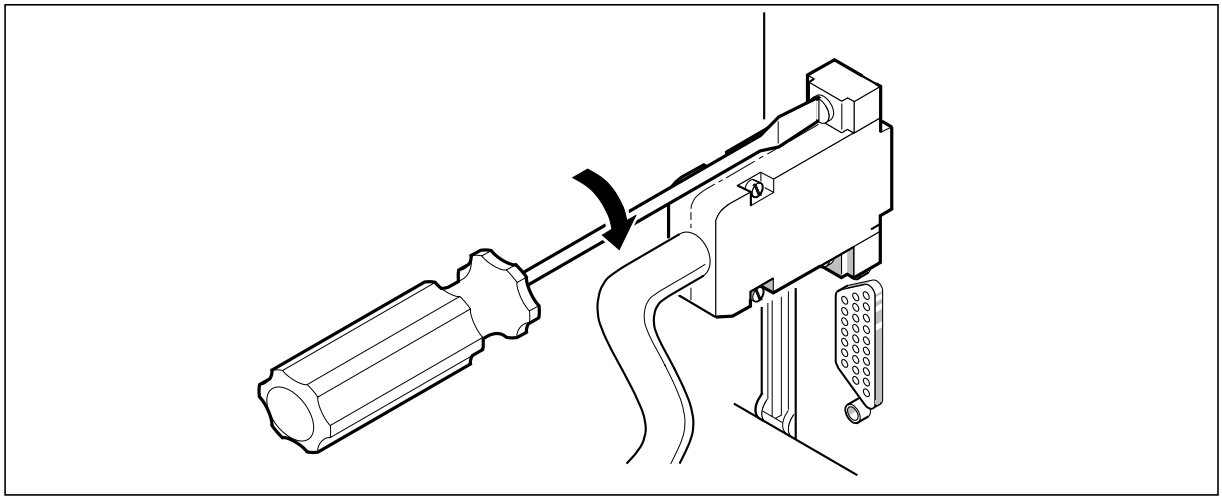
- **a** Hold the connector by the receptacle body only.
- **b** Align the connector to the correct RTIF port receptacle.
- **c** Push the connector into the receptacle.
- **d** Tighten the connector retaining screws.

Insert the local and remote port connectors into the RTIF ports



NTLX08 RTIF packlet (continued)

Tighten the local and remote port connector screws



16

If the IOP card is	Do
NTLX03AA or BA	step 17
NTLX03AB or BB	step 19

At the MAP

17 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the IOP CP is	Do
in service	step 18
not in service	step 20

18 Return the OC-3 two port interface packlet to service. Perform the following steps.

a Exit from the IO MAP level and access the CMIC MAP level. At the IO MAP level type

>CMIC

and press the Enter key.

b Return the OC-3 two port interface packlet to service. At the CMIC MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower completed
```

If the OC-3 two port interface packlet is	Do
in service	step 19
not in service	step 20

NTLX08 RTIF packlet (end)

19 Return the RTIF packlet to service. Perform the following steps.

a Exit from the CMIC MAP level and access the RTIF MAP level. At the CMIC MAP level type

>RTIF

and press the Enter key.

b Return the RTIF packlet to service. At the RTIF MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r u

Example of system response:

```
RTS 4 rear upper completed
```

If the RTIF packlet is	Do
not in service	step 20
in service	step 22

20 Call the next level of support.

21 Perform the correct alarm clearing procedure.

22 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX09 Ethernet packlet in a SuperNode and SuperNode SE XA-Core

Application

This section contains procedures for replacing NTLX09 Ethernet packlet in a single-width IOP circuit pack, and it also contains procedures for increasing and decreasing the number of Ethernet packlets in the XA-Core. The following table indicates where each procedure begins.

Activity	Procedure begin on
Replacement procedure	page 179
Increasing the number of Ethernet packlets	page 190
Decreasing the number of Ethernet packlets	page 194

The following lists the valid Ethernet packlets.

PEC	Suffix	Card name
NTLX09	AA	Ethernet packlet

Common procedures

Do not go to a common procedure unless directed to do so in the step-action procedure.

Light emitting diode (LED) strategy

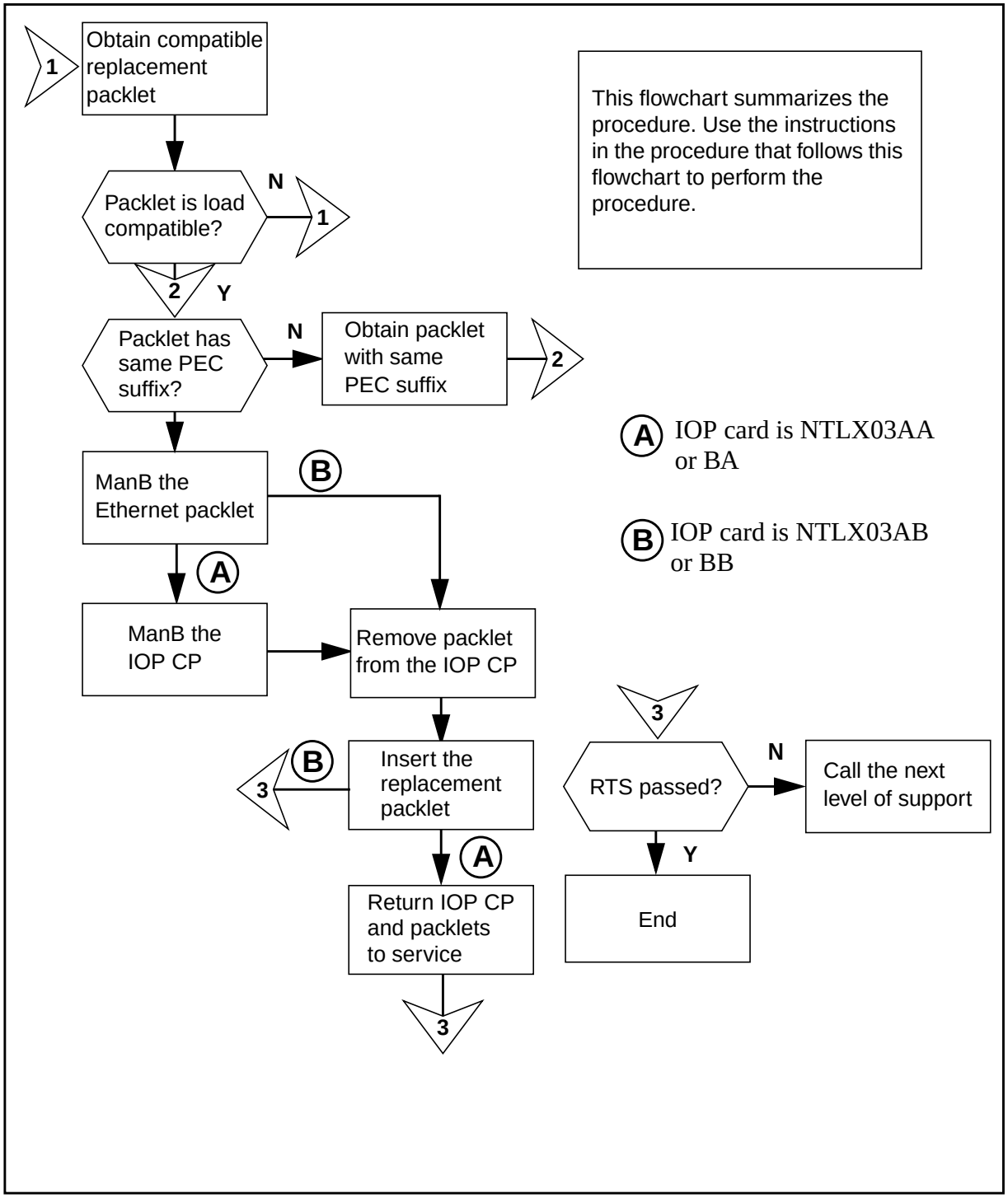
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action: replacing an Ethernet packlet

The following flowchart is only a summary of this procedure. To replace the packlet, use the instructions in the step-action procedure that follows the flowchart.

NTLX09 Ethernet packlet (continued)

Summary of NTLX09 Ethernet packlet replacement procedure



NTLX09 Ethernet packlet (continued)

How to replace an NTLX09 Ethernet packlet

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At your current location:

1 Get a replacement packlet. Make sure that the replacement packlet and the packlet you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core ETHR MAP level. At the CI MAP prompt type

>MAPCI;MTC;XAC;ETHR

and press the Enter key.

3 Examine the ETHR MAP level. Record the location and status of the ethernet packlet that you need to replace. Make sure that redundant components are InSv before removing the ethernet packlet that you need to replace.

The following is a sample MAP display.

NTLX09 Ethernet packlet (continued)

ETHR MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
 ETHR     .       .       .       .       .       .       .        .       .
 *C*

ETHR
 0 Quit        Front:   111111111    Rear: 111111   SM     PE    IO     PKLT
 2            123456789012345678    456789012345   .      .     .      ETHR M
 3       Sta:  . .  ..-.. .  . .    ....-..-...    0      0     0      1
 4       Dep:                        FF      FF
 5       Typ:                        **      **
 6       Slot:  Side:   Packlet:   Status:   Port:   Link:
 7 Tst_  05     Rear     lower      M        C       C
 8 Bsy_  06     Rear     lower      .        M       C
 9 RTS_  13     Rear     lower      .        .       S
10 LoadFW_ 14   Rear     lower      I        .       .
11       ETHR:
12 Uneq_
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
 Time  14:12   >
```

If the redundant IOP and Ethernet packlet are	Do
in a ManB state	step 4
in an InSv state	step 5
in a SysB state	step 17

4 Return the redundant IOP CP or packlets to service. At the correct MAP level type

>RTS <nn> <s>

or

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the redundant IOP and Ethernet packlet are	Do
in service	step 5
not in service	step 17

5 Place the Ethernet packlet in a ManB state. At the ETHR MAP level type

>BSY <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>BSY 4 r l

Example of system response:

```
Warning: Bsy command will take it out of service.
Please confirm ("YES", "Y", "NO", or "N")
```

To confirm the command type:

>Y

Example of system response

```
Bsy 4 rear lower complete
```

If the packlet is	Do
in a ManB state	step 6
not in a ManB state	step 17

NTLX09 Ethernet packlet (continued)

6 Indicate the ManB Ethernet packlet. At the ETHR MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>INDICAT card 4 r l

Example of system response:

```
Indicate 4 rear lower passed
```

7

If the IOP card is	Do
NTLX03AA or BA	step 8
NTLX03AB or BB	step 9

8 ManB the IOP CP. Perform the following steps

a Exit from the ETHR MAP level and display the IO MAP level. At the ETHR MAP level type

>IO

and press the Enter key.

b ManB the IOP CP. At the IO MAP level type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 4 r

Example of system response:

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)
Please confirm ("YES", "Y", "NO", or "N"),
```

To confirm the command type:

>Y

Example of system response:

```
Bsy 4 rear passed.
```

If the IOP CP is	Do
in a ManB state	step 9
not in a ManB state	step 17

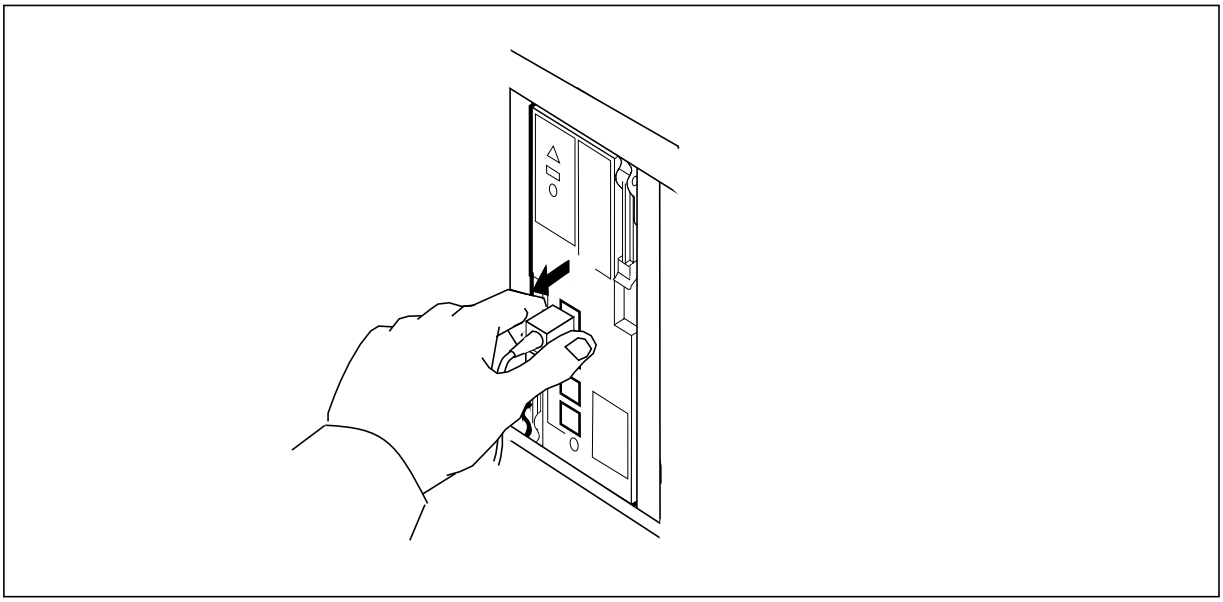
At the XA-Core physical shelf

9 Locate the Ethernet packlet in the IOP CP. Label the cable connections on the Ethernet packlet according to office standards.

10 Disconnect the cables from the faceplate of the Ethernet packlet.

- **a** Carefully pull the connector away from the receptacle. Hold the connector by the body only.
- **b** Cover the ends of the cable with dust caps.
- **c** Place the cable in a safe location away from the packlet.

Disconnect the cable from the Ethernet packlet port



NTLX09 Ethernet packlet (continued)

11

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Remove the Ethernet packlet from the IOP CP. Perform the following steps:

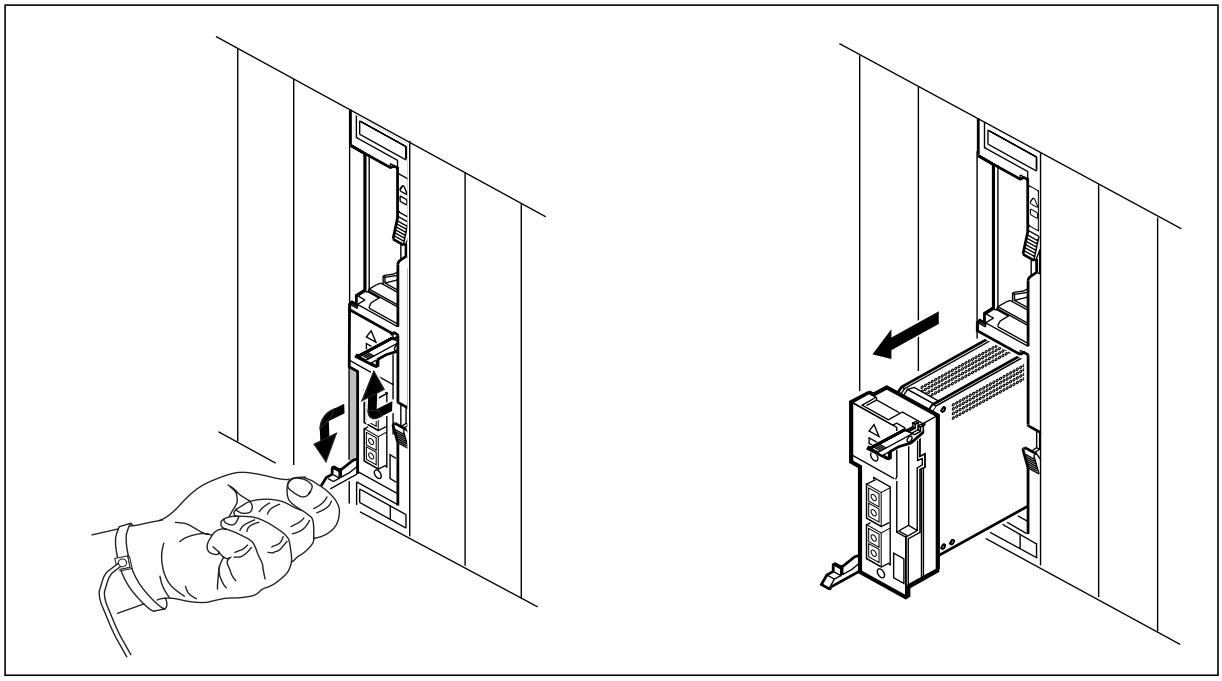
a Open the upper and lower locking levers on the packlet.

b Carefully pull the packlet toward you by the locking levers until it extends half way from the shelf opening.

c Hold the packlet by the faceplate with one hand and support the bottom edge with the other. Remove the packlet completely from the shelf.

d Place the packlet in ESD protective packaging.

Remove the Ethernet packlet from the IOP CP



12

WARNING
Do not hold circuit packlet by levers only
Holding a circuit packlet by the levers can result in lever breakage.

Insert the replacement Ethernet packlet in the lower IOP CP slot.

a Remove the replacement Ethernet packlet from the ESD protective packaging.

b Open the upper and lower locking levers on the packlet.

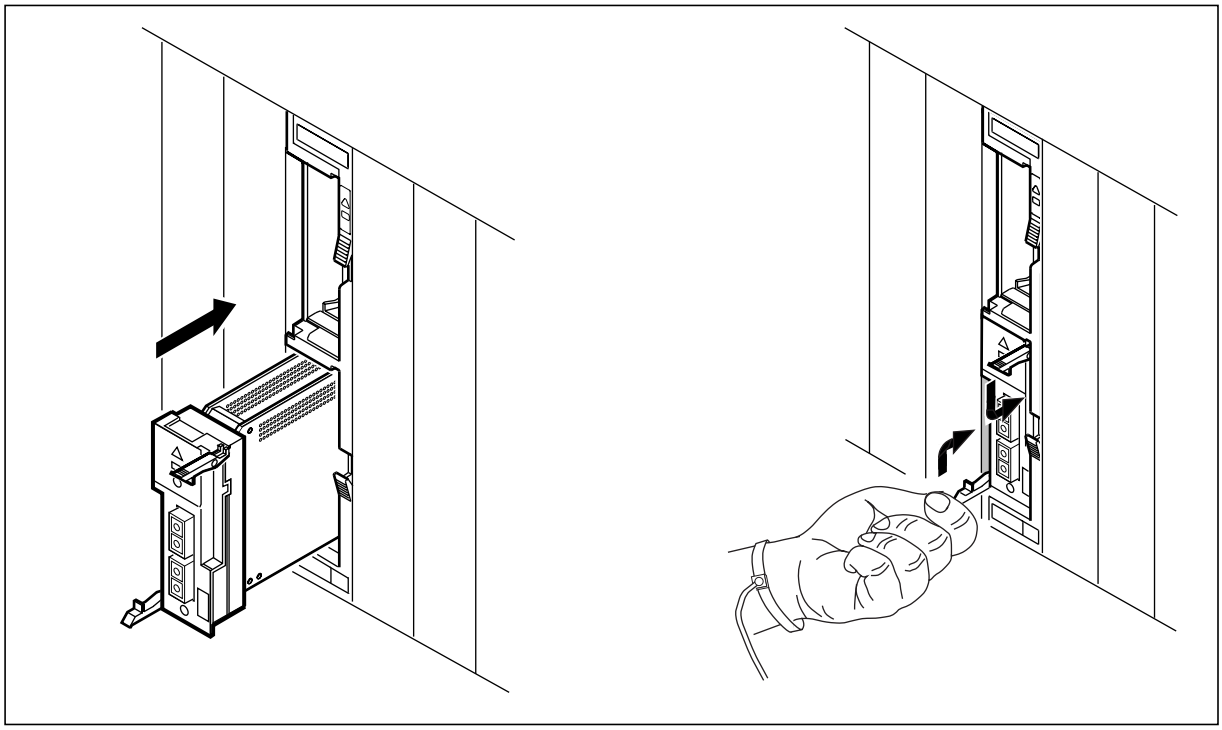
c Hold the packlet by the faceplate with one hand and support the bottom edge with the other.

d Align the packlet with the lower IOP CP slot and carefully slide the packlet into the slot. Do not force the packlet into the slot.

e Use your fingers or thumbs to push on the upper and lower edges of the faceplate.

f Close the locking levers to secure the packlet. Do not force the locking levers to close.

Insert the Ethernet packlet into the IOP CP



NTLX09 Ethernet packlet (continued)

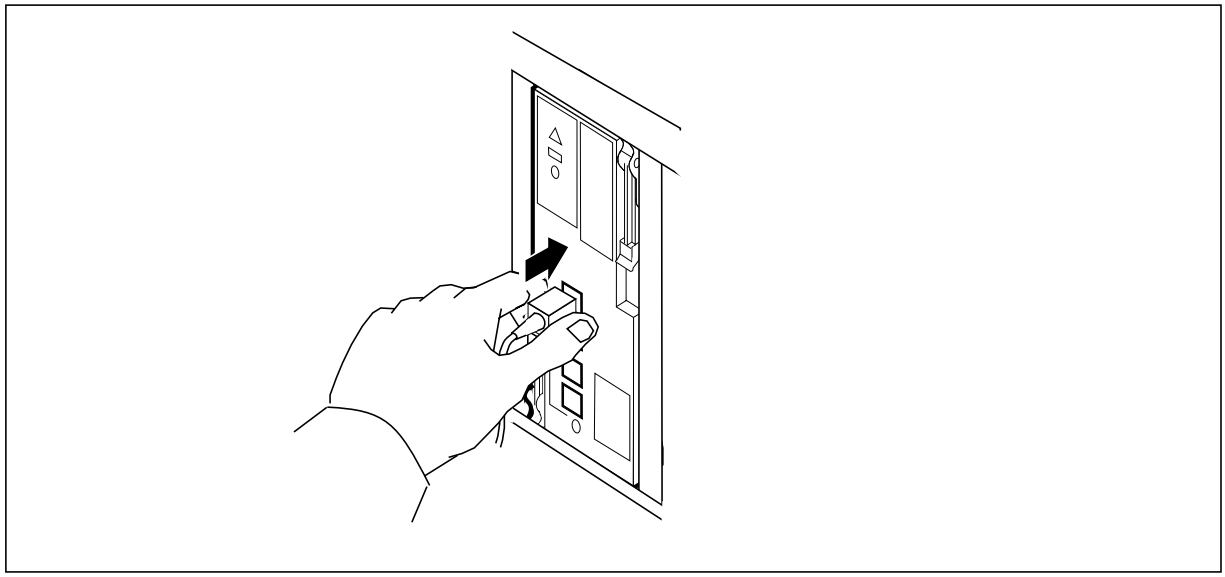
13 Connect the replacement or original cable to the correct interface ports.

a Remove the dust caps from the cable tips.

b Hold the cable connector by the body only.

c Carefully insert the cable connector into the correct receptacle. See the diagrams in this step.

Connect the cable



14

If the IOP card is	Do
NTLX03AA or BA	step 15
NTLX03AB or BB	step 16

At the MAP

15 Return the IOP CP to service. At the IO MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>RTS 4 r

Example of system response:

```
RTS 4 rear completed
```

If the IOP CP is	Do
in service	16
not in service	step 17

16 Return the Ethernet packlet to service. Perform the following steps.

a Exit from the IO MAP level and access the ETHR MAP level. At the IO MAP level type

>ETHR

and press the Enter key.

b Return the Ethernet packlet to service. At the ETHR MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the position parameter value to indicate the packlet location in an input/output processor (IOP) - upper (u) or lower (l)

Example of command use:

>RTS 4 r l

Example of system response:

```
RTS 4 rear lower completed
```

If the Ethernet packlet is	Do
in service	step 18
not in service	step 17

17 Call the next level of support.

18 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

NTLX09 Ethernet packlet (continued)

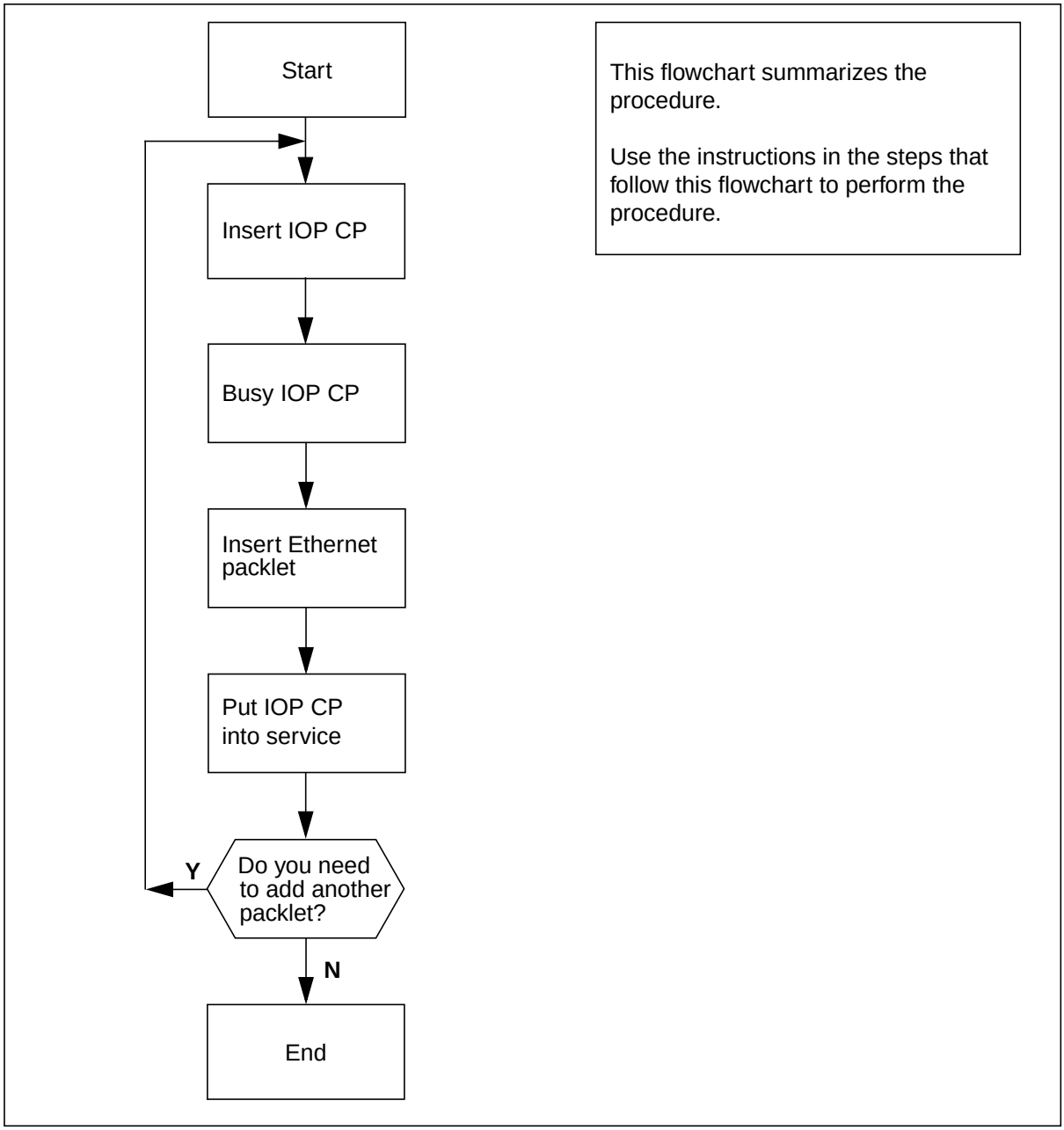
Action: increasing the number of Ethernet packlets in the shelf

You can use this procedure to increase the number of Ethernet packlets in the XA-Core shelf from zero to two, from zero to four, or from two to four.

The following flowchart is only a summary of this procedure. To add Ethernet packlets to increase the number of Ethernet packlets in the shelf, use the instructions in the step-action procedure that follows the flowchart.

NTLX09 Ethernet packlet (continued)

Summary of procedure for increasing the number of Ethernet packlets in the shelf



NTLX09 Ethernet packlet (continued)

How to increase the number of Ethernet packlets in the shelf

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At the MAP terminal

1 Access the XA-Core IOP MAP level. Type

>MAPCI;MTC;XAC;IOP

and press the Enter key.

2 Perform the following substeps for each Ethernet packlet that is to be added.

a At the XA-Core shelf, insert an empty single-width IOP circuit pack into the appropriate slot. The following table and note identify the slots.

Ethernet packlets	use slots
for the first pair	5 rear and 14 rear
for the second pair	6 rear and 13 rear

Note: If the XA-Core is in a SuperNode SE and is in the main cabinet (not an extension cabinet), then you cannot use slots 6 rear and 13 rear for Ethernet packlets.

b In the IOP MAP level, busy the newly inserted IOP circuit pack. At the CI prompt, type

>BSY <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

c At the XA-Core shelf, insert an Ethernet packlet into the lower packlet posstion in the newly inserted IOP CP.

d In the IOP MAP level, put the newly inserted IOP CP into service. At the CI prompt, type

>RTS <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

If	Do
you need to add another packlet	repeat step 2
you do not need to add another packlet	go to step 3

3 You have completed this procedure.

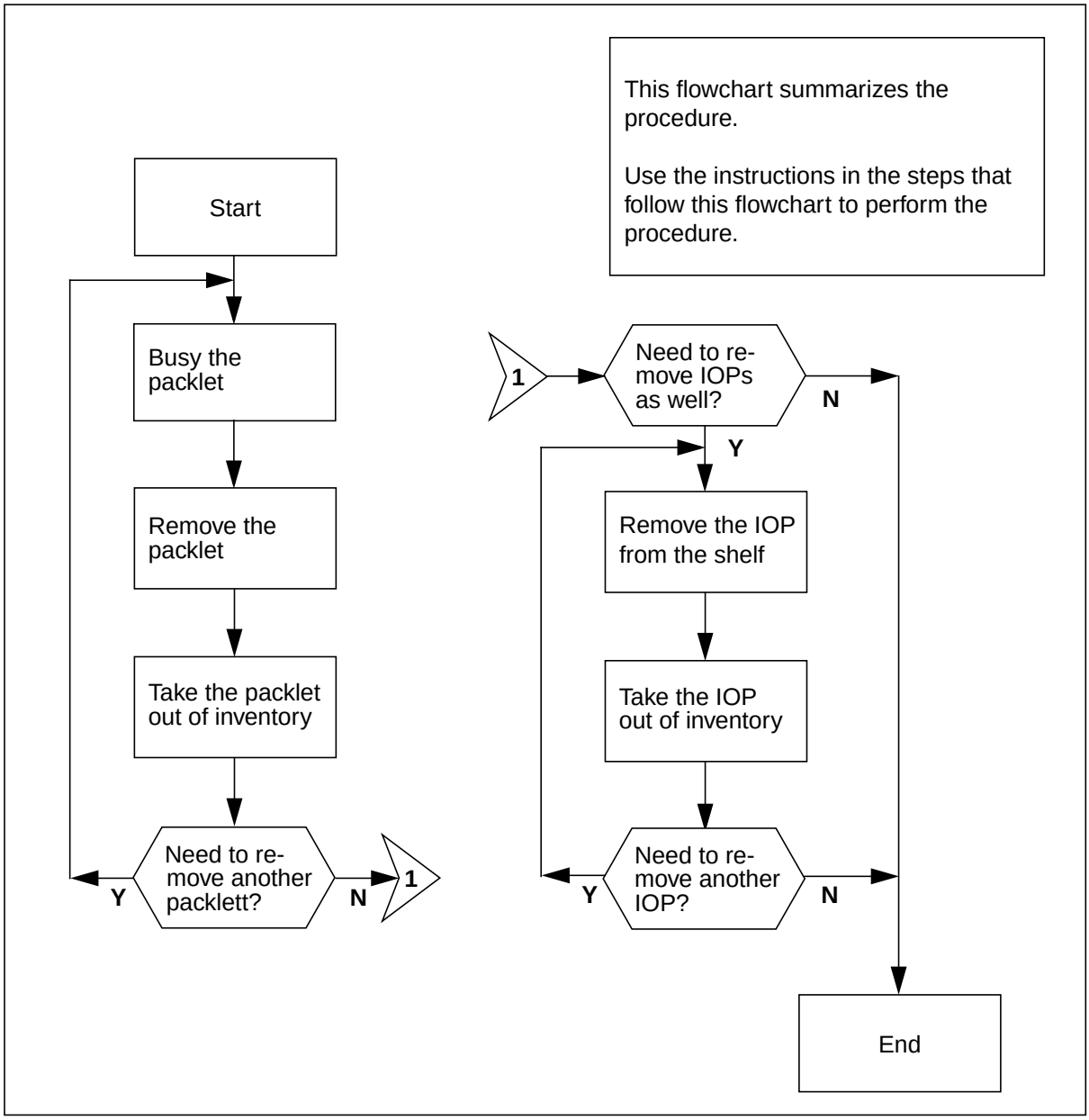
NTLX09 Ethernet packlet (continued)

Action: decreasing the number of Ethernet packlets in the shelf

You can use this procedure to decrease the number of Ethernet packlets in the XA-Core shelf from four to two, from four to zero, or from two to zero.

The following flowchart is only a summary of this procedure. To remove Ethernet packlets to decrease the number of Ethernet packlets in the shelf, use the instructions in the step-action procedure that follows the flowchart.

Summary of procedure for decreasing the number of Ethernet packlets in the shelf



NTLX09 Ethernet packlet (continued)

How to decrease the number of Ethernet packlets in the shelf

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP or packlet of the same equipment type at a time. Make sure that redundant components are InSv before taking any CPs, packlets or resources OOS.

At the MAP terminal

1 Access the XA-Core ETHR MAP level. Type

>MAPCI;MTC;XAC;ETHR

and press the Enter key.

2 Perform the following substeps for each Ethernet packlet that is to be removed.

a In the ETHR MAP level, busy the packlet that you are going to remove. At the CI prompt, type

>BSY <nn> <s> <packlet>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<packlet> . . .

b Remove the Ethernet packlet from the IOP circuit pack.

NTLX09 Ethernet packlet (end)

c In the ETHR MAP level, take the packlet out of the inventory. At the CI prompt, type

>UNEQ_ <nn> <s> <p>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the parameter value to indicate the packlet position in the IOP CP: upper (u) or lower (l)

If	Do
you need to add another packlet	repeat step 2
you have removed all the packlets, and you want to remove the IOP CPs as well	go to step 4
you have removed all the packlets and you do not want to remove the IOP CPs	go to step 5

3 Access the XA-Core IOP MAP level. Type

>MAPCI;MTC;XAC;IOP

and press the Enter key.

4 Perform the following substeps for each IOP circuit pack that is to be removed.

a Remove the IOP circuit pack.

b In the IOP MAP level, take the IOP CP out of the inventory. At the CI prompt, type

>UNEQ_ <nn> <s>

and press the Enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

If	Do
you need to remove another IOP CP	repeat step 4
you do not need to remove another packlet	go to step 5

5 You have completed this procedure.

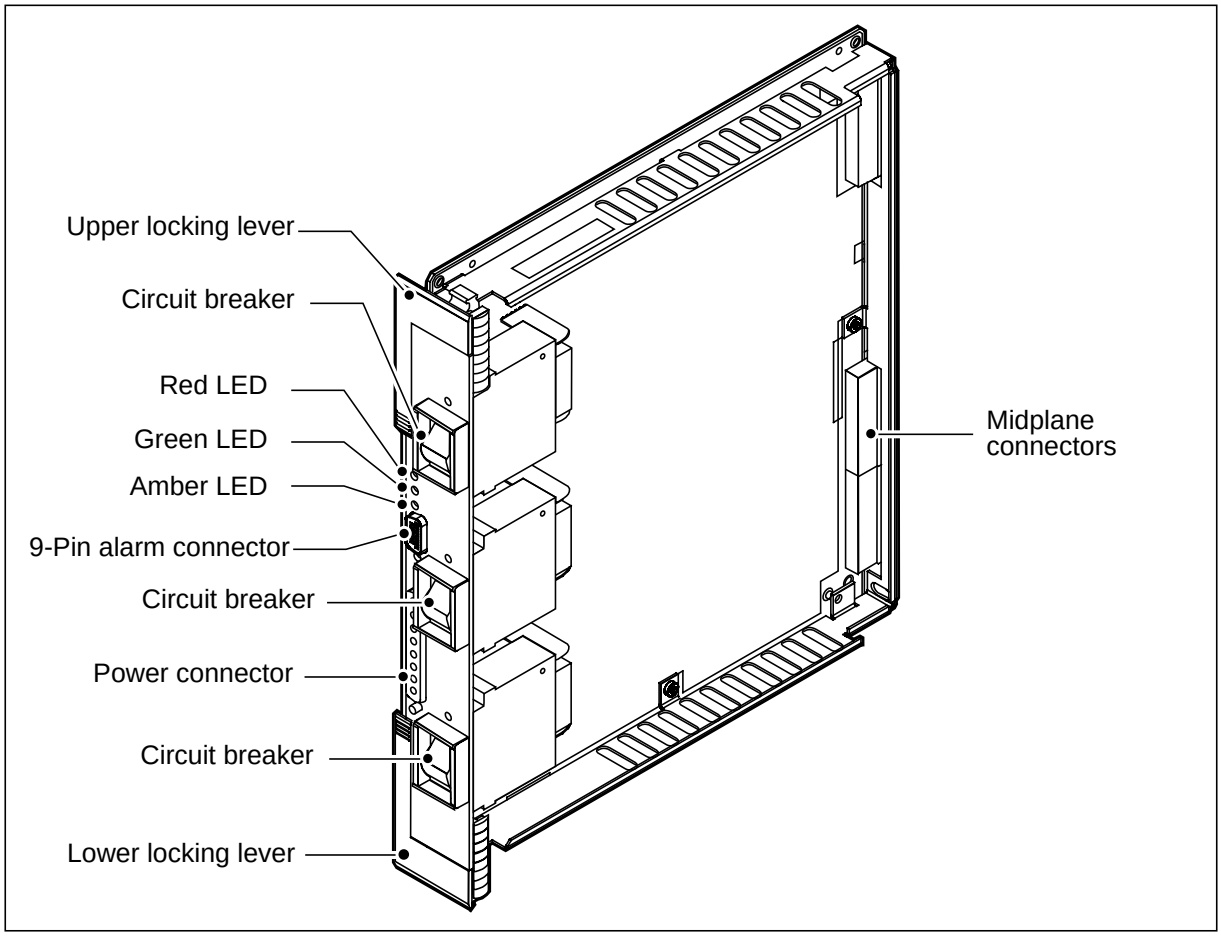
NTLX12 SIM circuit pack in a SuperNode and SuperNode SE XA-Core

Application

Use this procedure to replace the NTLX12 Shelf interface module (SIM) circuit pack (CP). The following table lists the correct SIM CP versions.

PEC	Suffix	Circuit pack name
NTLX12	AA	SIM circuit pack

NTLX12 shelf interface module circuit pack front and side views - DRAFT



Common procedures

The NTLX12 replacement procedure refers to the How to return a card or assembly common procedure.

NTLX12 SIM circuit pack (continued)

Do not go to a common procedure unless directed to do so in the step-action procedure.

Light emitting diodes (LEDs) strategy

Description

The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to the section titled "Light emitting diode (LED) interpretation" for an explanation of the LED system.

SIM LED explanation

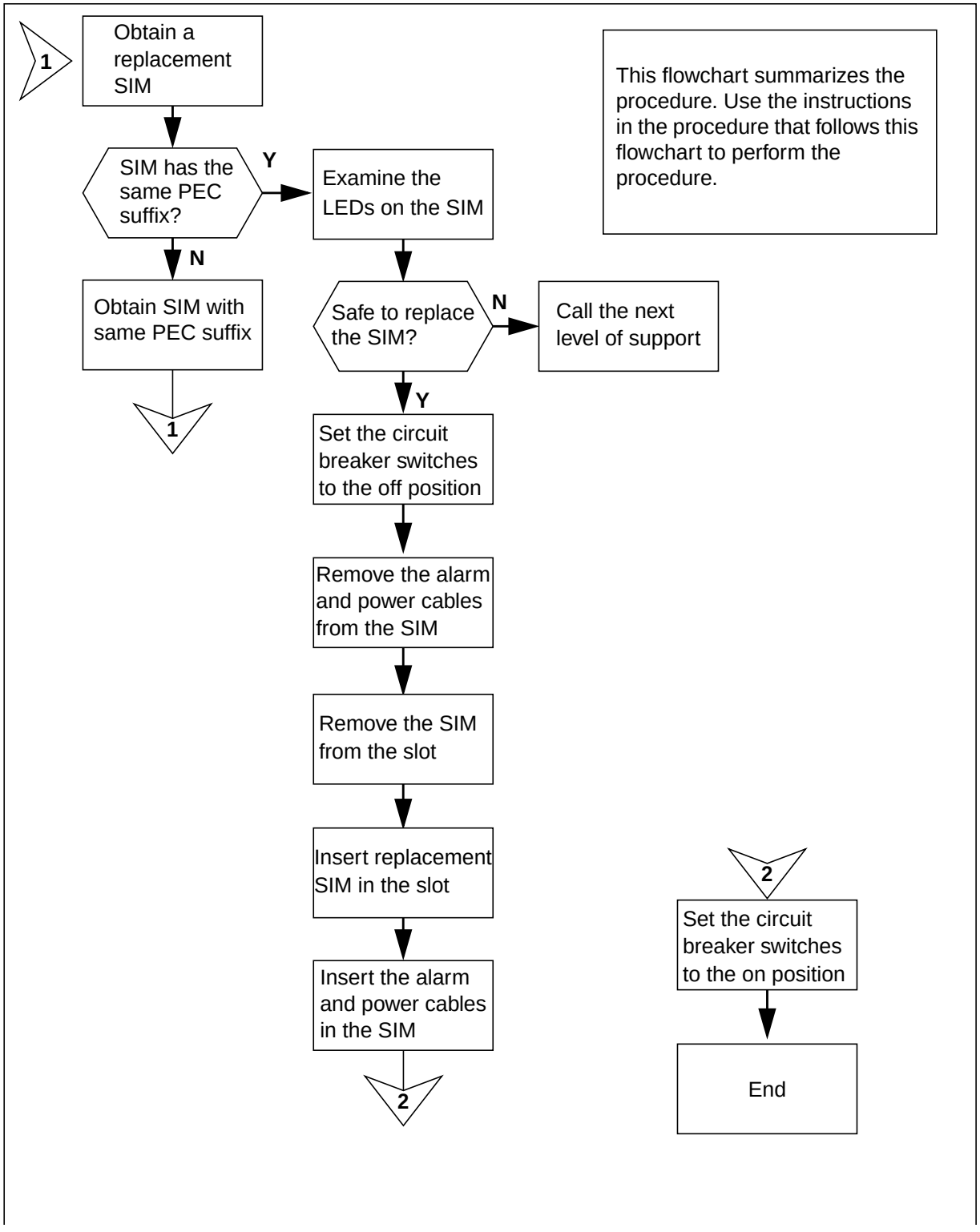
Green	Amber	Red	SIM state
On	Off	Off	The SIM is in a normal working state. Do not remove.
Off	Off	Off	The SIM does not have power or there is an LED control circuit failure. You can remove the SIM from the shelf if you are sure there is no power.
On	On	Off	Alarm State. There is a SIM failure, the input feed is without electrical power or one or more circuit breakers are off. Do not remove the SIM from the shelf.
Off	On	On	Alarm state. There is a SIM failure or all input feeds are without electrical power. You can remove the SIM from the shelf.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NTLX12 SIM circuit pack (continued)

Summary of NTLX12 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX12 SIM circuit pack (continued)

How to replace an NTLX12 SIM circuit pack

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP of the same equipment type at a time. Make sure that the unit you are replacing is inactive and the mate unit is active.

At your current location

1 Get a replacement SIM CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

At the XA-Core physical shelf

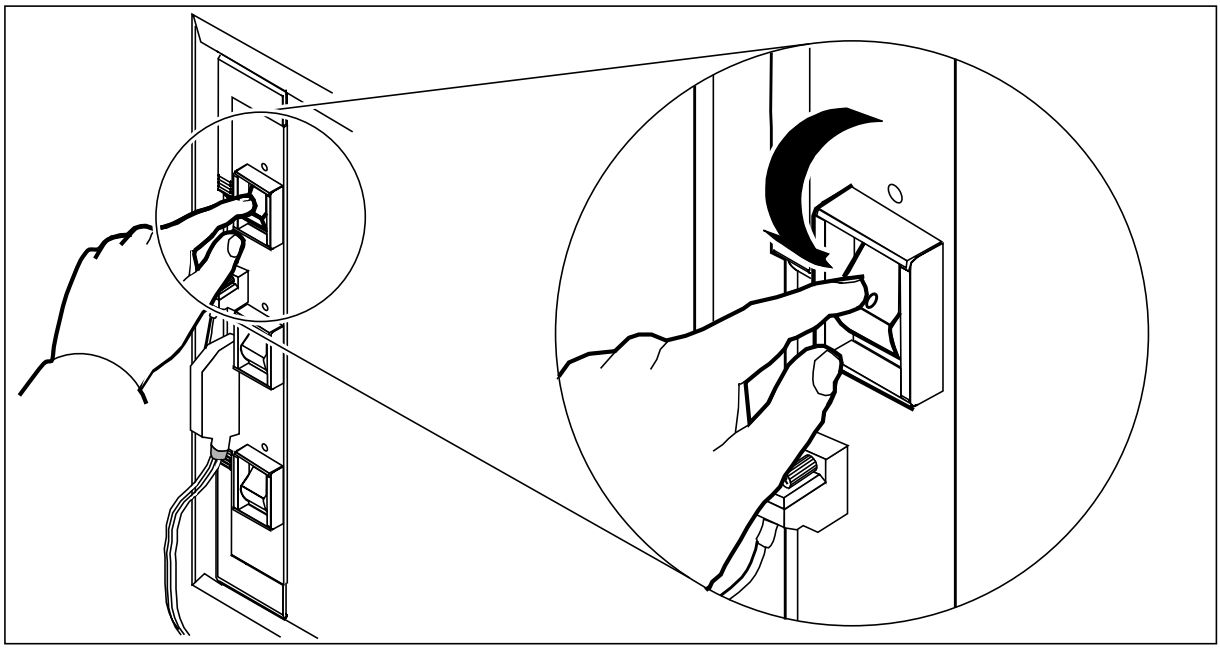
2 Locate the SIM CP on either end of the rear of the XA-Core physical shelf. Look for a lit red triangular and a yellow round LED on the SIM CP.

3

WARNING
Risk of equipment damage
Switch circuit breakers to 0 before removing the module or power/alarm connector. Allow 15 sec. discharge time after front power cable disconnection before removing module.

Set all circuit breakers to the off (0) position. Press down on each circuit breaker switch until it clicks and remains in place. Wait 15 sec. and then continue with step 4.

Set the circuit breakers on the SIM to the off (0) position



4 Remove the alarm cable from the SIM CP faceplate.

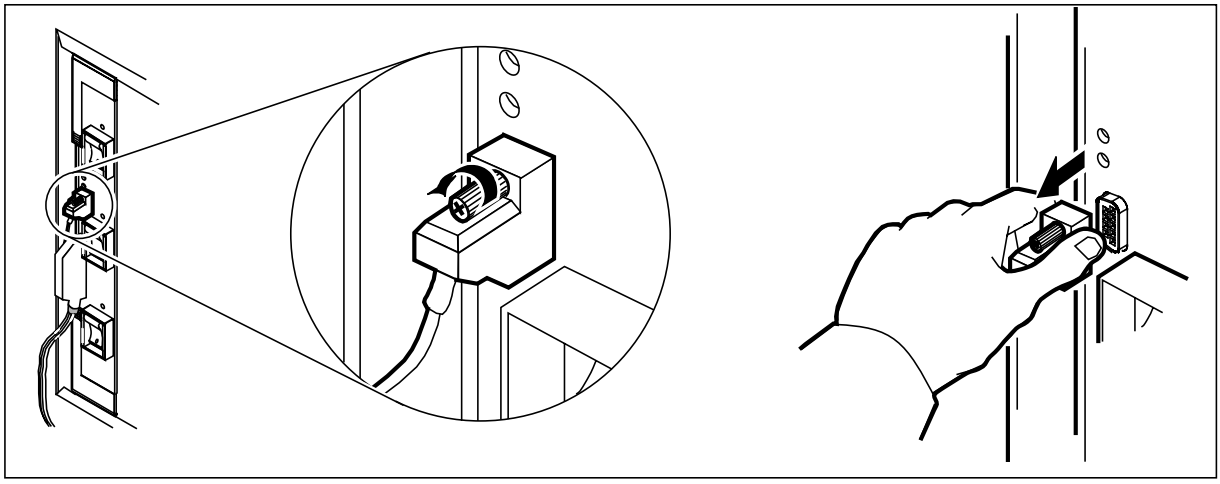
a Turn the alarm connector fastener in a counter-clockwise direction.

b Carefully pull the alarm cable connector from the faceplate receptacle.

c Place the cable in a safe location away from the XA-Core shelf.

NTLX12 SIM circuit pack (continued)

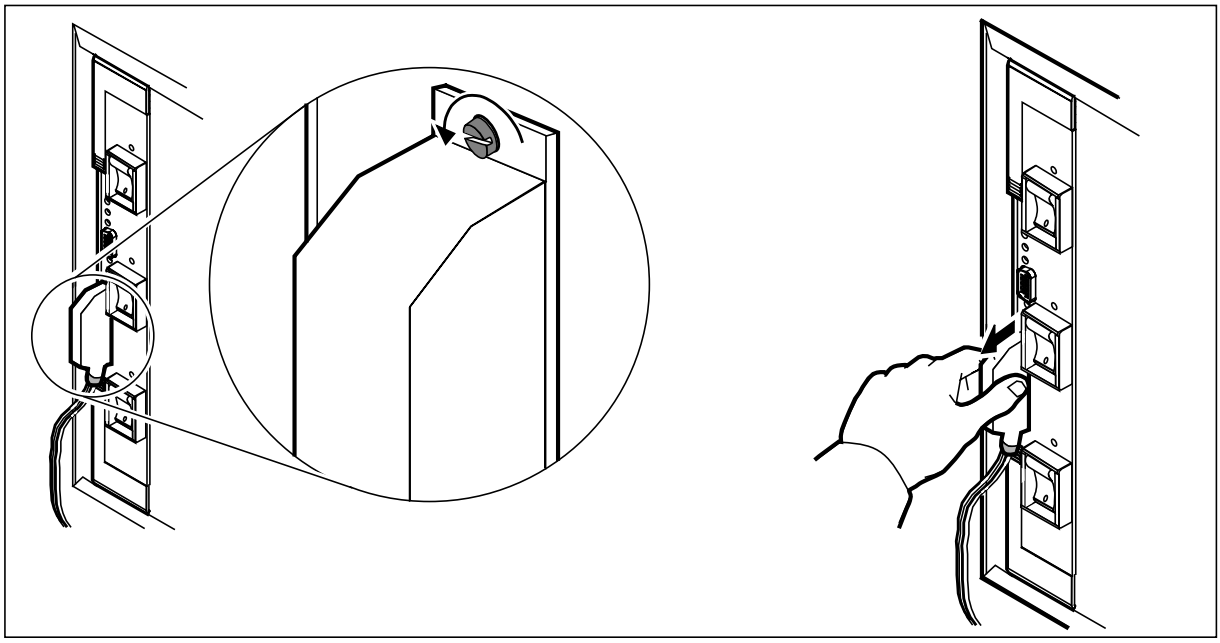
Remove the SIM alarm connector



5 Remove the power cable from the SIM CP faceplate.

- **a** Turn the alarm connector fasteners in a counter-clockwise direction.
- **b** Carefully pull the power cable connector from the faceplate receptacle.
- **c** Place the cable in a safe location away from the XA-Core shelf.

Remove the SIM power connector



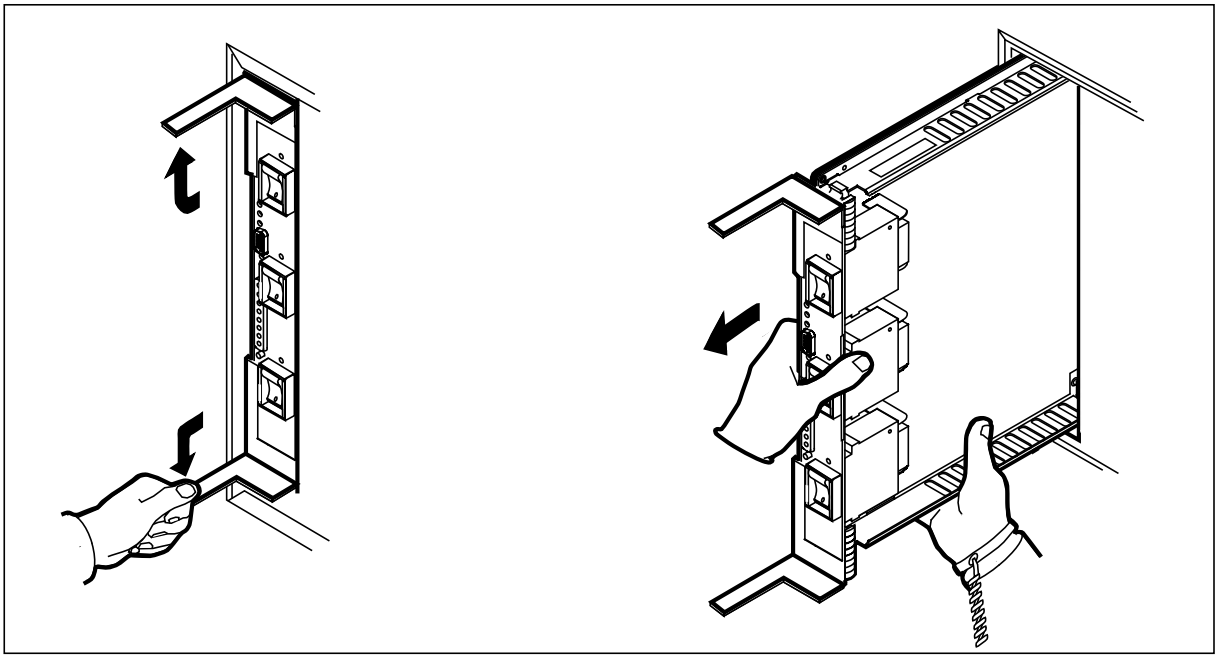
6 Remove the SIM CP from the physical shelf.

- **a** Open the locking levers on the CP.
- **b** Hold the CP by the locking levers. Pull the CP half way from the shelf opening toward you.

c Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

d Place the CP in ESD protective packaging.

Remove the NTLX12 SIM CP from the XA-Core shelf



7 Insert the replacement SIM CP into the physical shelf slot.

a Open the locking levers on the replacement SM CP.

b Hold the CP by the faceplate with one hand and support the bottom edge with the other.

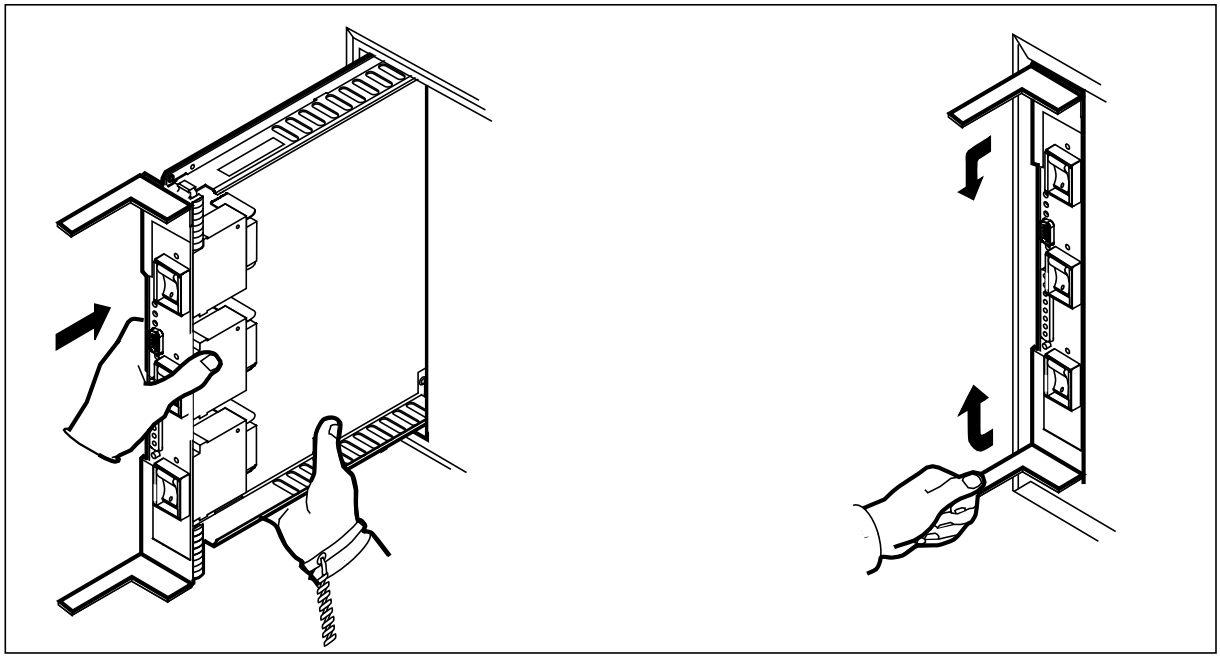
c Align the CP with the physical shelf slot. Slide the CP into the physical slot. Do not force the CP into the physical slot.

d Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the faceplate until the CP is fit into position.

e Close the locking levers to lock the CP in the physical shelf. Do not force the locking levers to close.

NTLX12 SIM circuit pack (continued)

Insert the NTLX12 SIM CP in the XA-Core shelf

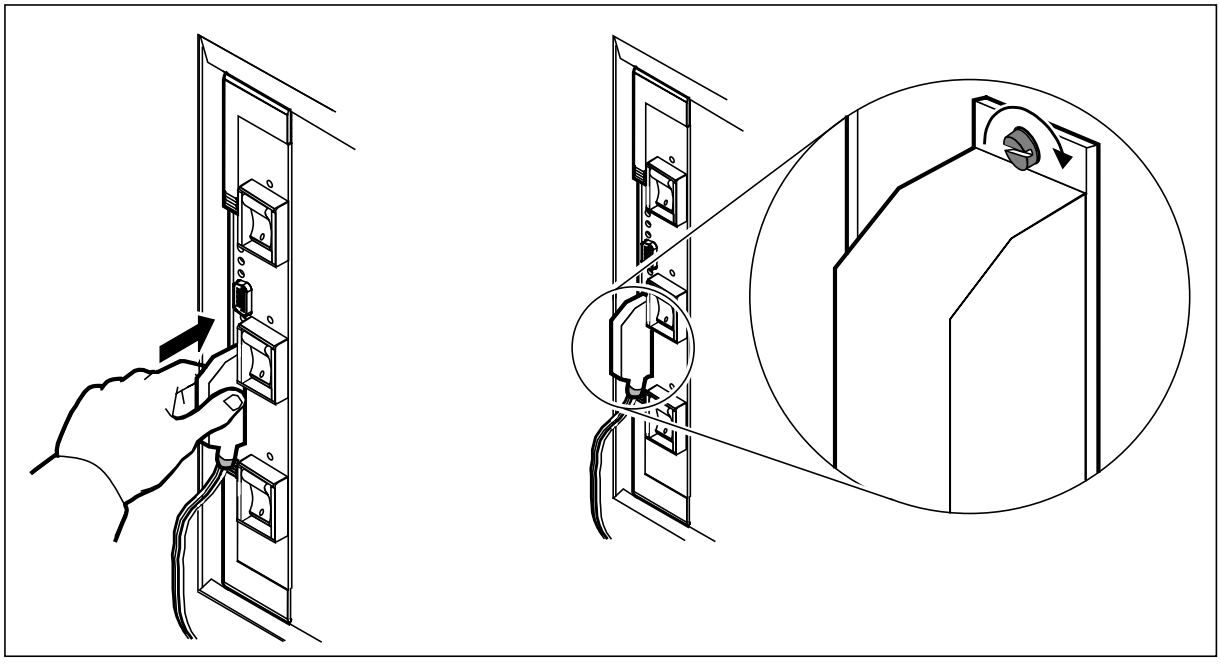


8 Connect the power cable to the SIM power receptacle.

a Carefully push the power cable connector into the faceplate receptacle.

b Turn the alarm connector fasteners in a clockwise direction.

Insert the SIM power connector

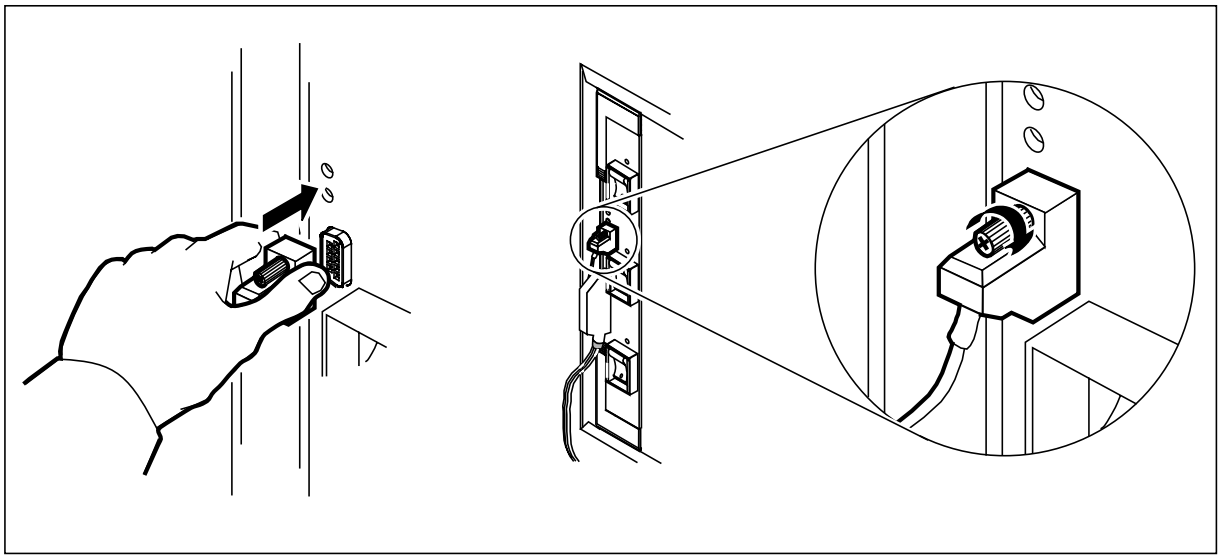


9 Connect the alarm cable to the SIM alarm receptacle.

a Carefully insert the alarm cable connector into the SIM alarm receptacle.

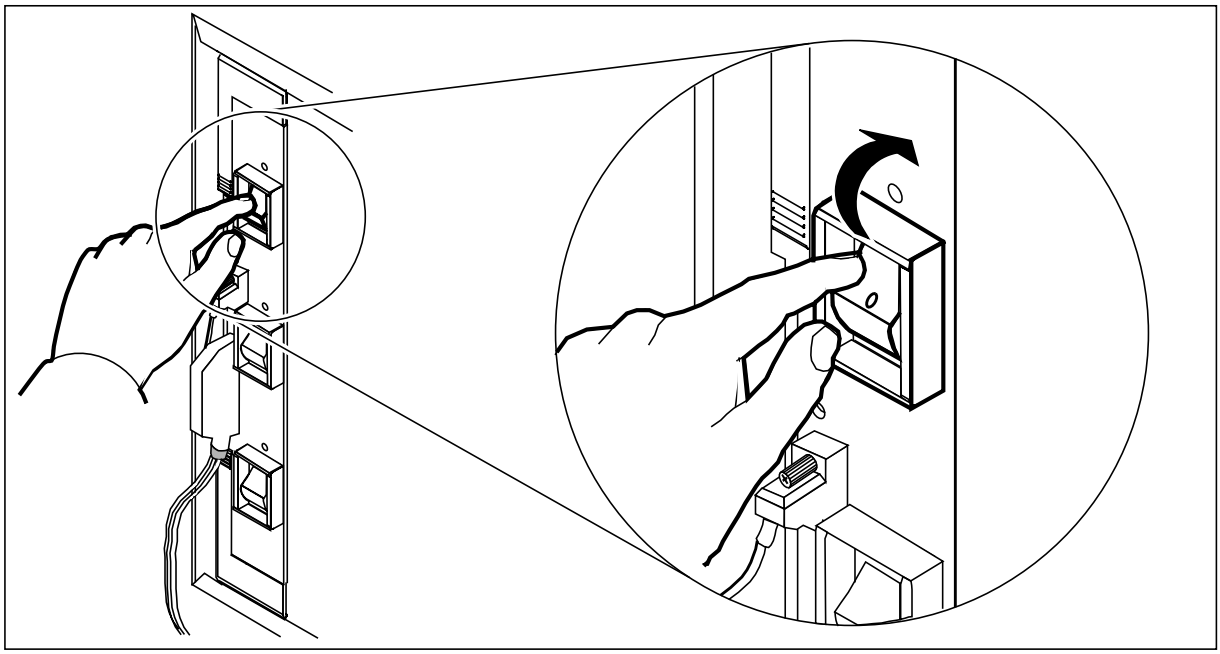
b Turn the alarm connector fastener in a clockwise direction.

Insert the SIM alarm connector



10 Set all circuit breakers to the ON (1) position. Push up on each circuit breaker switch until it clicks and remains in place. Wait 15 sec. before continuing.

Set all circuit breakers on the SIM to the ON (1) position



NTLX12 SIM circuit pack (continued)

If circuit breakers	Do
remain set to the ON position	step 11
reset to the OFF position	step 15

11 Examine the SIM CP faceplate. Look at the LEDs.

If the	Do
green LED is ON and red and yellow LEDs are OFF	step 12
green, yellow and red LEDs are OFF	step 15
green and yellow LEDs are ON and the red LED is OFF	step 15
green LED is OFF and the yellow and red LEDs are ON	step 15

At the MAP terminal

12 Examine the XAC Map level. Look for any in-service trouble (IsTb) alarms in the alarm banner or subsystem status summary fields (SSSF). At the CI MAP level, type

>MAPCI;MTC;XAC

and press the Enter key.

The following is a sample MAP display.

XAC MAP level

```
 XAC      MS      IOD     Net     PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .       .       .       .       .        .       .

XAC              Front:   111111111   Rear: 111111     SM     PE     IO   PKLT
 0 Quit          1234567890123456 78   456789012345
 2 Card_   Sta:  -.-.--..-..----..-   .--.-------.      0      0      0     0
 3 XACMtc  Dep:
 4 SM         XAC:
 5 PE
 6 IO
 7 CMIC
 8 RTIF
 9 Disk
10 Tape
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
 Time 14:12   >
```

If the XA-Core XAC MAP level displays	Do
in-service trouble alarms	step 13
a different alarm type	step 14
no alarms	step 16

13 Access the XA-Core log utility system and check for power failure log reports.

a At the MAP CI prompt type

>LOGUTIL

and press the Enter key.

b Open the XA-Core log system by typing

>OPEN XAC

and press the Enter key.

c Query the XA-Core log reports. To display all of the most recent log reports, type

>DUMPLOGS XAC

and press the Enter key.

Or, to display a known log report, type

NTLX12 SIM circuit pack (end)

>OPEN XAC LOG#

If the XA-Core log report shows	Do
a different alarm type	step 14
a power failure	step 15
all alarms are clear	step 16

14 Perform the correct alarm clearing procedure and return to this point.

If the XA-Core alarm is	Do
not clear	step 15
clear	step 16

15 Call the next level of support.

16 Refer to How to return a card or assembly. Return to this point when complete.

17 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

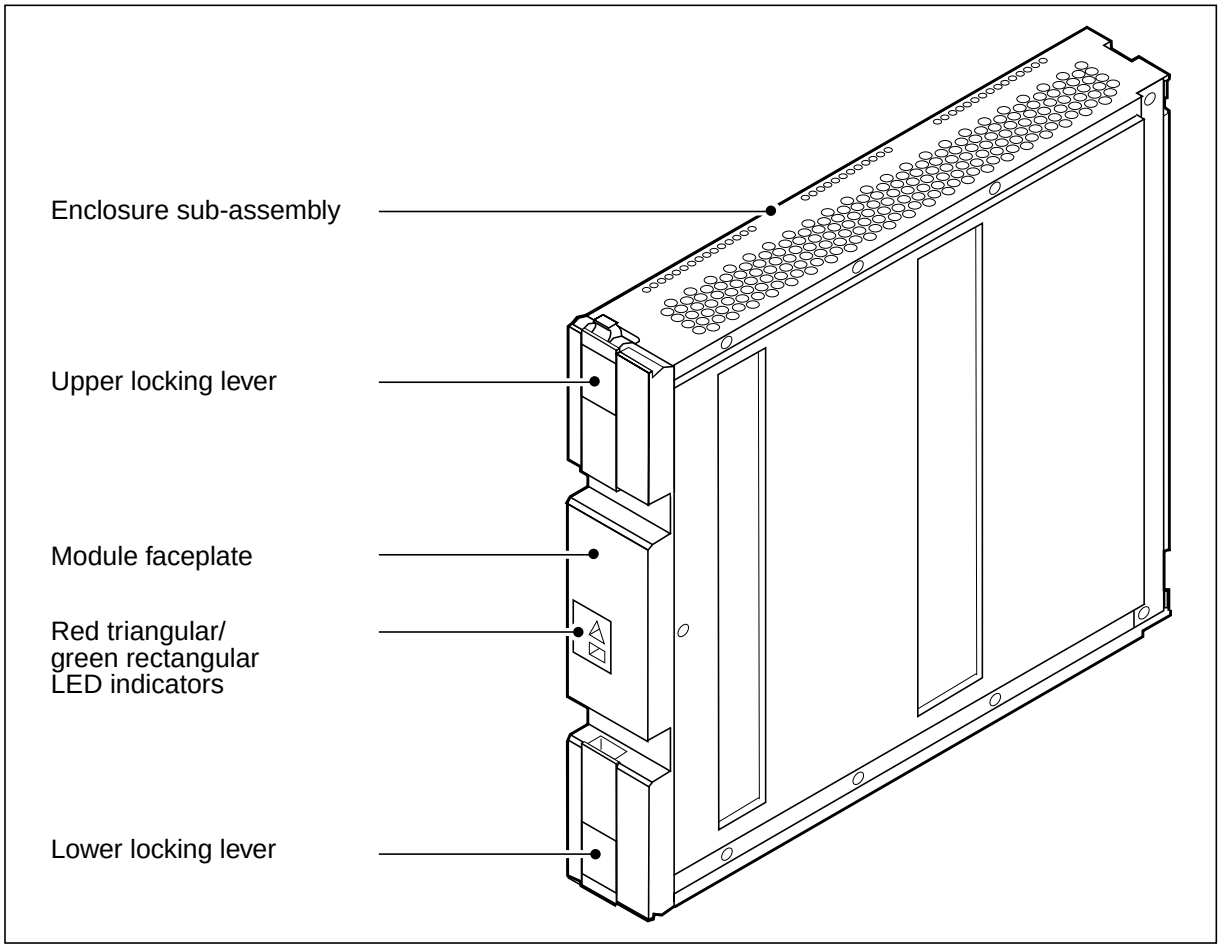
NTLX14 shared memory circuit pack in a SuperNode and SuperNode SE XA-Core

Application

Use this procedure to replace the NTLX14 Shared memory (SM) circuit pack (CP). The following table lists the correct SM CP versions.

PEC	Suffix	Circuit pack name
NTLX14	CA	384 MByte SM circuit pack

NTLX14 shared memory circuit pack front and side views



Common procedures

The NTLX14 replacement procedure refers to the How to return a card or assembly common procedure.

NTLX14 shared memory circuit pack (continued)

Do not go to a common procedure unless directed to do so in the step-action procedure.

Light emitting diode (LED) strategy

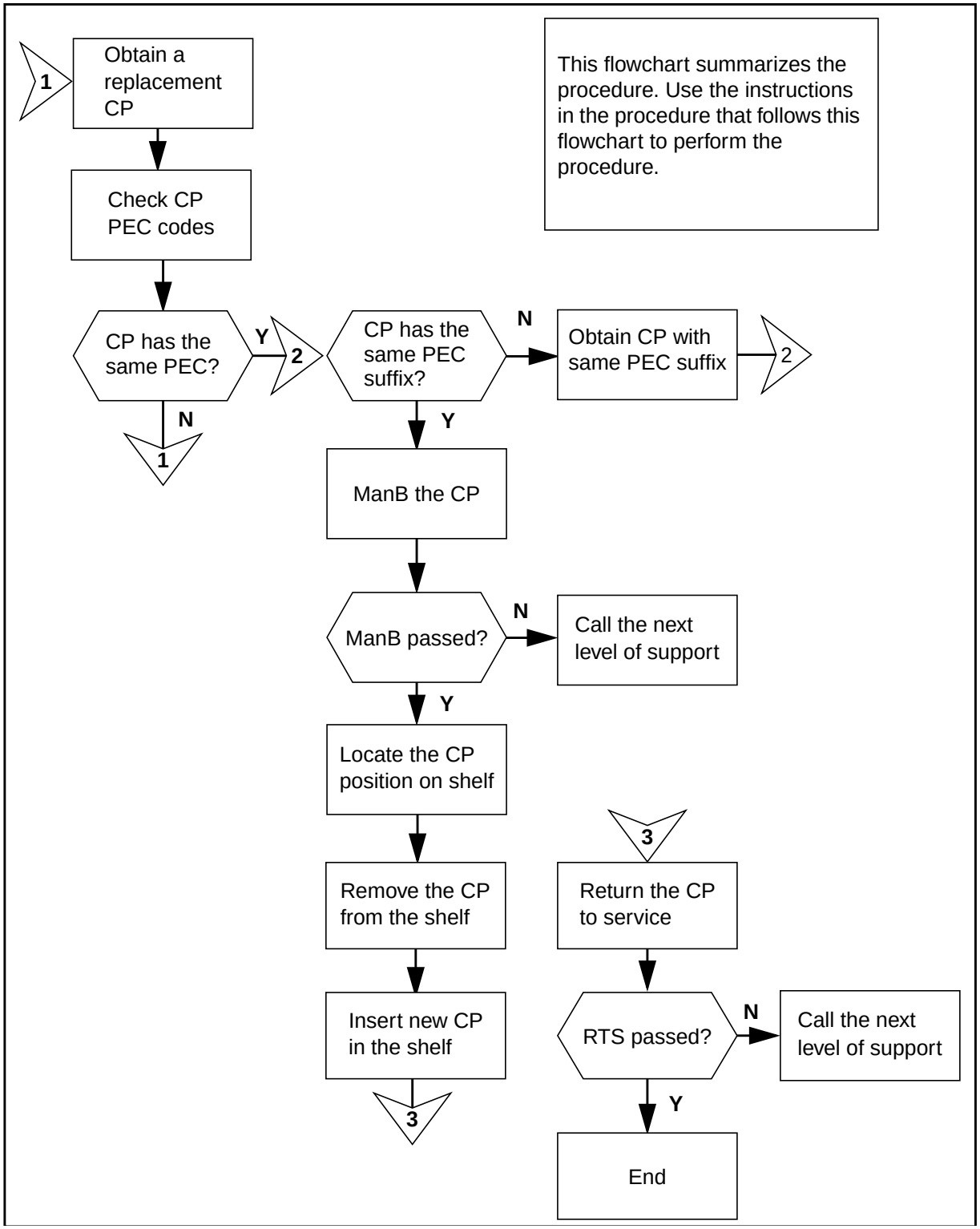
The faceplate of all CPs and packlets have built-in LED visual indicators. The visual indicators allow you to determine the working status of the CPs and identify damaged or inactive CPs. The relationship between lit and not lit LEDs indicate the CP's working status. Refer to Introduction to card replacement procedures for an explanation of the LED system.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

NTLX14 shared memory circuit pack (continued)

Summary of NTLX14 replacement procedure in a SuperNode and SuperNode SE XA-Core



NTLX14 shared memory circuit pack (continued)

How to replace an NTLX14 circuit pack

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

CAUTION
Loss of service
Do not repeat steps.

CAUTION
Loss of service
Manually busy one CP of the same equipment type at a time. Make sure that the unit you are replacing is inactive and the mate unit is active.

At your current location

1 Get a replacement CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

At the MAP terminal

2 Access the XA-Core SM MAP level. At the MAP terminal type

>MAPCI;MTC;XAC;SM

and press the Enter key.

The following is a sample MAP display.

NTLX14 shared memory circuit pack (continued)

SM MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
LowSM      .       .        .       .        .        .       .       .       .

SM
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 2               123456789012345678  456789012345   SM M   .       .       .
 3          Sta: -.----..-.---.-..-  .--M-------.   1      0       0       0
 4          Dep:
 5          Typ:       ** **            *
 6 Tst_       Physical: 1920          Useable: 1920        Available: 960
 7 Bsy_       SYNC State: duplex
 8 RTS_      SM:
 9
10
11
12 Uneq_
13
14 Alarm_
15
16 Trnsl_
17 Indicat_
18 Query_
  XMAP0
Time  14:12   >
```

3 Examine the SM MAP display. Record the working state of the system and the SM CPs. Determine the location of the SM CP that you need to replace. Record the SM CP location on the physical shelf, side and slot.

4 ManB the SM CP. The CP must be in a ManB state before indication, removal, insertion or out-of-service testing. At the SM MAP type

>BSY <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>BSY 7 r

Example of system response:

```
Bsy 7 rear complete.
```

If the SM CP is	Do
in a ManB state	step 5
not in a ManB state	step 10

NTLX14 shared memory circuit pack (continued)

5 Indicate the ManB SM CP. At the SM MAP terminal type

>INDICAT card <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command use:

>INDICAT card 7 r

Example of system response:

```
Indicate 7 rear passed.
```

At the XA-Core physical shelf

6 Locate the SM CP on the XA-Core physical shelf. Use the CP location information recorded from the SM MAP in 3. Look for a winking, red triangular LED (from 5).

7

WARNING
Static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs.

Remove the SM CP from the physical shelf.

a Open the locking levers on the CP.

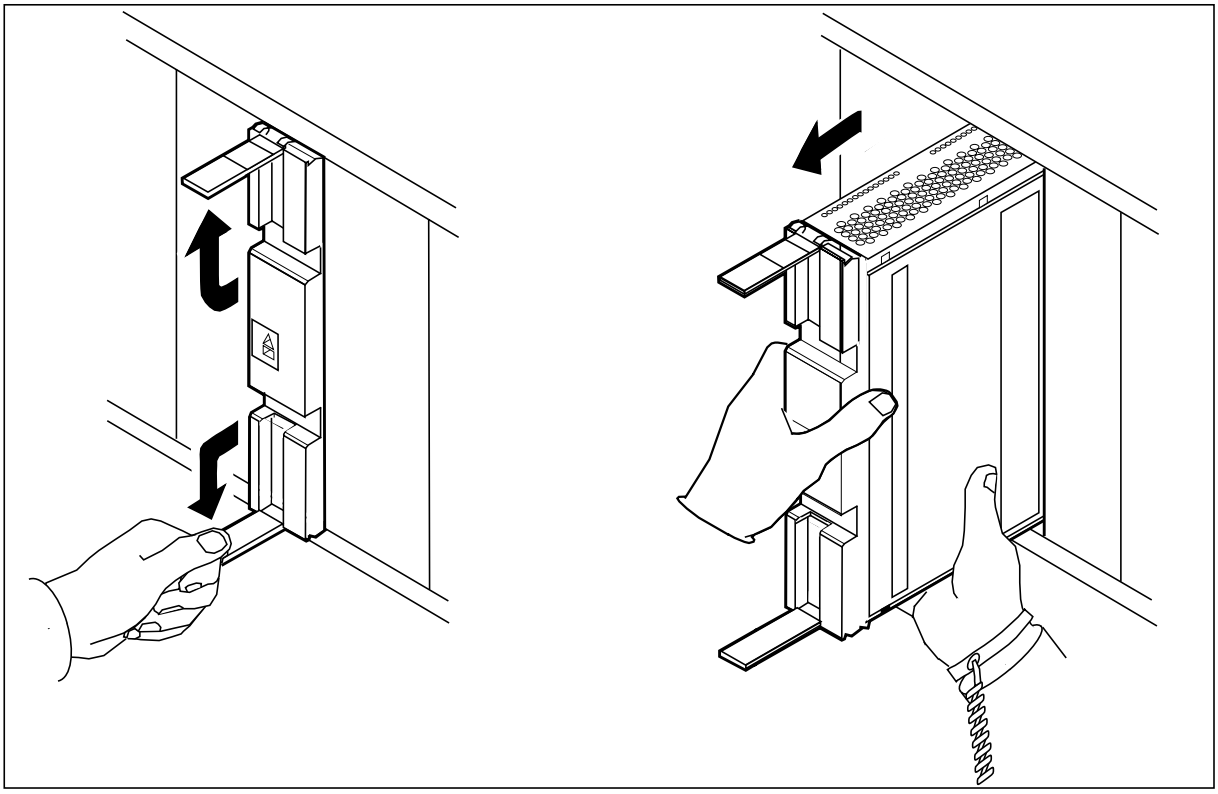
b Hold the CP by the locking levers. Pull the CP half way from the shelf opening toward you.

c Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

d Place the CP in ESD protective packaging.

NTLX14 shared memory circuit pack (continued)

Remove the NTLX14 SM CP from the XA-Core shelf



8 Insert the replacement SM CP into the physical shelf slot.

a Open the locking levers on the replacement SM CP.

b Hold the CP by the faceplate with one hand and support the bottom edge with the other.

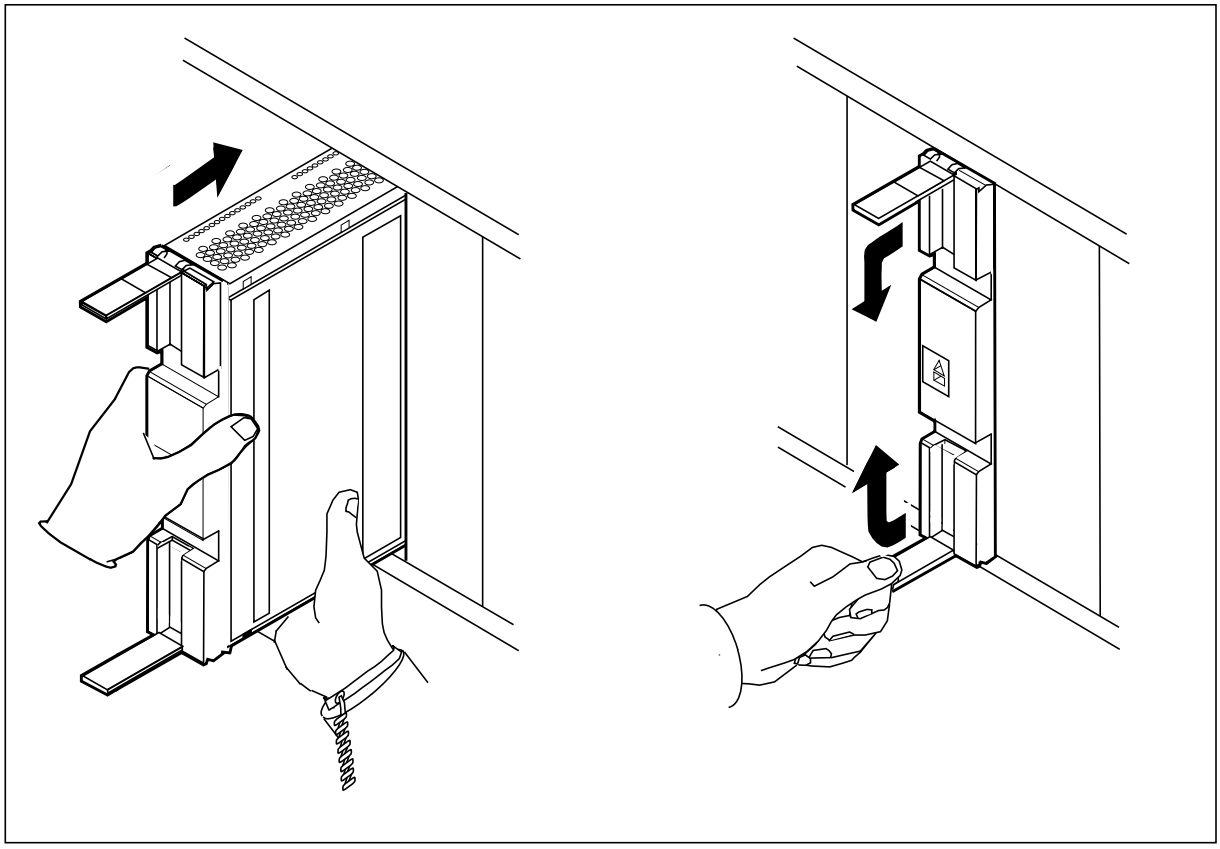
c Align the CP with the physical shelf slot. Slide the CP into the physical slot. Do not force the CP into the physical slot.

d Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the faceplate until the CP is fit into position.

e Close the locking levers to lock the CP in the physical shelf. Do not force the locking levers to close.

NTLX14 shared memory circuit pack (continued)

Insert the NTLX14 SM CP in the XA-Core shelf



At the MAP terminal

9 Return the SM CP to service. At the SM MAP level type

>RTS <nn> <s>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

Example of command:

>RTS 7 r

NTLX14 shared memory circuit pack (end)

Example of system response:

```
RTS 7 rear passed.
```

If replacement SM CP is	Do
not returned to service	step 10
returned to service	step 11

10 Call the next level of support.

11 Refer to How to return a card or assembly. Return to this point when complete.

12 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

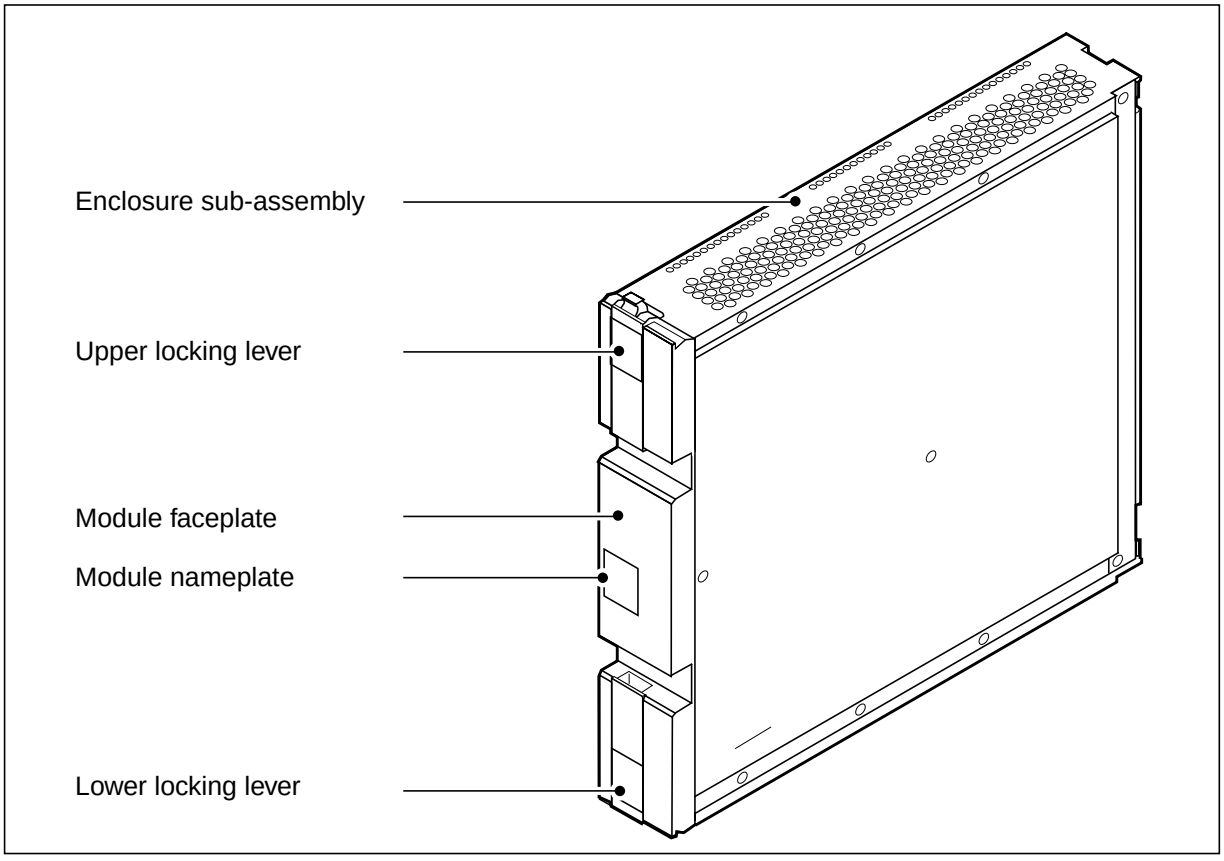
NTLX20 Filler circuit pack in a Super Node and Super Node SE XA-Core

Application

Use this procedure to replace or insert a new NTLX20 filler circuit pack (CP). Install the NTLX20 filler CP in slot 1 F (slot 1 front). The following table lists the correct XA-Core filler CP versions.

PEC	Suffix	Circuit pack name
NTLX20	AA	Filler

NTLX20 filler CP front and side views



Common procedures

There are no common procedures.

NTLX20 Filler circuit pack (continued)

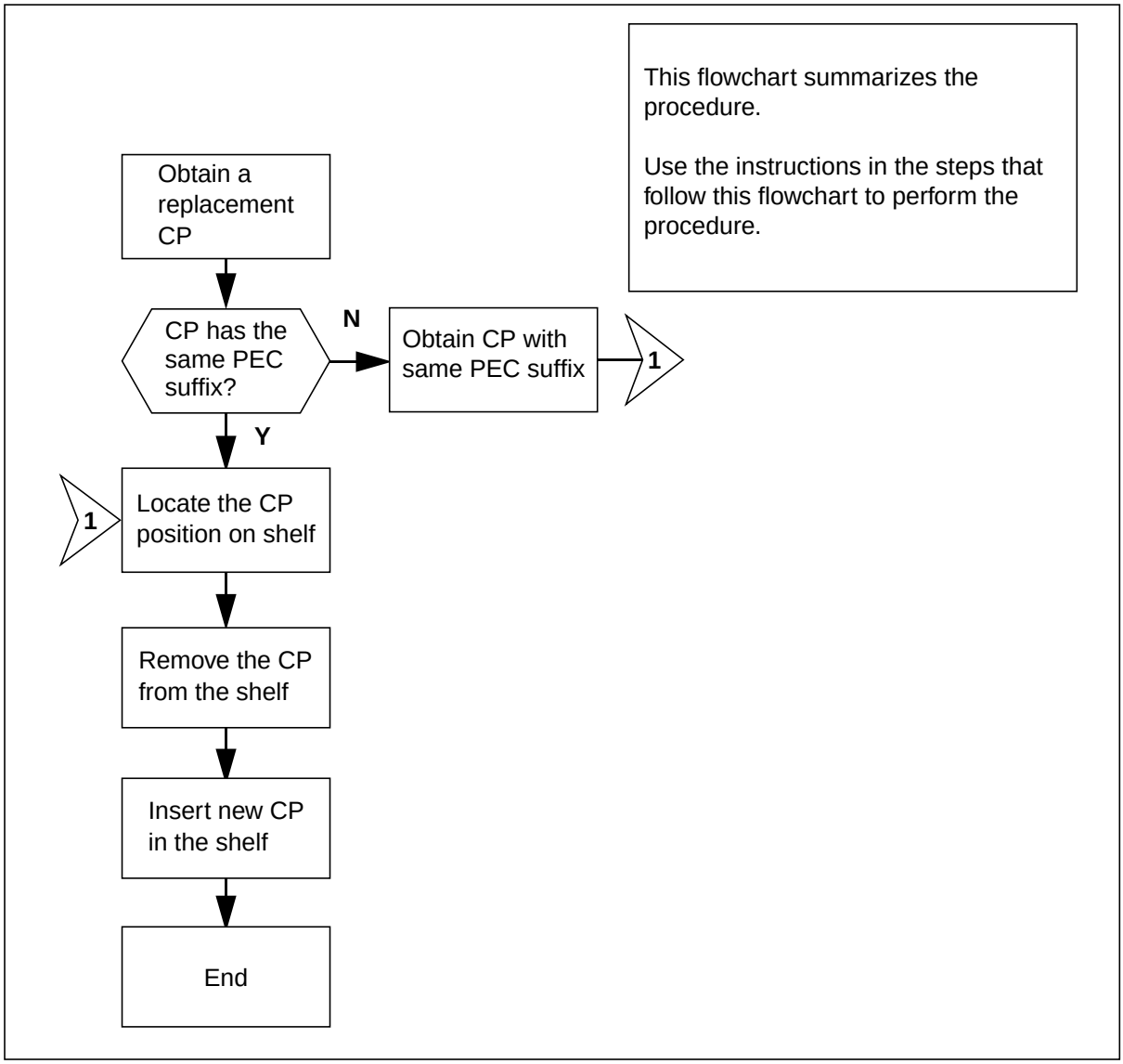
Light emitting diode (LED) visual indicators

There are no LEDs on the filler faceplate.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

Summary of NTLX20 filler CP replacement procedure



NTLX20 Filler circuit pack (continued)

How to replace an NTLX20 filler circuit pack

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Get a replacement CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

At the XA-Core physical shelf

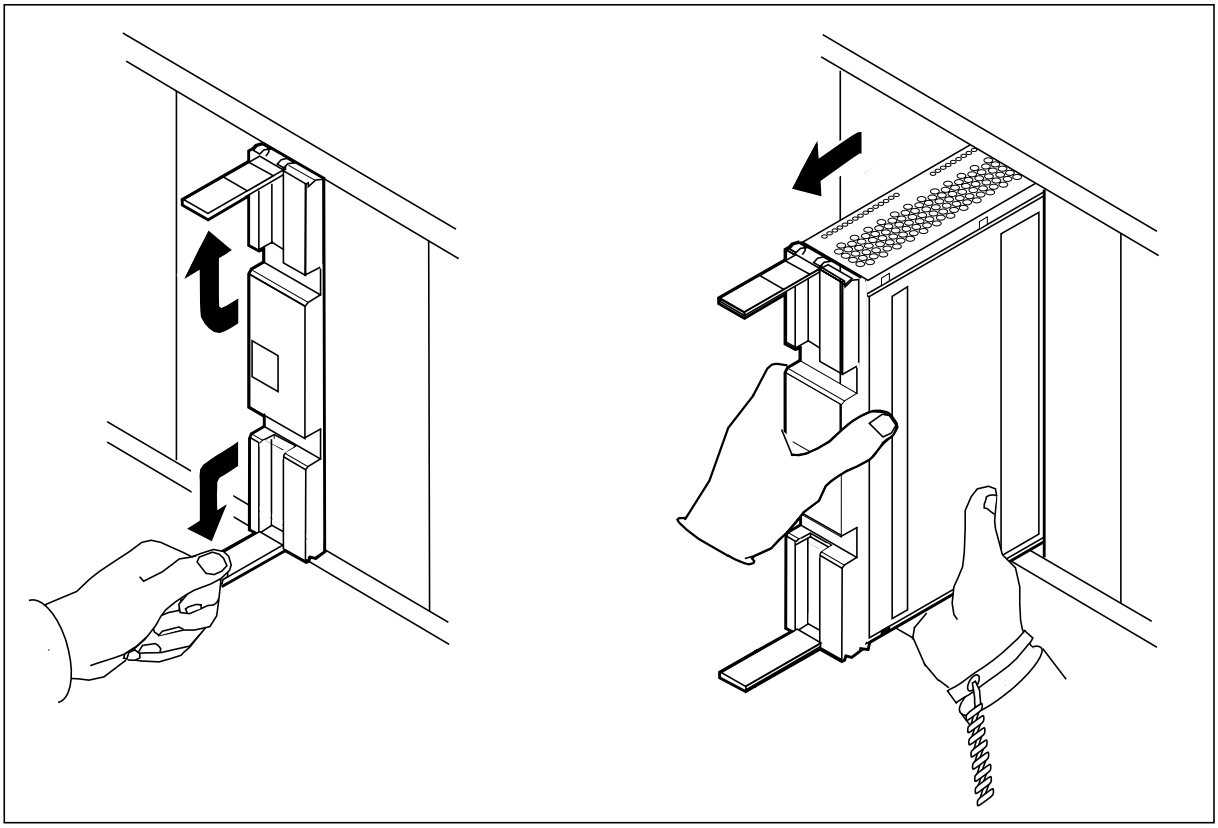
2 Locate the filler CP on the XA-Core physical shelf.

3 Remove the filler CP from the physical shelf. Use the diagrams shown in this step.

- **a** Open the locking levers on the CP.
- **b** Hold the CP by the locking levers. Pull the CP half way from the shelf opening toward you.
- **c** Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

NTLX20 Filler circuit pack (continued)

Remove the NTLX20 filler CP from the XA-Core shelf



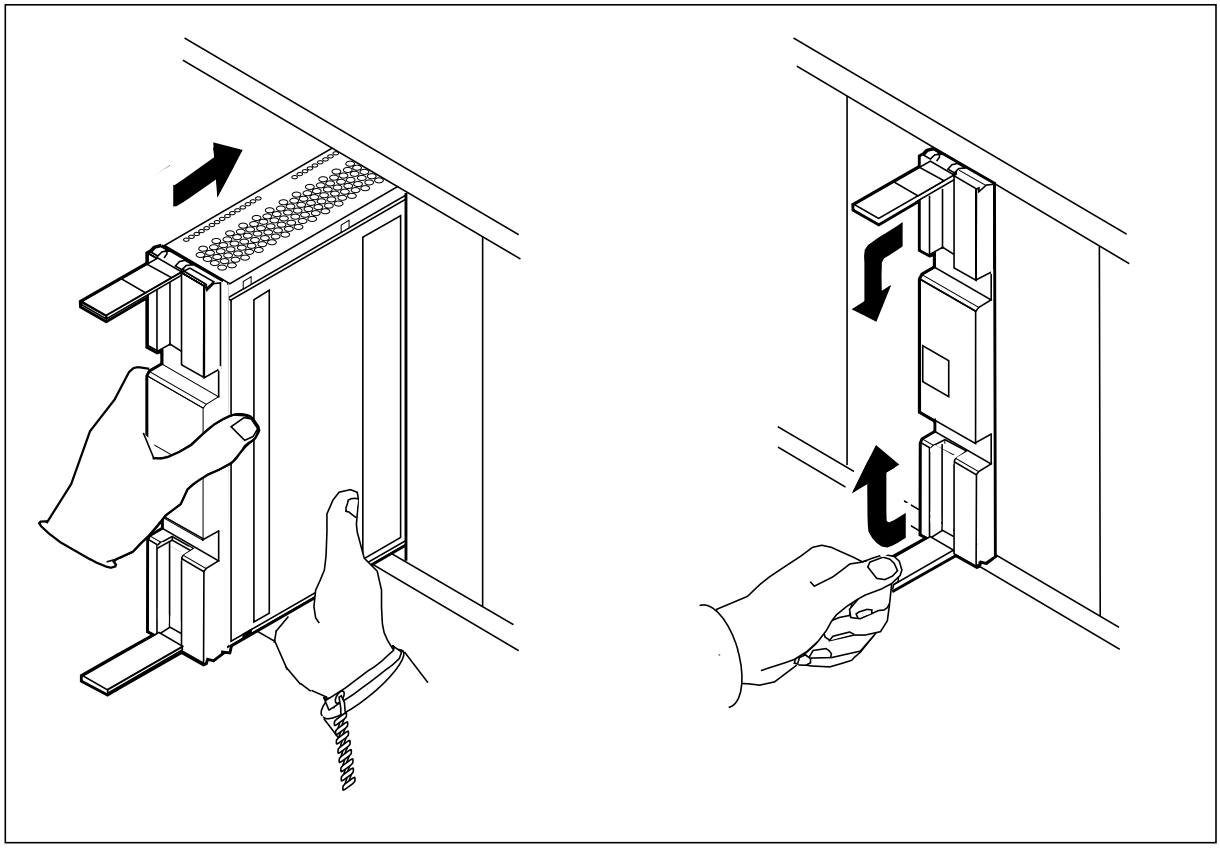
4 Place the CP in ESD protective packaging.

5 Insert the replacement filler CP into the physical shelf slot. Use the diagrams shown in this step.

- **a** Open the locking levers on the replacement filler CP.
- **b** Hold the CP by the faceplate with one hand and support the bottom edge with the other.
- **c** Align the CP with the physical shelf slot. Slide the CP into the physical slot. Do not force the CP into the physical slot.
- **d** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the faceplate until the CP is fit into position.
- **e** Close the locking levers to lock the CP in the physical shelf. Do not force the locking levers to close.

NTLX20 Filler circuit pack (end)

Insert the NTLX20 filler CP in the XA-Core shelf



6 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

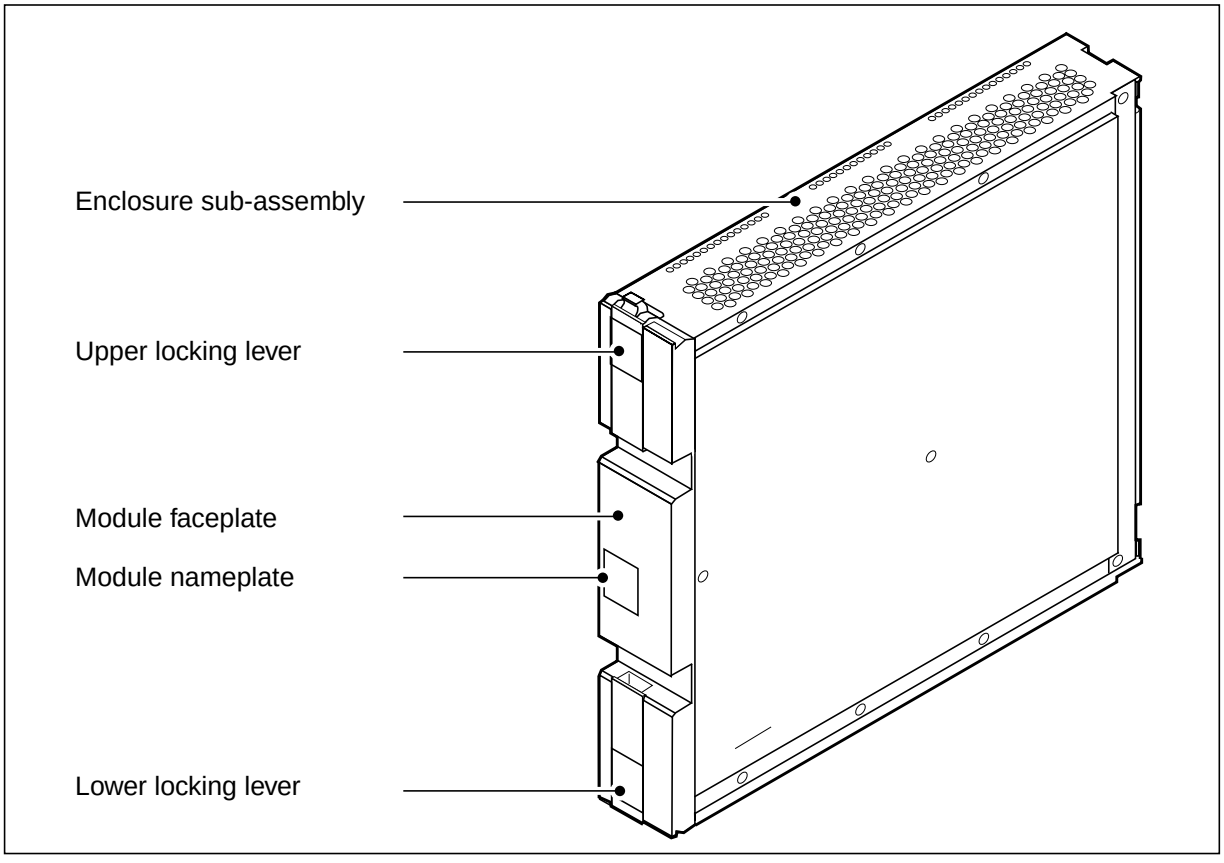
NTLX20 Terminating filler circuit pack in a SuperNode and SuperNode SE XA-Core

Application

Use this procedure to replace or insert a new NTLX20 Terminating filler circuit pack (CP). The following table lists the correct XA-Core Slot terminator CP versions.

PEC	Suffix	Circuit pack name
NTLX20	BA	Terminating filler

NTLX20 Terminating filler CP front and side views



Common procedures

There are no common procedures.

NTLX20 Terminating filler circuit pack (continued)

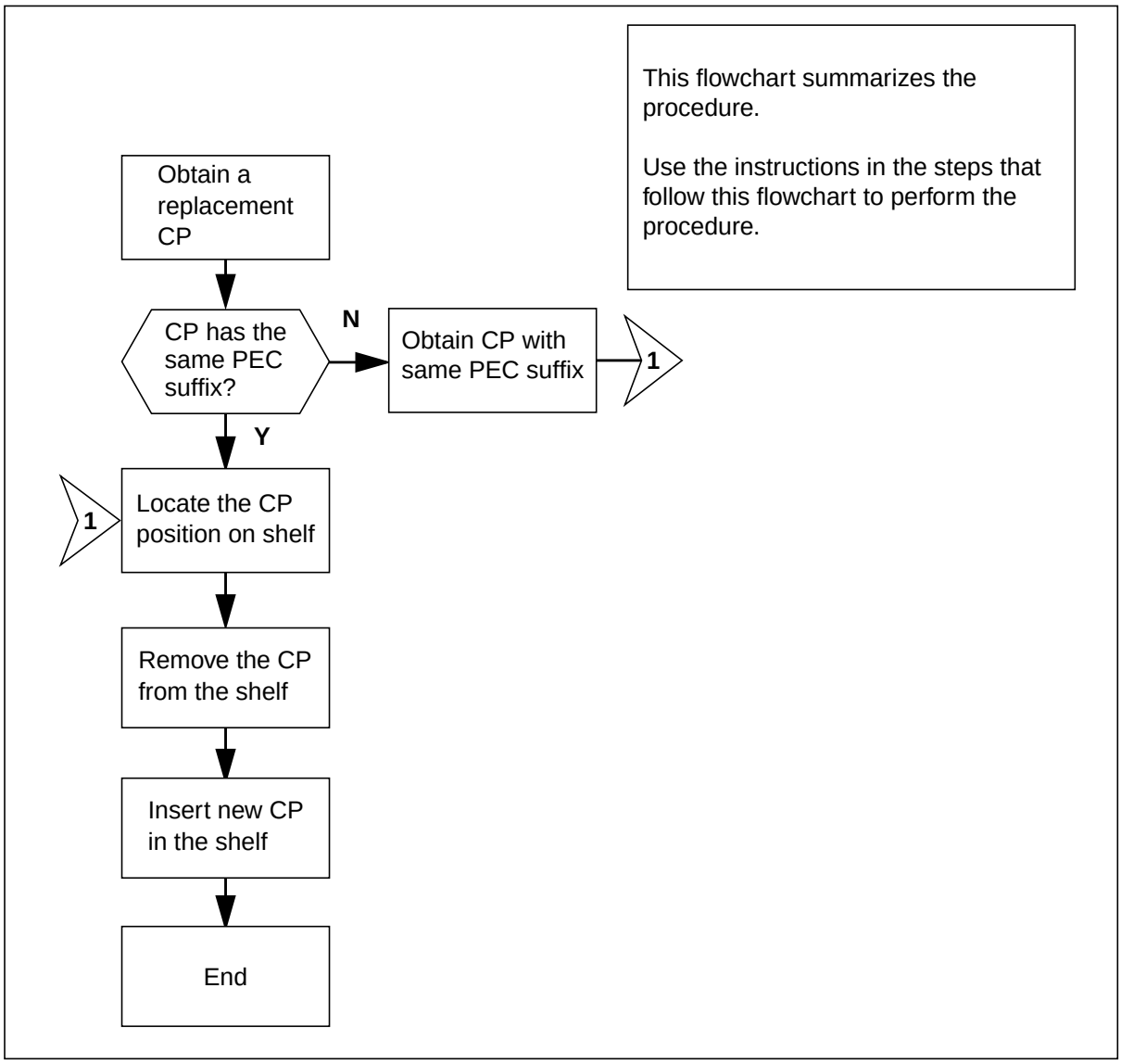
Light emitting diode (LED) visual indicators

There are no LEDs on the faceplate.

Action

The following flowchart is only a summary of this procedure. To replace the CP, use the instructions in the step-action procedure that follows the flowchart.

Summary of NTLX20 Terminating filler CP replacement procedure



NTLX20 Terminating filler circuit pack (continued)

How to replace an NTLX20 Terminating filler circuit pack

WARNING
Risk of equipment damage
Use this procedure as instructed from a step in a maintenance procedure. Use of this procedure separately can result in equipment damage.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Do not repeat steps.

At your current location

1 Get a replacement CP. Make sure that the replacement CP and the CP you remove have the same product engineering code (PEC) and PEC suffix.

At the XA-Core physical shelf

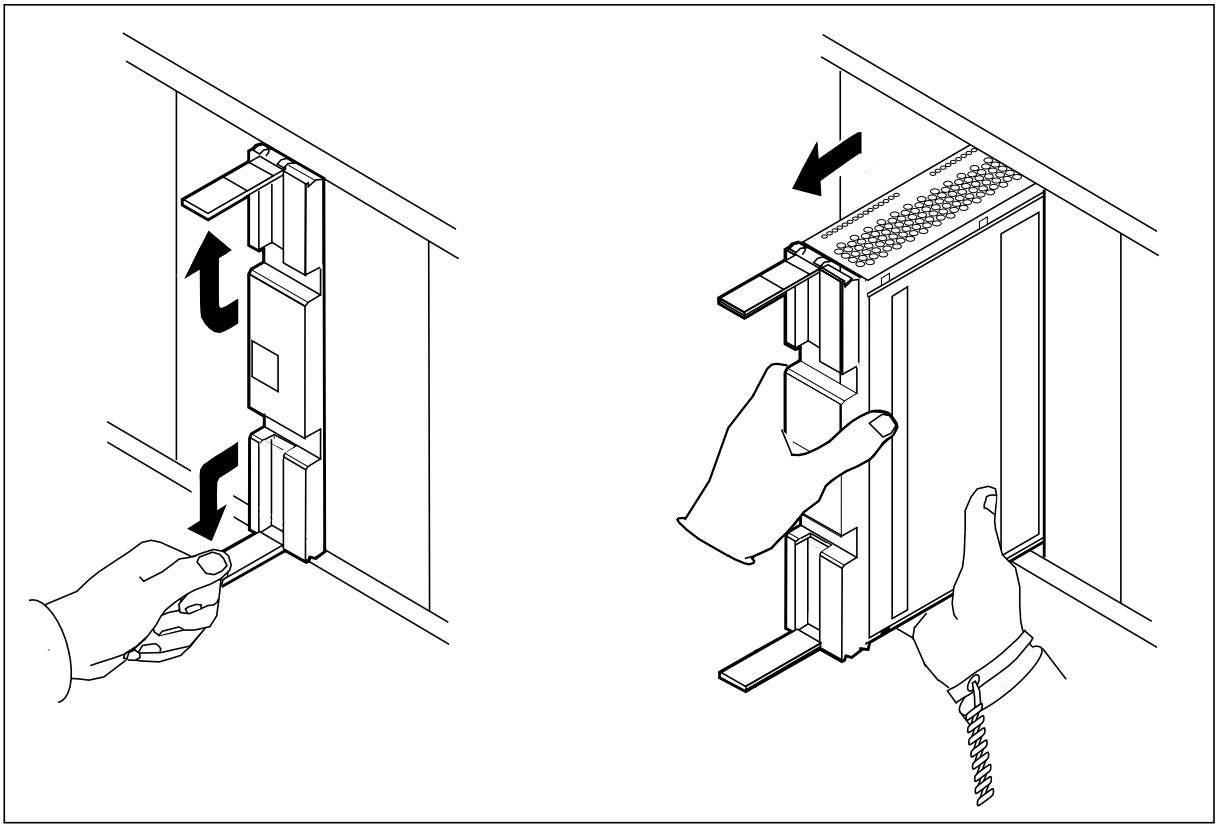
2 Locate the Terminating filler CP on the XA-Core physical shelf.

3 Remove the Terminating filler CP from the physical shelf. Use the diagrams shown in this step.

- **a** Open the locking levers on the CP.
- **b** Hold the CP by the locking levers. Pull the CP half way from the shelf opening toward you.
- **c** Hold the CP by the faceplate with one hand and support the bottom edge with the other. Remove the CP completely from the shelf.

NTLX20 Terminating filler circuit pack (continued)

Remove the NTLX20 Terminating filler CP from the XA-Core shelf



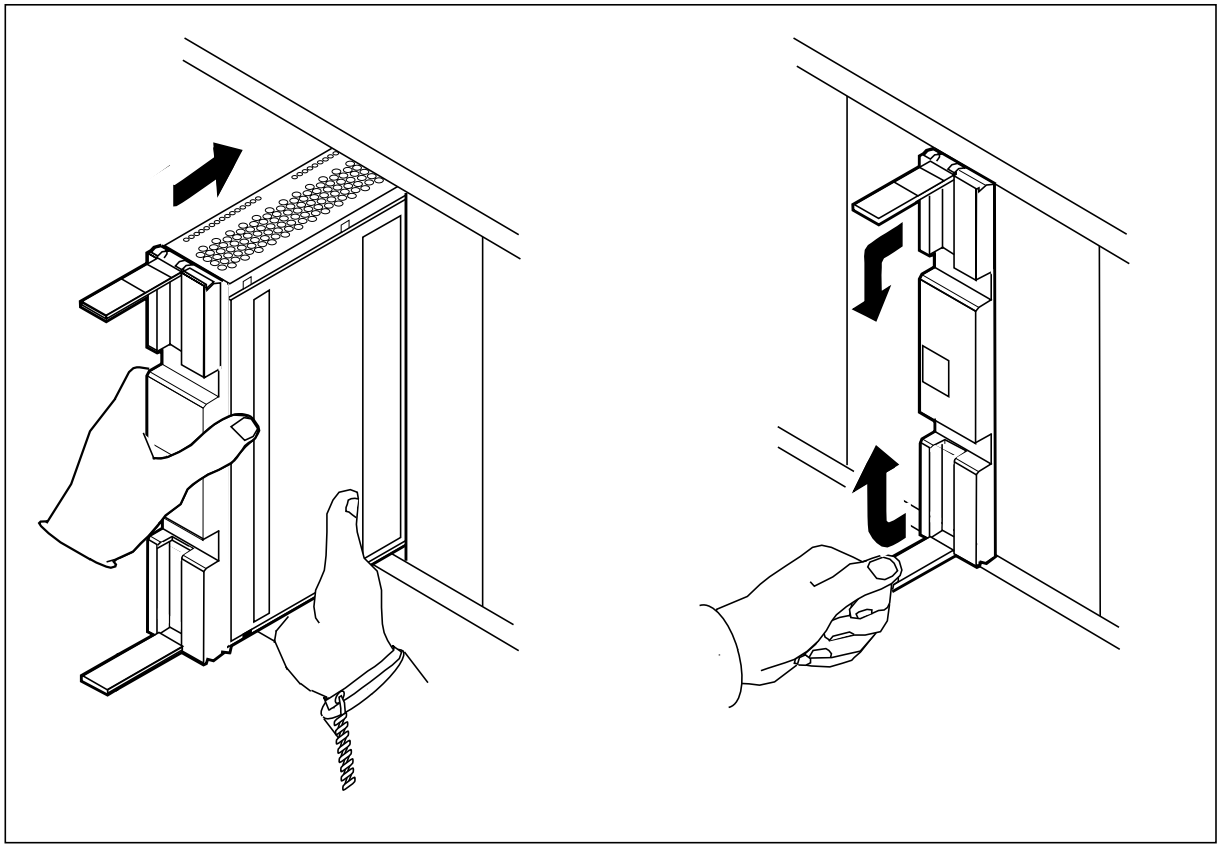
4 Place the CP in ESD protective packaging.

5 Insert the replacement Terminating filler CP into the physical shelf slot. Use the diagrams shown in this step.

- **a** Open the locking levers on the replacement Terminating filler CP.
- **b** Hold the CP by the faceplate with one hand and support the bottom edge with the other.
- **c** Align the CP with the physical shelf slot. Slide the CP into the physical slot. Do not force the CP into the physical slot.
- **d** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the faceplate until the CP is fit into position.
- **e** Close the locking levers to lock the CP in the physical shelf. Do not force the locking levers to close.

NTLX20 Terminating filler circuit pack (end)

Insert the NTLX20 Terminating filler CP in the XA-Core shelf



6 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as instructed.

3 Introduction to recovery procedures

Introduction

This chapter describes how to perform recovery maintenance procedures on the DMS SuperNode (SN) and DMS SuperNode SE (SNSE) XA-Core (XAC). Each procedure contains the following sections:

- application
- interval
- common procedures
- action

Application

This section describes the purpose of the procedure.

Interval

This section describes when to perform the procedure.

Common procedures

This section lists common procedures used during the recovery maintenance procedure. A common procedure is a series of steps that repeats in maintenance procedures. Common procedures include card removal and replacement.

Action

This section provides a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

How to boot an XA-Core in a DMS switch

Application

Use this procedure to boot a DMS SuperNode or DMS SuperNode SE switch that has an eXtended Architecture Core (XA-Core). This procedure boots a switch from a reset terminal display. An image loads from a small computer systems interface (SCSI) device. The SCSI device can be in a disk or a digital audio tape (DAT).

When you boot a switch, the booted switch drops all calls.

Interval

Perform this procedure when instructed by your next level of support.

Common procedures

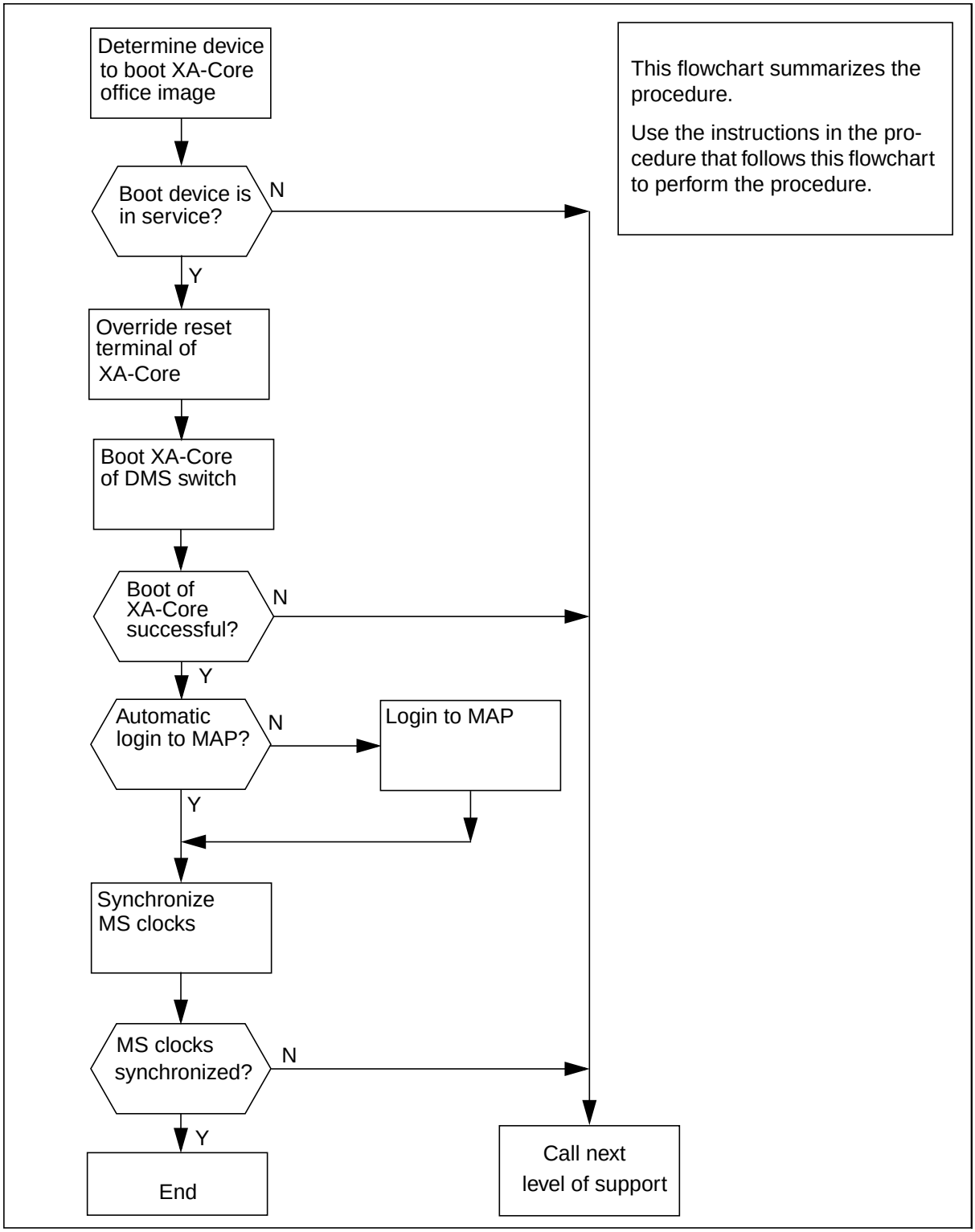
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart as an summary of the procedure. Follow the exact steps to boot an XA-Core in a DMS switch.

How to boot an XA-Core in a DMS switch (continued)

How to boot an XA-Core in a DMS switch



How to boot an XA-Core in a DMS switch (continued)

How to boot an XA-Core in the DMS switch

CAUTION
Call your next level of support
Do not try this procedure before you call your next level of support.

CAUTION
Extended service interruption
A longer recovery time occurs for a switch boot from tape than a switch boot from disk. Boot from disk when possible, because call processing starts again more quickly after a switch boot from disk.

At your current location

1 Determine from office records, the name of the XA-Core recording device that contains the last office image file. The XA-Core recording device is a disk drive or a tape drive for a digital audio tape (DAT). Record the name of the XA-Core device.

At the XA-Core shelf

2 Make sure that the disk drive or the tape drive that you recorded in step 1 is in service. Make sure the disk drive or the tape drive recorded in step 1 has a green light-emitting diode (LED) illuminated.

If the disk drive or tape drive is	Do
in service	step 3
not in service	step 14

At the XA-Core reset terminal

3 To override the XA-Core reset terminal, type:

>**\OVERRIDE**

and press the enter key.

Example of a reset terminal response

```
NOW IN SERVICE AFFECTING MODE
```

4 To boot the XA-Core, type:

>**\BOOT** nn s p

and press the enter key.

where

How to boot an XA-Core in a DMS switch (continued)

nn is the number of the slot position of the input/output processor (IOP) card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

s is the front (F) or rear (R) shelf position of the IOP card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

p is the upper (U) or lower (L) position of the IOP card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

Example of reset terminal input:

>\BOOT 2 F L

Example of a reset terminal response

```
CONFIRM (\YES OR \NO)
```

5 To confirm the command, type:

>**YES**

and press the enter key.

6 Monitor the reset terminal display to determine if the switch has booted.

Note: When the switch boots, the reset terminal displays a response to indicate a boot in progress. The response also displays different diagnostic messages and alphanumeric addresses. When the switch has completely booted, a prompt appears on the reset terminal display. The prompt can display as follows.

Example of a reset terminal response

```
RTIF>
```

If the response has	Do
a prompt	step
no prompt after approximately 15 min	step 14

How to boot an XA-Core in a DMS switch (continued)

At the MAP terminal

7

CAUTION
Extended service interruption
The exact log-in procedure can vary, depending on your office configuration. If you need additional help, call the personnel responsible for the next level of support.

Determine if you have to log in.

Note: The log-in message indicates that you have to manually log in. An automatic log in can occur if the office parameters have automatic log in.

Example of a MAP response

```
Please Login.
```

If log in is	Do
not automatic	step 8
automatic	step 12

8 Press the break key.

Example of a MAP response

```
?
```

9 To log in to the MAP terminal, type:

LOGIN

and press the enter key.

Example of a MAP response

```
Enter User Name
```

10 To enter the user name, type:

user_name

and press the enter key.

where

user_name is the name of the user for the account

Example of a MAP response

```
Enter Password
```

11 To enter the password, type:

password

How to boot an XA-Core in a DMS switch (end)

and press the enter key.

where

password is the name of the password for the account

Example of a MAP response

```
SuperNode_1 Logged in on 1997/01/15 at 20:37:17
```

12 To access the MS Clock level of the MAP display, type:

MAPCI;MTC;MS;CLOCK

and press the enter key.

13 To synchronize the clocks, type:

SYNC

and press the enter key.

If the MAP response is	Do
a successful completion	step 15
a failure	step 14

14 For additional help, call the personnel responsible for the next level of support.

15 You have completed this procedure.

How to perform a cold restart in XA-Core

Application

Use this procedure to perform a cold restart. The cold restart is on an eXtended Architecture Core (XA-Core) of a DMS SuperNode or of a DMS SuperNode SE switch.

A cold restart is more serious than a warm restart but less serious than a reload restart. A cold restart is an initialization phase during which temporary storage deallocates and clears. All calls drop during the restart and there is no billing data recorded for the calls that the switch drops. After a cold restart, the switch keeps the office configuration and translation data.

Interval

Perform this instruction when instructed by your next level of support.

Common procedures

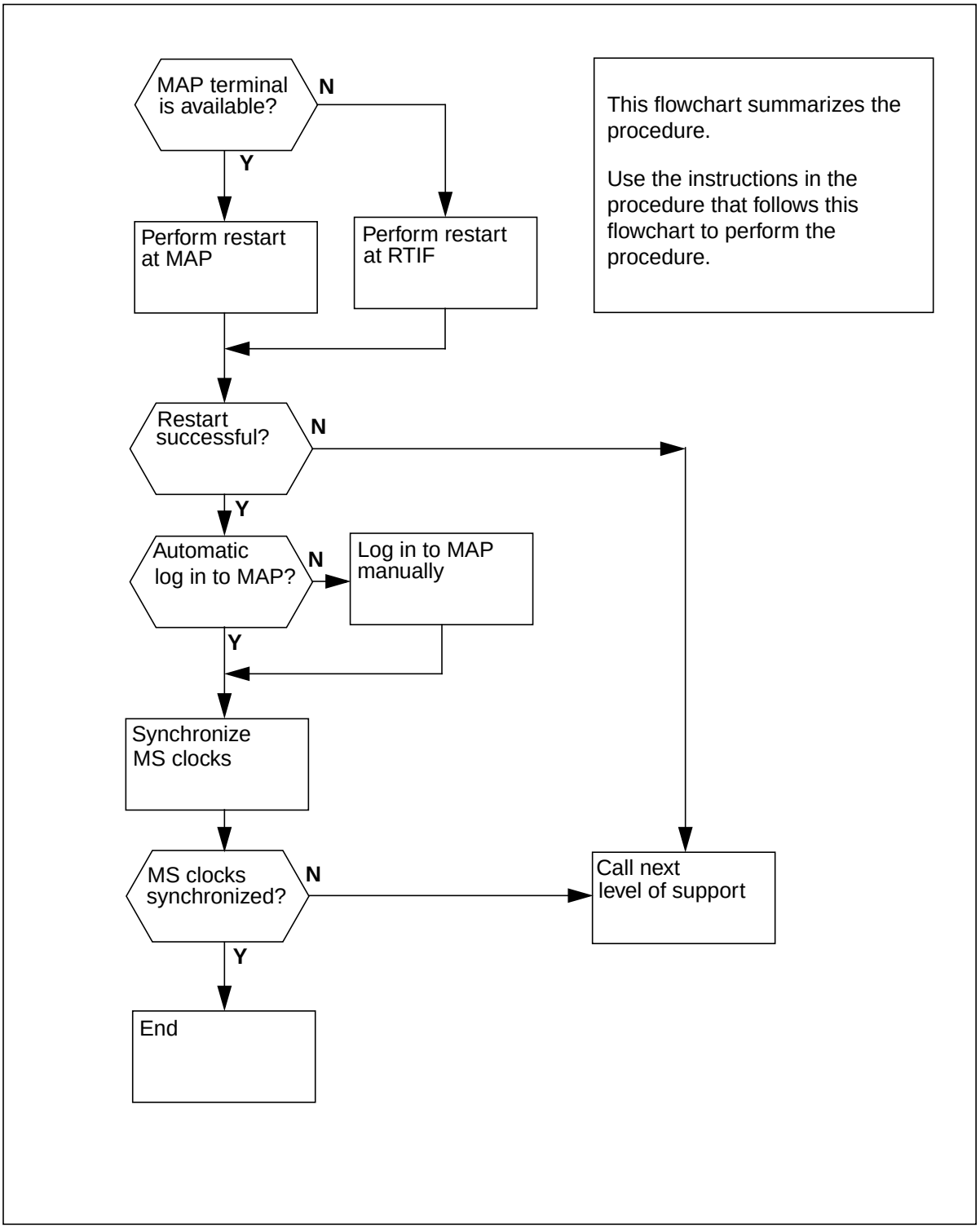
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to perform a cold restart in XA-Core (continued)

How to perform a cold restart in XA-Core



How to perform a cold restart in XA-Core (continued)

How to perform a cold restart in XA-Core

CAUTION
Call your next level of support
Do not try this procedure before you call your next level of support.

CAUTION
Loss of service
All calls drop during a cold restart.

CAUTION
Extended service interruption
Execute the restart from a MAP terminal when possible. The MAP terminals can be out of service if there is a serious problem. If a MAP terminal is not available, perform the restart from the reset terminal interface (RTIF) of XA-Core.

At your current location

1 Determine if a MAP terminal is available to execute the restart.

If a MAP terminal is	Do
available	step 2
not available	step 6

At the MAP terminal

2 To access the CI level of the MAP, type:

>QUIT ALL

and press the enter key.

Example of a MAP display

```
CI:
>
```

3 To restart the switch, type:

>RESTART COLD ACTIVE

How to perform a cold restart in XA-Core (continued)

and press the Enter key.

Example of a MAP display

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Use MTCSWACT. Consult NORESTARTSWACT/MTCSWACT Users Guide
NTP.
Please confirm ("YES", "Y", "NO", or "N"):
```

4 To confirm the command, type:

>YES

and press the enter key.

Example of a MAP display

```
COLD Restart from Command on CPU 0
*** SOS COLD restart no. 2 at OCT-20 15:46:06.
<<IGNORED>>
  Please Login.
```

At the RTIF terminal

5 Determine if the restart of the switch has completed.

Note: When the switch restarts, alphanumeric addresses appear in the RTIF display. When the switch has completed the restart, an automatic log in occurs or a manual log-in request appears.

If the response indicates	Do
a completed restart	step 9
no restart completion after approximately 5 min	step 16

At the RTIF terminal

6 To restart the switch, type:

>\RESTART COLD ACTIVE

and press the enter key.

Example of a reset terminal response

```
 Please confirm: (YES/NO)
```

7 To confirm the command, type:

>\YES

and press the enter key.

Example of a reset terminal response

```
 RESTART DONE
```

How to perform a cold restart in XA-Core (continued)

8 Monitor the RTIF display to determine if the switch has restarted.

Note: When the switch restarts, alphanumeric addresses display in the RTIF response. When the switch completes the restart, A1 appears in the RTIF response..

If the RTIF response has	Do
A1	step 9
no A1 after approximately 5 min	step 16

At the MAP terminal

9

CAUTION
Extended service interruption
The exact log-in procedure can vary, depending on your office configuration. If you need additional help, call the personnel responsible for the next level of support.

Determine from the MAP display if you have to log in.

Note: The message Please Login indicates that you have to log in manually. If your office parameters have automatic log in, you can log in automatically.

Example of a MAP response

```
Please Login.
```

IfIf the log in is	Do
manual	step 10
automatic	step 14

10 Press the break key.

Example of a MAP response

```
?
```

11 To log in to the MAP terminal, type:

>**LOGIN**

and press the Enter key.

Example of a MAP response

```
Enter User Name
```

12 To enter the user name, type:

How to perform a cold restart in XA-Core (end)

>user_name

and press the enter key.

where

user_name is the name of the user for the account

Example of a MAP response

```
Enter Password
```

13 To enter the password, type:

>**password**

and press the enter key.

where

password is the alphanumeric string of the password for the account

Example of a MAP response

```
SuperNode_1 Logged in on 1997/01/15 at 20:37:17
```

14 To access the message switch (MS) Clock level of the MAP display, type:

>**MAPCI;MTC;MS;CLOCK**

and press the enter key.

15 To synchronize the clocks, type:

>SYNC

and press the enter key.

If the MAP response to the SYNC command is	Do
successful	step 17
failed	step 16

16 For additional help, call the personnel responsible for the next level of support.

17 You have completed this procedure.

Emergency power conservation restoration

Application

Use this procedure to return to normal operation an eXtended Architecture Core (XA-Core) configuration of a switch. The switch is a DMS SuperNode or a DMS SuperNode SE switch. Use this procedure after having performed all parts of the procedure “Emergency power conservation shutdown” to maintain emergency backup power. The procedure “Emergency power conservation shutdown” follows an extended commercial power outage.

The procedure “Emergency power conservation shutdown” reduces the power decrease of emergency batteries to a minimum. The reduced power of emergency batteries is from a turn off in stages of equipment that is not necessary to maintain subscriber service. The specification of equipment shutdown is in a moving up order based on its effect on the system reliability. The equipment shutdown begins with less required equipment such as spare printers and ends with more required equipment.

This restoration procedure includes a top-level procedure and a number of other procedures. This procedure, “Emergency power conservation restoration” is the top-level procedure. This procedure describes the equipment for retrieval, and the order to do the retrieval. The top-level procedure refers out to the other procedures. The other procedures provide detail instructions for a restore of separate elements of the switch. A list of these other procedures are in the table of contents.

This procedure describes equipment recovery in decreasing order based on its effect on system reliability. The equipment restoration begins with more required equipment and ends with less required equipment such as maintenance trunk modules. The configuration of your office and the requirements of your operating company, can change the order of equipment restoration. The return of elements of the switch to service can be in an different order.

Interval

Use this procedure after completion of the procedure “Emergency power conservation shutdown” in this document. Perform this procedure on switch equipment that is out of service. Perform this procedure to restore normal operation to equipment after the need for power conservation shutdown in an emergency.

Common procedures

There are no common procedures.

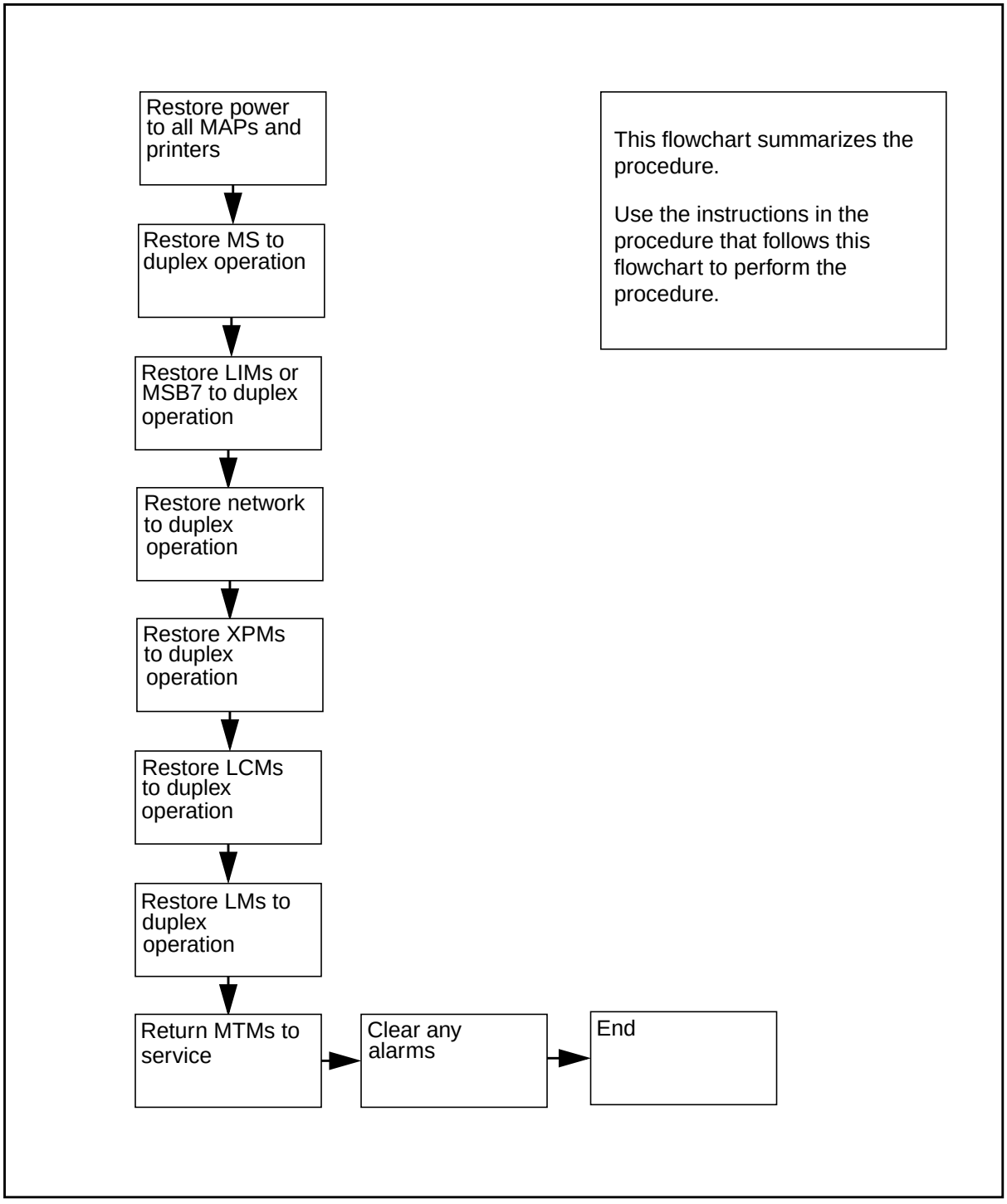
Emergency power conservation restoration (continued)

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

Emergency power conservation restoration (continued)

Emergency power conservation restoration



Emergency power conservation restoration (continued)

Emergency power conservation restoration

WARNING

Potential extended equipment outage

Nortel Networks recommends that you perform this procedure under the supervision of Emergency Technical Assistance Services (ETAS) of Nortel Networks. Also call your next level of support before you perform this procedure.

CAUTION

Potential loss of service or extended outage

This procedure is only to restore normal operation after the performance of measures for emergency power conservation. Do not use this procedure or parts of this procedure for equipment maintenance purposes.

At your current location

1 Use office records to identify and record the power converters which supply the MAPs and printers of the switch.

2 Restore power to all the power converters identified in step 1 that supply power to the MAPs and printers of the switch.

At the MAP

3 Restore power to one side of the remote oscillator shelf (NT3X9507), If you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring the remote oscillator shelf to duplex operation” in *Recovery Procedures*, 297-8001-545.

4 Restore power to one message switch (MS) shelf if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring the MS duplex operation” in *Recovery Procedures,* 297-8001-545.

5 Restore power to one unit of the CCS7 message switch and buffer (MSB7) if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring the MSB7 to duplex operation” in *Recovery Procedures,* 297-8001-545.

6 Restore power to one link interface module (LIM) unit on one or more link peripheral processors (LPP) if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring LPP LIMs to duplex operation” in *Recovery Procedures,* 297-8001-545.

7 If you removed power from one or more network frames, restore power to the changed frames at the power distribution center (PDC).

8 Restore power to one or more junctored network (JNET) shelves if you turned off power to save emergency backup power. To restore power, perform the

Emergency power conservation restoration (end)

procedure “Restoring the junctored network to duplex operation” in *Recovery Procedures,* 297-8001-545.

9 Restore power to one or more enhanced network (ENET) shelves if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring the enhanced network to duplex operation” in *Recovery Procedures,* 297-8001-545.

10 Restore power to one or more units of a line group controller (LGC), line trunk controller (LTC), or digital trunk controller (DTC). Restore power if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring LGCs, LTCs, and DTCs to duplex operation” in *Recovery Procedures,* 297-8001-545.

11 Restore power to one or more units of a line concentrating module (LCM) if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring LCMs to duplex operation” in *Recovery Procedures,* 297-8001-545.

12 Restore power to one or more line modules (LM) if you turned off power to save emergency backup power. To restore power, perform the procedure “Restoring line modules to duplex operation” in *Recovery Procedures,* 297-8001-545.

13 Restore power to one or more maintenance trunk modules (MTM) if you turned off power to save emergency backup power. To restore power, perform the procedure “Returning maintenance trunk modules to service” in *Recovery Procedures,* 297-8001-545.

14 To clear any alarms on the MAP display, perform the correct alarm clearing procedure. The correct alarm clearing procedure is in this document or in the *Alarm and Performance Monitoring Procedures,* 297-8001-543.

15 You have completed this procedure.

Emergency power conservation shutdown

Application

Use this procedure to maintain emergency backup power for a DMS SuperNode or a DMS SuperNode SE switch. Use this procedure when the switch has an eXtended Architecture Core (XA-Core) configuration.

This procedure reduces the loss from emergency batteries to a minimum by closure of power to equipment in stages. The equipment shutdown is not necessary to maintain subscriber service. Equipment shutdown is in moving up order based on its effect on switch reliability. The equipment shutdown begins with less required equipment, such as spare printers, and ends with more required equipment.

The procedure includes a top-level procedure and a number of referred procedures. The top-level procedure, "Emergency power conservation shutdown" in this document describes the equipment you can turn off without loss of service. The top-level procedure, "Emergency power conservation shutdown" in this document also describes the order of equipment shutdown. The top-level procedure refers out to other procedures which provide detail instructions for turning off power to separate elements of the switch. The referred procedures are in the table of contents.

When you perform this procedure, take into consideration the configuration and condition of your switch. Also take into consideration the expected period of the power outage, and the quantity of reserve power available. Continue as follows:

Note: If you receive a warning message for a loss of service if you busy a plane or unit, do not continue. Clear the problem that can cause a loss of service before you busy the plane or unit. Also you can leave both planes or units of that subsystem in service.

- Complete the number of steps of this procedure as your set of conditions needs. For example, if you expect power to restore, you can decide to leave important systems to operate in a duplex mode. The message switch (MS) is an example of a system that can have a duplex mode. Equally for reliability, you can decide to leave both units in service on peripheral modules required for emergency service lines.
- This procedure requires a condition when this procedure instructs you to busy down one plane or unit of a system. The condition is that the mate plane or unit you leave in service, is fault free and can operate normally.
- When possible, take the same plane or unit out of service on each subsystem (for example, ENET plane 0, LIM unit 0, MS 0). This action decreases the possible result of error and reduces recovery time.

Emergency power conservation shutdown (continued)

Interval

Use this procedure to maintain emergency backup power without loss of subscriber service, during an extended commercial power outage.

Common procedures

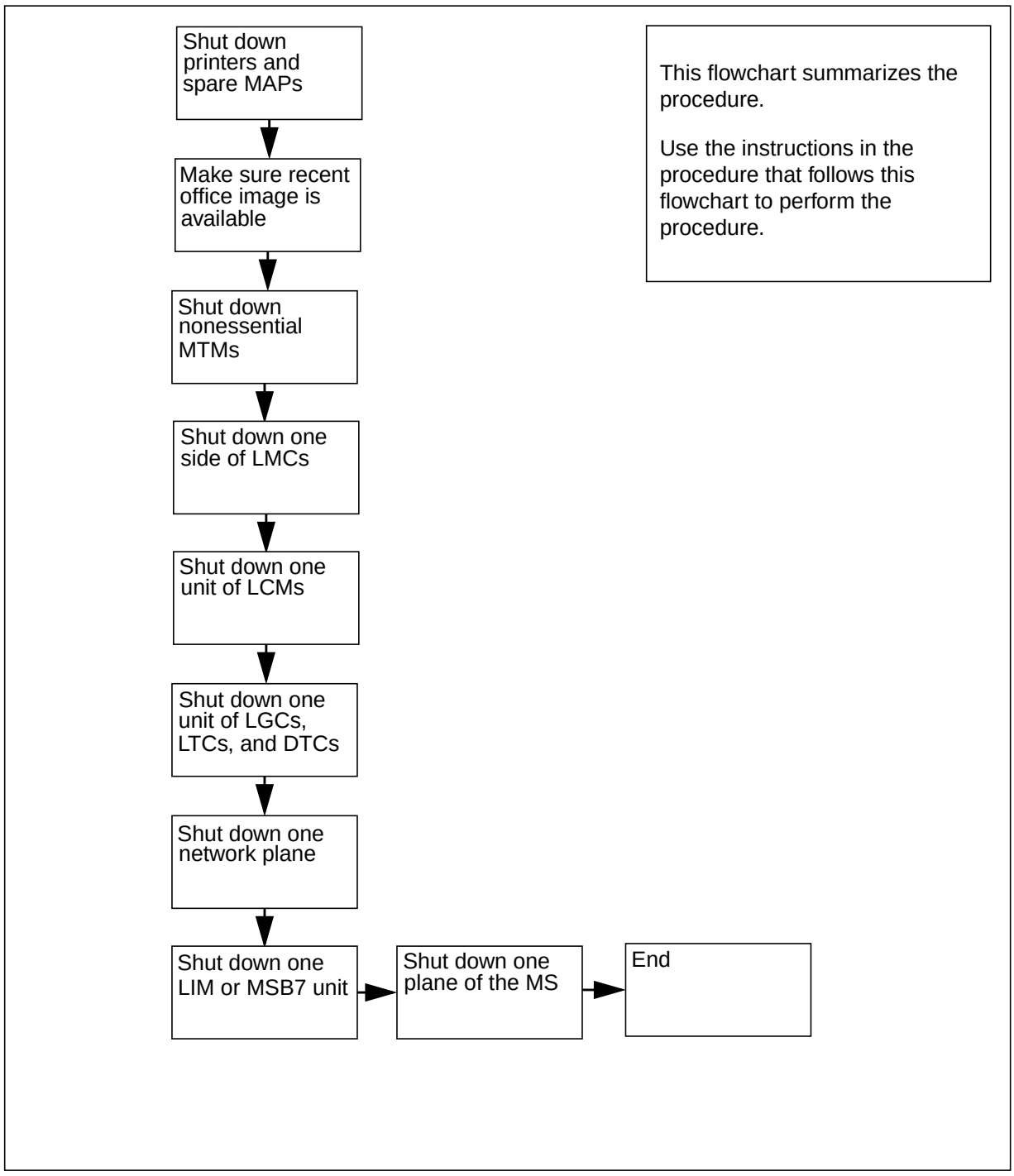
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

Emergency power conservation shutdown (continued)

Emergency power conservation shutdown



Emergency power conservation shutdown (continued)

Emergency power conservation shutdown

CAUTION
Potential service interruption or extended outage
Nortel Networks recommends that you call Emergency Technical Assistance Services (ETAS) of Nortel Networks. Also call your next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
This procedure is only for conservation of emergency backup power. Do not use this procedure or sections for equipment maintenance purposes.

At your current location

1 Use office records to identify and record the power converters that supply the MAPs and printers for the switch.

2 Turn the power off on all power converters identified in step 1. Do not turn the power off for the power converters which supplies the operator's MAP and one printer connected to IOC 0.

At the MAP terminal

3 To confirm that an office image is available to reload the switch if a total turn off of power becomes necessary, type:

>AUTODUMP STATUS

and press the enter key.

Example of a MAP response

```
Successful Image:  990215_CM
Taken:  1999/03/17 21:47:32:04.138 WED.
On Volume: F17LIMAGE

Successful Image:  990215_MS
Taken:  1999/03/17 21:47:32:04:138 WED.
On Volume: F17LIMAGE

SCHEDULED-Image Dump is ON.

Next scheduled dump is MONDAY at 22:30 hours.
```

Emergency power conservation shutdown (continued)

```
Next image to be dumped on F02LIMAGE.
```

If an office image is	Do
available	step 5
not available	step 4

4 Record the office image. Perform the procedure, “How to record an XA-Core office image on a disk” in this document. Return to this step when you complete the procedure to record the office image.

5 Turn off power for all maintenance trunk modules (MTM) in the office. Do not turn power off if the MTM contains cards that have an effect on service. To turn off power perform the procedure, “Emergency shutdown of maintenance trunk modules” in *Recovery Procedures*, 297-8001-545.

Note: Cards that have an effect on service include digitone receiver cards (NT2X48), centralized automatic message accounting (CAMA) cards (NT2X66), and digital recorded announcement machine (DRAM) cards.

6 Turn off power for one of the line module controllers (LMC) (NT2X14 shelf) in each double-bay line module (LM) pair in the office. To turn off the power, perform the procedure, “Emergency shutdown of one half of a line module pair” in *Recovery Procedures*, 297-8001-545.

7 Turn off power for one unit of all line concentrating modules (LCM) in the office. To turn off the power, perform the procedure, “Emergency shutdown of one unit of LCMs” in *Recovery Procedures*, 297-8001-545.

8 Turn off power for one unit of all line group controllers (LGC), line trunk controllers (LTC), and digital trunk controllers (DTC) in the office. To turn off the power, perform the procedure, “Emergency shutdown of one LGC, LTC, and DTC unit” in *Recovery Procedures*, 297-8001-545.

9 Turn off power for one plane of all network shelves in the office, as follows:

- for ENET, perform the procedure, “Emergency shutdown of one enhanced network plane” in *Recovery Procedures*, 297-8001-545.
- for JNET, perform the procedure, “Emergency shutdown of one junctored network plane” in *Recovery Procedures*, 297-8001-545.

10 If you removed power from a complete network frame in step 9, turn off power for the cooling fans for the frame. To turn off power, remove the correct power fuses from the PDC.

11 Busy and power down one local message switch in the link peripheral processor (LPP). Perform the procedure, “Emergency shutdown of one LIM unit on each LPP” in *Recovery Procedures*, 297-8001-545.

12 Turn off power for one unit of all CCS7 message switch and buffers (MSB7) in the office. To turn off power, perform the procedure, “Emergency shutdown of one unit of MSB7s” in *Recovery Procedures*, 297-8001-545.

13 Turn off power for one message switch (MS) plane. To turn off power, perform the procedure, “Emergency shutdown of one DMS SuperNode MS plane” in *Recovery Procedures*, 297-8001-545.

14 If your office has a remote oscillator shelf (NT3X9507), busy the clock related to the MS number. The MS number is for the MS that you turned off power in

Emergency power conservation shutdown (end)

step 13. To busy the clock, perform the procedure, “Emergency shutdown of one remote ascillator shelf plane” in *Recovery Procedures*, 297-8001-545.

15 You have completed this procedure.

How to perform a reload restart in an XA-Core

Application

Use this procedure to perform a reload restart. The reload restart is on an eXtended Architecture Core (XA-Core) of a DMS SuperNode or of a DMS SuperNode SE switch.

A reload restart is more serious than a cold restart. A reload restart simulates an actual reload of the current software into the switch. All calls drop during the restart and there is no billing data recorded for the calls that the switch drops. After a reload restart, the switch keeps the office configuration and translation data.

Interval

Perform this procedure when instructed by your next level of support.

Common procedures

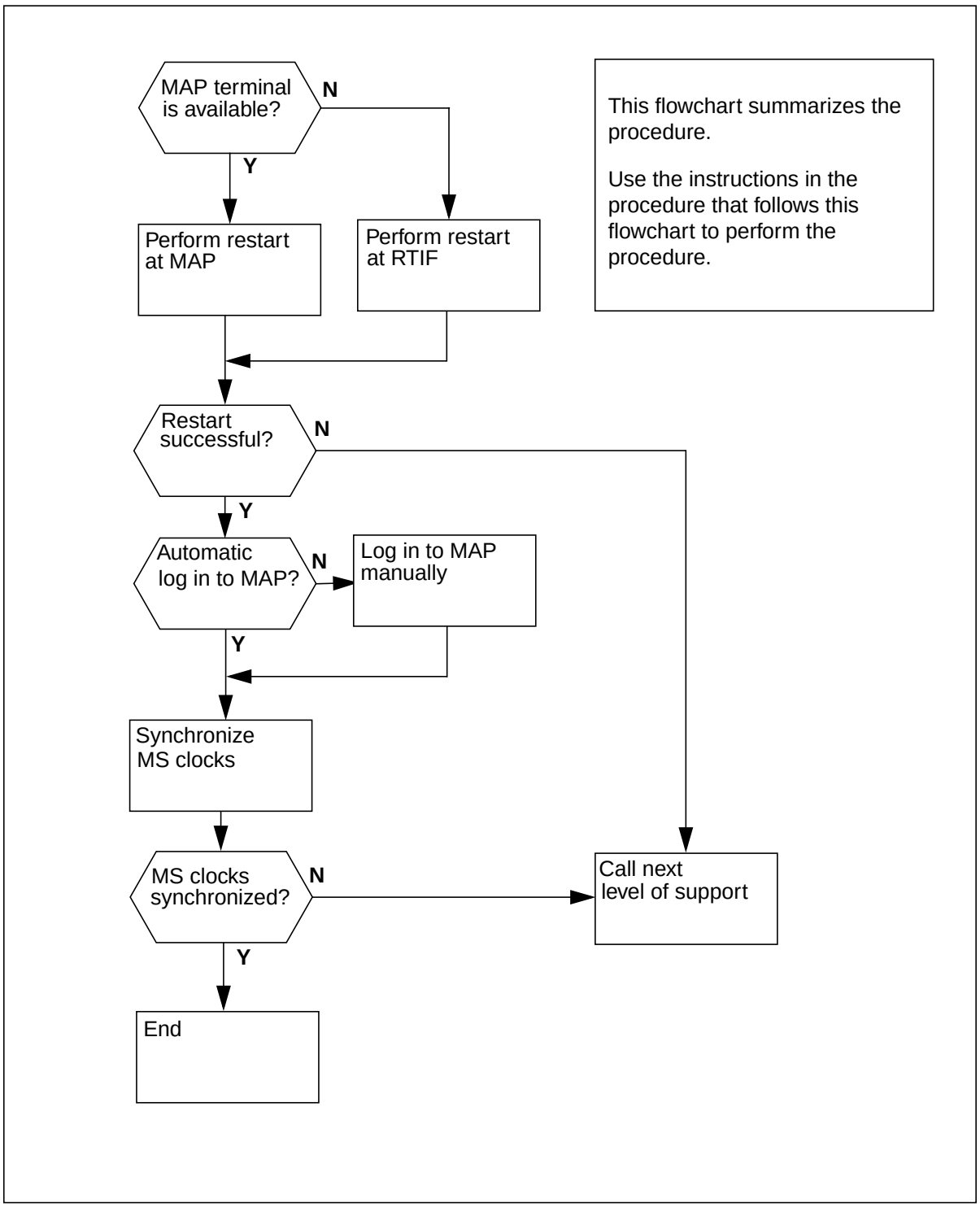
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to perform a reload restart in an XA-Core (continued)

How to perform a reload restart in an XA-Core



How to perform a reload restart in an XA-Core (continued)

How to perform a reload restart in XA-Core

CAUTION
Contact your next level of support
Do not try this procedure before you call your next level of support.

CAUTION
Loss of service
All calls drop during a reload-restart.

CAUTION
Extended service interruption
Execute the restart from a MAP terminal when possible. The MAP terminals can be out of service if there is a serious problem. If a MAP terminal is not available, perform the restart from the reset terminal interface (RTIF) of XA-Core.

At your current location

1 Determine if a MAP terminal is available to execute the restart.

If a MAP terminal is	Do
available	step 2
not available	step 6

At the MAP terminal

2 To access the CI level of the MAP, type:

>**QUIT ALL**

and press the enter key.

Example of a MAP display

```
CI:
>
```

3 To restart the switch, type:

>**RESTART RELOAD ACTIVE**

How to perform a reload restart in an XA-Core (continued)

and press the enter key.

Example of a MAP response

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Please confirm (“YES”, “Y”, “NO”, “N”):
```

4 To confirm the command, type:

>**YES**

and press the enter key.

At the RTIF terminal

5 Determine if the restart of the switch has completed.

Note: When the switch restarts, alphanumeric addresses appear in the RTIF display. When the switch has completed the restart, an automatic log in occurs or a manual log-in request appears.

If the response indicates	Do
a completed restart	step 9
no restart completion after approximately 5 min	step 16

At the RTIF terminal

6 To restart the switch, type:

>**\RESTART RELOAD**

and press the enter key.

Example of an RTIF response

```
Please confirm: (YES/NO)
```

7 To confirm the command, type:

>**YES**

and press the enter key.

Example of an RTIF response

```
RESTART DONE
```

8 Monitor the RTIF display to determine if the switch has restarted.

Note: When the switch restarts, alphanumeric addresses display in the RTIF response. When the switch completes the restart, A1 appears in the RTIF response.

If If the RTIF response has	Do
A1	step 9
no A1 after approximately 5 min	step 16

How to perform a reload restart in an XA-Core (continued)

At the MAP terminal

9

CAUTION
Extended service interruption
The exact log-in procedure can vary, depending on your office configuration. If you need additional help, call the personnel responsible for the next level of support.

Determine from the MAP display if you have to log in.

Note: The message Please Login indicates that you have to log in manually. If your office parameters have automatic log in, you can log in automatically.

Example of a MAP response

```
Please Login.
```

If your log in is	Do
not automatic	step 10
automatic	step 14

10 Press the break key.

Example of a MAP response

```
?
```

11 To log in to the MAP terminal, type:

LOGIN

and press the enter key.

Example of a MAP response

```
Enter User Name
```

12 To enter the user name, type:

user_name

and pressing the Enter key.

where

user_name is the name of the user for the account

Example of a MAP response

```
  Enter Password
```

13 To enter the password, type:

password

How to perform a reload restart in an XA-Core (end)

and press the enter key.

where

password is the alphanumeric string of the password for the account

Example of a MAP response

```
  SuperNode1 Logged in on 1997/01/15 at 20:37:17
```

14 To access the message switch (MS) Clock level of the MAP display, type:

>**MAPCI;MTC;MS;CLOCK**

and press the enter key.

15 To synchronize the clocks, type:

>SYNC

and press the enter key.

If the SYNC command is	Do
successful	step 17
not successful	step 16

16 For additional help, call the personnel responsible for the next level of support.

17 You have completed this procedure.

How to perform a warm restart in XA-Core

Application

Use this procedure to perform a warm restart. The warm restart is on an eXtended Architecture Core (XA-Core) of a DMS SuperNode or of a DMS SuperNode SE switch.

A warm restart is the least serious type of restart. A warm restart is an initialization phase during which temporary storage deallocates and clears. Calls in the talking state continue during the restart, and the switch keeps data related to each call. Calls that have not reached the talking state disconnect.

Interval

Perform this procedure when instructed by your next level of support.

Common procedures

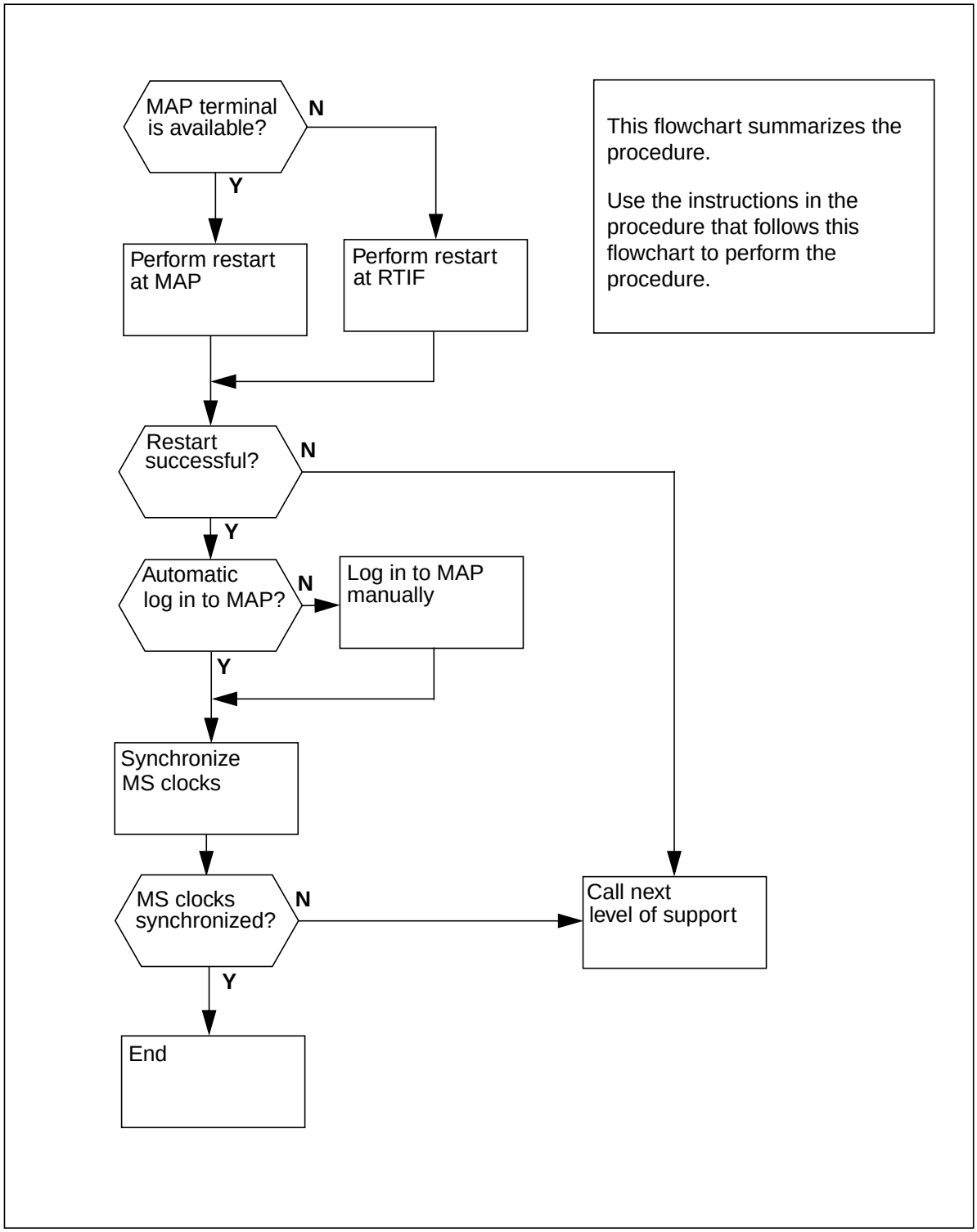
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to perform a warm restart in XA-Core (continued)

How to perform a warm restart in XA-Core



How to perform a warm restart in XA-Core (continued)

How to perform a warm restart in XA-Core

CAUTION
Call your next level of support
Do not try this procedure before you call your next level of support.

CAUTION
Loss of service
Calls in process that have not reached the talking state disconnect during a warm restart.

CAUTION
Extended service interruption
Execute the restart from a MAP terminal when possible. The MAP terminals can be out of service if there is a serious problem. If a MAP terminal is not available, perform the restart from the reset terminal interface (RTIF) of XA-Core.

At your current location

1 Determine if a MAP terminal is available to execute the restart.

If a MAP terminal is	Do
available	step 2
not available	step 6

At the MAP terminal

2 To access the CI level of the MAP, type:

>QUIT ALL

and press the enter key.

Example of a MAP display

```
CI:
>
```

3 To restart the switch, type:

>RESTART WARM ACTIVE

How to perform a warm restart in XA-Core (continued)

and press the enter key.

Example of a MAP display

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Use MTCSWACT. Consult NORESTARTSWACT/MTCSWACT Users Guide
NTP.
Please confirm ("YES", "Y", "NO", or "N"):
```

4 To confirm the command, type:

>**YES**

and press the enter key.

WARM Restart from Command on CPU 0

**** SOS WARM restart no. 3 at OCT-20 18:36:55.*

<<IGNORED>>

U2 Logged in on 1998/10/20 at 18:37:51.

At the RTIF terminal

5 Determine if the restart of the switch has completed.

Note: When the switch restarts, alphanumeric addresses appear in the RTIF display. When the switch has completed the restart, an automatic log in occurs or a manual log-in request appears.

If the response indicates	Do
a completed restart	step
no restart completion after approximately 5 min	step 16

At the RTIF terminal

6 To restart the switch, type:

>**\RESTART WARM**

and press the enter key.

Example of a RTIF response

```
  Please confirm: (YES/NO)
```

7 To confirm the command, type:

>\YES

and press the enter key.

Example of a RTIF response

```
RESTART DONE
```

How to perform a warm restart in XA-Core (continued)

8 Monitor the RTIF display to determine if the switch has restarted.

Note: When the switch restarts, alphanumeric addresses display in the RTIF response. When the switch has restarted, A1 appears in the RTIF response..

If the RTIF response has	Do
A1	step
no A1 after approximately 5 min	step 16

At the MAP terminal

9

CAUTION
Extended service interruption
The exact login procedure can vary, depending on your office configuration. If you need additional help, call the personnel responsible for the next level of support.

Determine from the MAP display if you have to log in.

Note: The message Please Login indicates that you have to log in manually. If your office parameters have automatic log in, you can log in automatically.

Example of a MAP response

```
Please Login.
```

If If your log in is	Do
not automatic	step 10
automatic	step 14

10 Press the break key.

Example of a MAP response

?

11 To log in to the MAP terminal, type:

>**LOGIN**

and press the enter key.

Example of a MAP response

```
Enter User Name
```

12 To enter the user name, type:

How to perform a warm restart in XA-Core (end)

>**user_name**

and press the enter key.

where

user_name is the name of the user for the account

Example of a MAP response

```
Enter Password
```

13 To enter the password, type:

>password

and press the enter key.

where

password is the alphanumeric string of the password for the account

Example of a MAP response

```
SuperNode1 Logged in on 1997/01/15 at 20:37:17
```

14 To access the message switch (MS) Clock level of the MAP display, type:

>MAPCI;MTC;MS;CLOCK

and press the enter key.

15 To synchronize the clocks, type:

>**SYNC**

and press the enter key.

If the MAP response to the SYNC command is	Do
successful	step 17
failed	step 16

16 For additional help, call the personnel responsible for the next level of support.

17 You have completed this procedure.

How to recover a dead XA-Core DMS switch

Application

Use this procedure to recover a dead switch that has an eXtended Architecture Core (XA-Core). The switch can be a DMS SuperNode or SuperNode SE switch. The switch is dead if the complete switch is without power. The power loss results from a loss or interruption of A and B dc power feeds to the power distribution center (PDC).

Interval

Perform this procedure when instructed by your next level of support.

Common procedures

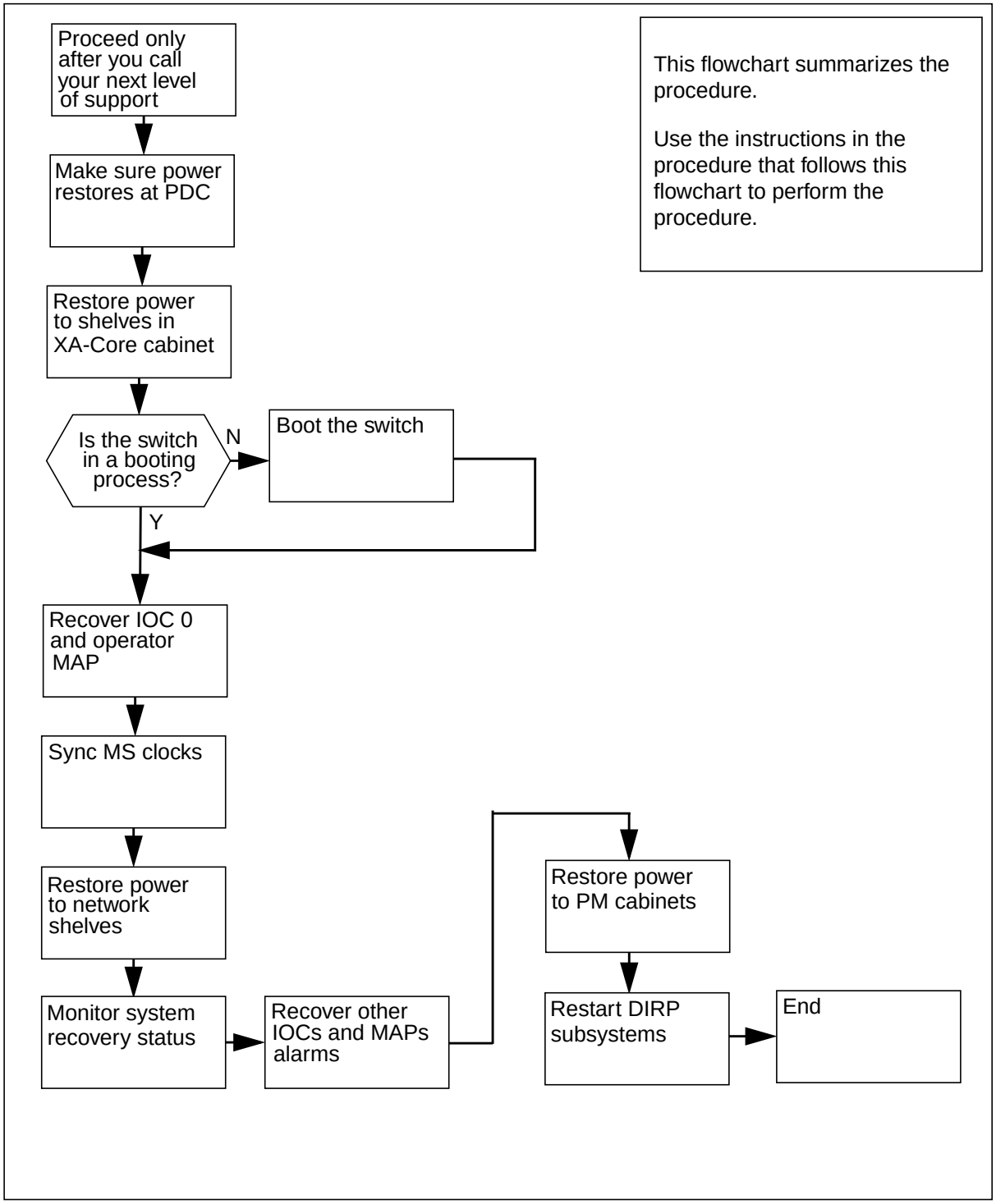
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to recover a dead XA-Core DMS switch (continued)

How to recover a dead XA-Core DMS Switch



How to recover a dead XA-Core DMS switch (continued)

How to recover a dead XA-Core DMS switch

CAUTION
Call ETAS or your next level of support
In the event of a dead system, call the Emergency Technical Assistance Services (ETAS) of Nortel Networks. Also call your next level of support before you perform this procedure.

DANGER
Risk of electrocution
Do not touch the cabinet wiring. Connections with unshielded cabinet wiring can result in electric shock. Only qualified power maintenance personnel can perform the voltage measurements in step 3.

At the PDC

1 When possible after detection of the power outage, remove all the fuse holders for the following:

- line concentrating equipment (LCE) talk batteries
- trunk module equipment (TME) talk batteries
- PDC filter fuses from the correct PDCs

Note: The location of the fuse holders in the fuse panel can vary, depending on your office configuration. For help in locating the fuse holders, refer to the fuse assignment diagram for your office. Also call your next level of support to help you locate the fuses.

2 The next step depends on if the switch power is a -48 V dc feed or by a -60 V dc feed.

If the switch power is	Do
-48 V dc	step 3
-60 V dc	step 4

3 Continue when you know of restored power at the power plant for your office. Power maintenance personnel must check for restored power at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and

How to recover a dead XA-Core DMS switch (continued)

the battery return plate. Repeat the dc voltage measurement for the B feed bus. Power is correct when the voltage on each feed is -48 V dc.

Note: Power can be at a nominal potential of -48 V dc. Under conditions that are not normal, the operating voltage can range from -43.75 V dc to -55.8 V dc. A not normal condition is a commercial power failure

If the switch has	Do
power retrieval	step 6
no power retrieval	step 5

4 Continue when you know of restored power at the power plant for your office. Request power maintenance personnel to check for restored power at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat the dc voltage measurement for the B feed bus. Power is correct when the voltage on each feed is -60 V dc.

Note: Power can be at a nominal potential of -60 V dc. Under conditions that are not normal, the operating voltage can range from -57.4 V dc to -67.7 V dc. A not normal condition is a commercial power failure.

If power has	Do
power retrieval	step 6
no power retrieval	step 5

At the power room

5 For help in restoring power to the PDC, call the personnel responsible for maintenance of power at your site.

When power restores to the PDC, return to this point.

At the PDC

6 Inspect the alarm indication fuses for the XA-Core and the network cabinets.

If uses that blew are	Do
present	step 7
not present	step 14

7 Replace the blown cartridge fuse in the rear of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

8 Remove the blown alarm-indication fuse from the front of the fuse holder.

9 Re-insert the fuse holder, with the alarm-indication fuse removed, into the PDC.

10 Get an alarm-indication fuse for replacement.

11 Insert the alarm-indication fuse that is for replacement into the fuse holder.

How to recover a dead XA-Core DMS switch (continued)

12 Continue as follows:

If the replacement fuse is	Do
not successful and blows repeatedly	step 13
successful	step 14

13 Call your next level of support for help.

Continue when you complete replacement of all blown fuses and restored power to the XA-Core and network cabinets. Continue this procedure at step 14.

14 If a second person is available to help in the recovery, continue this procedure with two sets of tasks. Request the second person to restore power from the pdc to the peripheral module frames. The second person restores power by use of steps 86 through 121 of this procedure. While the second person restores power, you recover the core and network by completion of steps 15 through 73. If one person is available, recover the core and network first.

15 Determine if the switch has a remote oscillator shelf.

If the switch has	Do
a remote oscillator shelf	step 16
no remote oscillator shelf	step 17

At the remote oscillator shelf

16 Turn on the power converters for the shelf.

At the XA-Core cabinet

17 Locate the NT9X31 and NT9X30 power converters for message switch 0 (MS 0) in slots 33F and 36F on the MS 0 shelf.

18 Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F of the MS 0 shelf at the same time. Lift and release the power switches located on the faceplates of the converters.

19 Locate the NT9X31 and NT9X30 power converters for MS 0 in slots 1F and 4F on the MS 0 shelf.

20 Turn on the NT9X31 and NT9X30 power converters in slots 1F and 4F of the MS 0 shelf at the same time. Lift and release the power switches located on the faceplates of the converters.

21 Locate the NT9X31 and NT9X30 power converters for message switch 1 (MS 1) in slots 33F and 36F on the MS 1 shelf.

22 Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F of the MS 1 shelf at the same time. Lift and release the power switches located on the faceplates of the converters.

23 Locate the NT9X31 and NT9X30 power converters for MS 1 in slots 1F and 4F on the MS 01shelf.

How to recover a dead XA-Core DMS switch (continued)

24 Turn on the NT9X31 and NT9X30 power converters in slots 1F and 4F of the MS 1 shelf at the same time. Lift and release the power switches located on the faceplates of the converters.

25 Determine if the switch is a SuperNode switch or a SuperNode SE switch.

If the switch is	Do
a SuperNode switch	step 26
a SuperNode SE switch	step 29

26 Turn on circuit breakers for shelf interface module (SIM) A. Turn on the three switches for circuit breakers A1, A2, and A3. The SIM A card is in slot 3R of the XA-Core shelf.

27 Turn on circuit breakers for shelf interface module (SIM) B. Turn on the three switches for circuit breakers B1, B2, and B3. The SIM B card is in slot 16R of the XA-Core shelf.

28 Go to step 31

29 Turn on circuit breakers for shelf interface module (SIM) A. Turn on the two switches for circuit breakers A1 and A2. The SIM A card is in slot 3R of the XA-Core shelf.

30 Turn on circuit breakers for shelf interface module (SIM) B. Turn on the two switches for circuit breakers B1 and B2. The SIM B card is in slot 16R of the XA-Core shelf.

31 Determine if all the power converters have power. You know that all the power converters have power when all the Converter Off lights go off.

If all the power converters have	Do
power	step 24
not power	step 32

32 To power up the frame perform the procedure, “Clearing an Ext FSP DPCC cabinet major alarm” in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes).

When you completed the procedure, return to this point.

33 Go to step 17

How to recover a dead XA-Core DMS switch (continued)

At the XA-Core shelf

34

CAUTION
Extended service interruption
If you boot the switch from tape, the boot requires more recovery time than a boot from disk. Boot from disk when possible, because call processing operation continues quicker after a boot from disk. Do not try this procedure before you call your next level of support.

Determine from office records the name of the last office image file.

If the last office image file is on	Do
disk	step 36
tape	step 35

35 Make sure that the tape cartridge contains the last image file inserted in the tape drive.

At the XA-Core reset terminal

36 To boot the XA-Core, type:

>**BOOT nn s p**

and press the enter key.

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

s is the front (F) or rear (R) shelf position of the IOP card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

p is the upper (U) or lower (L) position of the IOP card that contains the packlet with the last image file. The packlet is for a disk drive or a DAT drive.

Example of a RTIF response

```
BOOT Please confirm: (YES/NO)
```

37 To confirm the command, type:

>**YES**

and press the enter key.

Example of a RTIF response

```
Boot request submitted
```

How to recover a dead XA-Core DMS switch (continued)

38 Monitor the XA-Core reset terminal to determine if the switch has booted.

When the switch boots, the XA-Core reset terminal displays a response to indicate a boot in progress. The response also displays different diagnostic messages and alphanumeric addresses. When the switch has completely booted, an A1 appears on the RTIF display.f

If the response has	Do
an A1	step 39
no A1 after approximately 15 min	step 164

At the MAP terminal

39

CAUTION
Extended service interruption
The exact log in procedure can vary, depending on your office configuration. If you need additional help, call the personnel responsible for the next level of support.

Determine if you have to log in.

Note: The log in message indicates that you have to manually log in. An automatic log in can occur if the office parameters have automatic log in.

Example of a MAP response

```
Please Login.
```

If the log in is	Do
not automatic	step 40
automatic	step 44

40 Press the break key.

Example of a MAP response

```
?
```

41 To log in to the MAP terminal, type:

>**LOGIN**

and press the enter key.

Example of a MAP response

```
Enter User Name
```

How to recover a dead XA-Core DMS switch (continued)

42 To enter the user name, type:

>user_name

and press the enter key.

where

user_name is the name of the user for the account

Example of a MAP response

```
Enter Password
```

43 To enter the password, type:

>**password**

and press the enter key.

where

password is the name of the password for the account

Example of a MAP response

```
SuperNode1 Logged in on 1997/01/15 at 20:37:17
```

44 To turn on priority, type:

>**PRIORITY ON**

and press the enter key.

Example of a MAP response

```
Pref>
```

45 To determine if the system time is correct, type:

>TIME

and press the enter key.

Example of a MAP response

```
Time is 14:55:50
```

If the system time is	Do
correct	step 48
not correct	step 46

46 To enter the correct time (by use of the 24 hour clock), type:

>**SETTIME hh mm**

and press the enter key.

where

hh is the hour (00 to 23)

mm is the minute (00 to 59)

How to recover a dead XA-Core DMS switch (continued)

Example of a MAP response

```
  Warning:  There is an automated TOD clock change
request scheduled on:
1997/10/15 at 1:00 (see table DSTTABLE).
Do you want to proceed with this request?
Please confirm (“YES”, “Y”, “NO”, or “N”)
```

47 To confirm the command, type:

>**YES**

and press the enter key.

Example of a MAP response

```
  Time is 20:40:00 on WED 1997/10/15.
```

48 Determine if the system date is correct.

If the system date is	Do
correct	step 51
not correct	step 49

49 To enter the correct date, type:

>SETDATE dd mm yyyy

and press the enter key.

where

dd is the day (01 to 31)

mm is the month (01 to 12)

yyyyy is the year

Example of a MAP response

```
Warning:  There is an automated TOD clock change
request scheduled on:
1997/10/15 at 1:00 (see table DSTTABLE).
Do you want to proceed with this request?
Please confirm (“YES”, “Y”, “NO”, or “N”)
```

50 To confirm the command, type:

>**YES**

and press the enter key.

Example of a MAP response

```
Date is WED. 15/OCT/1997  00:00:00
```

51 To access the SRSTATUS level of the MAP, type:

>**MAPCI;MTC;SRSTATUS**

and press the enter key.

How to recover a dead XA-Core DMS switch (continued)

Example of a MAP response

```
SRSTATUS
0 Quit  OVERALL STATUS  Pend: 0%  Inprg: 0%  Comp: 100%
Fail: 0%
2 View_  View: SYSTEM                              14:08:30
3 List_          Pend  InPrg  Comp  Fail      Pend InPrg
Comp Fail
4       MS       0     0      2     0   IOD   5   5     30   2
5       NET      0     0      6     0   Other 21  3     13   3
6         SER1     0      41      0       0
7         SER2     0      39      0       0
8         SER3     0      37      0       0
9
10         MTC:
11         STATUS:
```

52 Determine the recovery status of the MSs.

Note: MS recovery status displays to the right of the word “MS” in the MAP display. Recovery status for each MScan be one of pending, in progress, complete, or failed.

If the recovery status is	Do
either MS failed recovery	step 164
either MS continues to have pending recovery	step 53
another status different from failed or pending recovery	step 54

53 Wait until both MSs are either in recovery development or have completed recovery.

When neither MS continues to have pending recovery, go to step 52

54 To access the MS Clock level of the MAP display, type:

>MAPCI;MTC;MS;CLOCK

and press the enter key.

55 To synchronize the clocks, type:

>SYNC

and press the enter key.

If the SYNC command is	Do
successful	step 57
failed	step 56

56 Record the reason for synchronization failure, as shown in the MAP response. Continue this procedure at step 57 to recover networks and peripheral modules (PM). Repeat the try to synchronize the MS clocks later, after networks and PMs are in service.

How to recover a dead XA-Core DMS switch (continued)

At the ENET frames

57 Locate the NT9X31 power converters in slots 1F and 33F on the ENET shelves.

58 To turn on the NT9X31 power converters lift and release the power switches located on the faceplates of the converters.

59 Locate the NT9X30 power converters in slots 4F and 36F on the ENET shelves.

60 Turn on the NT9X30 power converters lift and release the power switches located on the faceplates of the converters.

61 Determine if all the converters have power. Power indication is by all the Converter Off lights going off.

If all the power converters have	Do
power	step 64
not power	step 62

62 To power up the ENET frame perform the procedure, *Clearing an Ext FSP DPCC cabinet major alarm*, in the document, *Alarm and performance monitoring procedures, 297-XXXX-543*

When you complete the procedure, return to this point.

63 Go to step 57

At the MAP terminal

64 To access the SRSTATUS level of the MAP display, type:

>**MAPCI;MTC;SRSTATUS**

and press the enter key.

Example of a MAP response

```
SRSTATUS
0 Quit  OVERALL STATUS  Pend: 0%  Inprg: 0%  Comp: 100%
Fail: 0%
2 View_  View: SYSTEM                              14:08:30
3 List_          Pend  InPrg  Comp  Fail      Pend InPrg
Comp Fail
4       MS      0    0      2    0   IOD   5   5    30   2
5       NET     0    0      6    0   Other 21  3    13   3
6         SER1     0     41     0      0
7         SER2     0     39     0      0
8         SER3     0     37     0      0
9
10         MTC:
11         STATUS:
```

How to recover a dead XA-Core DMS switch (continued)

65 From the MAP display, determine the recovery status of the network.

Note: Network recovery status displays to the right of the word “NET” in the MAP display. Recovery status can be one of pending, in progress, complete, or failed.

If the status of any network element is	Do
failed	step 68
pending	step 66
another status	step 74

66 Continue when there are no network elements that continue to be pending recovery.

67 Go to step 65.

68 To manually recover the ENET perform the procedure, “Recovering the Enhanced Network” in *Recovery Procedures*, 297-8001-545.

When you complete the procedure, return to this point.

69 Go to step 64.

At the MAP terminal

70 To access the NET level of the MAP display, type:

>NET

and press the enter key.

Example of a MAP response

```
NET
                          11111   11111   22222   22222   33
Plane  01234   56789   01234   56789   01234   56789   01
  0  0000
  1  0000
JNET
```

71 To manually busy the network module for return to service, type:

>**BSY plane_no pair_no**

and press the enter key.

where

plane_no is the network plane number (0 or 1)

pair_no is the network plane pair number (0 to 31)

72 To return the network module to service, type:

>**RTS plane_no pair_no**

and press the enter key.

where

plane_no is the network plane number (0 or 1)

How to recover a dead XA-Core DMS switch (continued)

pair_no is the network plane pair number (0 to 31)

73 Repeat steps 71 through 72 for each JNET shelf.

When all JNET shelves recover, continue this procedure at step 74.

74 Determine if there are additional input output controller (IOC) and maintenance and administration position (MAP) terminals to recover.

If recover of additional IOCs and MAP terminals is	Do
not complete	step 75
complete	step 86

75 Restore power to all remaining power inverters in the office.

At the IOC

76 Locate the IOC for recovery.

If recovery is for	Do
an IOC	step 77
an IOM	step 81

77 Turn on the power converters on the IOC.

Note: The version of IOC determines if the IOC has one or two power converters.

78 While you press the reset button on one of the IOC power converters, lift the related circuit breaker to turn on the FSP.

79 Release the reset button.

80 Repeat steps 76 through 79 for each IOC for recovery, then continue this procedure at step 81.

81 To access the input output device (IOD) level of the MAP display, type:

>IOD

and press the enter key.

82 To access the IOC level of the MAP display for the IOC for recovery, type:

>**BSY ioc_no**

and press the enter key.

where

ioc_no is the number of the IOC or IOM

83 To return the IOC or IOM to service, type:

>RTS ioc_no

and press the enter key.

where

ioc_no is the number of the IOC or IOM

How to recover a dead XA-Core DMS switch (continued)

84 Repeat steps 82 through 83 for each IOC or IOM for recovery, then continue this procedure at step 85.

85 Log in to additional MAP terminals as required.

Note: Steps 40 through 43 describe how to log in to the MAP terminal.

86 Determine if your switch has one or more link peripheral processors (LPP) or fiberized link interface shelf (FLIS).

If the switch has	Do
LPPs or FLIS	step 87
does not have LPPs or FLIS	step 106

87 Determine if PDC has power restored to the LPP(s).

If PDC has	Do
power restored to the LPPs	step 91
not power restored to the LPPs	step 88

88 Check the PDC fuses that supply the LPP.

If there are	Do
blown fuses	step 89
no blown fuses visible	step 90

89 Replace the blown fuses.

Note: If fuses blow repeatedly, call your next level of support for help.

When PDC power restores to the LPPs, continue this procedure at step 91.

90 Call the personnel responsible for maintaining power at your site, or refer to your next level of support for help.

When PDC power restores to the LPPs, continue this procedure at step 91.

91 Locate the LPPs for recovery.

How to recover a dead XA-Core DMS switch (continued)

At the LPP cabinet

92

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP). Also a wrist strap can connect to a modular supervisory panel (MSP). Wear a wrist strap when you handle circuit cards. A wrist strap protects the cards against damage caused by static electricity.

Locate the NT9X74 cards in all link interface shelves (LIS).

Note: NT9X74 cards are in shelf position 7F and 32F on all LISs.

93 To unseat each NT9X74 card, release the locking levers and carefully pull the card towards you about 25 mm (1 in.).

94 Locate the NT9X30 power converters in slots 4F and 36F of the link interface module (LIM) unit shelf.

95 To turn on the power converters of the LIM unit shelf, toggle the switch each NT9X30 card.

96 Locate the NT9X30 or NTDX16 power converters for each LIS.

Note: NT9X30 power converters are in slots 4F and 36F for each LIS. NTDX16 power converters can be in slots 1F, 4F, 33F, and 36F for each LIS.

97 To turn on the LIS power converters, toggle the switch on each NT9X30 or NTDX16 card.

98 Determine if all the power converters turned on power correctly. All the CONVERTER OFF lights go off when power turns on correctly.

If all the CONVERTER OFF lights are	Do
off	step 101
not off	step 100

99 To power up the frame, perform the procedure, “Clearing an Ext FSP LPP cabinet major alarm” in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes).

When you complete the procedure, return to this point.

100 Go to step 94.

How to recover a dead XA-Core DMS switch (continued)

101 Put in position all NT9X74 cards as follows:

- Carefully slide each NT9X74 card back into the LIS.
- Push on the upper and lower edges of each faceplate. Make sure that the card is completely in the slot of the shelf.
- Close the locking levers on each card.

102 Repeat steps 91 through 101 for each LPP in your office.

When power restores to all LPPs, continue this procedure at step 103.

103 To access the SRSTATUS level of the MAP display, type:

>**MAPCI;MTC;SRSTATUS**

and pressing the Enter key.

Example of a MAP response

```
SRSTATUS
0 Quit  OVERALL STATUS  Pend: 0%  Inprg: 0%  Comp: 100%
Fail: 0%
2 View_  View: SYSTEM                                14:08:30
3 List_          Pend  InPrg  Comp  Fail      Pend InPrg
Comp Fail
4       MS      0    0      2    0   IOD   5   5    30   2
5       NET     0    0      6    0   Other 21  3    13   3
6         SER1     0     41     0      0
7         SER2     0     39     0      0
8         SER3     0     37     0      0
9
10         MTC:
11         STATUS:
```

104 From the MAP display, determine the recovery status of the Series III PMs.

Note: Series III PM recovery status displays to the right of the word "SER3" in the MAP display. Recovery status can be one of pending, in progress, complete, or failed.

If the Series 3 PM are	Do
zero	step 106
not zero	step 105

105 To manually recover the PMs, perform the procedure, "Recovering Link Peripheral Processors, in *Recovery Procedures*, 297-8001-545.

When you complete the procedure, return to this point.

106 Steps 107 through 121 describe how to restore power from the PDC to Series I and Series II peripheral module frames. Continue as follows:

If the PDC power to the PM frames restores	Do
correctly	step 122
not correctly	step 107

How to recover a dead XA-Core DMS switch (continued)

107 Get one of the following capacitor charging tools:

- a 100-W, 120-V light bulb installed into a socket that has pigtail leads
- tool number T000655 (CPC number NTA0600512), that has a fuse holder-style connector instead of pigtail leads for easier insertion

At the PDC

108

WARNING
Possible equipment damage or extended service interruption
Use correct fuses. When you return fuses to the PDC, make sure that the amperage of the fuses is correct. The fuse amperage must match the amperage marked on the PDC.

At the first empty fuse slot in the PDC, connect the leads of the capacitor charging tool. Connect the leads across the contacts for the fuse holder until the lamp decreases brightness. If you use a charging tool with a fuse holder-style connector, insert the connector into the slot. Insert the connector until the lamp decreases brightness.

109 Remove the capacitor charging tool and immediately insert again the correct fuse holder into the slot.

110 Repeat steps 108 and 109 for all the LCE talk battery, TME talk battery, and PDC filter fuse holders you removed in step 1. When all fuses restore to the PDCs, continue with this procedure.

111 Determine if any alarm-indicating fuses blew.

Note: The fuse alarm-indicator lamp lights when an alarm-indicating fuse blows.

If any alarm-indicating fuses have	Do
blown	step 112
not blown	step 122

112 Locate a fuse holder with a blown alarm-indicating fuse.

Note: You can replace blown fuses in any order.

113 The cartridge fuse in the fuse holder has blown. Remove the fuse holder from the PDC.

114 Replace the blown cartridge fuse in the rear of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

115 Remove the blown alarm-indicating fuse from the front of the fuse holder.

How to recover a dead XA-Core DMS switch (continued)

116 Insert again the fuse holder, with the alarm-indicating fuse removed, into the PDC.

117 Get a replacement alarm-indicating fuse.

118 Insert the replacement alarm-indicating fuse into the fuse holder.

119 Determine if the alarm-indicating fuse blows.

Note: The fuse alarm indicator lamp lights when an alarm-indicating fuse blows.

If the alarm-indicating fuse is	Do
blown	step 164
not blown	step 120

120 Determine if you replaced all the blown alarm-indicating fuses.

If you have	Do
replaced all the blown alarm-indicating fuses	step 121
not replaced all the blown alarm-indicating fuses	step 112

121 Determine if the fuse alarm indicator lamp lit.

If the fuse alarm indicator lamp lit	Do
yes	step 164
no	step 122

At the PM frames

122 Select a peripheral module (PM) frame to power up.

Note: The PM frames can power up in any order.

123 Locate the frame supervisory panel (FSP) and the power converters on the frame.

124 Determine if the FSP for the frame has fuses or circuit breakers.

If the FSP has	Do
fuses	step 125
circuit breakers	step 130

How to recover a dead XA-Core DMS switch (continued)

125 Determine if the power converters have Power Reset buttons or Power Reset switches.

If the power converters have	Do
Power Reset buttons	step 126
Power Reset switches	step 128

126 To turn on each power converter press and hold its Power Reset button for 2 s.

Note: The Converter Fail light goes off when the power converter turns on.

127 Determine if all the power converters turn on correctly, indicated by all the Converter Fail lights going off.

If all the Converter Fail lights are	Do
off	step 132
not off	step 133

128 To turn on each power converter pull out the power switch and toggle it to the Power Reset position.

Note: The Converter Fail light goes off when the power converter turns on.

129 Determine if all the power converters turns on correctly, indicated by all the Converter Fail lights are off.

If all the Converter Fail lights are	Do
off	step 132
not off	step 133

130 Turn on each power converter as follows:

- Toggle the circuit breaker to the ON position.
- Press and hold the Power Reset button for 2 s.
- Release the circuit breaker and the Power Reset button.

Note: The Converter Fail light goes off when the power converter turns on.

131 Determine if all the power converters turn on correctly, indicated by all the CONVERTER FAIL lights are off.

If all the Converter Fail lights are	Do
off	step 132
not off	step 133

How to recover a dead XA-Core DMS switch (continued)

132 Determine if all PM frames turn on.

If all the PM frames turn on	Do
yes	step 137
no	step 133

133 Determine if a try made to power up the remaining PM frames.

If power up has	Do
not tried	step 134
tried and failed	step 136

134 Power up the next PM frame.

135 Go to step 123.

136 To power up the remaining PM frames perform the correct procedures in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes). When you complete the procedure, return to this point.

At the MAP terminal

137 To access the SRSTATUS level of the MAP display, type:

>**MAPCI;MTC;SRSTATUS**

and press the enter key.

Example of a MAP response

```
SRSTATUS
0 Quit  OVERALL STATUS  Pend: 0%  Inprg: 0%  Comp: 100%
Fail: 0%
2 View_  View: SYSTEM                              14:08:30
3 List_          Pend  InPrg  Comp  Fail      Pend InPrg
Comp Fail
4       MS      0    0      2    0   IOD   5   5     30   2
5       NET     0    0      6    0   Other 21  3     13   3
6         SER1     0     41     0      0
7         SER2     0     39     0      0
8         SER3     0     0      37     0
9
10         MTC:
11         STATUS:
```

How to recover a dead XA-Core DMS switch (continued)

138 From the MAP display, determine the recovery status of the Series I and II PMs.

Note: Series I PM recovery status displays to the right of the word "SER1" in the MAP display. Series II PM recovery status displays to the right of the word "SER2" in the MAP display. Recovery status can be one of pending, in progress, complete, or failed.

If the recovery status is	Do
zero	step 141
not zero	step 139

139 Determine from office records or other office personnel which PMs to manually recover first.

140 To manually recover the PMs in the required order, perform the correct alarm clearing procedures in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes). When you have complete the procedures, return to this point.

141

CAUTION
Loss of billing data
Different billing systems than automatic message accounting (AMA) or additional billing system, can be in your office configuration. Call your next level of support to determine if other billing systems are in your office, and if you require recovery action.

To access the device independent recording package (DIRP) level of the MAP, type:

>**IOD;DIRP**

and press the enter key.

142 To determine the state of the recording volumes for the billing system, type:

>**QUERY subsystem ALL**

and press the enter key.

where

subsystem is the name of the DIRP system used for the billing system

How to recover a dead XA-Core DMS switch (continued)

Example of a MAP response

```
SSNAME  SSNO  SEQNO  ROTATES  POOLNO  PARLPOOL  EMERGENCY
AMA        0      1        6       9        62  ***YES***
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE   NONEg
STANDBY1 NONE
PARALLEL
FILE          STATE VOLUME   BLOCK E V V_B VLID FNUM FRN#
                 NONE
REGULAR VOLUME(S)
VOL# VOLNAME  STATE      IOC CARD VOL FSEG ROOM VLID FILES
REGULAR SPACE
```

If the state of the recording volumes for the billing system has	Do
no volumes allocated, as indicated by the word NONE under the state header on the MAP display	step 144
any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 143
all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 145

Note: Different billing systems than automatic message accounting (AMA) or additional billing system, can be in your office configuration. Call your next level of support to determine if other billing systems are in your office, and if you require recovery action.

143 To reset any volumes that are IN ERROR, type:

>**RSETVOL vol_name**

and press the enter key.

where

vol_name is the name of the volume to reset

If the volumes reset has	Do
passed	step 145
failed	step 164

144 Perform the procedure, “Allocating recording volumes in the DIRP utility” in *Routine Maintenance Procedures*, 297-8001-546. When you complete the procedure, return to this point.

How to recover a dead XA-Core DMS switch (continued)

145 To determine the state of the DLOG recording volumes, type:

>**QUERY DLOG ALL**

and press the enter key.

Example of a MAP response

```
SSNAME  SSNO  SEQNO  ROTATES  POOLNO  PARLPOOL  EMERGENCY
DLOG      2      1      102      10    NONE     ****YES***
.
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE  AVAIL S01DDLOG     6    6   0 22 NO 8447 0013 204D
STANDBY1 AVAIL S00DDLOG   0   0   0 23 NO 8408 0014 309B
.
REGULAR VOLUME(S)
VOL# VOLNAME STATE   IOC CARD VOL FSEG ROOM VLID FILES
   22 S01DDLOG READY       N/A N/A   7    5   18 8447 A
   23 S00DDLOG READY       N/A N/A   8    4   18 8408 S1
REGULAR SPACE
VOL# VOLNAME STATE          SEGS  EXP UNEXP TOTAL
  22 S01DDLOG READY           5   13     0     18
  23 S00DDLOG READY           4   14     0     18
```

If the state of DLOG recording volumes is	Do
no allocated volumes, as indicated by the word NONE under the state header on the MAP display	step 147
any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 146
all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 148

Note: Different billing systems than automatic message accounting (AMA) or additional billing system, can be in your office configuration. Call your next level of support to determine if other billing systems are in your office, and if you require recovery action.

How to recover a dead XA-Core DMS switch (continued)

146 To reset any volumes that are IN ERROR, type:

>**RSETVOL vol_name**

and press the enter key.

where

vol_name is the name of the volume to reset

If the volumes reset has	Do
passed	step 148
failed	step 164

147 Perform the procedure, “Allocating recording volumes in the DIRP utility” in *Routine Maintenance Procedures*, 297-8001-546. When you complete the procedure, return to this point.

148 Determine from your next level of support if you need to recover other DIRP systems (for example, JF, OM).

If you need to recover other DIRP systems	Do
yes	step 149
no	step 152

149 Perform the correct procedures in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes). When you complete the procedures, return to this point.

150 To determine if DIRP logs generated, type:

>**LOGUTIL;OPEN DIRP**

and press the enter key.

If DIRP log generated	Do
yes	step 151
no	step 152

151 Refer to the *Log Report Reference Manual*, 297-800-8401, 297-800-8402, 297-800-8403, 297-800-8404, 297-800-8405, 297-800-8406, and 297-8001-8407 (seven volumes), and take the correct action.

When you complete the log report activities, return to this point.

152 Determine if the try to synchronize the clocks in step 55 was successful.

If synchronization	Do
was successful	step 155
failed	step 153

How to recover a dead XA-Core DMS switch (end)

153 To access the MS Clock level of the MAP display, type:

>MAPCI;MTC;MS;CLOCK

and press the enter key.

154 To synchronize the clocks, type:

>**SYNC**

and press the enter key.

If the SYNC command was	Do
a successful completion	step 155
a failure	step 164

155 To turn off priority, type:

>**PRIORITY OFF**

and press the enter key.

156 To access the SRSTATUS level of the MAP display, type:

>**MAPCI;MTC;SRSTATUS**

and press the enter key.

Example of a MAP response

```
SRSTATUS
0 Quit  OVERALL STATUS  Pend: 0%  Inprg: 0%  Comp: 100%
Fail: 0%
2 View_  View: SYSTEM                              14:08:30
3 List_          Pend  InPrg  Comp  Fail      Pend InPrg
Comp Fail
4       MS      0    0      2    0   IOD   5   5    30   2
5       NET     0    0      6    0   Other 21  3    13   3
6         SER1     0     0      41     0
7         SER2     0     0      39     0
8         SER3     0     0      37     0
9
10         MTC:
11         STATUS:
```

157 Determine the status of the switch recovery.

If the status of the switch recovery is	Do
any Series III PMs that failed recovery	step 158
any Series I or II PMs that failed recovery	step 160
any IODs or other devices and services that failed recovery	step 163
that the system has completely recovered	step 165

158 To manually recover the PMs, perform the procedure, “Recovering Link Peripheral Processors” in *Recovery Procedures*, 297-8001-545.

When you complete the procedure, return to this point.

159 Go to step 156.

160 Determine from office records or other office personnel which PMs you can recover first.

161 To manually recover the PMs in the required order perform the correct alarm clearing procedures in *Alarm Clearing and Performance Monitoring Procedures*, 297-8001-5431, 297-8001-5432, 297-8001-5433, and 297-8001-5434 (four volumes).

When you complete the procedure, return to this point.

162 Go to step 156.

163 To manually recover IODs and other devices and services, perform the correct procedure in this document. Also you can refer to your site-related operating procedures.

164 For additional help, call the personnel responsible for the next level of support.

165 You have completed this procedure.

4 Introduction to routine maintenance procedures

Introduction

This chapter describes how to perform routine maintenance procedures on the DMS SuperNode (SN) and DMS SuperNode SE (SNSE) XA-Core (XAC). Each procedure contains the following sections:

- application
- interval
- common procedures
- action

Application

This section describes the purpose of the procedure.

Interval

This section describes when to perform the procedure.

Common procedures

This section lists common procedures used during the routine maintenance procedure. A common procedure is a series of steps that repeats in maintenance procedures. Common procedures include card removal and replacement.

Action

This section provides a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of XA-Core storage device commands and tasks

CAUTION

Use the SCANF command with caution

SCANF is a powerful tool that is used to perform file operations, one of which is to allow open files to be copied. Use this command during periods of low activity to avoid loss of data.

This section provides a an overview of the tasks and commands associated with XA-Core storage devices.

Table 4-1 Back up a file

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
Back up a single file from a disk to a tape	BACKUP FILE (BA)	SCANF XXXX COPY	COPY

Table 4-2 Copy a file (Sheet 1 of 2)

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
Copy a single file from any storage device to another		SCANF XXXX COPY	COPY
Copy a single file from one disk volume to another disk volume		SCANF XXXX COPY	COPY
Copy a single file within the same disk volume to a different file name	DUPLICATE (DUP)		COPY
Copy multiple files from one storage device to another		SCANF XXXX COPY	
Copy multiple files from tape to disk		SCANF XXXX COPY	

Table 4-2 Copy a file (Sheet 2 of 2)

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
Copy multiple files to a specified disk volume		SCANF XXXX COPY	

Table 4-3 Create a file or volume

Task	DISKADM: XA-Core disks	SCANF: all storage devices (XXXX= name of storage device and volume)	Edit utility: all storage devices
Create a volume on an in-service disk	CREATEVOL (CV)		
Create, navigate, edit or save a file			EDIT, INPUT, TOP, END, UP, DOWN, FIND, LINE, TYPE, CHANGE, DELETE, SAVE, FILE

Table 4-4 Handling image files

Task	DISKADM: XA-Core disks	DISKADM: XA-Core disks	ITOCCI: XA-Core Disks
Delete a registered image file from a Message Switch (MS) or XA-Core ITOC			CLEARBBOTFILE (CBF)
List all image files registered in the MS or XA-Core ITOC			LISTBOOTFILE (LBF)
Register a specified image file in the MS or XA-Core ITOC			SETBOOTFILE (SBF)
Set an Autoload image file			SETALR (SA)

Table 4-5 Deleting a file or volume

Task	DISKADM: XA-Core disks	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)
Delete a single file from a disk volume		DELETEFL (DDF)	SCANF XXXX DELETE
Delete a volume from an in-service disk	DELETEVOL (DDV)		
Delete files from a volume on an in-service disk	REINITVOL (RV)		SCANF XXXX DELETE
Delete selected files from a disk volume			SCANF XXXX DELETE
Delete files from a tape (see “Format a tape”)			

Table 4-6 Tape commands

Task	DISKADM: XA-Core disks	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)
Demount a tape		EJECTTAPE (ET) or QUIT DISKUT	
Format a tape		INSERTTAPE (IT)	
Mount a tape		INSERTTAPE (IT)	

Table 4-7 Listing a file or volume (Sheet 1 of 2)

Task	DISKADM: XA-Core disks	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)
List data about a single disk volume		VOLINFO (VINFO)	
List data about all disk volumes	DISPLAYVOLS (DV)	LISTVOLS (LV)	

Table 4-7 Listing a file or volume (Sheet 2 of 2)

Task	DISKADM: XA-Core disks	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)
List data about all files on a disk or tape, and place the file names in the user directory		LISTFL (LF)	SCANF XXXX BRIEF or FULL
List data about an in-service disk	DISPLAYDISK (DD)		
List data about selected files on a disk or tape, and place the file names in the user directory			SCANF XXXX BRIEF or FULL

Table 4-8 File commands

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
Execute a file			READ
Rename a file on a disk volume	RENAMFL (RNF)		COPY
Restore a single file from tape to disk	RESTORE FILE (RE)	SCANF XXXX COPY	COPY

Table 4-9 VDU or printer commands

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
List the contents of a file on the VDU or printer			PRINT

Table 4-10 SCANF OPTIONS

Task	DISKUT: XA-Core disks and tapes	SCANF: all storage devices (XXXX= name of storage device and volume)	CI common file manipulation commands: all storage devices
Disable prompt for confirmation		NOPROMPT	
Operate on files that do match criteria		MATCH	
Operate on files that do not match specified name criteria		NOTNAME	
Operate on files up to and including a specified index value		TOI	
Operate on files with specified name criteria		NAME	
Prompt for confirmation (default)		PROMPT	
Start from a file index value		FROMI	

Routine maintenance schedule for XA-Core

Use this table to help you prepare a routine maintenance schedule for your office. The following procedures are for a DMS SuperNode or SuperNode SE switch that has the eXtended Architecture Core (XA-Core).

Task	Interval
How to backup an XA-Core office image from disk to tape	each week or per office schedule
How to change XA-Core REx intensity	when required
How to check and adjust the TOD clock of XA-Core	daily
How to clean the XA-Core tape drive	after eight hours of operation
How to copy all files of an XA-Core disk volume to tape	when required
How to create a test volume on XA-Core disks	after installation of new disk in disk drive packlet
How to create volumes on XA-Core disks	after installation of new or old disk in disk drive packlet
How to perform LED maintenance in XA-Core	every 30 days (monthly)
How to record an XA-Core office image on a disk	every day or when required
How to replace XA-Core cooling unit filters	every six weeks
How to restore an XA-Core office image from tape to disk	when required
How to return an XA-Core card, packlet, or assembly to Nortel Networks	when required
How to schedule automatic image taking for XA-Core	per office manager
How to schedule tape drive maintenance in XA-Core	every 180 days (six months)
How to test wrist-strap grounding cords for XA-Core	every 30 days (monthly)

Upgrade firmware on an XA-Core component

Application

Use this procedure to upgrade firmware on an XA-Core component. You can upgrade firmware in the following components:

- PE packs
- IOP packs
- CMIC packlets
- AMDI packlets
- ETHR packlets

This procedure is applicable only to offices equipped with CSP14 or higher based software releases.

Interval

Perform this procedure as required.

Common procedures

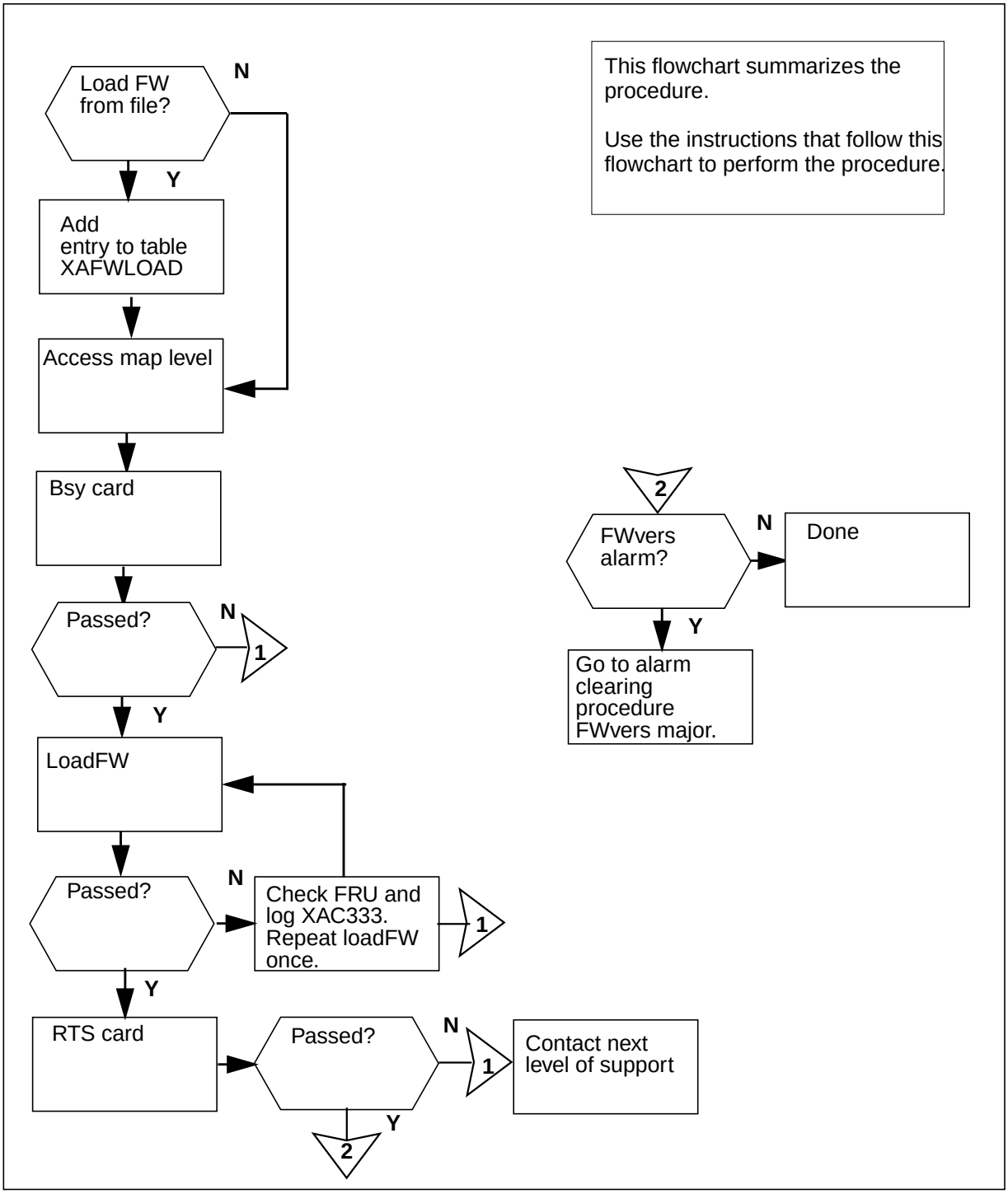
This procedure does not refer to any common procedures.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the routine maintenance procedure.

Upgrade firmware on an XA-Core component (continued)

Summary of Upgrade firmware on an XA-Core component



Upgrade firmware on an XA-Core component (continued)

Upgrade firmware on an XA-Core component

At the map

1 Determine the next action.

If	Do
you want to load the firmware (FW) from a file	step 2
you want to clone the firmware (FW) from another component of the same type	step 15

2 To access the table XAFWLOAD, type

>TABLE XAFWLOAD

and press the Enter key.

Map response
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: XAFWLOAD

3 To add a tuple to the table, type

>ADD

and press the Enter key.

Map response
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

4 To confirm the action, type

>Y

and press the Enter key.

Map response
INDEX:

5 To enter the index number, type

>index

and press the Enter key.

where

index is the index key of the tuple in table XAFWLOAD

Map response
FRU:

6 To enter the field replaceable unit (FRU), type

>fru

and press the Enter key.

where

Upgrade firmware on an XA-Core component (continued)

fru is the FRU of the new component (PE, IOP, CMIC, AMDI, or ETHR)

Map response
PEC:

7 To enter the product equipment code (PEC) code, type

>pec

and press the Enter key.

where

pec is the PEC code of the new component (for example, NTLX02AA)

Map response
VERSION:

8 To enter the version, type

>version

and press the Enter key.

where

version is the firmware version (for example, XAPE01BA)

Map response
VOLUME:

9 To enter the volume name, type

>volume

and press the Enter key.

where

volume is the volume containing the firmware version (for example, F02LFWLOADS)

Map response
FILE:

10 To enter the file name, type

>file

and press the Enter key.

where

file is the name of the file containing the firmware version (for example, PEFW424)

Map response
STATUS:

11 To enter the status, type

>status

and press the Enter key.

where

status is the status of the entry (old, current or new)

Upgrade firmware on an XA-Core component (continued)

Map response
SOAK:

12 To enter the soak time, type

>soak

and press the Enter key.

where

soak is the soak time measured in hours (for example, 48)

Map response
TUPLE TO BE ADDED:
3 PE NTLX02AA XAPE01BA F02LFWLOADS PEF424 NEW 48
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

13 To confirm the action, type

>Y

and press the Enter key.

Map response
TUPLE ADDED
JOURNAL FILE INACTIVE

14 To review the table entries, type

>LIST ALL

and press the Enter key.

Map response:

```
INDEX FRU PEC VERSION VOLUME FILE STATUS SOAK
---------------------------------------------
1 PE   NTLX02AA XAPE01AC F02LFWLOADS PEFW413 old     48
2 PE   NTLX02AA XAPE01AF F02LFWLOADS PEFW421 current 48
3 PE   NTLX02AA XAPE01BA F02LFWLOADS PEFW424 new     48
4 IOP  NTLX03AA XAIO01AA F02LFWLOADS ISEFW41 old     0
5 IOP  NTLX03AA XAIO01AC F02LFWLOADS ISEFW44 current 0
6 CMIC NTLX05AA PK10CU10 F02LFWLOADS 0C3FW75 current 72

BOTTOM
```

15 To access the PE, IOP, CMIC, AMDI, or ETHR map level, type

>MAPCI;MTC;XAC;map level

and press the Enter key.

where

map level is the name of the map level

Upgrade firmware on an XA-Core component (continued)

16

CAUTION
Possible service impact
The busy command may jeopardize redundancy. Perform this procedure during time periods of low traffic.

To manually busy the card, type

>BSY slot

and press the Enter key.

where

slot is the slot position of the card (for example, 4 Front)

Note: If this command reduces redundancy, you must use the Force option. Use the Force option with caution.

Map response
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):

17 To confirm the action, type

>Y

and press the Enter key.

If	Do
the response is Command Submitted. Bsy 4 front completed	18
the response is Command Submitted. Bsy 4 front failed	25

18 To load the firmware, type

>LOADFW slot FILE NEW

or

>LOADFW slot CLONE from_slot

and press the Enter key.

where

slot is the slot position of the card (for example 4 Front) being upgraded

Upgrade firmware on an XA-Core component (continued)

from_slot is the slot position of the card (for example 16 Front) being cloned

Note: The clone option is not available at the CMIC map level.

If	Do
the response is Command Submitted. LoadFW 4 front completed	19
the response is Command Submitted. LoadFW 4 front failed and, for example, reason is Volume nonexistent.	Confirm the FRU information in table XAFWLOAD and record log XAC333 then repeat this step again. If the loading process continues to fail, go to step 25

19 To return the card to service, type

>RTS slot

and press the Enter key.

where

slot is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. RTS 4 front passed	20
the response is Command Submitted. RTS 4 front failed	25

20 Determine the next action.

If	Do
you want to upgrade another component with the same FW	15
all components are upgraded	21

21 If you want to change the status of one of the firmware loads listed in table XAFWLOAD, type

>CHANGE entire_tuple

and press the Enter key.

where

entire_tuple is the entire tuple with the changed status (for example, 3 PE NTLX02AA XAPE01BA F02LFWLOADS PEFW424 current 48)

Map response
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

Upgrade firmware on an XA-Core component (end)

Note: Table XAFWLOAD lists firmware loads. For each FRU type, there can be only one firmware load with the status of “new”, and only one firmware load with the status of “current”. For a description of table XAFWLOAD, see the chapter, “XA-Core data schema overview” in the *XA-Core Reference Manual*, 297-8991-810.

22 To confirm the action, type

>Y

and press the Enter key.

Map response
TUPLE CHANGED
JOURNAL FILE INACTIVE

23 To review the table entries, type

>LIST ALL

and press the Enter key.

Example of a map response:

```
INDEX FRU PEC VERSION VOLUME FILE STATUS SOAK
-----------------------------------------
1 PE   NTLX02AA XAPE01AC F02LFWLOADS PEFW413 old     48
2 PE   NTLX02AA XAPE01AF F02LFWLOADS PEFW421 old     48
3 PE   NTLX02AA XAPE01BA F02LFWLOADS PEFW424 current 48
4 IOP  NTLX03AA XAIO01AA F02LFWLOADS ISEFW41 old     0
5 IOP  NTLX03AA XAIO01AC F02LFWLOADS ISEFW44 current 0
6 CMIC NTLX05AA PK10CU10 F02LFWLOADS 0C3FW75 current 72
```

24 Determine the next action.

If	Do
the system detects a firmware mismatch and raises an alarm	Record the FW version of the FRU and information recorded on the XAC330 log. Go to the appropriate alarm clearing procedure.
there is no alarm	26

25 For additional help, call the next level of support.

26 The procedure is complete.

How to backup an XA-Core office image from disk to tape

Application

Use this procedure to copy the office image files of an eXtended Architecture Core (XA-Core). Use this procedure to copy the office image files from a disk to a digital audio tape (DAT) cartridge in an XA-Core shelf.

Interval

Perform this procedure each week or as indicated in the routine maintenance schedule for your office.

Common procedures

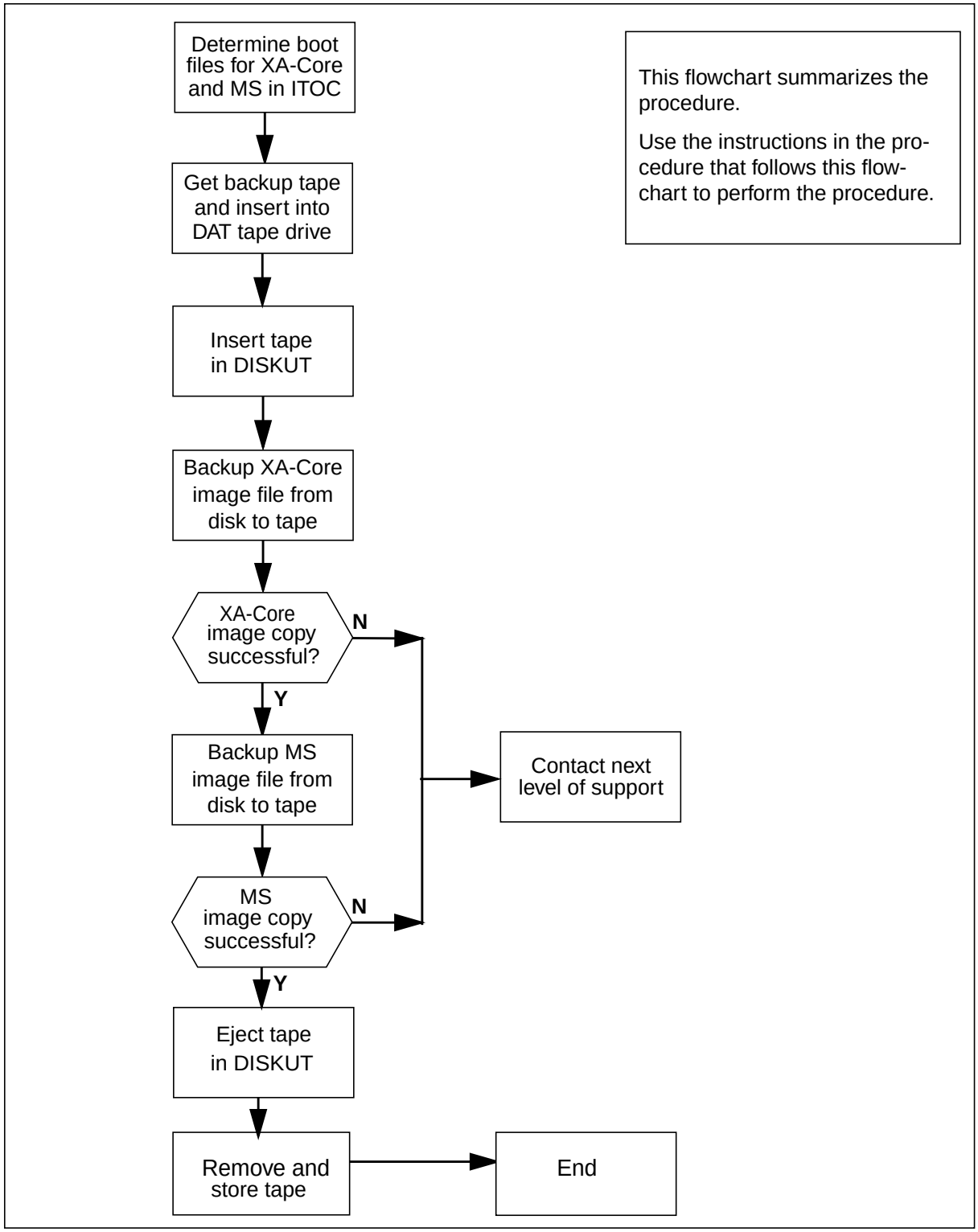
There are no common procedures.

Action

This procedure contains a summary flowchart as a summary of the procedure. Follow the exact steps to perform this procedure.

How to backup an XA-Core office image from disk to tape (continued)

Summary of How to backup an XA-Core office image from disk to tape



How to backup an XA-Core office image from disk to tape (continued)

How to backup an XA-Core office image from disk to tape

At the MAP

1 To access the MAP CI level display, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

2 To access the image table of contents (ITOC) user interface, type:

>ITOCCI

and press the enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

3 To list the boot file for the XA-Core in ITOC, type:

>LISTBOOTFILE XA

and press the enter key.

Example of a MAP response:

```
Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ ------------------- -----------

 0 * 05/17/1999 19:26:29 F02LIMAGE
IMG0517CY_CM
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

4 To list the boot file for the message switch (MS) in ITOC, type:

>LISTBOOTFILE MS

and press the enter key.

Example of a MAP response:

```
Image Table Of Contents for MS :

   A Registered          Generic Device       File
   L Date       Time                          Name
```

How to backup an XA-Core office image from disk to tape (continued)

```
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ ------------------- -----------

 0 * 05/17/1999 19:26:29 F02LIMAGE
IMG0517CY_MS
```

5 Determine if the XA-Core and MS have image files that are autoload registered (ALR). The examples of a MAP response in steps 3 and 4 identify the ALR image files by an asterisk (*) in the ALR column.

If the image files are	Do
ALR	step 6
not ALR	step 24

6 Record the names of the office image files for XA-Core and MS that are ALR. Also record the volume name that has these office image files The ALR image file is the file that you copy to the XA-Core tape.

Note 1: In the example of a MAP response in step 3, the name of the office image file for XA-Core is IMG0517CY_CM. Image file IMG0517CY_CM is ALR. Image file IMG0517CY_CM is in volume F02LIMAGE.

Note 2: In the example of a MAP response in step 4, the name of the office image file for the MS is IMG0517CY_MS. Image file IMG0517CY_MS is ALR. Image file IMG0517CY_MS is in volume F02LIMAGE.

7 To quit the ITOCCI user interface, type:

>QUIT

and press the enter key.

Example of a MAP response:

```
CI:
```

At the shelf

8 Determine from office records or office personnel if the DAT tape drive is clean. Refer to the XA-Core procedure “How to clean the XA-Core tape drive”.

9

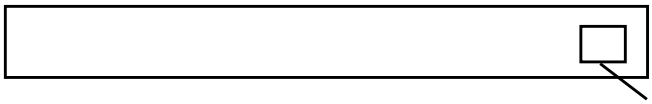
WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

How to backup an XA-Core office image from disk to tape (continued)

Get a tape cartridge that has the approval of Nortel Networks. Determine the tape planned for a backup of an office image. Determine the tape to use from the office records or from office personnel.

10 Make sure the tape write protection is at the position that permits recording (closed). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Write protection of DAT cartridge



Side-view of DAT cartridge — Position for write protection

11 Insert the DAT tape cartridge into the XA-Core tape drive and close the drive door. The XA-Core tape drive is in the input/output processor (IOP) card of the XA-Core shelf.

Note: Copy the XA-Core image file to tape first and the MS image file second.

At the MAP

12 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

13

WARNING
Files of tape lost when formatted
If the tape had files, the formatting of the tape loses the files. Make sure the tape has no files that your office needs.

To insert the tape in the MAP disk utility, type

>INSERTTAPE snnpTAPE WRITELABEL label_name

and press the enter key

where

How to backup an XA-Core office image from disk to tape (continued)

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

WRITELABEL is a parameter to format a tape.

label_name is the alphanumeric name of the tape label that records the data. The name can be up to 32 characters long. If blank spaces are in the label name then enclose the label name with quotation marks.

Example of MAP input:

>INSERTTAPE F02UTAPE WRITELABEL IMAGE_1

Example of a MAP response:

```
                    *****  WARNING  *****

Writing the label IMAGE_1 to tape volume F02UTAPE on node
CM will destroy all files stored on this tape volume.

Do you want to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

14 To confirm the command type:

>YES

and press the enter key.

Example of a MAP response:

```
The INSERT operation may take
up to 5 minutes to tension the tape.
A tape is now available to user on unit 0, node CM.
Name IMAGE_1 has been written to the tape label.
```

15 To list the files in the volume that contains the office image, type:

>LISTFL vol_name

and press the enter key.

where

<vol_name> is the name of the disk volume that contains the office image files.

Example of MAP input:

>LISTFL F02LIMAGE

How to backup an XA-Core office image from disk to tape (continued)

Example of a MAP response:

```
File information for volume F02LIMAGE:
{NOTE:  1 BLOCK = 512 BYTES }
-------------------------------------------------------
-------------------------
FILE NAME                      O R I O O V FILE   MAX
NUM OF    FILE   LAST
                                R E T P L L CODE   REC
RECORDS    SIZE MODIFY
                              G C O E D D       LEN
IN      IN   DATE
                                C N                 FILE
BLOCKS
-------------------------------------------------------
-------------------------
IMG0517CY_MS                  I F Y         0  1020
7542   15360 990517
IMG0517CY_CM                   I F Y          0  1020
165180  329728 990517
```

Note: A volume can have more files listed by command LISTVOLS than by command LISTFL in the MAP disk utility. The difference in the number of files between the commands is because of directory files not displayed by command LISTFL.

16 Begin the disk to tape backup process. To create a backup copy of the XA-Core image file, type:

>BACKUP FILE file_name snnpTAPE

and press the enter key.

where

file_name is the name of the XA-Core image file that requires backup to tape

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example
Example of MAP input:

>BACKUP FILE IMG0517CY_CM F02UTAPE

Example of a MAP response:

```
FTFS file IMG0517CY_CM on disk volume F02LIMAGE on node
CM backed up as file IMG0517CY_CM on tape device F02UTAPE
on node CM .
```

If the command was	Do
successful	step 17
not successful	step 24

How to backup an XA-Core office image from disk to tape (continued)

17 To create a backup copy of the MS image file, type:

>BACKUP FILE file_name snnpTAPE

and press the enter key.

where

file_name is the name of the MS image file that requires backup to tape

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example
Example of MAP input:

>BACKUP FILE IMG0517CY_MS F02UTAPE

Example of a MAP response:

```
FTFS file IMG0517CY_MS on disk volume F02LIMAGE on node
CM backed up as file IMG0517CY_MS on tape device F02UTAPE
on node CM   .
```

If the command was	Do
successful	step 18
not successful	step 24

18 To check the backup copies of the image files on the tape, type:

>LISTFL snnpTAPE

and press the enter key.

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example
Example of MAP input:

>LISTFL F02UTAPE

How to backup an XA-Core office image from disk to tape (continued)

Example of a MAP response:

```
File information for tape volume F02UTAPE, node CM:
{Note: 1 BLOCK = 512 BYTES}
-------------------------------------------------------
---------------
CREATE  ORG FILE V      FILE     NUM OF   REC    FILE NAME
  DATE TYPE CODE L    SIZE IN    RECORDS   LEN
                D     BLOCKS     IN FILE
-------------------------------------------------------
---------------
990520 IMAG    0      329070    165180  1020 IMG0517CY_CM
990520 IMAG    0       15026      7542  1020 IMG0517CY_MS
```

19 To eject the tape from the MAP disk utility after the backup procedure completes, type:

>EJECTTAPE snnpTAPE

and press the enter key.

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example
Example of MAP input:

>EJECTTAPE F02UTAPE

Example of a MAP response:

```
The EJECT operation may take up to 5 minutes
to position the tape to the beginning.
Rewind of tape F02UTAPE, unit 0, on node CM is completed.
This tape device is not available to the user now.
```

20 To exit the MAP disk utility and return to the MAP CI level, type:

and press the enter key.

>QUIT

Example of a MAP response:

```
CI:
```

How to backup an XA-Core office image from disk to tape (end)

At the shelf

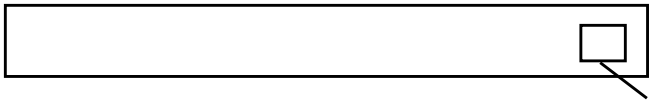
21

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Remove the tape cartridge from the tape drive. Set the tape write protection to the position that does not permit recording (open). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Example

Write protection of DAT cartridge



Side-view of DAT cartridge — Position for write protection

22 Store tape cartridge per office procedure.

23 Go to step 25.

24 For additional help, call the next level of support.

25 You have completed the backup procedure.

How to change XA-Core REx test intensity

Application

Use this procedure to change the XA-Core system routine exercise (REx) test schedule or REx test class. For a full explanation of all REx commands, refer to the XACMtc MAP level document.

The classes of REx tests have the following differences:

- PE class of REx test is:
  - A REx test on a processor element (PE) card that is a different PE card for each REx test performed.
  - The REx tests are out-of-service tests.
- SM class of REx test is:
  - A REx test on a shared memory (SM) card that is a different SM card for each REx test performed.
  - The REx tests are out-of-service tests.
- IO class of REx test is:
  - A REx test on an input/output processor (IOP) card and related packlets. The REx test is on a different IOP card and related packlets for each REx test performed.
  - The REx tests are out-of-service tests.
- BASE class of REx test is:
  - A REx test while in service on all PE, SM, and IOP cards (with related packlets).
  - The BASE class also performs an image test.
  - By default, BASE REx tests run each day of the week except Thursday.

How to change XA-Core REx test intensity (continued)

- ALL class of REx test is:
  - — A REx test while in service on all PE, SM, and IOP cards, and on all packlets.
  - — A REx test while out of service on a different PE card, a different SM card, and a different IOP card (with related packlets) for each REx test.
- FULL class of REx test is:
  - — A REx test while in service on all PE, SM, and IOP cards, and on all packlets.
  - — A REx test while out of service on a different PE card, a different SM card, and a different IOP card (with related packlets) for each REx test.
  - — The FULL class also performs an image test.
  - — By default, FULL REx tests run each Thursday of the week.

Interval

Perform this procedure when the schedule or intensity of the XA REx test requires a change. Schedule REx tests for times in the day when call volume is low.

Common procedures

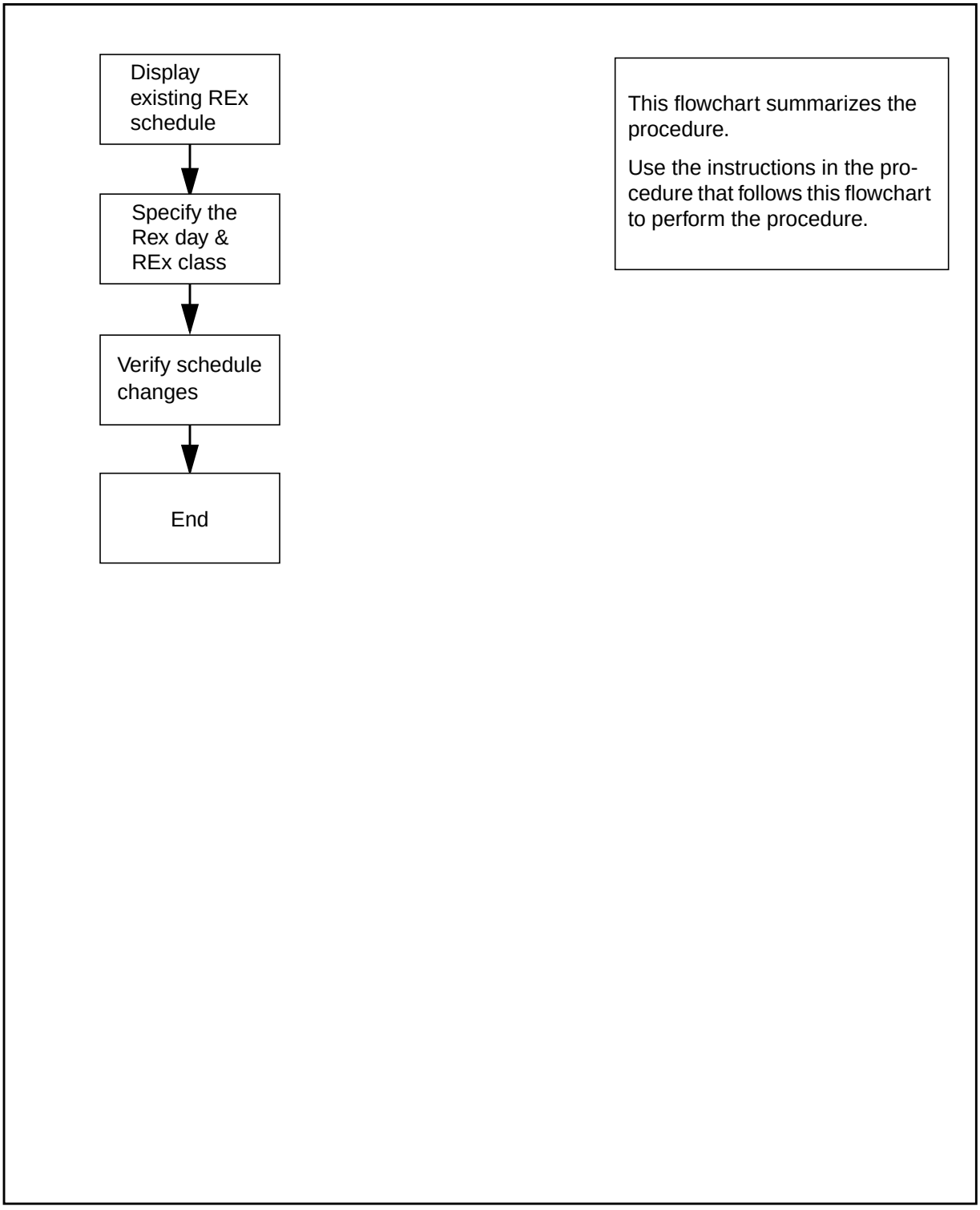
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to change XA-Core REx test intensity (continued)

Summary of How to change XA-Core REx test intensity



How to change XA-Core REx test intensity (continued)

How to change XA-Core REx test intensity

At the MAP terminal

1 Access the XACMtc MAP level. At the CI MAP prompt, type:

>MAPCI;MTC;XAC;XACMTC

and press the enter key.

The following is a sample MAP display.

XACMtc MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .       .        .        .       .        .        .       .       .       .


XACMtc          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
 0 Quit         123456789012345678  456789012345   .      .       .       .
 2         Sta: -.-.--..-.------..-  .--.--------.  0      0       0       0
 3         Dep:
 4
 5
 6
 7         Traps:       Per Minute:  = 0           Total = 1
 8         Last Image run at:     1999/02/15 13:13
 9           restart type= reload
10             Result    = pass
11 Image   Last XARExTst run at:  1999/03/15 14:25
12 RExTst_ Last XARExTst Type:    full
13 RExInt_ Last XARExTst Result:  notRun
14 Alarm_
15         XACMTC:
16
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

2 Display the current REx intensity schedule and REx test class assignment. At the XACMtc MAP level type:

>REXINT STATUS

and press the enter key.

The XACMtc MAP level displays the schedule for full and base REx tests.

Example of MAP response:

```
RExInt Status completed
Mon       Tue       Wed       Thu       Fri       Sat       Sun
base      base      base      full      base      base      base
```

3 To change the REx test class for any day, type:

>REXINT SETDAY <rex_day> <rex_class>

How to change XA-Core REx test intensity (continued)

and press the enter key.

where

<rex_day> is the day of the week when a full REx test is on a schedule (rex_day values = mon, tue, wed, thu, fri, sat, sun)

<rex_class> is the type of REx test class (rex_class values = all, full, base, io, pe, sm)

Example of command use:

```
>REXINT SETDAY mon all
```

Example of MAP response:

```
rexint setday mon all
Warning: the RExInt SetDay command may alter REx
Intensity.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

4 To confirm the change, type:

>Y

and press the enter key.

5 To check that the switch accepted and saved changes to the REx schedule, type:

>REXINT STATUS

and press the enter key.

Example

Example of MAP response:

```
RExInt Status
Command Submitted
RExInt Status completed
Mon       Tue       Wed       Thu       Fri       Sat       Sun
all       base      base      full      base      base      base
```

6 Confirm that the REx intensity is changed. Examine the XACMtc MAP level.

If the XACMtc MAP level indicates	Do
the REx intensity is not changed	step 7
the REx intensity is changed	step 8

7 Call the next level of support.

8 Quit from the XACMtc MAP level and return to the CI MAP level, type:

>QUIT ALL

How to change XA-Core REx test intensity (end)

and press the Enter key.

9 You have completed this procedure. Return to the main procedure that sent you to this procedure and continue as directed

How to check and adjust the XA-Core TOD

Application

Use this procedure to check and adjust the setting of the time-of-day (TOD) in the XA-Core.

Interval

Perform this procedure daily.

Common procedures

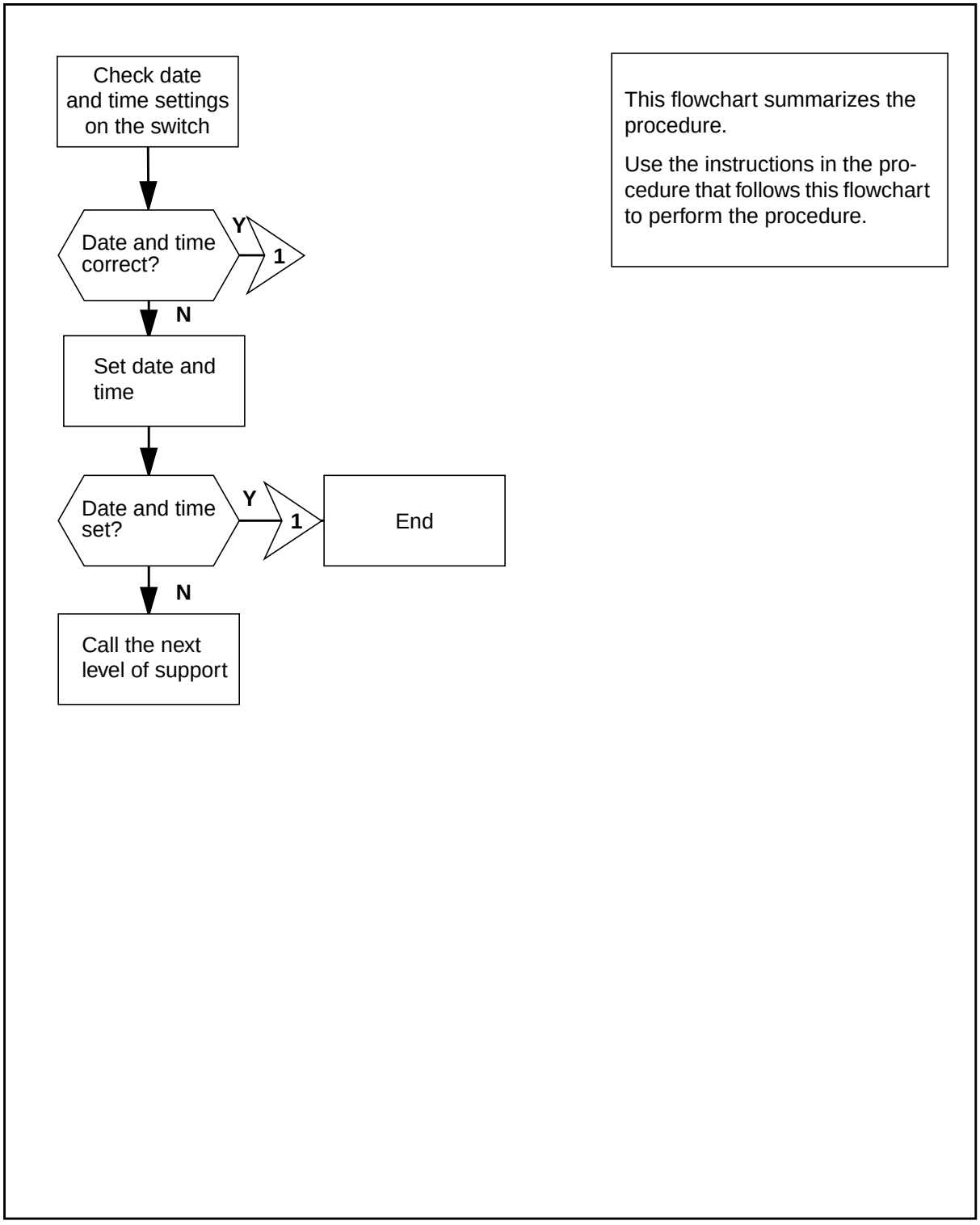
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

How to check and adjust the XA-Core TOD (continued)

Summary of How to check and adjust the XA-Core TOD



How to check and adjust the XA-Core TOD (continued)

How to check and adjust the XA-Core TOD

CAUTION
Possible loss or damage of AMA data
If you fail either to use this procedure or to follow it correctly, you can lose or damage automatic message accounting (AMA) data. Because AMA data produces billings, loss or damage to AMA data results in revenue loss for the operating company. Call your next level of support before you start this procedure.

At the MAP terminal

1 Determine if the switch has the correct date. At the CI MAP prompt, type:

>DATE

and press the Enter key.

Example of a MAP response:

```
Date is TUE. 29/JUN/1999 20:59:29:
```

2 Compare the time of day to the standard office time reference.

If the date is	Do
wrong	step 3
correct	step 4

3 Enter the correct date. At the CI MAP prompt type

>SETDATE <dd> <mm> <yyyy>

and press the Enter key

where

dd is the day (01 to 31)

mm is the month (01 to 12)

yyyy is the year (1976 to 2039)

Example input:

>SETDATE 30 06 1999

Example of system response:

```
Date is WED. 30/JUN/1999 20:59:29
```

4 Determine if the time is correct. At the CI MAP prompt type

>TIME

and press the Enter key.

How to check and adjust the XA-Core TOD (end)

Example of a MAP response:

```
Time is 20:59:29
```

If the time of day is	Do
not correct	step 5
correct	step 7

5 Set the correct system time. At the CI MAP prompt, type

>SETTIME <hh> <mm> [timezone]

and press the Enter key.

where

<hh> is the hour (00 to 23)

<mm> is the minutes (00 to 59)

[timezone] is the offset time (in minutes) relative to Greenwich Mean Time (GMT). The default value is zero minutes.

Example of command use:

>SETTIME 08 24 1999

Example of system response:

```
Time is 08:24:00 on WED. 1999/06/30
Timezone is 0 minutes from GMT
```

If the time of day is	Do
not set	step 6
set	step 7

6 Call the next level of support.

7 You have completed this procedure.

How to clean the XA-Core tape drive

Application

Use this procedure to clean the recording heads in the digital audio tape (DAT) drive.

Interval

Perform this procedure as follows:

- If the tape cassette is new, clean the recording heads once after the first four hours of read/write operation. After the first cleaning, clean the recording heads after 25 hours of read/write operation or according to office standards.
- If the tape cassette is not new, clean after 25 hours of read/write operation or according to office standards

Common procedures

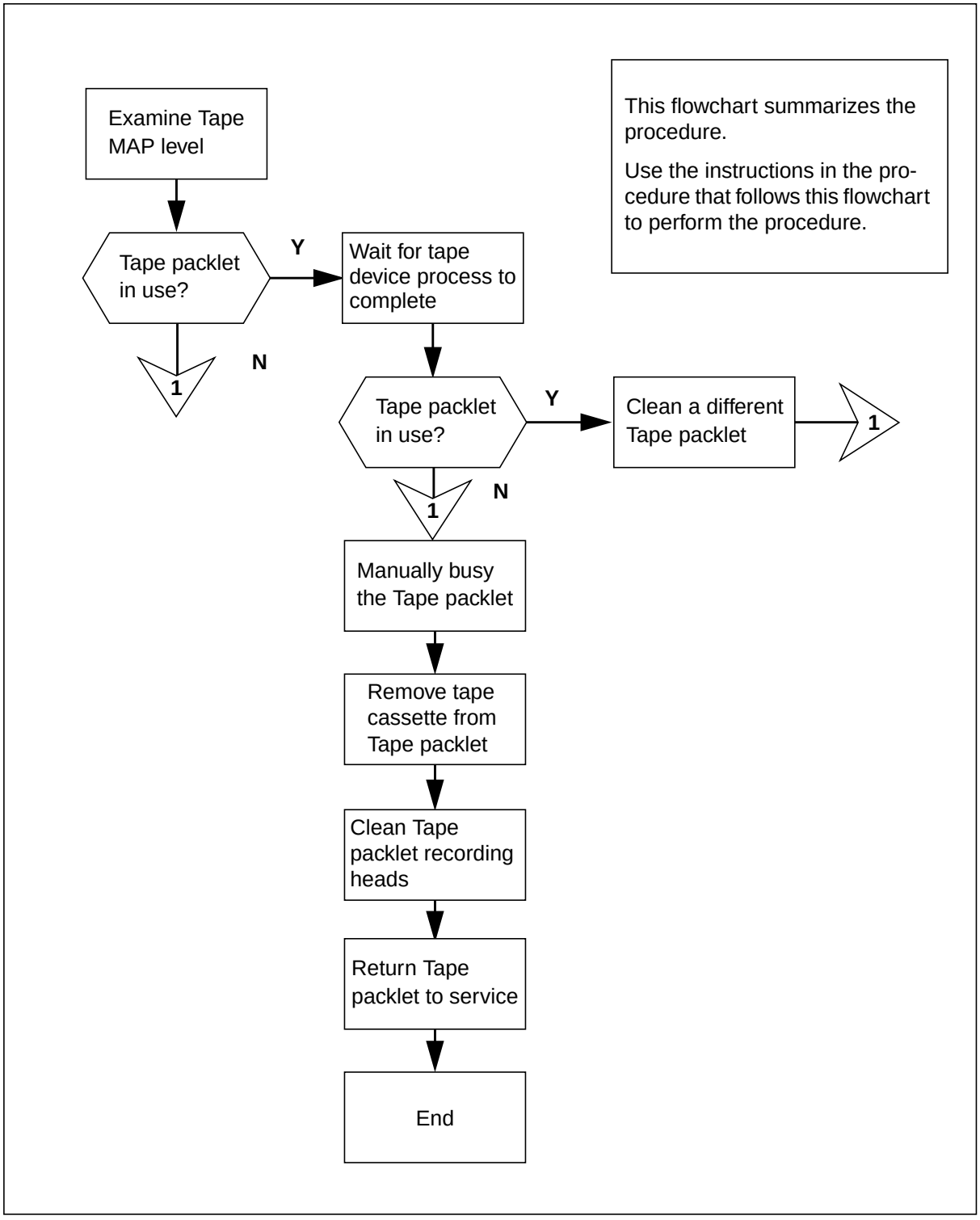
Refer to common procedure Selection of DAT tapes approved by Nortel Networks.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to clean the XA-Core tape drive (continued)

Summary of How to clean the XA-Core tape drive



How to clean the XA-Core tape drive (continued)

How to clean the DAT drive

WARNING
Possible DAT failure
Do not use an audio DAT cleaning cassette. The DAT drive can not identify an audio cleaning cassette. Use only an approved Nortel Networks (Northern Telecom) DAT cleaning cassette.

WARNING
Possible tape failure
If dust or particles collect at one or more of the recording heads, the heads cannot read or write to the tape.

At your current location

1 Get a Nortel Networks approved tape head cleaner (refer to common procedure).

At the MAP terminal

2 Access the XA-Core Tape MAP level. At the CI MAP prompt, type:

>MAPCI;MTC;XAC;TAPE

and press the Enter key.

3 Examine the Tape MAP level. Record the location of the Tape packlet that you want to clean.

Note: The Tape MAP level displays the following information in the command interpreter output area:

- the user name under the User Name header
- the tape drive status under the Drive header (mounted/unmounted)

The following is a sample MAP display.

How to clean the XA-Core tape drive (continued)

Tape MAP level

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .        .       .        .        .       .        .       .        .       .

Tape            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      .
 2              Sta: -.-.--..-.---.-..-  .----------.   0      0       0      0
 3              Dep:
 4              Typ:  *              *
 5              Slot:   Side:    Packlet:   Status:    User Name:      Drive:
 6 Tst_            2    Front    Upper      .          User1           mounted
 7 Bsy_           17    Front    Upper      .                          Unmounted
 8 RTS_           TAPE:
 9
10
11
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

  XMAP0
Time  14:12   >
```

4 Record the user name and drive state as shown on the Tape MAP level. There are four possible tape device user conditions:

- The system is using the tape device. The Tape MAP level displays “System” as the user name. The system software is performing an activity such as an ONP or software upgrade. The tape drive state is mounted.
- Another user is performing a backup or restore at a different location. The tape drive state is mounted.
- You are the user of the tape device. The tape drive state is mounted.
- There are no users. The tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the system software is the user	step 5
another user is using the tape device	step 6
you are the user of the tape device	step 9
there are no users	step 11

How to clean the XA-Core tape drive (continued)

5 Wait for the system software to complete the ONP or upgrade process. When the system software activities are complete, the MAP deletes the “System” user name and the tape drive state changes to unmounted.

If the system software process is complete and the Tape MAP level indicates that	Do
the tape is not rewound and the tape drive state is mounted	step 10
the tape is rewound and the tape drive state is unmounted	step 11

6 Notify the other user that you intend to clean the tape heads. The other user needs to complete tape device activities and perform an EJECTTAPE. Wait for the Tape MAP level to delete the other user name and indicate that the tape drive state is unmounted.

If the Tape MAP level indicates that	Do
the tape is not rewound and that the tape drive state is mounted	step 7
the tape is rewound and that the tape drive state is unmounted	step 11

7 Call the other user to make sure that all tape drive activities are complete.

If the other user has	Do
not completed tape drive activities	step 8
completed tape drive activities and rewound the tape	step 10

8 Clean a different tape drive. Continue to 3.

9 Access the DISKUT MAP level and rewind the tape.

a At the Tape MAP level type:

>QUIT all

and press the enter key.

b Access the DISKUT MAP level. At the CI MAP prompt type:

>DISKUT

and press the enter key.

c Rewind the tape. Use the tape location information from 3. At the DISKUT MAP level type:

>EJECTTAPE <device>

and press the enter key.

where

How to clean the XA-Core tape drive (continued)

<device> is the name of the tape device.

Note: The system rejects the EJECTTAPE command if the system cannot identify you as the user of the tape device.

Example of command use:

>EJECTTAPE F02UTAPE

Example of system response:

```
Rewind of tape F02UTAPE on node <node_name> is
completed. The tape device is not available to the user
now
```

d Exit from the DISKUT MAP level. At the DISKUT MAP prompt, type

>QUIT

and press the enter key.

e Access the XA-Core Tape MAP level. At the CI MAP prompt, type

>MAPCI;MTC;XAC;TAPE

and press the enter key.

If the Tape MAP level indicates that	Do
the tape is not rewound and the tape drive state is mounted	step 10
the tape is rewound and the tape drive state is unmounted	step 11

10 Clear the tape drive state on the Tape MAP level. Manually busy the Tape packlet and return the Tape packlet to service.

a Manually busy the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 2 f u

Example of system response:

```
BSY 2 front upper complete
```

b Return the Tape packlet to service. At the Tape MAP level type

How to clean the XA-Core tape drive (continued)

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS 2 front upper passed
```

If the Tape MAP level indicates that	Do
the tape is rewound and the tape drive state is unmounted	step 11
the tape is not rewound and the tape drive state is mounted	step 19

11 At the Tape MAP level, manually busy the Tape packlet.

a Manually busy the Tape packlet. At the Tape MAP level type

>BSY <nn> <s> <p>

and press the enter key.

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>BSY 2 f u

Example of system response:

```
BSY 2 front upper complete
```

How to clean the XA-Core tape drive (continued)

At the XA-Core physical shelf

12 Indicate the ManB Tape packlet. At the Tape MAP level, type

>INDICAT card <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command usage:

>INDICAT card 2 f u

Example of system response:

```
Card 2 front upper LED is indicating.
```

13

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Locate the correct Tape packlet on the physical shelf. Use the location information recorded from 3.

If there is	Do
a tape cassette in the tape cassette slot	step 14
no tape cassette in the tape cassette slot	step 15

14 Remove the tape cassette from the Tape packlet (see the diagrams in this step). Perform the following steps:

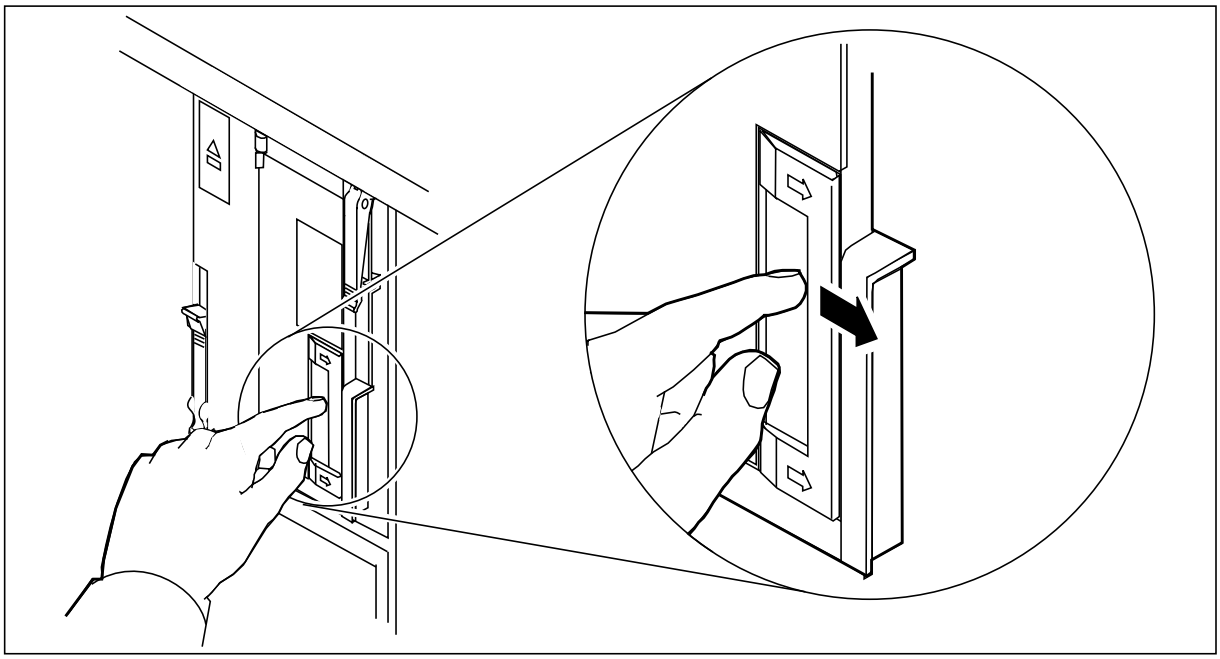
a Push the door lock in the direction of the arrow to unlock. The cassette door unlocks. Open the cassette door.

b Press the tape eject button. Wait for the tape cassette to partially eject for removal.

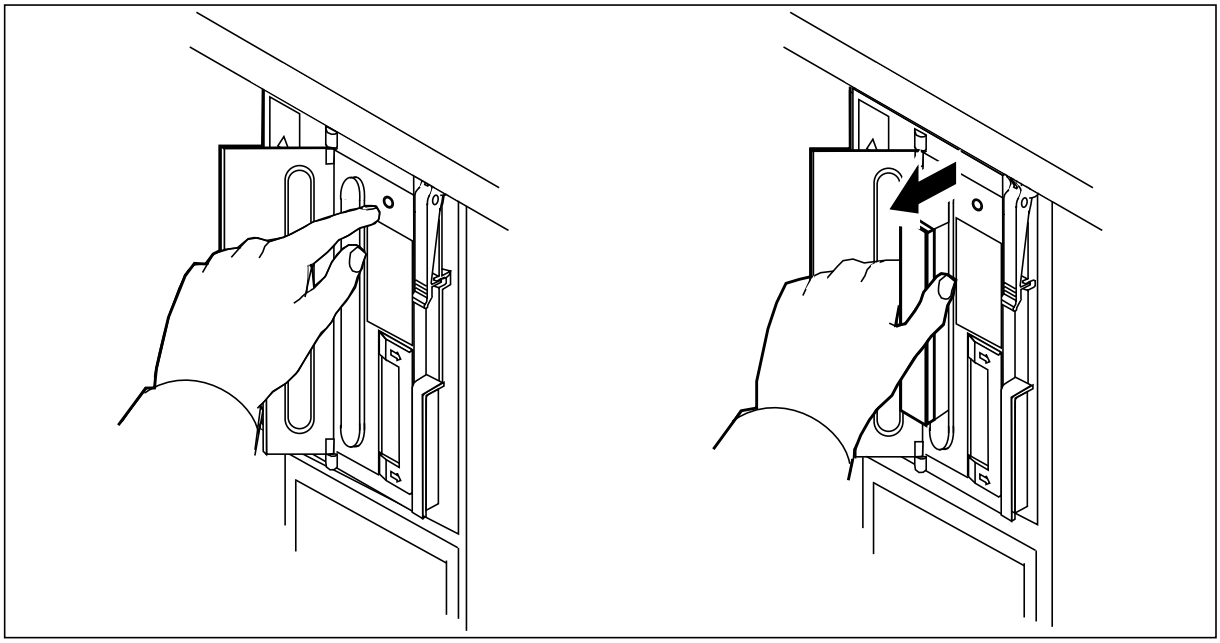
How to clean the XA-Core tape drive (continued)

c Remove the tape cassette and place it in tape cassette case. Place the cassette in a safe location away from the physical shelf.

Open the tape cassette door



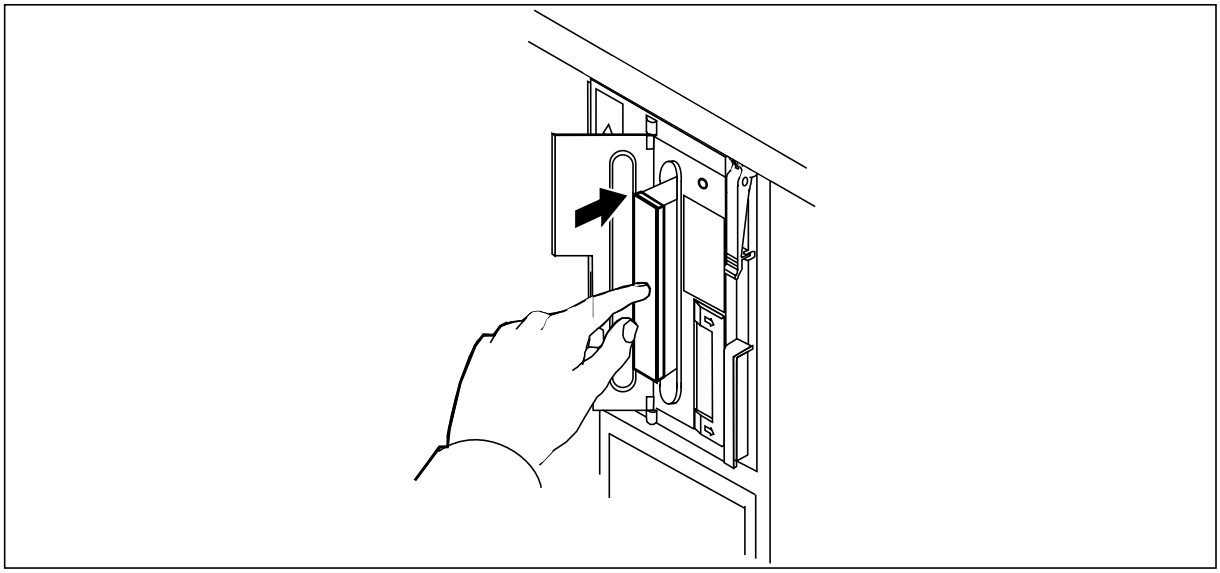
Eject and remove the tape cassette



15 Insert the tape cleaning cassette into the tape cassette slot. Push on the tape cassette until it locks in position. Do not close the tape door.

How to clean the XA-Core tape drive (continued)

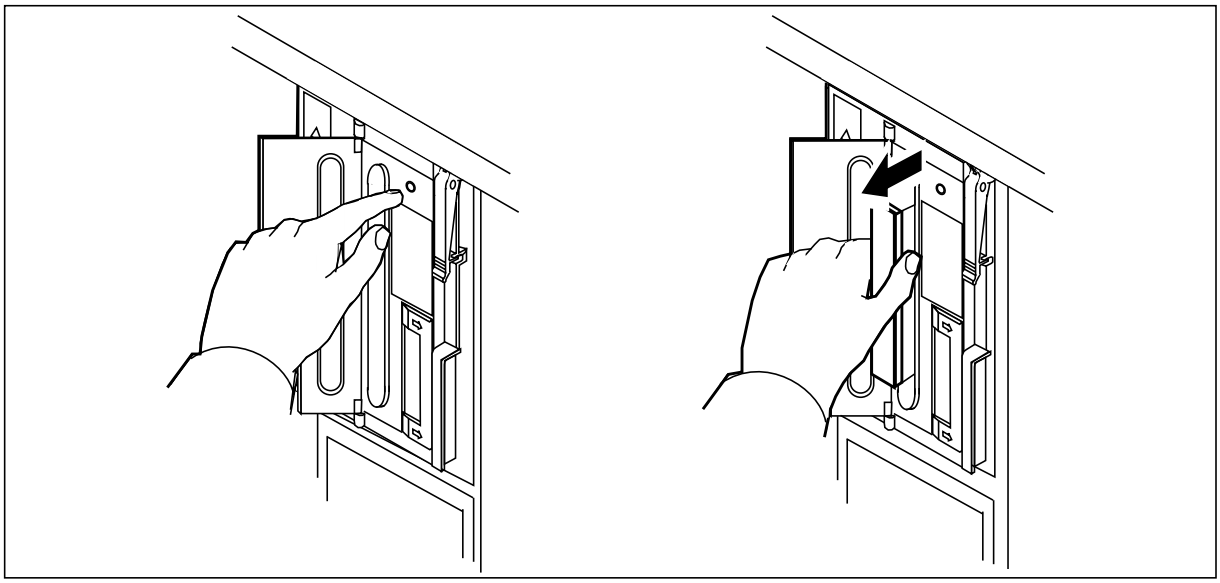
Insert the tape cleaning cassette



16 Wait until the tape cleaning cassette ejects from the tape slot. The tape cleaning process is automatic.

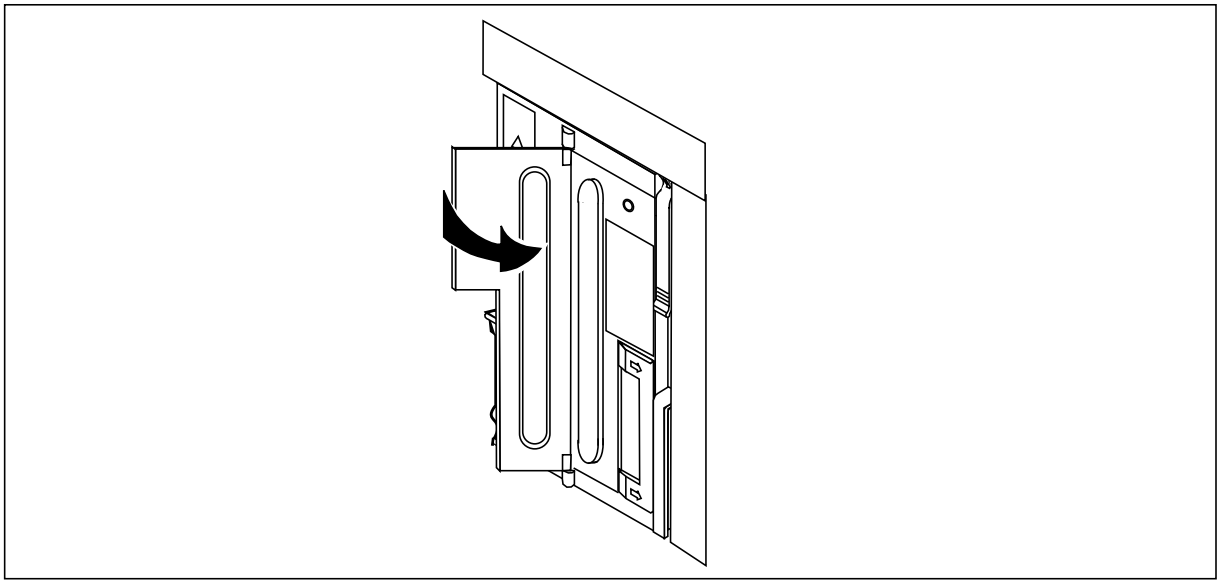
17 Remove the tape cleaning cassette from the tape slot. Close the tape cassette door. Place the tape cleaning cassette in the tape cleaning case.

Eject and remove the tape cleaner cassette



How to clean the XA-Core tape drive (end)

Close the tape cassette door



At the MAP terminal

18 Return the Tape packlet to service. At the Tape MAP level type

>RTS <nn> <s> <p>

and press the Enter key

where

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

Example of command use:

>RTS 2 f u

Example of system response:

```
RTS of card <nn> <s> <p> Completed.
```

If the tape device	Do
does not return to service	step 19
returns to service	step 20

19 Call the next level of support.

20 You have completed this procedure.

How to copy all files of an XA-Core disk volume to tape

Application

Use this procedure to copy all the files of a disk volume in an eXtended Architecture Core (XA-Core). Use this procedure to copy the files from a disk to a digital audio tape (DAT) cartridge in an XA-Core shelf. Do not use this procedure to copy the office image files from disk to tape for an XA-Core. To copy the office image files, use the procedure “How to backup an XA-Core office image from disk to tape”.

Interval

Perform this procedure when required by your office.

Common procedures

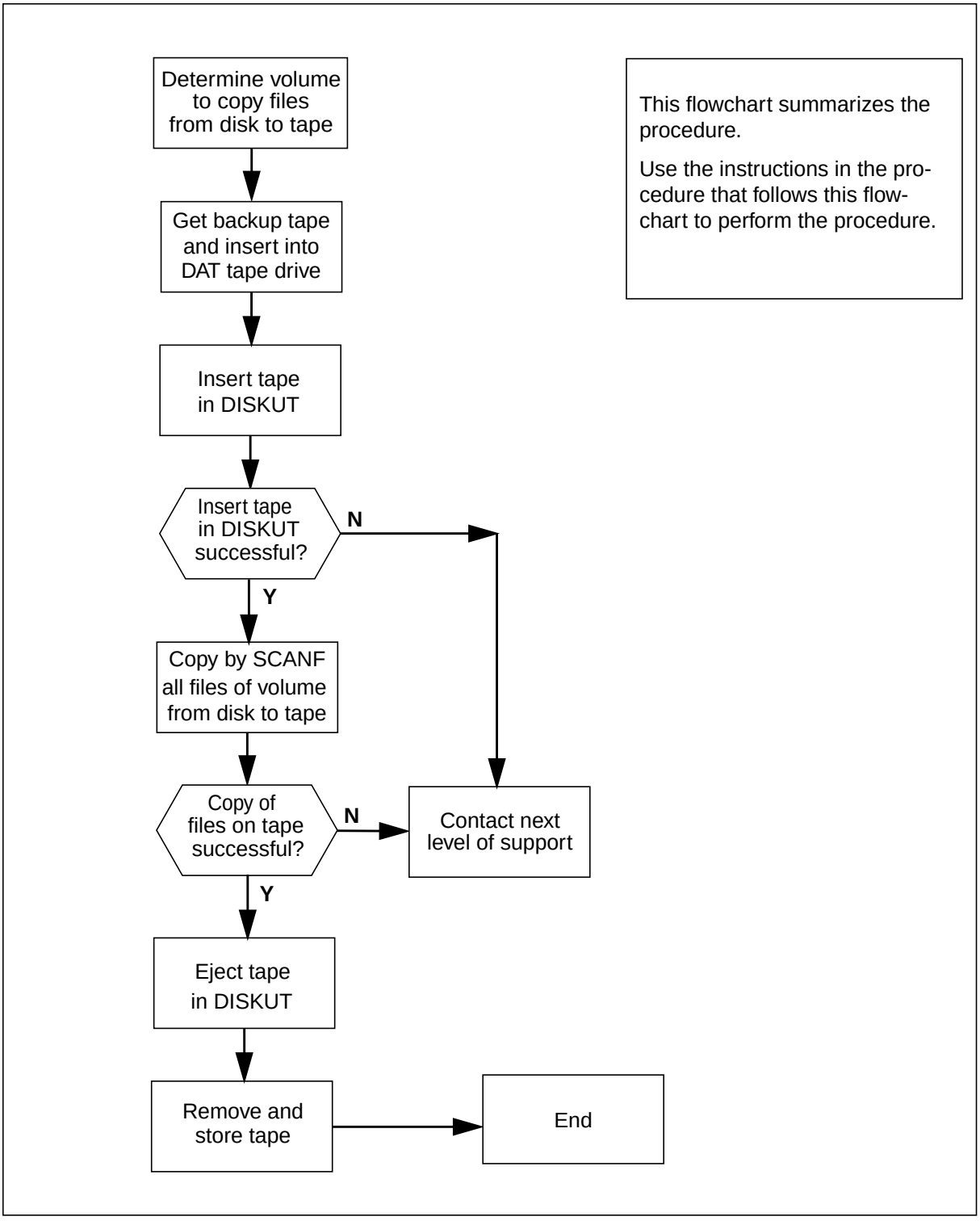
There are no common procedures.

Action

This procedure contains a summary flowchart as a summary of the procedure. Follow the exact steps to perform this procedure.

How to copy all files of an XA-Core disk volume to tape (continued)

Summary of How to copy all files of an XA-Core disk volume to tape



How to copy all files of an XA-Core disk volume to tape (continued)

How to copy all files of an XA-Core disk volume to tape

At the shelf

1

CAUTION
Use SCANF in this procedure with caution
SCANF is a powerful tool that is used to perform file operations, one of which is to allow open files to be copied. Use this command during periods of low activity to avoid loss of data.

CAUTION
Do not copy office image files
Do not use this procedure to copy the office image files from disk to tape for an XA-Core. To copy the office image files, use the procedure “How to backup an XA-Core office image from disk to tape”.

Determine the volume of the XA-Core that requires a copy of all files to a tape. Determine the volume from office records or from office personnel. Record the volume name.

2 Determine from office records or office personnel if the DAT tape drive is clean. Refer to the XA-Core procedure “How to clean the XA-Core tape drive”.

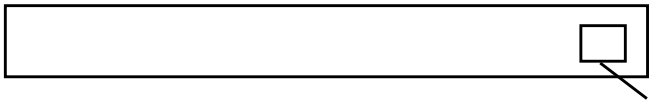
3 Get a tape cartridge that has the approval of Nortel Networks. Determine the tape planned for storage of all the files from a disk volume. Determine the tape to use from the office records or from office personnel. The tape must not have files that the office requires.

4 Make sure the tape write protection is at the position that permits recording (closed). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Example

Terminating

Write protection of DAT cartridge



Side-view of DAT cartridge Position for write protection

How to copy all files of an XA-Core disk volume to tape (continued)

5

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Insert the DAT tape cartridge into the XA-Core tape drive and close the drive door. The XA-Core tape drive is in the input/output processor (IOP) card of the XA-Core shelf.

At the MAP

6 To access the MAP CI level display, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

7 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

8 To insert the tape for access by the MAP disk utility, type

>INSERTTAPE snnpTAPE WRITELABEL label_name

and press the enter key

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf of the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

WRITELABEL is a parameter to format a tape. The tape must not have files that the office requires. A formatted tape has all the files on the tape deleted.

label_name is the alphanumeric name of the tape label that records the data. The name can be up to 32 characters long.

How to copy all files of an XA-Core disk volume to tape (continued)

Example of MAP input:

>INSERTTAPE F02UTAPE WRITELABEL IMAGE_1

Example of a MAP response:

```
                    *****  WARNING  *****

Writing the label IMAGE_1 to tape volume F02UTAPE on node
CM will destroy all files stored on this tape volume.

Do you want to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

9 To confirm the command type:

>YES

and press the enter key.

Example of a MAP response:

```
The INSERT operation may take
up to 5 minutes to tension the tape.
A tape is now available to user on unit 0, node CM.
Name IMAGE_1 has been written to the tape label.
```

10 Determine if the INSERTTAPE command completed correctly..

If the INSERTTAPE command completed	Do
correctly	step 11
not correctly	step 24

11 To list the volumes contained on the node, type:

>LISTVOLS

and press the enter key.

Example of a MAP response:

```
Volumes found on the node CM:
-----------------------------

NAME               TYPE      TOTAL       FREE TOTAL  OPEN
ITOC    LARGEST
                             BLOCKS     BLOCKS FILES FILES
FILES  FREE SEGMENT
-------------------------------------------------------------
-----------------------
F02LV1            FTFS    131072    130080    2    0
0     128032
F02LDLOG          FTFS    129024      2144   131    0
0       1536
F17LV1            FTFS     61440     60512    0    0
0      60512
F17LDLOG          FTFS     61440      1632   71    2
0        512
Total number of volumes found on node CM : 4
```

How to copy all files of an XA-Core disk volume to tape (continued)

12 Check the list of volumes in step 11 for the volume name that you recorded in step .

If the volume name is	Do
in the volume list	step 13
not in the volume list	step 24

13 To list the files in the disk volume that you need to copy to tape, type:

>LISTFL vol_name

and press the enter key.

where

<vol_name> is the name of the disk volume that contains the files to copy to tape.

Example of MAP input:

>LISTFL F02LV1

Example of a MAP response:

```
File information for volume F02LV1:
{NOTE:  1 BLOCK = 512 BYTES }
-------------------------------------------------------
-------------------------
FILE NAME                     O R I O O V FILE   MAX
NUM OF    FILE   LAST
                               R E T P L L CODE   REC
RECORDS    SIZE MODIFY
                              G C O E D D       LEN
IN      IN   DATE
                                C N                 FILE
BLOCKS
-------------------------------------------------------
-------------------------
OLD_RECORD_FILES_01                    I F Y         0
1020      7542   15360 990517
OLD_RECORD_FILES_02                    I F Y         0
1020    165180  329728 990517
```

14 Record the file names in the disk volume. In the example of a MAP response in step 13, the file names are OLD_RECORD_FILES_01 and OLD_RECORD_FILES_02.

15 To copy all the files from the disk volume to the tape, type:

>SCANF vol_name COPY snnpTAPE

and press the enter key.

where

vol_name is the name of the disk volume that contains the files to copy to tape.

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

How to copy all files of an XA-Core disk volume to tape (continued)

nn is the number of the slot position on the XA-Core shelf of the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example
Example of MAP input:

>SCANF F02LV1 COPY F02UTAPE

Example of a MAP response:

```
Copy file: IMG0517CY_CM
    10%
    20%
    30%
    40%
    50%
    60%
    70%
    80%
    90%
    100%
OLD_RECORD_FILES_01: 165180 records copied with success.

Copy file: IMG0517CY_MS
    10%
    20%
    30%
    40%
    50%
    60%
    70%
    80%
    90%
    100%
OLD_RECORD_FILES_02: 7542 records copied with success.

Scanf: matched 2 of the 2 files encountered.
```

16 Determine if the SCANF command completed. In the MAP response of step 15, the completed SCANF command responded with the text, Scanf: matched 2 of the 2 files encountered.

If the SCANF command has	Do
completed	step 17
not completed	step 24

17 To check the copies of files on the tape, type:

>LISTFL snnpTAPE

and press the enter key.

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

How to copy all files of an XA-Core disk volume to tape (continued)

nn is the number of the slot position on the XA-Core shelf of the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example of MAP input:

>LISTFL F02UTAPE

Example of a MAP response:

```
File information for tape volume F02UTAPE, node CM:
{Note: 1 BLOCK = 512 BYTES}
-------------------------------------------------------
---------------
CREATE  ORG FILE V      FILE     NUM OF   REC    FILE NAME
  DATE TYPE CODE L    SIZE IN    RECORDS   LEN
                D     BLOCKS     IN FILE
-------------------------------------------------------
---------------
990520 IMAG    0       329070     165180  1020
OLD_RECORD_FILES_01
990520 IMAG    0        15026       7542  1020
OLD_RECORD_FILES_02
```

18 Determine if all the files from the disk volume copied correctly to the tape. Check the file names in the MAP response of step 17 with the file names you recorded in step 14.

If all the files copied to tape	Do
correctly	step 19
not correctly	step 24

19 To eject the tape from the DAT tape drive after the backup procedure completes, type:

>EJECTTAPE <tape_device>

and press the enter key.

where

<tape_device> is the name of the DAT device

Example
Example of MAP input:

>EJECTTAPE F02UTAPE

Example of a MAP response:

```
The EJECT operation may take up to 5 minutes
to position the tape to the beginning.
Rewind of tape F02UTAPE, unit 0, on node CM is completed.
This tape device is not available to the user now.
```

20 To exit the MAP disk utility and return to the MAP CI level, type:

and press the enter key.

>QUIT

How to copy all files of an XA-Core disk volume to tape (end)

Example of a MAP response:

```
CI:
```

At the shelf

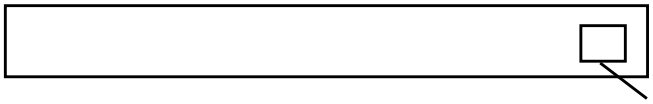
21

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Remove the tape cartridge from the tape drive. Set the tape write protection to the position that does not permit recording (open). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Example

Write protection of DAT cartridge



Side-view of DAT cartridge — Position for write protection

22 Store the tape cartridge per office procedure.

23 Go to step 25.

24 For additional help, call the next level of support.

25 You have completed the backup procedure.

How to create a test volume on XA-Core disks

Application

Use this procedure to create a test volume on a disk of the eXtended Architecture Core (XA-Core).

The test volume performs file transfer tests on a disk drive packlet. The tests make sure that the disk drive packlet functions correctly.

Interval

Perform this procedure on a new disk. Perform this procedure after installation of the new disk in the disk drive packlet in the input/output processor (IOP) card.

Common procedures

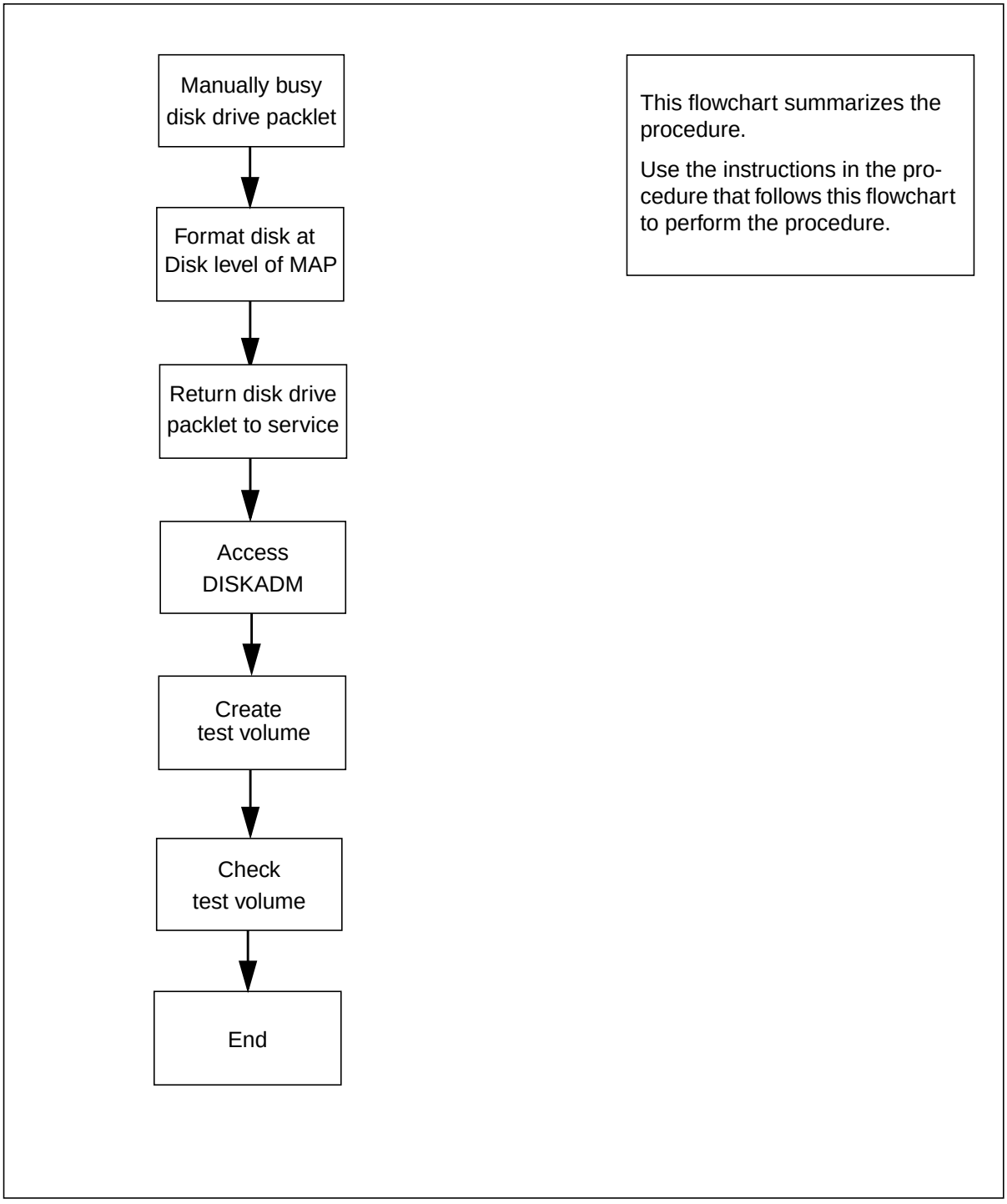
There are no common procedures.

Action

This procedure contains a summary flowchart as a summary of the procedure. Follow the exact steps to perform this procedure.

How to create a test volume on XA-Core disks (continued)

How to create a test volume on XA-Core disks



How to create a test volume on XA-Core disks (continued)

How to create a test volume on XA-Core disks

DANGER

This procedure is for use on a new disk only

Perform this procedure on a new disk only. Perform this procedure after installation of the new disk in the disk drive packlet in the input/output processor (IOP) card. If you fail either to use this procedure or follow it exactly, you can lose or damage automatic message accounting (AMA) data. Because AMA data produces billings, loss or damage to AMA data results in revenue loss for the operating company. Call your next level of support before you start this procedure.

CAUTION

Risk of service interruption

Call your next level of support before you start this procedure.

At the MAP terminal

1 To access the XA-Core Disk MAP level, type:

>MAPCI;MTC;XAC;DISK

and press the enter key.

The following is a sample MAP display.

How to create a test volume on XA-Core disks (continued)

DISK MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .        .       .       .       .       .       .       .       .       .


Disk            Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit         123456789012345678  456789012345   .      .       .      .
 2        Sta: -.-.--..-..-----..-  .--.-------.   0      0       0      0
 3        Dep:
 4        Typ:  *              *
 5        Slot: Side:     Packlet:  Status:
 6 Tst_    2    Front     Lower     .
 7 Bsy_   17    Front     Lower     .
 8 RTS_
 9
10
11 Format     DISK:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

2 To manually busy the disk drive packlet, type:

>BSY nn s p

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command:

BSY 2 F L

Example of a MAP response:

```
bsy 2 f l
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

3 To confirm the command from step 2, type:

>YES

and press the enter key

How to create a test volume on XA-Core disks (continued)

Example of a MAP response:

```
yes
Command Submitted.
Bsy  2 front  lower completed
```

4

CAUTION
Risk of data loss from disk
When you format the disk, you lose all files and volumes from the disk. Call your next level of support before you start this procedure.

To format the disk, type:

>FORMAT nn s p

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command:

FORMAT 2 F L

Example of a MAP response:

```
format 2 f l
Warning: Format of the disk will result in LOST DATA.
Proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

5 To confirm the format command from step , type:

>YES

and press the enter key

How to create a test volume on XA-Core disks (continued)

Example of a MAP response:

```
yes
Command Submitted.
Format  2 front  lower    checking data
Format  2 front  lower    formatting disk
Format  2 front  lower    initializing
Format  2 front  lower   completed
```

6 To return the disk drive packlet to service, type:

>RTS nn s p

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command:

RTS 2 F L

Example of a MAP response:

```
rts 2 f l
Command Submitted.
RTS  2 front  lower   completed
```

If the disk drive packlet is	Do
in service (.)	step 7
another state	step 18

7 To display the CI level of the MAP, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

8 To access the administration of the disk device, type:

>DISKADM snnp

and press the enter key

where

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

How to create a test volume on XA-Core disks (continued)

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (requires a two-digit number)

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command:

DISKADM F02L

Example of a response to the disk administration command:

```
Start up command sequence is in progress.
This may take a few minutes.
Administration of device F02L on CM is now active.
DISKADM;  CM
```

9 To display the disk data space that is available, type:

>DD

and press the enter key

Example of a response to the display disk command:

```
Disk drive information for F02L

Date last formatted           :  1999/02/18 12:25:03.716
THU.
Date last modified            :  1999/02/18 12:25:03.986
THU.
Total space for volumes          :  266221 blocks
Total Free space                 :  266221 blocks
Size of largest free segment     :  266221 blocks
Total number of volumes          :  0

1 Block = 512 bytes
```

Note: The number of blocks varies according to the total disk storage capacity.

10 To display the information of all the volumes on the disk, type:

>DV

and press the enter key

Example of a response to the display volumes command:

```
F02L contains no volumes.
```

11 To create a test volume on the disk, type:

>CV name size FTFS LBLOCK

and press the enter key

where

name is the name you call the test volume (eight characters maximum).

size is the size of the volume in megabytes.

FTFS is the type of volume described as fault tolerant file system (FTFS).

How to create a test volume on XA-Core disks (continued)

LBLOCK is the size of the logical volume. The size can have 1, 2, 4, 8, or 16 kbytes when a number 1, 2, 4, 8, or 16 added after LBLOCK and a space. Default is 16 kbytes. A recommended size for one disk user is 16 kbytes. A recommended size for the maximum amount of disk users is 1 kbytes.

Example of command:

CV TEST 50 FTFS LBLOCK 16

Example of a response to the create volume command that requests a confirmation is as follows:

```
FTFS volume TEST will be created on F02L.

Volume size:                   50 megabytes
First FID table extent size:  2047 entries
Volume Free Space Map size:   7936 segments

Do you want to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

12 Determine if the volume creation exceeds a maximum.

An example of the response to the create volume command that exceeds a maximum is as follows:

```
CREATEVOL-1 command is aborted
Not enough space on disk.

Retry command OR Quit and reenter DISKADM.
```

If the response to the create volume command indicates	Do
a prompt to confirm the command	step 13
that the volume exceeds a maximum	step 18

13 To confirm the create volume command from step 11, type:

>YES

and press the enter key

Example of a MAP response:

```
Creation of the volume is completed.
```

14 To display the information of all the volumes on the disk, type:

>DV

and press the enter key.

Example of a response to the display volumes command:

```
Information about FTFS volumes on F02L.

Volume   Create   Modify   Size  LBLK   Max    Max     No.
System Data
```

How to create a test volume on XA-Core disks (end)

```
Name    Date    Date    Mega  Size   No. of No. of  Boot
Cache Cache
         Y/M/D    Y/M/D    Bytes kBytes Files  Segmnts
Files Pages Pages
-------- -------- -------- ----- ------ -----  -------
----- ----- -----

TEST     99/02/18 99/02/18    50     16  2047     7936
0     6     6
```

Note: *In the example of a MAP response, the test volume is TEST.*

15 To quit the DISKADM utility, type:

>QUIT

and press the enter key

16 To check for the test volume, type:

>PRINT ROOTDIR

and press the enter key.

Example of a MAP response:

```
MAP                    Device         Copy    1800
F02LTEST               Device         Copy    84C2
```

Note: *The test volume has the disk device identified as a prefix to the volume name. In the example of a MAP response, the test volume is F02LTEST.*

17 Determine if the administration of the disk device created the test volume.

If the administration of the disk device created the test volume	Do
correctly	step 19
failed	step 18

18 For additional help, call the next level of support.

19 You have completed this procedure.

How to create volumes on XA-Core disks

Application

Use this procedure to create volumes on a disk of the eXtended Architecture Core (XA-Core).

Interval

Perform this procedure on a disk that is not formatted or on a earlier formatted disk. Perform this procedure after installation of the disk in the disk drive packlet in the input/output processor (IOP) card.

Common procedures

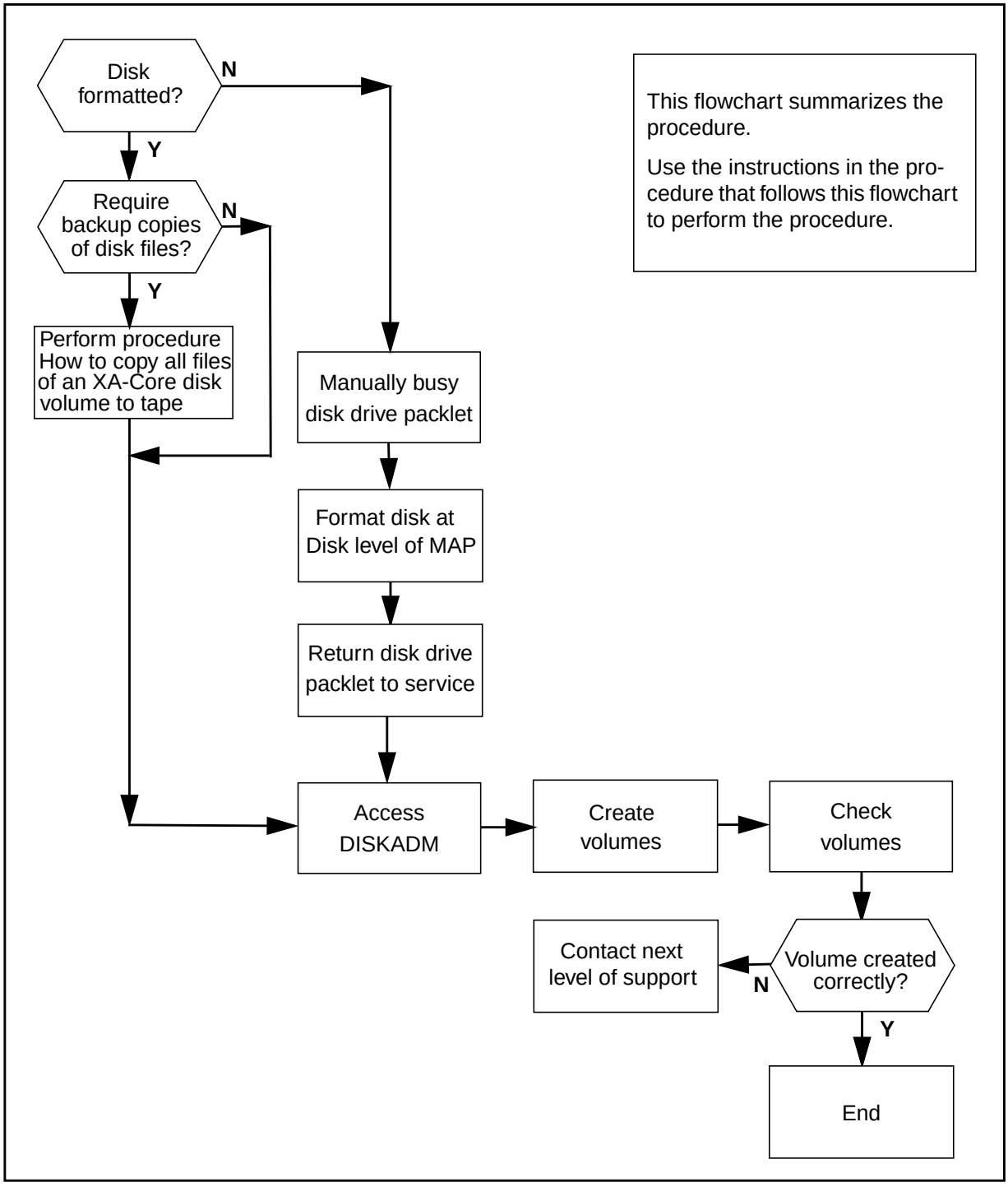
There are no commonon procedures.

Action

This procedure contains a summary flowchart as a summary of the procedure. Follow the exact steps to perform this procedure.

How to create volumes on XA-Core disks (continued)

How to create volumes on XA-Core disks



How to create volumes on XA-Core disks (continued)

How to create volumes on XA-Core disks

CAUTION
Risk of service interruption
Call your next level of support before you start this procedure.

CAUTION
Format operation on a disk deletes all files on the disk. Make sure all files on the disk have backup copies on tape.
Perform this procedure on a disk that has backup copies of all files or is a new disk. Perform this procedure after installation of the disk in the disk drive packlet in the input/output processor (IOP) card. If you fail either to use this procedure or follow it exactly, you can lose or damage automatic message accounting (AMA) data. Because AMA data produces billings, loss or damage to AMA data results in revenue loss for the operating company. Call your next level of support before you start this procedure.

At the MAP terminal

1 Determine if the disk to create volumes on, is formatted or not formatted. Determine if the disk is formatted from office records or office personnel.

If the disk is	Do
formatted	step 2
not formatted	step 8

2 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

3 To list the volumes contained on the node, type:

>LISTVOLS

and press the enter key.

How to create volumes on XA-Core disks (continued)

Example of a MAP response:

```
Volumes found on the node CM:
-----------------------------

NAME                TYPE      TOTAL       FREE TOTAL  OPEN
ITOC    LARGEST
                              BLOCKS     BLOCKS FILES FILES
FILES  FREE SEGMENT
-------------------------------------------------------
-----------------------
F02LV1             FTFS    131072    130080    2    0
0     128032
F02LDLOG           FTFS    129024      2144   131    0
0       1536
F17LV1             FTFS     61440     60512    0    0
0      60512
F17LDLOG           FTFS     61440      1632   71    2
0        512
Total number of volumes found on node CM : 4
```

4 Determine if volumes are on the XA-Core disk.

If the disk has	Do
volumes	step 5
no volumes	step 7

5 Make a backup copy of all files from the XA-Core disk to tape. Perform procedure, "How to copy all files of an XA-Core disk volume to tape". Perform this procedure one time on a separate tape for each disk volume. When you complete the procedure, return to this step.

6 Go to step 15.

7 To exit the MAP disk utility and return to the MAP CI level, type:

and press the enter key.

>QUIT

Example of a MAP response:

```
CI:
```

8 To access the XA-Core Disk MAP level, type:

>MAPCI;MTC;XAC;DISK

and press the enter key.

The following is a sample MAP display.

How to create volumes on XA-Core disks (continued)

Example of a DISK MAP display

```
XAC      MS      IOD      Net      PM      CCS      Lns      Trks     Ext     APPL
 .       .        .        .       .        .        .         .       .       .


Disk                Front:   111111111  Rear: 111111   SM    PE    IO   PKLT
 0 Quit             123456789012345678  456789012345   .     .     .     .
 2             Sta: -.----..-.---.-..-  .----------.   0     0     0     0
 3             Dep:
 4             Typ:  *              *
 5             Slot:Side:   Packlet:    Status:
 6               2  Front   Lower       .
 7 Tst_          17 Front   Lower       .
 8 Bsy_
 9 RTS_
10
11 Format      DISK:
12
13
14 Alarm_
15
16
17 Indicat_
18 Query_
  XMAP0
Time  14:12   >
```

9 To manually busy the disk drive packlet, type:

>BSY nn s p

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command input:

BSY 2 F L

Example of a MAP response:

```
bsy 2 f l
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

10 To confirm the command from step 9, type:

>YES

and press the enter key

How to create volumes on XA-Core disks (continued)

Example of a MAP response:

```
yes
Command Submitted.
Bsy  2 front  lower completed
```

11

CAUTION
Risk of data loss from disk
When you format the disk, you lose all files and volumes from the disk. Call your next level of support before you start this procedure.

To format the disk, type:

>FORMAT nn s p FORCE

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command input:

FORMAT 2 F L FORCE

Example of a MAP response:

```
format 2 f l
Warning: Format of the disk will result in LOST DATA.
Proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

12 To confirm the format command from step , type:

>YES

and press the enter key

How to create volumes on XA-Core disks (continued)

Example of a MAP response:

```
yes
Command Submitted.
Format  2 front  lower    checking data
Format  2 front  lower    formatting disk
Format  2 front  lower    initializing
Format  2 front  lower   completed
```

13 To return the disk drive packlet to service, type:

>RTS nn s p

and press the enter key

where

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (number can have one digit or two digits)

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command input:

RTS 2 F L

Example of a MAP response:

```
rts 2 f l
Command Submitted.
RTS  2 front  lower   completed
```

If the disk drive packlet is	Do
in service (.)	step 14
another state	step 25

14 To display the CI level of the MAP, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

15 To access the administration of the disk device, type:

>DISKADM snnp

and press the enter key

where

s is the front (F) or rear (R) shelf position of the IOP card that contains the disk drive packlet

How to create volumes on XA-Core disks (continued)

nn is the number of the slot position of the input/output processor (IOP) card that contains the disk drive packlet (requires a two-digit number)

p is the upper (U) or lower (L) position of the IOP card that contains the disk drive packlet

Example of command input:

DISKADM F02L

Example of a MAP response:

```
Start up command sequence is in progress.
This may take a few minutes.
Administration of device F02L on CM is now active.
DISKADM;  CM
```

16 To display the disk data space that is available, type:

>DISPLAYDISK

and press the enter key

Example of a MAP response:

```
Disk drive information for F02L

Date last formatted           :  1999/05/17 09:58:03.277
MON.
Date last modified            :  1999/05/17 10:21:54.822
MON.
Total space for volumes          :  4095 Mbytes
Total Free space                 :  3695 Mbytes
Size of largest free segment     :  3695 Mbytes
Total number of volumes          : 0

1 Block = 512 bytes
```

Note: The number of blocks varies according to the total disk storage capacity.

17 To display the information of all the volumes on the disk, type:

>DISPLAYVOLS

and press the enter key

Example of a MAP response

```
F02L contains no volumes.
```

18 To create a volume on the disk, type:

>CREATEVOL vol_name vol_size FTFS LBLOCK logical_size

and press the enter key

where

vol_name is the name you call the volume (eight characters maximum).

vol_size is the size of the volume in megabytes.

logical_size is the block size of the logical volume. The block size can have 1, 2, 4, 8, or 16 kbytes when a number 1, 2, 4, 8, or 16 is after LBLOCK and a space. The recommended size is the default value of16 kbytes. A

How to create volumes on XA-Core disks (continued)

recommended size for a disk volume that has peripheral module (PM) load files is 4 kbytes. The same disk volume can support concurrent loading of more than one PM load file. A decrease in the block size from 16 kbytes supports an increased number of concurrent loading processes but with less performance.

Example of command input:

CREATEVOL VOLUME_1 70 FTFS LBLOCK 4

Example of a MAP response:

```
FTFS volume VOLUME_1 will be created on F02L.

Volume size:                    70 megabytes
First FID table extent size:  2047 entries
Volume Free Space Map size:   7936 segments

Do you want to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

19 Determine if the volume creation exceeds the largest free segment..

An example of a MAP response to the create volume command that exceeds a maximum is as follows:

```
CREATEVOL-1 command is aborted
Not enough space on disk.

Retry command OR Quit and reenter DISKADM.
```

If the response to the create volume command indicates	Do
a prompt to confirm the command	step 20
that the volume exceeds the largest free segment	step 25

20 To confirm the create volume command from step 18, type:

>YES

and press the enter key

Example of a MAP response:

```
Creation of the volume is completed.
```

21 To display the information of all the volumes on the disk, type:

>DISPLAYVOLS

and press the enter key.

Example of a MAP response:

```
Information about FTFS volumes on F02L.

Volume   Create   Modify   Size  LBLK   Max    Max     No.
System Data
```

How to create volumes on XA-Core disks (end)

```
Name    Date    Date    Mega  Size   No. of No. of  Boot
Cache Cache
         Y/M/D    Y/M/D    Bytes kBytes Files  Segmnts
Files Pages Pages
-------- -------- -------- ----- ------ -----  -------
----- ----- -----

VOLUME_1 99/02/18 99/02/18   70    4 22047    7936    0
6     6
```

Note: *In the example of a MAP response, the test volume is VOLUME_1.*

22 To quit the DISKADM utility, type:

>QUIT

and press the enter key

23 To check for the volume that you created, type:

>PRINT ROOTDIR

and press the enter key.

Example of a MAP response:

```
MAP                    Device        Copy    1800
F02LVOLUME_1           Device        Copy    84C2
```

Note: *The volume has the disk device identified as a prefix to the volume name. In the example of a MAP response, the volume is F02LVOLUME_1.*

24 Determine if the administration of the disk device created the volume. Check for the MAP response of step 23 to list the created volume.

If the administration of the disk device created the volume	Do
correctly	step 26
failed	step 25

25 For additional help, call the next level of support.

26 You have completed this procedure.

How to perform XA-Core LED maintenance

Application

Use this procedure to check that light-emitting diodes (LEDs) function correctly on all XA-Core circuit packs (CPs) and packlets. The LEDs indicate the working state and physical slot location of the CPs and packlets. If a red LED is not working, you cannot locate the CP or packlet on the physical shelf. If a red, amber or green LED is not working, you cannot accurately define the working state of the CP or packlet.

Use the Indicat_ menu command with the <testall> parameter to light all LEDs on all CPs and packlets. Use the Indicat_ command with the <card> and location parameters to light LEDs on a single CP or packlet. For a complete explanation of the Indicat_ command, refer to the documents that describe XA-Core MAP level commands.

Interval

Perform this procedure once every month.

Common procedures

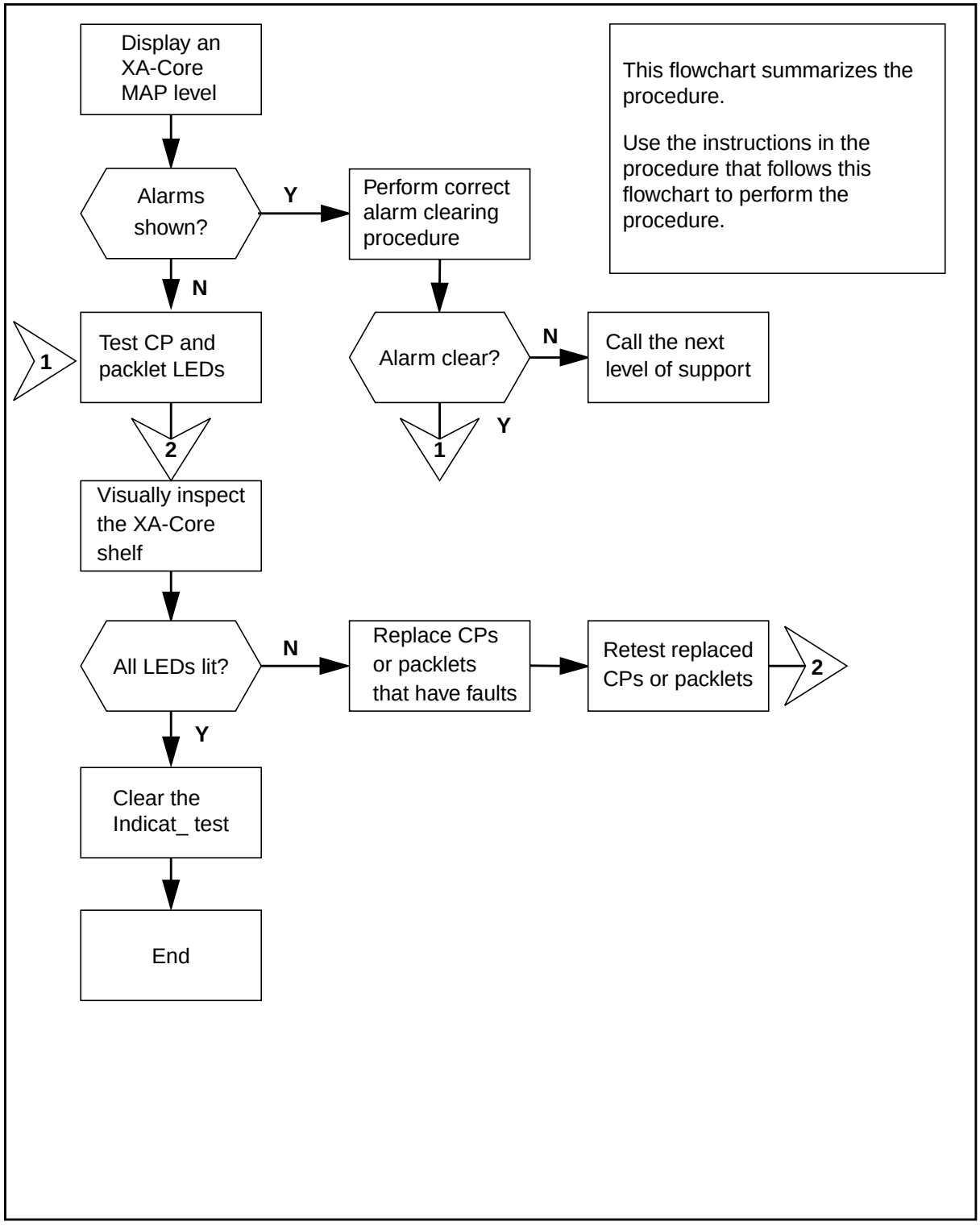
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to perform XA-Core LED maintenance (continued)

Summary of How to perform XA-Core LED maintenance



How to perform XA-Core LED maintenance (continued)

How to perform LED maintenance

At the MAP terminal

1 Access any XA-Core MAP level (such as the XACMtc MAP level). At the CI MAP prompt, type:

>MAPCI;MTC;XAC;XAMTC

and press the Enter key.

2 Examine the MAP level. Record any alarms and the location of any OOS CPs or packlets.

The following is a sample MAP display.

XACMtc MAP level

```
 XAC      MS      IOD     Net      PM      CCS     Lns     Trks     Ext     APPL
  .       .       .       .        .       .       .       .        .       .


XACMtc          Front:   111111111  Rear: 111111   SM     PE      IO     PKLT
 0 Quit        123456789012345678  456789012345   .      .       .      .
 2       Sta: -.-.--..-..----..-  .--.--------.   0      0       0      0
 3       Dep:
 4
 5
 6
 7       Traps:       Per Minute:  = 0           Total = 1
 8       Last Image run at:     1999/02/15 13:13
 9              restart type= reload
10                 Result    = pass
11 Image       Last XARExTst run at:  1999/03/15 14:25
12 RExTst_     Last XARExTst Type:    full
13 RExInt_     Last XARExTst Result:  notRun
14 Alarm_
15             XACMTC:
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

If the MAP alarm banner displays	Do
an alarm	step 3
no alarm	step 4

3 Perform the correct alarm clearing procedure. Return to this point when complete.

4 Test all CP and packlet LED indicators. At the MAP level type:

>INDICAT <testall> [timer]

and press the Enter key

where

How to perform XA-Core LED maintenance (continued)

<testall> is the parameter used to cause all LEDs to light. The <testall> parameter does not cause an audible alarm nor alarm notification on the MAP terminal. The amber LEDs on the shelf interface modules (SIM) CPs do not light. CP or packlet LEDs now under test continue to flash. You can use this parameter for all CP or packlet states (SysB, ManB, Cbsy, IsTb).

[timer] is the option used to indicate the time (in minutes) to light or flash LEDs. The XA-Core system turns the LEDs off when the time expires. The maximum time period is 999 min. If you do not define a time period, the default time period is 120 min.

Example of command use:

>INDICAT testall 5

Example of system response:

```
Indicate testall passed
```

At the XA-Core physical shelf

5 Perform a visual inspection of LEDs on all the CPs and packlets. Make sure that all LEDs light-up on all CPs and packlets.

Note: The amber LEDs on the SIMs do not light.

6 Record the physical slot location of any CP or packlet that does not have all LEDs lit.

If one or more LEDs are	Do
not lit on one or more different CP or packlet types	step 7
not lit on similar CP or packlet types	step 9
lit on all CPs and packlets	step 10

How to perform XA-Core LED maintenance (continued)

At the MAP terminal

7 Test each of the suspect CPs or packlets individually. Use the CP or packlet location information recorded from 6. Perform the following:

a Clear the Indicat_ <testall> command. At the MAP level type

>INDICAT <clearall>

and press the Enter key

where

<clearall> is the parameter used to return all winking or testing LEDs on all CPs or packlets to a normal working state.

Example of command use:

>INDICAT clearall

Example of system response:

```
Indicate clearall passed
```

b Light all the LEDs on the suspect CP or packlet. At the MAP level type

>INDICAT <test> <nn> <s> [timer]

or

>INDICAT <test> <nn> <s> <p> [timer]

and press the Enter key

where

<test> is the parameter used to cause all LEDs on a single CP or packlet to light. The <test> parameter does not cause an audible alarm nor alarm notification on the MAP terminal. The amber LEDs on the shelf interface modules (SIM) CPs do not light. CP or packlet LEDs now under test continue to flash. You can use this parameter for all CP or packlet states (SysB, ManB, Cbsy, IsTb). You can use the <test> parameter with the [timer] option.

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

[timer] is the option used to indicate the time (in minutes) to light or flash LEDs. The XA-Core system turns the LEDs off when the time expires. The maximum time period is 999 min. If you do not define a time period,

How to perform XA-Core LED maintenance (continued)

the default time period is 120 min. The Indicat_ <clear> or <clearall> command returns CPs or packlets to a normal working state.

Example of command use:

>INDICAT test 2 f 5

or

>INDICAT test 2 f u 5

Example of system response:

```
Indicate test 2 front upper passed
```

c Record the physical slot location of the CP or packlet that does not have all LEDs lit.

If one or more LEDs are	Do
not lit on one or more CP or packlet	step 8
lit on all CPs and packlets	step 10

8 Perform the correct CP or packlet replacement procedure. Return to this point when complete. Test the replacement CP or packlet individually. Use the CP or packlet location information recorded from 7. Perform the following steps:

a Use the Indicat <clearall> command. At the MAP level type

>INDICAT <clearall>

and press the Enter key

where

<clearall> is the parameter used to return all winking or testing LEDs on all CPs or packlets to a normal working state.

Example of command use:

>INDICAT clearall

Example of system response:

```
Indicate clearall passed
```

b Light all the LEDs on the replacement CP or packlet. At the MAP level type

i **>INDICAT <test> <nn> <s> [timer]**

or

>INDICAT <test> <nn> <s> <p> [timer]

and press the Enter key

where

<test> is the parameter used to cause all LEDs on a single CP or packlet to light. The <testa> parameter does not cause an audible alarm nor alarm notification on the MAP terminal. The amber LEDs

How to perform XA-Core LED maintenance (end)

on the shelf interface modules (SIM) CPs do not light. CP or packlet LEDs now under test continue to flash. You can use this parameter for all CP or packlet states (SysB, ManB, Cbsy, IsTb). You can use the <test> parameter with the [timer] option.

<nn> is the slot number parameter value to indicate the number of the physical shelf slot - 0 to 18

<s> is the side parameter value to indicate the CP or packlet location in the physical shelf - front (f) or rear (r)

<p> is the upper (u) or lower (l) physical slot location of the packlet in an input/output processor (IOP).

[timer] is the option used to indicate the time (in minutes) to light or flash LEDs. The XA-Core system turns the LEDs off when the time expires. The maximum time period is 999 min. If you do not define a time period, the default time period is 120 min.

Example of command use:

>INDICAT test 2 f 5

or

>INDICAT test 2 f u 5

Example of system response:

```
Indicate test 2 front (upper) passed
```

ii Record the physical slot location of any replacement CP or packlet that does not have all LEDs lit.

If one or more LEDs are	Do
not lit	step 9
lit on all CPs and packlets	step 10

9 Call the next level of support.

10 You have completed this procedure.

How to record an XA-Core office image on a disk

Application

Use this procedure to record the office image files of an eXtended Architecture Core (XA-Core). Use this procedure to record the office image on to a disk in an XA-Core shelf.

Interval

Perform this procedure each day if the XA-Core has no automatic image taking. Perform this procedure as required by your office if the XA-Core has automatic image taking.

Common procedures

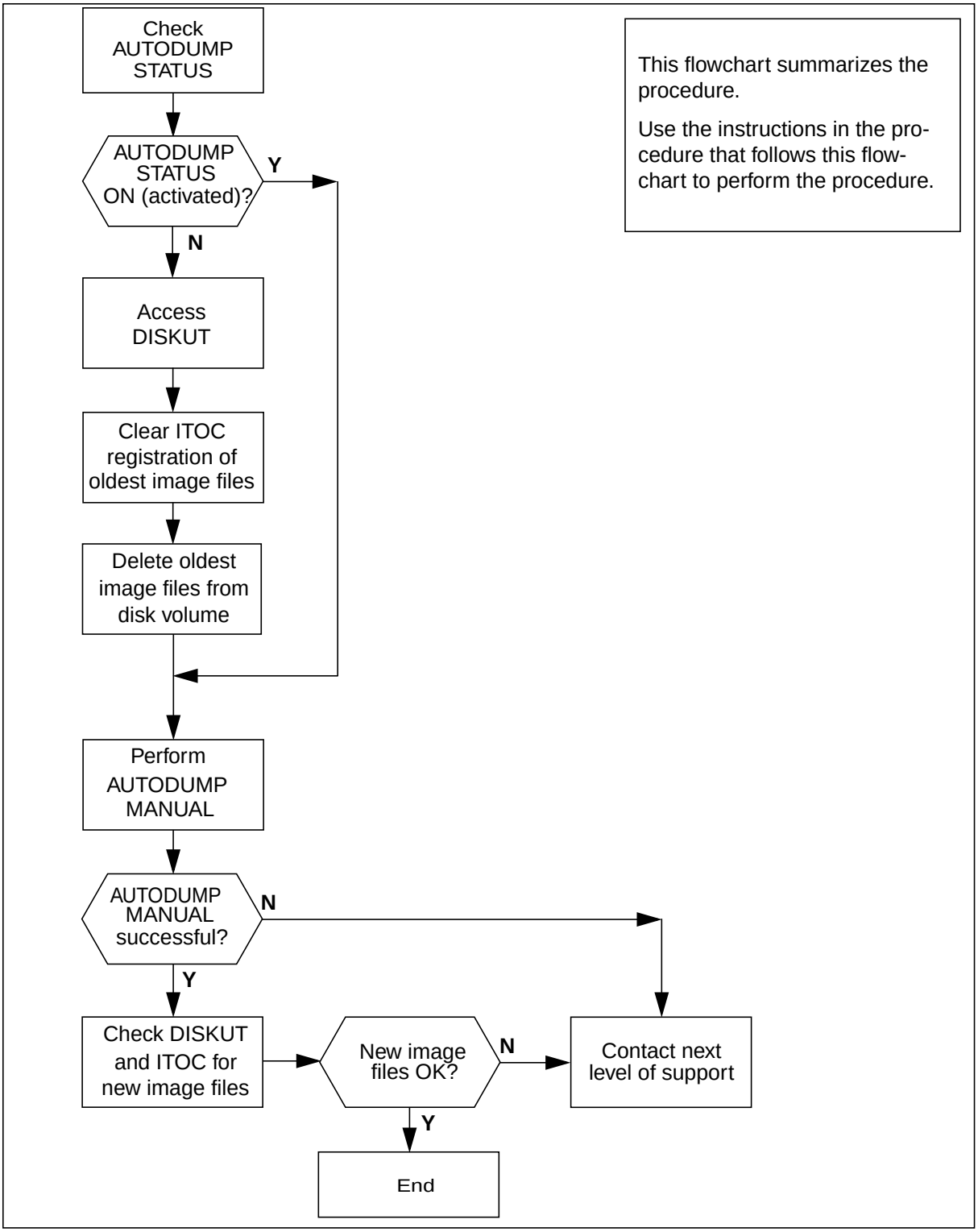
There are no common procedures.

Action

This procedure contains a summary flowchart as a summary of the procedure. Follow the exact steps to perform this procedure.

How to record an XA-Core office image on a disk (continued)

Summary of How to record an XA-Core office image on a disk



How to record an XA-Core office image on a disk (continued)

How to record an XA-Core office image on a disk

CAUTION
Call your next level of support
Do not try this procedure before you call your next level of support.

At the MAP

1 To access the MAP CI level display, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

2 To check the status of automatic image taking, type:

>AUTODUMP STATUS

and press the enter key.

Example of a MAP response

```
Successful Image:  990215_CM
Taken:  1999/03/17 21:47:32:04.138 WED.
On Volume: F17LIMAGE

Successful Image:  990215_MS
Taken:  1999/03/17 21:47:32:04:138 WED.
On Volume: F17LIMAGE

SCHEDULED-Image Dump is ON.

RETAIN option is OFF.

Next scheduled dump is MONDAY at 22:30 hours.
Next image to be dumped on F02LIMAGE.
```

3 Determine if the retain option is off. XA-Core has the retain option on or off. In the example of a MAP response of step 2, the text RETAIN option is OFF indicates the retain option is off..

If If RETAIN option is	Do
ON	step 4
OFF	step 8

4 To change the retain option, type:

>AUTODUMP RETAIN

How to record an XA-Core office image on a disk (continued)

and press the enter key.

Example of a MAP response:

```
        *** WARNING ***
This option RETAINS the PRIMARY LOAD ROUTE.
The PRIMARY LOAD ROUTE should be initially
set per NTP.
The RETAIN option will be ENABLED.
Please confirm ("YES", "Y", "NO", or "N"):
```

5 To confirm the command, type:

>YES

and press the enter key.

Example of a MAP response:

```
RETAIN option DISABLED.
```

6 To check the status of automatic image taking, type:

>AUTODUMP STATUS

and press the enter key.

Example of a MAP response

```
Successful Image:  990215_CM
Taken:  1999/03/17 21:47:32:04.138 WED.
On Volume: F17LIMAGE

Successful Image:  990215_MS
Taken:  1999/03/17 21:47:32:04:138 WED.
On Volume: F17LIMAGE

SCHEDULED-Image Dump is ON.

RETAIN option is OFF.

Next scheduled dump is MONDAY at 22:30 hours.
Next image to be dumped on F02LIMAGE.
```

7 Determine if the retain option is off. XA-Core has the retain option on or off. In the example of a MAP response of step 2, the text RETAIN option is OFF indicates the retain option is off.

If If RETAIN option is	Do
ON	step 40
OFF	step 8

How to record an XA-Core office image on a disk (continued)

8 Determine if the XA-Core has automatic image taking on or off. In the example of a MAP response of step 2, the text SCHEDULED-Image Dump is ON indicates the automatic image taking is on..

If If SCHEDULED-Image Dump is	Do
ON	step 27
OFF	step 9

9 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

10 Determine and record the XA-Core disk volume that the image dump goes on to. Determine the disk volume from office records or office personnel.

11 To list the files in the disk volume that you recorded in step 10, type:

>LISTFL vol_name

and press the enter key.

where

<vol_name> is the name of the disk volume that contains the office image files.

Example of MAP input:

>LISTFL F02LIMAGE

Example of a MAP response:

```
File information for volume F02LIMAGE:
{NOTE:  1 BLOCK = 512 BYTES}
-------------------------------------------------------
-------------------------
FILE NAME                      O R I O O V FILE   MAX
NUM OF    FILE   LAST
                                R E T P L L CODE   REC
RECORDS    SIZE MODIFY
                              G C O E D D       LEN
IN      IN   DATE
                                C N                 FILE
BLOCKS
-------------------------------------------------------
-------------------------
IMG0504CX_CM                    I F           0  1020
165180  329728 990506
IMG0504CX_MS                   I F           0  1020
7542   15360 990506
IMG0501CU_CM                    I F           0  1020
165180  329728 990501
```

How to record an XA-Core office image on a disk (continued)

```
IMG0501CU_MS                    I F          0  1020
7542   15360 990501
```

12 Determine and record the file names of the oldest XA-Core and message switch (MS) images. The XA-Core image files have a CM suffix. The MS image files have an MS suffix.

Note: In the example of a MAP response in step 11, the oldest image file for XA-Core is IMG0501CU_CM. In the example of a MAP response in step 11, the oldest image file for the MS is IMG0501CU_MS

13 Determine if you can delete the files of the oldest XA-Core and MS images. Determine if file deletion is correct from office records or office personnel.

IfIf file deletion of oldest XA-Core and MS images is	**Do**
correct	step 14
not correct	step 40

14 To access the user interface for the image table of contents (ITOC) table, type:

>ITOCCI

and press the enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

15

WARNING
Do not leave ITOC table empty
The ITOC table must not be empty of image files to boot the switch. Do not clear from the ITOC the last image files for the XA-Core and message switch (MS). Each XA-Core disk must have an XA-Core image file and an MS image file.

To list the image files for the XA-Core in the ITOC, type:

>LISTBOOTFILE XA

and press the enter key.

How to record an XA-Core office image on a disk (continued)

Example of a MAP response:

```
Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- ------------------- -----------

 0 * 05/04/1999 19:16:21 F02LIMAGE
IMG0504CX_CM
 0   05/01/1999 19:21:19 F02LIMAGE
IMG0501CU_CM
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

16 Determine if the ITOC table has more than one XA-Core image file.

IfIf more than one XA-Core image file is	**Do**
in the ITOC table	step 17
not in the ITOC table	step 40

17 To clear the oldest image file for the XA-Core from the ITOC table, type:

>CLEARBOOTFILE XA FILE xacore_image_file

where

and press the Enter key.

<xacore_image_file> is the name of the XA-Core image file that you recorded in step 12.

Example of MAP input:

>CLEARBOOTFILE XA FILE IMG0501CU_CM

18 To list the image files for the MS in the ITOC table, type:

>LISTBOOTFILE MS

and press the enter key.

How to record an XA-Core office image on a disk (continued)

Example of a MAP response:

```
Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- ------------------- -----------

 0 * 05/04/1999 19:16:21 F02LIMAGE
IMG0504CX_MS
 1   05/01/1999 19:21:19 F02LIMAGE
IMG0501CU_MS
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

19 Determine if the ITOC table has more than one MS image file.

IfIf more than one MS image file is	**Do**
in the ITOC table	step 20
not in the ITOC table	step 40

20 To clear the oldest image file for the MS from the ITOC table, type:

>CLEARBOOTFILE MS FILE ms_image_file

and press the Enter key.

where

<ms_image_file> is the name of the MS image file that you recorded in step 12.

Example of MAP input:

>CLEARBOOTFILE MS FILE IMG0501CU_MS

21 To quit the MAP user interface for the ITOC table, type:

>QUIT

and press the enter key.

Example of a MAP response:

```
DISKUT:
```

22 To delete the oldest image file for XA-Core, type:

>DELETEFL xacore_image_file

and press the enter key.

where

How to record an XA-Core office image on a disk (continued)

<xacore_image_file> is the name of the XA-Core image file that you recorded in step 12.

Example of MAP input:

>DELETEFL IMG0501CU_CM

23 To confirm the command type:

>YES

and press the enter key.

24 To delete the oldest image file for the MS, type:

>DELETEFL ms_image_file

and press the enter key.

where

<ms_file> is the name of the MS image file that you recorded in step 12.

Example of MAP input:

>DELETEFL IMG0501CU_MS

25 To confirm the command type:

>YES

and press the enter key.

26 To quit the MAP disk utility, type:

>QUIT

and press the enter key.

Example of a MAP response:

```
CI:
```

27 To start an image taking record, type:

>AUTODUMP MANUAL

and press the enter key.

Example of a MAP response:

```
SCHEDULED Image Dump in approximately 5 minutes...
Please refrain from using dump unsafe commands during the
CM image dump.
Quit to CI if possible.
If you cannot refrain from using dump unsafe commands use
the STOPDUMP command to abort AUTODUMP.
Querying image size on node: MS0. Waiting for reply...
Reply received.
Querying image size on node: CM. Waiting for reply...
Reply received.
Checking to see if anyone using dump unsafe commands.
Image Dump STARTED: 1999/06/18 03:52:20.150 FRI.
Please refrain from using dump unsafe commands during the
CM image dump.Quit to CI if possible.
If you cannot refrain from using dump unsafe commands use
the STOPDUMP command to abort AUTODUMP.
```

How to record an XA-Core office image on a disk (continued)

```
Users will be notified when dump unsafe commands are
allowed to be used.
Users can now use dump unsafe commands.
Image dump completed successfully.
Successful Image: S990618035204_CM
Taken: 1999/06/18 03:52:20.150 FRI.
On Volume: F02LCUTOVER
Last Image: S990618035204_CM
Successful Image: S990618035204_MS
Taken: 1999/06/18 03:52:20.150 FRI.
On Volume: F02LCUTOVER
Last Image: S990618035204_MS
```

28 To check the performance of the image taking record of step 27, type:

>AUTODUMP HISTORY

and press the enter key.

Example of a MAP response.

```
Autodump begins...
WARNING: Only 1 percent space left in the volume after
this image is taken. There may not be enough space for
subsequent images. Ensure that only recent CM and MS image
and history file exist in the volume. Increase the volume
size if necessary.
Stopping Journal File...
Journal File stopped.
Beginning Dump. START time: 1999/06/18 03:52:20.237 FRI.
Timeout initialized.
CM: Estimated image size is 155288 Kbytes.
CM: Unloading modules that are loaded as TEMPORARY...
CM: None found.
CM: Current autoload file: F02LPATCHES
TAM_UNITCNA114DC_W24_CM
CM:
CM: Dumping Data Store.
CM:
CM: Dumping Program Store.
CM:
CM: Dumping Entry Record.
CM:
CM: Checking Data Store.
CM:
CM: Checking Program Store.
CM:
CM: Checking Entry Record.
CM:
CM: Successful DUMP and CHECK.
CM: 155287 blocks with 1033 corrections.
CM:
CM: Image from XA registered as file 11 in ITOC for XA.
CM: Active entry in ITOC for XA was NOT updated.
Image Dump Completed.
```

How to record an XA-Core office image on a disk (continued)

```
Timeout initialized.
MS0: Estimated image size is 7543 Kbytes.
MS0:Unloadingmodulesthatareloadedas TEMPORARY...
MS0: None found.
MS0: Current autoload file: F02LPATCHES
TAM_UNITCNA114DC_W24_C
MS0:
MS0: Dumping Data Store
MS0:  .
MS0: Dumping Program Store.
MS0: Dumping Entry Record.
MS0:
MS0: Checking Data Store.
MS0:
MS0: Checking Program Store.
MS0: Checking Entry Record.
MS0: Successful DUMP and CHECK.
MS0: 7542 blocks with 101 corrections.
MS0:
MS0: Image from MS registered as file 3 in ITOC for MS.
MS0: Active entry in ITOC for MS was NOT updated.
Image Dump Completed.
Dump END time: 1999/06/18 04:17:37.297 FRI..
Renaming CM Image File from ACTIVE to SAFE:
CM Image File Renamed.
Renaming MS Image File from ACTIVE to SAFE:
MS Image File Renamed.
Rotating Journal File...
ROTATE Journal File Completed.
Store Usage:
DS:  USED = 151357Kb  AVAIL =  45699Kb  TOTAL = 197056Kb
% USED
PS:  USED =  95672Kb  AVAIL =  31240Kb  TOTAL = 126912Kb
% USED =
Starting Journal File...
Completed START Journal File.
Autodump ends...
```

29 Determine if the image taking record completed correctly.

If image taking record completed	Do
correctly	step 32
not correctly	step 30

30 To find additional information about the image taking record that completed not correctly, type:

>AUTODUMP DEBUG

and press the enter key.

How to record an XA-Core office image on a disk (continued)

Example of a MAP response.

```
Creating image file name: A990618035204
Attempting to determine disk volume to use for dump:
BEGIN: get_image_size for node MS0:
Allocating MTS resources... Done.
Allocating event... Done.
Searching for dump controller... Done.
Sendingquery_image_sizemsgtodumpcontroller...Done.
Image size for MS0 is 7724032 bytes.
Releasing MTS resources.
END: get_image_size - deallocating event.
BEGIN: get_image_size for node CM:
Allocating MTS resources... Done.
Allocating event... Done.
Searching for dump controller... Done.
Sending    query_image_size msg to dump controller...
Done.
Image size for CM is 159014912 bytes.
Releasing MTS resources.
END: get_image_size - deallocating event.
Total image size (CM + MS) is: 166738944 bytes.
Calculating disk block requirements for a 166738944 byte
image
Beginning search for disk volume to use for dump:
Getting volume name for next volume in table: Done.
Getting volume id for F02LCUTOVER... Done.
Checking available disk space:
Getting volume information... Done.
Calculating requirements in disk blocks:
Image size: 325662 Disk space: 331648
Enough space exists to take an image
Updating protected variable active_volume
Updating protected variables for last image.
BEGIN: perform_autodump
Setting up dump parms.
Update_mode is: update
Allocating MTA resources... Done.
Allocating cleanup event... Done.
Searching for dump controller mailbox... Done.
BEGIN: over_nodes loop:
Preparing to dump CM:
Requesting permission from SAC to dump node CM
Permission received
*** Sending DUMP request to dump controller... Message
sent.
Timeout time is: 1999/06/18 06:52:21.590 FRI..
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Message
received:
```

How to record an XA-Core office image on a disk (continued)

```
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Timed out.
Continuing...
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Message
received:
Sending event stopped notification to SAC. RC: 0
Preparing to dump MS:
Requesting permission from SAC to dump node MS0
Permission received
*** Sending DUMP request to dump controller... Message
sent.
Timeout time is: 1999/06/18 04:58:44.186 FRI..
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Timed out.
Continuing...
Waiting for messages from DUMP controller... Message
received:
Waiting for messages from DUMP controller... Timed out.
Continuing...
Waiting for messages from DUMP controller... Timed out.
Continuing...
Waiting for messages from DUMP controller... Message
received:
Sending event stopped notification to SAC. RC: 0
END: over_nodes loop
Deallocating autodump event
END: perform_autodump
Attempting to rename image file:
Searching for image file: A990618035204_CM...
Found image file: A990618035204_CM
Getting file information...  Done.
Attempting to clear ITOC entry...
Done.
Renaming file: A990618035204_CM TO: S990618035204_CM...
Done.
Getting volume information...  Done.
Getting file information...  Done.
Retain option is UPDATE: Setting ACTIVE bootfile...
Setting bootfile...
Done.
Updating protected variables for last successful image.
Getting MS image file info:
Found image file: A990618035204_MS
Getting file information...  Done.
Attempting to clear ITOC entry...
Done.
Renaming file: A990618035204_MS TO: S990618035204_MS...
Failed. Reason: File not found
Updating protected variables for successful dump.
```

How to record an XA-Core office image on a disk (continued)

31 Record the information about the image taking record that completed not correctly.

Go to step 40.

32 To access the image table of contents (ITOC) user interface, type:

>ITOCCI

and press the enter key.

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

33 To list the image files for the XA-Core in the ITOC, type:

>LISTBOOTFILE XA

and press the enter key.

Example of a MAP response:

```
Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ ------------------- -----------

 0 * 05/04/1999 19:16:21 F02LIMAGE
IMG0504CX_CM
 0   05/17/1999 19:26:29 F02LIMAGE
IMG0517CY_CM
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

34 Determine if the XA-Core image file is in the ITOC correctly.

IfIf the XA-Core image file is in the ITOC	**Do**
correctly	step 35
not correctly	step 40

35 To list the image files for the MS in the ITOC, type:

>LISTBOOTFILE MS

and press the enter key.

How to record an XA-Core office image on a disk (end)

Example of a MAP response:

```
Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- ------------------- -----------

 0 * 05/04/1999 19:16:21 F02LIMAGE
IMG0504CX_MS
 1   05/17/1999 19:26:29 F02LIMAGE
IMG0517CY_MS
```

Note: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

36 Determine if the MS image file is in the ITOC correctly.

If the MS image file is in the ITOC	Do
correctly	step 37
not correctly	step 40

37 Determine if office procedures require a backup copy on tape of the office image files of XA-Core that you recorded.

If If office procedures require	Do
a backup copy	step 38
no backup copy	step 41

38 Perform the procedure “How to backup an XA-Core office image from disk to tape”. When you have completed this procedure, return to this step.

39 Go to step 41

40 For additional help, call the next level of support.

41 You have completed the procedure.

How to replace XA-Core cooling unit air filters

Application

Use this procedure to replace a cooling unit filter in XA-Core, in a standard C-42 cabinet frame. The part number of the cooling unit filter is A0662028.

The cooling unit filter is a single, slide-out tray assembly located above the cooling unit fan drawers. Access the cooling unit filter from the front of the cabinet. The fan drawers of the cooling unit are in the lower front section of the cabinet.

Interval

Replace the cooling unit filter every six weeks.

Common procedures

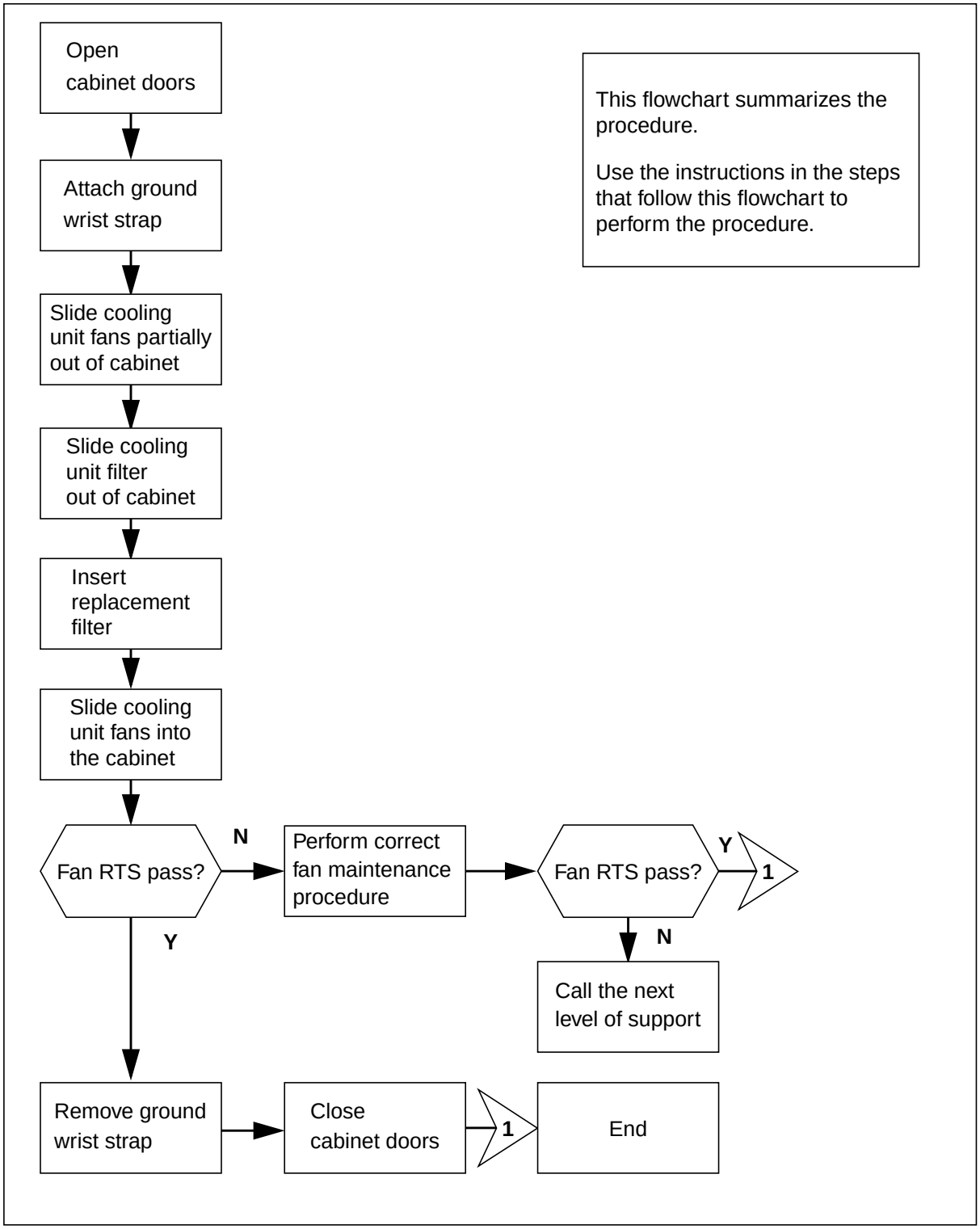
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to replace XA-Core cooling unit air filters (continued)

How to replace XA-Core cooling unit air filters



How to replace XA-Core cooling unit air filters (continued)

How to replace an XA Core cooling unit filter

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Read and make sure you thoroughly understand the instructions in this procedure before performing the filter replacement. Do not allow the cooling unit to remain un-powered for more than 2 min.

At the XA-Core cabinet

1 Get a new, replacement cooling unit filter (part number A0662028). Do not re-use old filters.

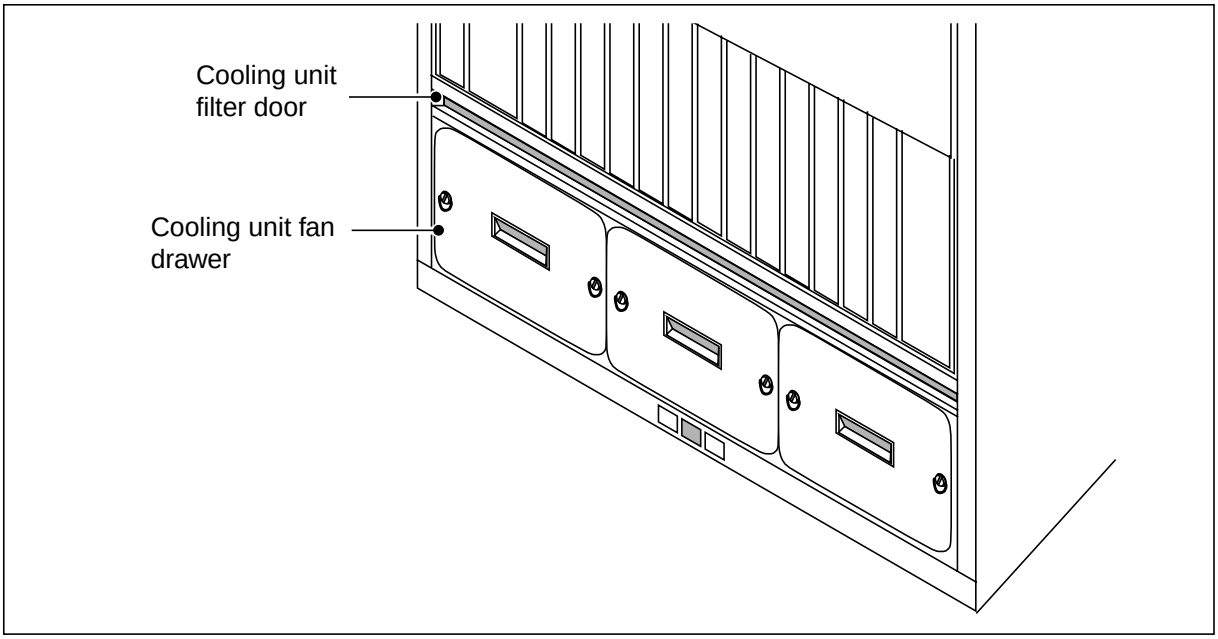
2 Open the front doors of the XA-Core cabinet completely.

3 Locate the following in the lower front section of the cabinet.

- The cooling unit fans.
- The cooling unit filter. The cooling unit filter is a single, slide-out tray assembly.

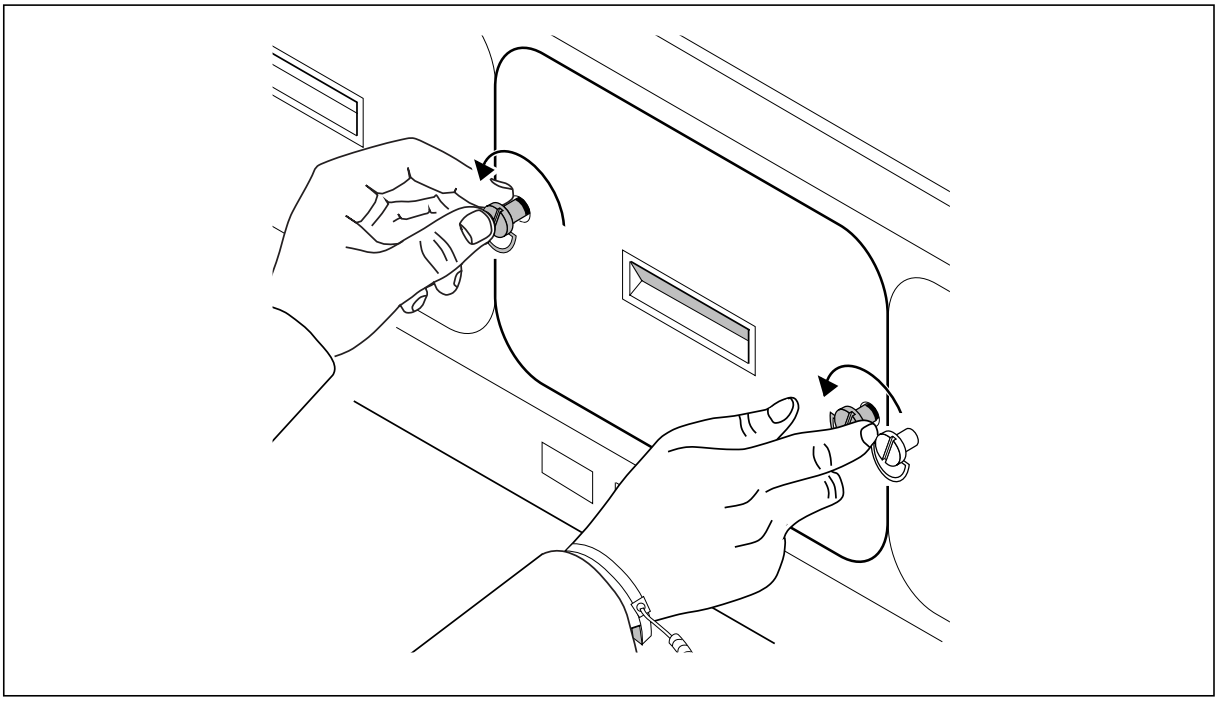
How to replace XA-Core cooling unit air filters (continued)

XA-Core cooling unit fan drawer and filter door locations



4 Loosen the locking screws on the cooling unit fan drawers. Turn the locking screws in a counter-clockwise direction.

Loosen the locking screws on the cooling unit fan drawers

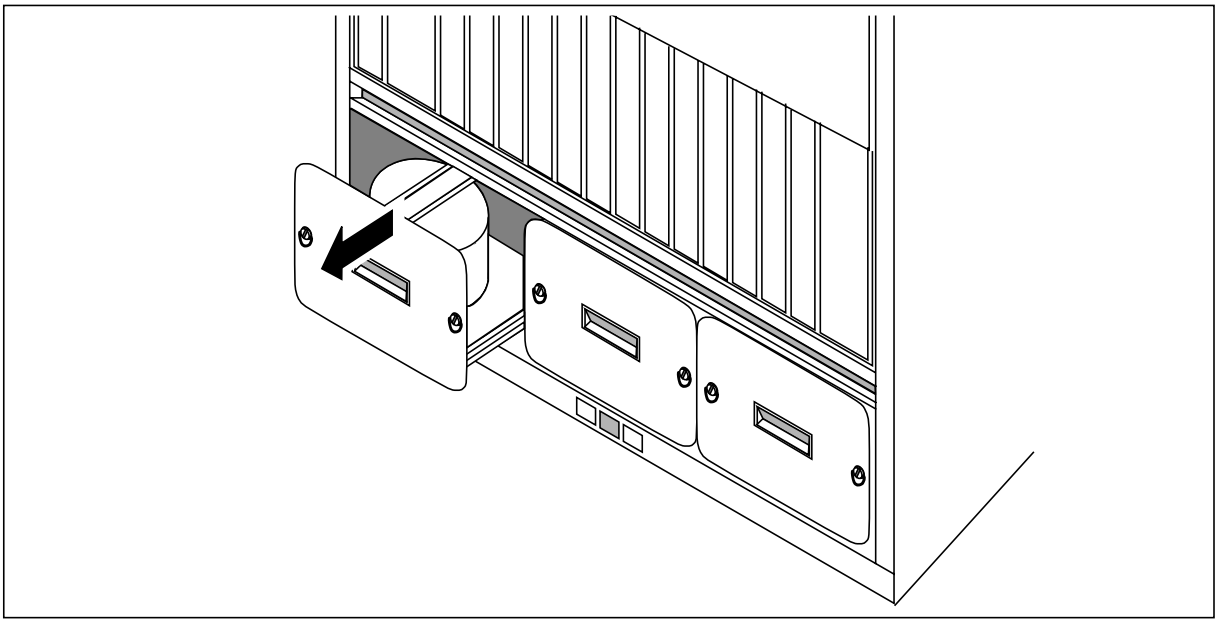


How to replace XA-Core cooling unit air filters (continued)

5 Pull all three fan drawers partially away from the cabinet. Wait 30 sec. to allow the cooling unit fans to spin down.

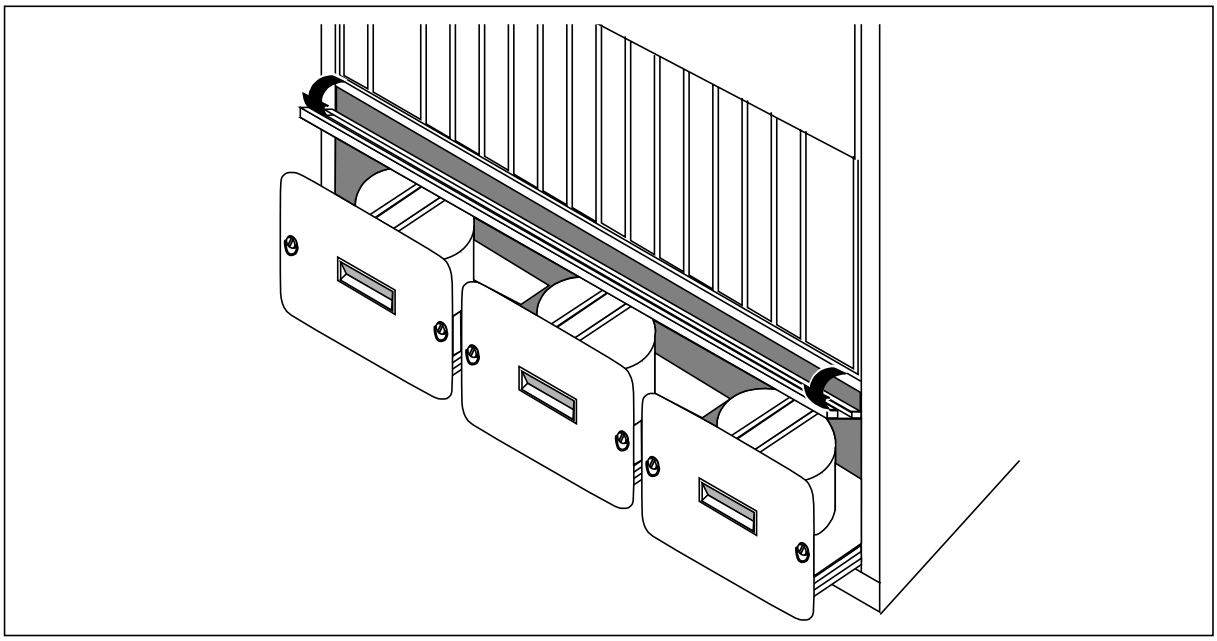
Note: The FSP blower LED will light. An FSP major alarm appears on the MAP level under the EXT alarm banner header.

Open the cooling unit fan drawers



6 Open the cooling unit filter door as shown in the diagram in this step.

Open the cooling unit filter door

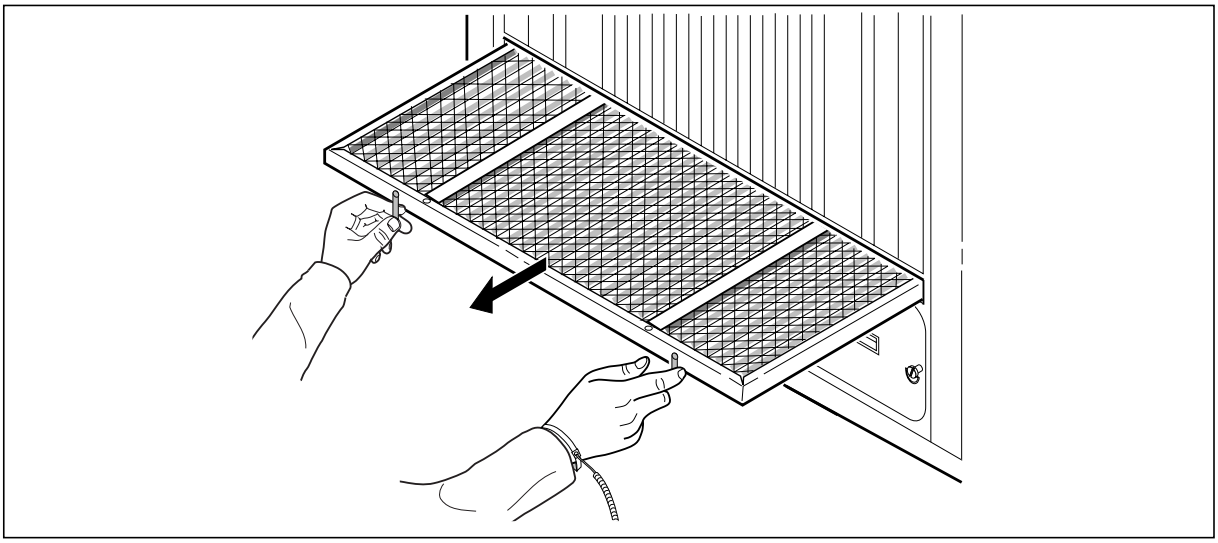


How to replace XA-Core cooling unit air filters (continued)

7 Hold the tabs of the cooling unit filter and carefully pull the filter toward you. Pull the filter completely away from the cooling unit. Make sure that you do not hit the filter during removal. Sudden movement of the filter can cause dust to fall into the cabinet.

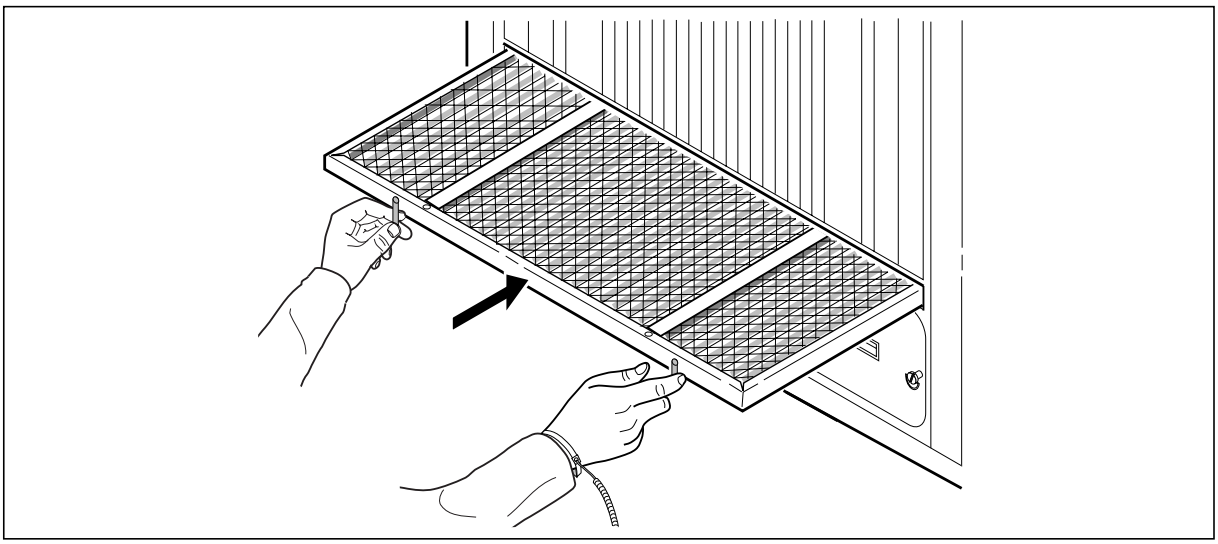
Note: Before you remove the cooling unit filter, note the position of the filter in the cabinet. Make sure that the wire mesh side of the replacement filter is face-up.

Remove the cooling unit filter



8 Insert the replacement cooling unit filter. Align the replacement filter with the filter guides. Carefully push the filter until the filter is completely in the cabinet. Make sure that the wire mesh side is face-up.

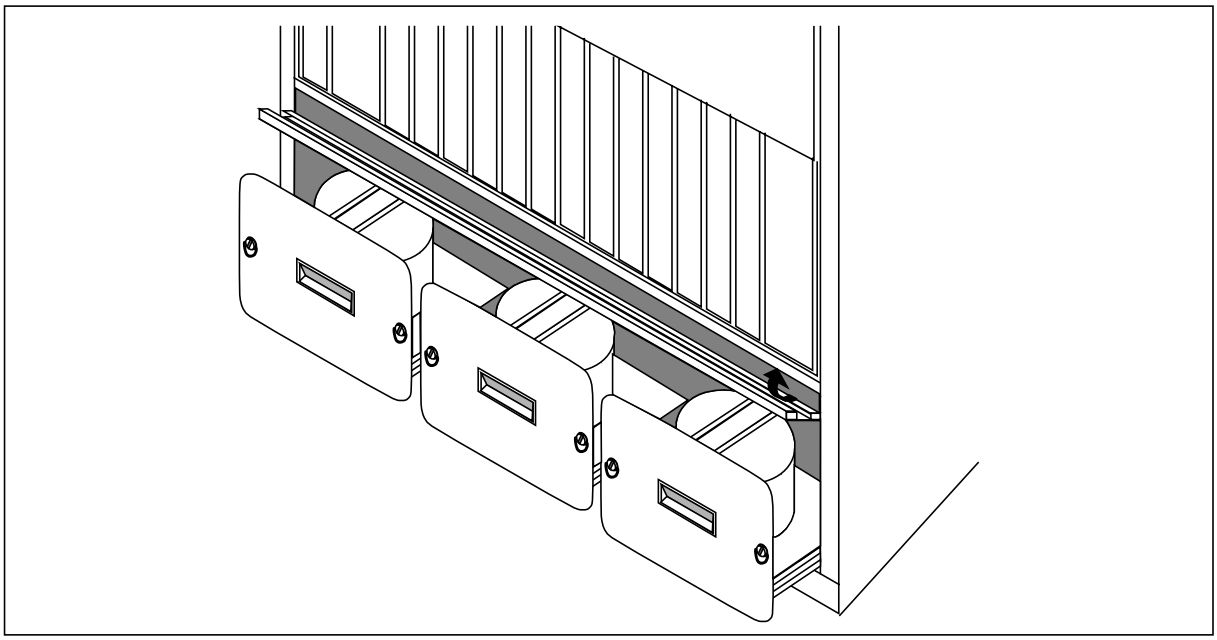
Insert the replacement cooling unit filter



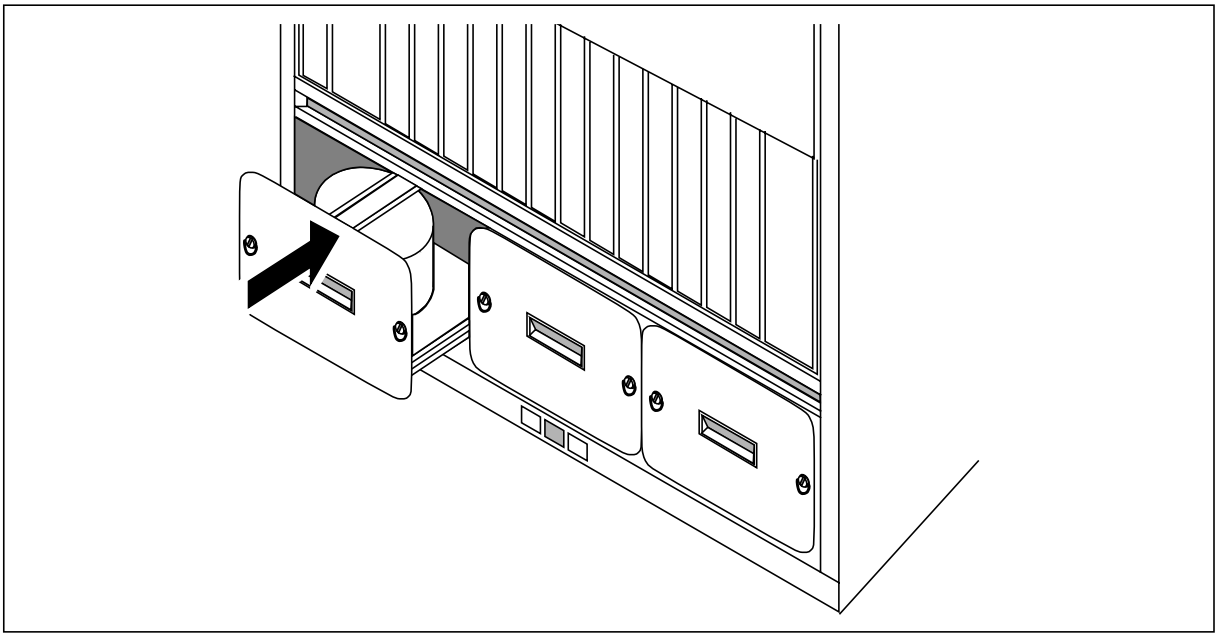
How to replace XA-Core cooling unit air filters (continued)

9 Close the cooling unit filter door as shown in the diagram in this step. Push on the filter door until it locks into place.

Close the cooling unit filter door



Close the cooling unit fan drawers



10 Power up all three cooling unit fans. Push all three fan drawers one at a time completely into the cabinet.

How to replace XA-Core cooling unit air filters (end)

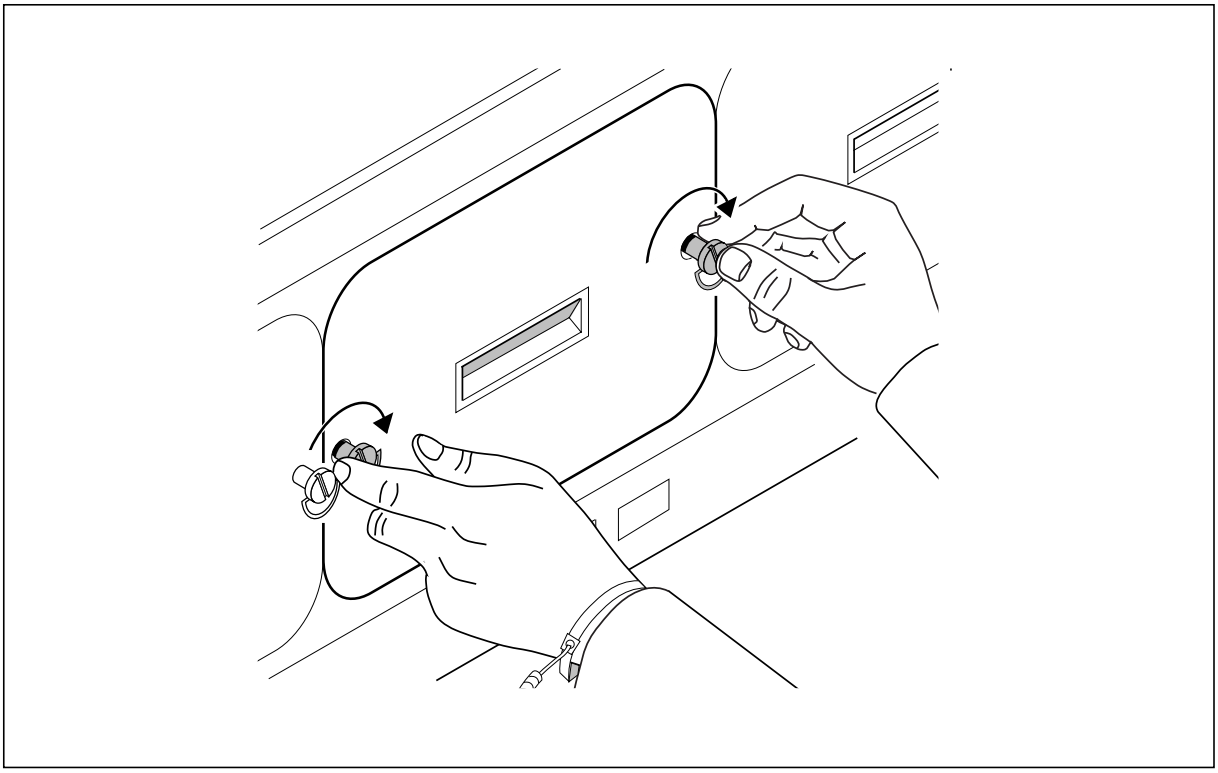
11 Make sure that the fans power up. Make sure that the green LEDs light on all fan drawers.

If the cooling unit fans are	Do
not in service	step 12
in service	step 13

12 Refer to the correct cooling unit maintenance procedure. Return to this point when complete.

13 Tighten the locking screws on the cooling unit fan drawers. Turn the locking screws in a clockwise direction.

Tighten the locking screws on the cooling unit fan drawers



14 Disconnect the wrist strap lead from the FSP.

15 Close the cabinet doors completely.

16 You have completed this procedure. Return to the procedure that sent you to this procedure and continue as indicated.

How to restore an XA-Core office image from tape to disk

Application

Use this procedure to copy the office image files of an eXtended Architecture Core (XA-Core). Use this procedure to copy the office image files from a digital audio tape (DAT) cartridge to a disk in an XA-Core shelf.

Interval

Perform this procedure as required.

Common procedures

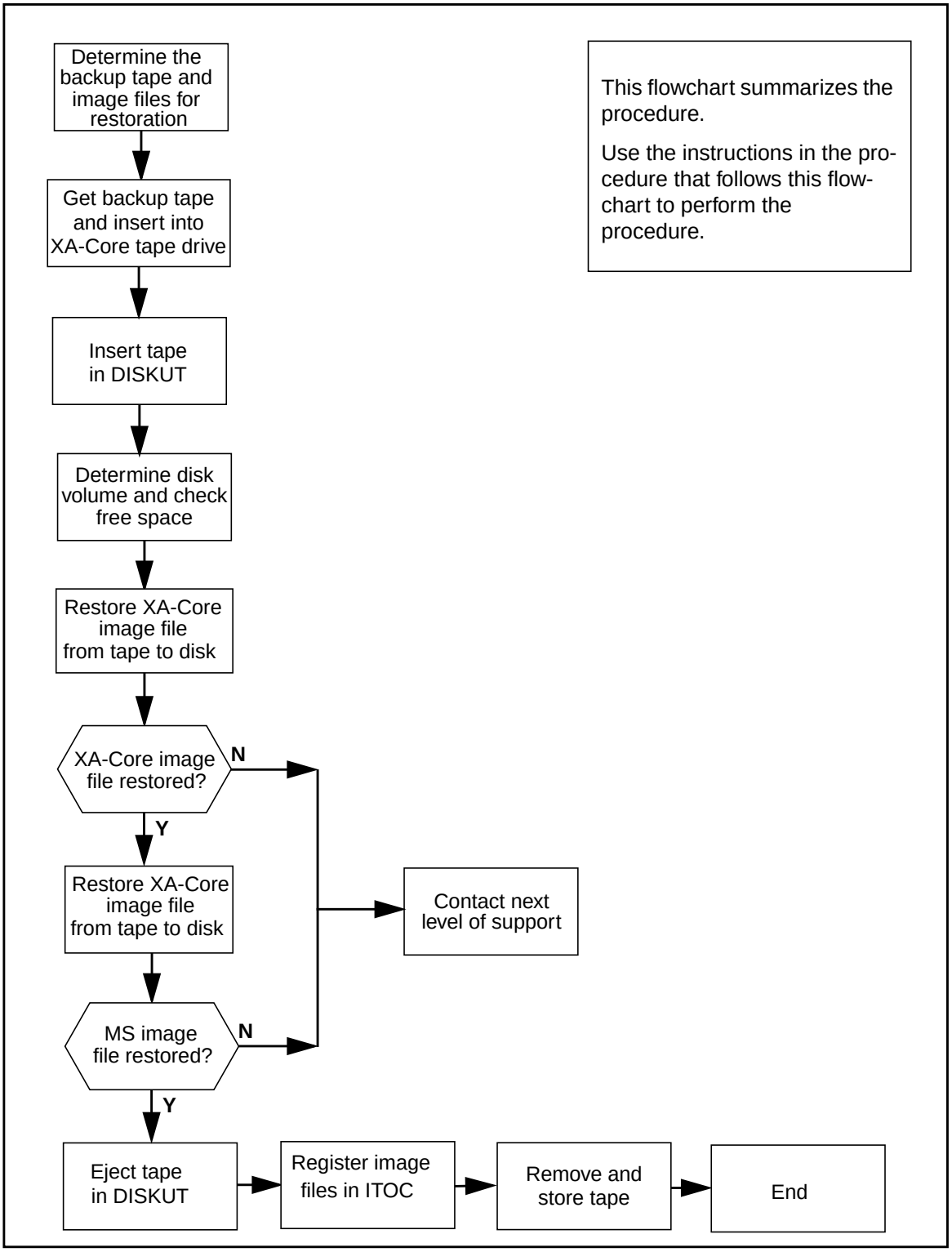
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to restore an XA-Core office image from tape to disk (continued)

Summary of How to restore an XA-Core office image from tape to disk heads



How to restore an XA-Core office image from tape to disk (continued)

How to restore an XA-Core office image from tape to disk

At the shelf

1 Determine the DAT tape that contains the office images for restoration to the XA-Core. Determine the tape from office records or office personnel.

2 Determine the tape files that have the images for the XA-Core and the message switch (MS). These tape files are for restoration to the XA-Core.

3 Determine from office records or office personnel if the DAT tape drive is clean. Refer to the XA-Core procedure “How to clean the XA-Core tape drive”.

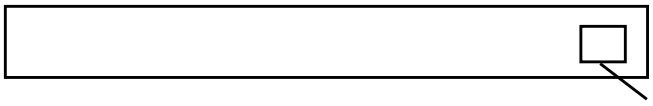
4

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Get the tape cartridge that contains the office images for restoration found in step 1.

5 Make sure that the protection tab for tape write permission is at the position that does not permit recording (open). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Write protection of DAT cartridge



Side-view of DAT cartridge Position for write protection

6 Insert the tape cartridge into the XA-Core tape drive and close the drive door. The XA-Core tape drive is in the input/output processor (IOP) card of the XA-Core shelf.

Note: Restore the XA-Core image file first and the MS image file second.

How to restore an XA-Core office image from tape to disk (continued)

At the MAP

7 To access the MAP CI level display, type:

>QUIT ALL

and press the enter key.

Example of a MAP response:

```
CI:
```

8 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

9 To insert the tape, type

>INSERTTAPE snnpTAPE

and press the enter key

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example of MAP input:

>INSERTTAPE F02UTAPE

Example MAP response:

```
The INSERT operation may take
up to 5 minutes to tension the tape.
Tape IMAGE_1, unit 0, is now available to user on node CM
```

10 To list the files in the tape, type:

>LISTFL snnpTAPE

and press the enter key.

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example of MAP input:

How to restore an XA-Core office image from tape to disk (continued)

>LISTFL F02UTAPE

Example of a MAP response:

```
File information for tape volume F02UTAPE, node CM:
{Note: 1 BLOCK = 512 BYTES}
-------------------------------------------------------
---------------
CREATE  ORG FILE V      FILE     NUM OF   REC    FILE NAME
  DATE TYPE CODE L    SIZE IN    RECORDS   LEN
                 D     BLOCKS    IN FILE
-------------------------------------------------------
---------------
990520 IMAG    0      329070    165180  1020 IMG0517CY_CM
990520 IMAG    0       15026      7542  1020 IMG0517CY_MS
```

Note 1: In the example of a MAP response, IMG0517CY_CM is the name of the XA-Core image file on tape. The name of the XA-Core image file is the same name as recorded in step 2.

Note 2: In the example of a MAP response, IMG0517CY_MS is the name of the MS image file on tape. The name of the MS image file is the same name as recorded in step 2.

11 Determine the name of the disk volume for the restoration of the image from tape. Determine the disk volume from office records or office personnel. Record the disk volume name.

12 To list the volumes contained on the node, type:

>LISTVOLS

and press the enter key.

Example of a MAP response:

```
Volumes found on the node CM:
-----------------------------

NAME               TYPE     TOTAL      FREE TOTAL  OPEN
ITOC    LARGEST
                            BLOCKS     BLOCKS FILES FILES
FILES  FREE SEGMENT
-------------------------------------------------------
-----------------------
F02LIMAGE_1        FTFS    819200    473088    5    0
2     473088
F02LIMAGE_2        FTFS    409600    408672    0    0
0     408672

Total number of volumes found on node CM : 2
```

13 To check the free space of the disk volume for restoration, type:

>VOLINFO vol_name

and press the enter key.

where

vol_name is the name of the disk volume for image restoration.

Example of MAP input:

How to restore an XA-Core office image from tape to disk (continued)

>VOLINFO F02LIMAGE_2

Example MAP response:

```
Information for disk volume F02LIMAGE_2   on node CM   :
-----------------------------------------------

Type Code                        : FTFS
Version                          : 2
Name                             : IMAGE_RES
Number                           : 1
Valid                            : YES
When Created                  : 1999/05/20 11:06:24.278 THU.
When last modified               : 1999/05/20 11:06:31.835
THU.
Logical block size in Kbytes     : 16
Volume Size in Kbytes            : 204800
Total free space in Kbytes       : 204336
Total free space in blocks       : 408672
# Free segments                  : 1
Largest free area in Kbytes      : 204336
# Data cache pages               : 24
# System cache pages             : 24
# Files on volume                : 1
# Open files                     : 0
# Max open files                 : 170
FID table version                : 1
FID table last modified          : 1999/05/20 11:06:24.278
THU.
# extents in FID table           : 1
FID table init alloc size        : 352
FID table incr alloc size        : 352
Free Space Map Version           : 1
HD version #                     : 1
```

Note: In the example of a MAP response in step 12, the image restoration is on disk volume F02LIMAGE_2.

14 To restore the XA-Core image file from tape to disk, type:

>RESTORE FILE vol_name snnpTAPE xa_file_name

and press the enter key.

where

vol_name is the name of the disk volume to receive the restored file

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

xa_file_name is the name of the XA-Core image file on tape

Example of MAP input:

How to restore an XA-Core office image from tape to disk (continued)

>RESTORE FILE F02LIMAGE_2 F02UTAPE IMG0517CY_CM

If the command was	Do
successful	step 15
not successful	step 28

15 To restore the MS image file from tape to disk, type:

>RESTORE FILE vol_name snnpTAPE ms_file_name

and press the enter key.

where

vol_name is the name of the disk volume to receive the restored file

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

ms_file_name is the name of the MS image file on tape

Example of MAP input:

>RESTORE FILE F02LIMAGE_2 F02UTAPE IMG0517CY_MS

If the command was	Do
successful	step 16
not successful	step 28

16 To list the office image files in the disk volume that contains the restored office image, type:

>LISTFL vol_name

and press the enter key.

where

<vol_name> is the name of the disk volume that contains the office image files.

Example of MAP input:

>LISTFL F02LIMAGE_2

How to restore an XA-Core office image from tape to disk (continued)

Example of a MAP response:

```
File information for volume F02LIMAGE_2:
{NOTE:  1 BLOCK = 512 BYTES }
-------------------------------------------------------
-------------------------
FILE NAME                      O R I O O V FILE   MAX
NUM OF    FILE   LAST
                                R E T P L L CODE   REC
RECORDS    SIZE MODIFY
                              G C O E D D       LEN
IN      IN   DATE
                                C N                 FILE
BLOCKS
-------------------------------------------------------
-------------------------
IMG0517CY_CM                    I F           0  1020
165180  329728 990520
IMG0517CY_MS                   I F          0  1020
7542   15360 990520
```

17 To eject the tape from the tape drive, type:

>EJECTTAPE snnpTAPE

and press the enter key.

where

s is the front (F) or rear (R) shelf position of the input output processor (IOP) that has the tape device.

nn is the number of the slot position on the XA-Core shelf for the IOP that has the tape device.

p is the upper (U) or lower (L) packlet position of the IOP that has the tape device.

Example of MAP input:

>EJECTTAPE F02UTAPE

Example of a MAP response:

```
The EJECT operation may take up to 5 minutes
to position the tape to the beginning.
Rewind of tape F02UTAPE, unit 0, on node CM is completed.
This tape device is not available to the user now.
```

18 To exit the MAP disk utility and return to the CI MAP level, type:

>QUIT

and press the enter key.

Example of a MAP response:

```
CI:
```

19 To access the image table of contents (ITOC) user interface, type:

>ITOCCI

and press the enter key.

How to restore an XA-Core office image from tape to disk (continued)

Example of a MAP response:

```
ITOC User Interface is now active.
ITOCCI:
```

20 To register the restored image file for the XA-Core to the ITOC type:

>SETBOOTFL XA xa_file_name entry_no alr_or_notalr

and press the enter key.

where

xa_file_name is the name of the XA-Core image file restored from the tape.

entry_no is the entry number in the ITOC to insert the XA-Core image file into (range is from 0 to 15).

alr_or_notalr indicates if the file is the autoload registered (ALR) image file or not the ALR file (NOTALR) for the XA-Core. The default value is NOTALR.

Example of MAP input:

>SETBOOTFL XA IMG0517CY_CM 0 ALR

Example of a MAP response:

```
IMG0517CY_CM is registered in XA ITOC.
The updated ITOC is listed directly below.

Image Table Of Contents for XA :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ ------------------- -----------

 0 * 05/20/1999 13:23:22 F02LIMAGE_2         IMG0517CY_CM
 1   05/15/1999 11:19:41 F02LIMAGE_1         IMG0517CX_CM
```

Note 1: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

Note 2: *The command LISTBOOTFL XA in ITOCCI produces the same MAP response as this step.*

21 Determine if the restored image file for the XA-Core is in ITOC correctly.

If the	Do
successful	step 22
not successful	step 28

22 To register the restored image file for the MS to the ITOC type:

>SETBOOTFL MS ms_file_name entry_no alr_or_notalr

How to restore an XA-Core office image from tape to disk (continued)

and press the enter key.

where

ms_file_name is the name of the MS image file restored from the tape.

entry_no is the entry number in the ITOC to insert the MS image file into (range is from 0 to 15).

alr_or_notalr indicates if the file is the autoload registered (ALR) image file or not the ALR file (NOTALR) for the MS. The default value is NOTALR.

Example of MAP input:

>SETBOOTFL MS IMG0517CY_MS 0 ALR

Example of a MAP response:

```
IMG0517CY_MS is registered in MS ITOC.
The updated ITOC is listed directly below.

Image Table Of Contents for MS :

   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------ ------------------- -----------

 0 * 05/20/1999 13:24:38 F17LIMAGE_2         IMG0517CY_MS
 1   05/15/1999 11:19:44 F17LIMAGE_1         IMG0517CX_MS
```

Note 1: *The example of a MAP response identifies the autoload registered (ALR) image file by an asterisk (*) in the ALR column. Each image file has an index number at the beginning of the tuple line. The ALR image in the example of a MAP response has an index number of 0. The XA-Core selects the ALR image file first to boot the switch. If the ALR image file does not boot the switch then the XA-Core selects the next image file. The next image file is by sequence of the index number from the top of the table.*

Note 2: *The command LISTBOOTFL MS in ITOCCI produces the same MAP response as this step.*

23 Determine if the restored image file for the MS is in ITOC correctly.

If the command was	Do
successful	step 24
not successful	step 28

24 To quit the ITOCCI user interface, type:

>QUIT

and press the enter key.

Example of a MAP response:

```
CI:
```

How to restore an XA-Core office image from tape to disk (end)

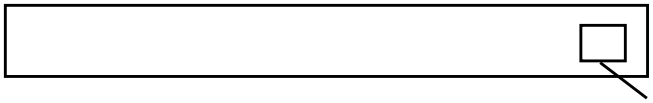
At the shelf

25

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) when you handle the tape and packlet. The use of the wrist strap protects the packlets against damage caused by electrostatic discharge (ESD).

Remove tape cartridge from the tape drive. Set the tape write protection to the position that does not permit recording (open). The tape write protection is an entrance on one side of the tape that has a sliding door. The sliding door is open for write protection and closed to allow a write to the tape.

Write protection of DAT tape cartridge



Side-view of DAT cartridge — Position for write protection

26 Store tape cartridge per office procedure.

27 Go to step 29.

28 For additional help, call the next level of support.

29 You have completed the backup procedure.

How to return an XA-Core circuit pack, packlet, or assembly to Nortel Networks (Canada)

Application

Use this procedure to return a circuit pack (CP), packlet or assembly to Nortel Networks for repair or replacement in Canada.

Interval

Perform this procedure as required.

Common procedures

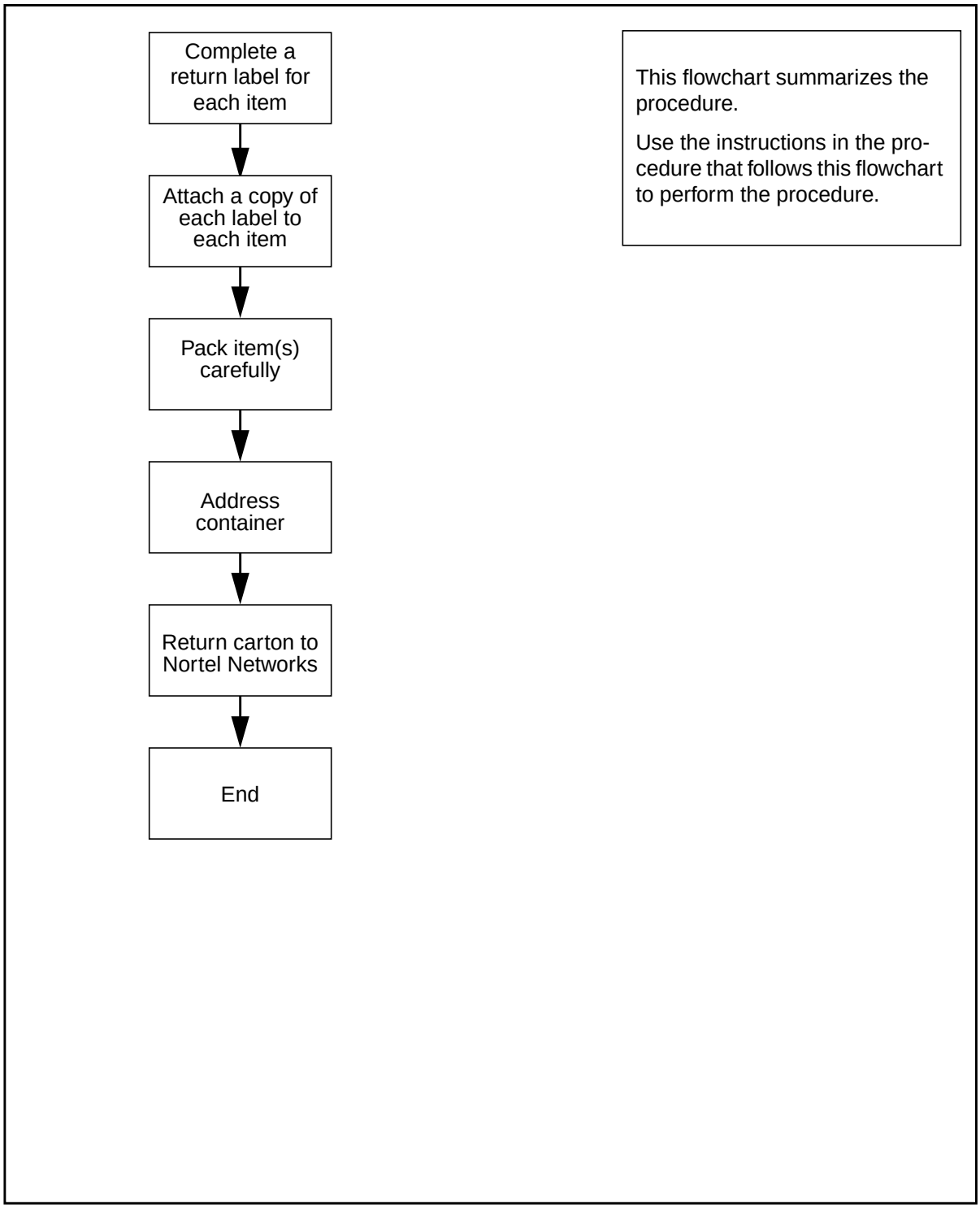
There are no common procedures.

Action

The following flowchart is only a summary of this procedure. Use the instructions in the steps follow the flowchart to perform the procedure.

How to return an XA-Core circuit pack, packlet, or assembly to Nortel

Summary of How to return an XA-Core circuit pack, packlet, or assembly to Nortel Networks (Canada)



How to return an XA-Core circuit pack, packlet, or assembly to Nortel

How to return a circuit pack (CP), packlet, or assembly to Nortel Networks

At your current location

1 Place the CP, packlet, or assembly into an electrostatic discharge (ESD) protective bag.

2 Complete one repair/return tag for each CP, packlet, or assembly that you return.

Include the following information on the repair/return tag:

- fault code that best describes the indications of the CP, packlet or assembly failure
- summary description of the failure
- return material authorization (RMA) number from customer service
- peripheral module (PM) software load name, if a PM-type failure
- unit serial number
- Nortel Networks product engineering code (PEC)
- unit release number
- name of your company
- office identifier code (shipping address)
- your name
- your site code (point of installation)
- any other relevant information

Note: If you need assistance to complete the repair/return tag, call 1-800-668-5511.

Example

How to return an XA-Core circuit pack, packlet, or assembly to Nortel

Example repair/return tag (front and rear views)

In Service Return Tag

NT Code	Release	Ticket No. 123456
Serial Number		
Simplex	Duplex	PCL - CSP Load PCL - CSP
PM Load / PM		MTX - Base Load
Fault Identification codes		

Subscriber	Failure Freq.
1 No Dialtone	23 Intermittent
2 Noisy	24 Permanent
3 Cut off	Failure Located By
4 Pre trip	25 Logutil Report
5 Can't hear	26 System Check
6 Can't be heard	27 Extended Diagnostic Monitor
7 Transmission fades	28 Card - Shelf Alarm
Diagnostics	Failure Mode
8 BSY - RTS	A ALT - LTP Failure
9 Built in Test Failure	B Bad Audio Path
10 Automatic passes	C C/O relay
11 Automatic fails	D Drop Call
12 Manual passes	F Flux Cancel
13 Manual fails	I Fails to Load (Flash, etc)
Maintenance	K PLL Fault
14 Routine trouble-shooting	L Loop Detect
15 Change on spec	M No Communication
16 Dead on arrival	N Noise
29 Old Rel - Update	P Pad Test
30 Surplus	Q RAM-ROM Test
Card List	R Cannot Reset
18 No list	S RSSI / SINAD
19 1st pack on list	T Transhybrid loss
20 Other pack on list	U No Power Up
21 Not on list	O Other (Specify)

Log Message
Confirmed ALT / LTP test results
Failure Description
Return Authorization Number
R M A
Frame Type / Shelf & Slot Nos.

Office ID	Office name:
Returned by: (Telco)	
Craftsperson	Phone No.

Instructions

Instructions to fill in Return Tag (To be completed upon replacement of failure unit or circuit pack).

1. Provide description of pack and fault at time of failure.
2. Write down the Return Material Authorization (RMA) Number in the Box provided.
3. Check appropriate box in each category, and the log message number if applicable.
4. Obtain the PM Load name via the Query PM command at a map location.
5. Copy the pack serial no. (bar code label on face plate). Older vintage packs have an ink stamp on the solder side of the PC board.
6. Print the name and date (bottom line).
7. Attach original copy to circuit pack.
8. Place circuit pack in appropriate packing material (antistatic bag). This must be done directly after the pack is extracted from the operating environment to prevent additional component failure.

How to return an XA-Core circuit pack, packlet, or assembly to Nortel

3 Attach the original copy of the return/repair tag to each unit that you return.

4 Keep a copy of each label and store it in a safe place for later reference.

5 Place the CP, packlet, or assembly in a Nortel Networks shipping carton and close the carton. Provide enough protection for the unit you are returning. If you cannot locate a Nortel Networks shipping carton, use any sutiable carton. Perform the following:

- include packing paper in carton
- surround CP, packlet, or assembly in bubble pack or foam
- fasten the CP, packlet, or assembly to the sides of the carton to prevent movement during shipment

6 Address the shipping carton as follows:

Nortel Networks Canada Limited,

Customer Service Operations,

c/o Wesbell Distribution Resources Inc,

2365 Matheson Blvd. East,

Rec. Door #1-4

Mississauga, Ontario, Canada

L4W 5C2

Phone/Tel 1-800-668-5511

ATTN: Replacement/Repair Operations

7 Call Wesbell Distribution Resources for carton pickup.

Note: Wesbell Distribution Resources Inc. (Ph: 905-624-8410) (Fax: 905-624-2522).

8 You have completed this procedure.

How to schedule automatic image taking for XA-Core

Application

Use this procedure to enable and schedule the automatic image taking for the eXtended Architecture Core (XA-Core). This procedure makes a record of the office image to a disk in the XA-Core shelf.

Interval

This procedure is a task performed on the decision of the office manager.

Common procedures

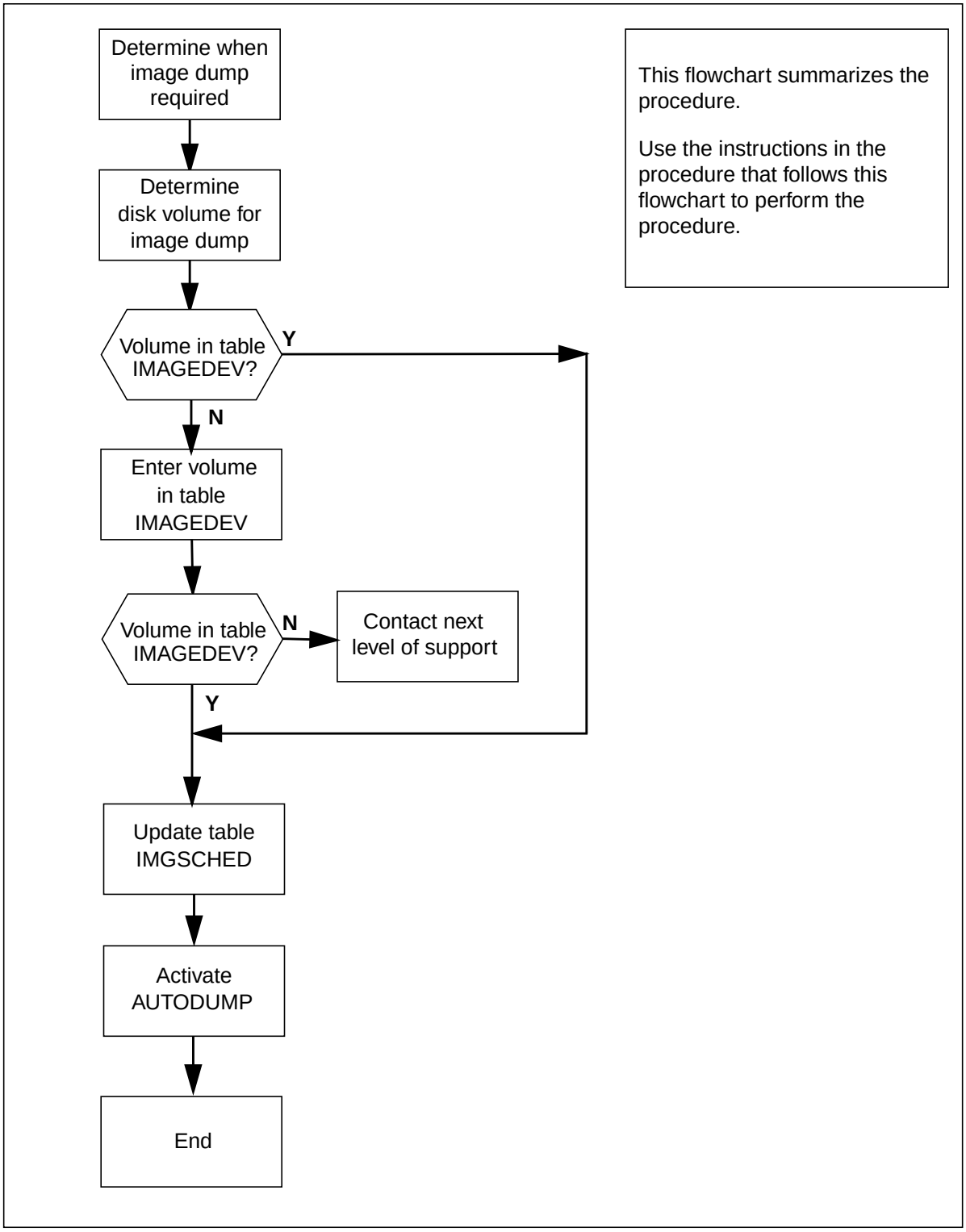
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to schedule automatic image taking for XA-Core (continued)

Summary of How to schedule automatic image taking for XA-Core



How to schedule automatic image taking for XA-Core (continued)

How to schedule automatic image taking for XA-Core

At your current location

1 Determine and record the days and times to have an office image dump. Determine the days and times from office personnel or office records.

2 Determine and record the volume names that stores the image files. Determine the volume names from office personnel or office records.

At the MAP

3 To access the CI level of the MAP display, type:

>QUIT ALL

and press the Enter key

4 To access the MAP disk utility, type:

>DISKUT

and press the enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

5 To list the volumes on the XA-Core node, type:

>LISTVOLS CM

and press the enter key.

Example of a MAP response:

```
Volumes found on the node CM:
-----------------------------

NAME               TYPE     TOTAL       FREE TOTAL  OPEN
ITOC    LARGEST
                            BLOCKS     BLOCKS FILES FILES
FILES  FREE SEGMENT
-------------------------------------------------------
-----------------------
F02LIMAGE          FTFS    819200    473088    5    0
2     473088

Total number of volumes found on node CM : 1
```

Note: *The XA-Core node is node CM.*

6 Determine if the list of volumes on node CM in step 5 has the volume name that stores the image files. You recorded the volume name that stores the image files in step 2.

If node CM has	Do
the volume of image files	step 7
no volume of image files	step 37

How to schedule automatic image taking for XA-Core (continued)

7 To quit the MAP disk utility, type:

>QUIT

and press the enter key.

8 To access table IMAGEDEV, type:

>TABLE IMAGEDEV

and press the enter key.

Example of a MAP response:

```
TABLE: IMAGEDEV
```

9 To list the tuples in table IMAGEDEV, type:

>LIST ALL

and press the enter key.

Example of a MAP response:

```
TOP
          VOLNAME        ACTIVE
-----------------------------
       F17LVOLUME_1          Y
BOTTOM
```

Example of a MAP response to an empty table IMAGEDEV:

```
EMPTY TABLE
```

10 Check if the image volume from office records is in the list of table IMAGEDEV in step 9. You recorded the name of the image volume that stores the image files in step 2.

If the image volumes is	Do
in table IMAGEDEV	step 15
not in table IMAGEDEV	step 11

11 To add a tuple for the image volume recorded in step 2, type.

>ADD volume_name Y

and press the enter key.

where

volume_name is the name of the volume used for automatic image dumps

Y is confirmation that the volume is active.

Example of MAP input:

>ADD F02LIMAGE Y

Example of a MAP response:

```
TUPLE TO BE ADDED:
    F02LIMAGE               Y
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

How to schedule automatic image taking for XA-Core (continued)

12 To confirm the command, type:

>Y

and press the enter key.

Example of a MAP response:

```
TUPLE ADDED
```

13 To check the tuple addition to table IMAGEDEV, type:

>LIST ALL

and press the enter key.

Example of a MAP response:

```
TOP
         VOLNAME        ACTIVE
-----------------------------
    F17LVOLUME_1             Y
    F02LIMAGE                Y
BOTTOM
```

If addition of the image volume is	Do
completed	step 14
not completed	step 37

14 To quit from table IMAGEDEV, type:

>QUIT

and press the enter key.

15 To access table IMGSCHED, type

>TABLE IMGSCHED

and press the Enter key.

Example of MAP response:

```
Table:  IMGSCHED
```

16 To display the table of contents, type:

>LIST ALL

and press the Enter key.

Example of a MAP display:

```
TOP
              DAY   DUMPHOUR  DUMPMIN   CMMS      ISN
ACTIVE
-----------------------------------------------------
----------
         MONDAY        21       0     N       N          N
        TUESDAY        21       0     N       N          N
      WEDNESDAY        21       0     N       N          N
```

How to schedule automatic image taking for XA-Core (continued)

```
        THURSDAY        21       0      N       N          N
          FRIDAY        21       0      N       N          N
        SATURDAY        21       0      N       N          N
          SUNDAY        21       0      N       N          N
BOTTOM
```

Note 1: Fields DUMPHOUR and DUMPMIN control the time at which the dump performs. The default time is 21:00. You can modify the time according to separate office requirements. You must perform image dumps during hours that have minimum traffic.

Note 2: You can not set the ACTIVE field to Y if both the CMMS and ISN fields are N.

17 To access the tuple for the first day you must activate an automatic image dump, type:

>POSITION day

and press the Enter key.

where

day is the day for which you must activate automatic image taking, for example, MONDAY

Note: You recorded the days and times for office image dumps in step 2.

Example of MAP input:

POSITION MONDAY

Example of a MAP response:

```
        MONDAY        21       0      N       N          N
```

18 To start an edit of the tuple, type:

>CHANGE

and press the Enter key.

Example of a MAP response:

```
Enter Y to continue processing or N to quit.
```

19 To confirm the command, type:

>Y

and press the Enter key.

Example of a MAP response:

```
DUMPHOUR: 21
```

20 To enter the required dump hour, type:

>dump_hour

and press the Enter key.

where

dump_hour is the dump hour you must enter, for example 21,

Note: You recorded the days and times for office image dumps in step 2.

How to schedule automatic image taking for XA-Core (continued)

Example of a MAP response:

```
DUMPMIN: 0
```

21 To enter the required dump minutes, type:

>dump_minutes

and press the Enter key.

where

dump_minutes is the dump minutes, for example 30, you must enter

Note: You recorded the days and times for office image dumps in step 2.

Example of a MAP response:

```
CMMS: N
```

22 To enable the automatic image dump on nodes CM and MS, type:

>Y or N

and press the Enter key.

Note: You can not set the ACTIVE field to Y if both the CMMS and ISN fields are N.

Example of a MAP response:

```
ISN: N
```

23 To enable the automatic image dump on node ISN, type:

>Y or N

and press the Enter key.

Note: You can not set the ACTIVE field to Y if both the CMMS and ISN fields are N.

Example of a MAP response:

```
ACTIVE: N
```

24 To make the automatic image dump active for the selected day, type:

>Y

and press the Enter key.

Example of a MAP response:

```
TUPLE TO BE CHANGED:
        MONDAY       22      30     Y       Y          Y
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

25 To confirm the tuple change, type:

>Y

and press the Enter key.

Example of a MAP response:

```
TUPLE CHANGED
```

How to schedule automatic image taking for XA-Core (continued)

26 To check the tuple revisions to table IMGSCHED, type:

>LIST ALL

and press the Enter key.

Example of a MAP response:

```
TOP
            DAY   DUMPHOUR  DUMPMIN   CMMS      ISN
ACTIVE
-------------------------------------------------------
----------
         MONDAY        22       30      Y        N           Y
        TUESDAY        21        0      N        N           N
      WEDNESDAY        21        0      N        N           N
       THURSDAY        21        0      N        N           N
         FRIDAY        21        0      N        N           N
       SATURDAY        21        0      N        N           N
         SUNDAY        21        0      N        N           N
BOTTOM
```

If all the tuple entries are	Do
complete	step 28
not complete	step 27

27 Repeat steps 17 to 25 for each day you must have an automatic image dump. You recorded the days and times for office image dumps in step 2.

28 To quit from table IMGSCHED, type:

>QUIT

and press the Enter key.

29 To activate the autodump facility for the days and times you indicated, type:

>AUTODUMP ON

and press the Enter key.

Example of a MAP response:

```
SCHEDULED-Image Dump is ON.

Next scheduled dump is MONDAY at 22:30 hours.
Next image to be dumped on F02LIMAGE.
```

Note: *The MAP response identifies the disk and volume name that the image dumps to. The switch software selects from table IMAGEDEV the disk and volume to dump the image to.*

30 To check the status of automatic image taking, type:

>AUTODUMP STATUS

and press the enter key.

How to schedule automatic image taking for XA-Core (continued)

Example of a MAP response

```
Successful Image:  990215_CM
Taken:  1999/03/17 21:47:32:04.138 WED.
On Volume: F17LIMAGE

Successful Image:  990215_MS
Taken:  1999/03/17 21:47:32:04:138 WED.
On Volume: F17LIMAGE

SCHEDULED-Image Dump is ON.

RETAIN option is ON.

Next scheduled dump is MONDAY at 22:30 hours.
Next image to be dumped on F02LIMAGE.
```

31 Determine if the XA-Core has automatic image taking on or off. In the example of a MAP response of step 30, the text SCHEDULED-Image Dump is ON indicates the automatic image taking is on..

If SCHEDULED-Image Dump is	Do
ON	step 32
OFF	step 37

32 Determine if the retain option is off. XA-Core has the retain option on or off. In the example of a MAP response of step 30, the text RETAIN option is OFF indicates the retain option is off..

If RETAIN option is	Do
ON	step 33
OFF	step 37

33 To change the retain option, type:

>AUTODUMP RETAIN

and press the enter key.

Example of a MAP response:

```
        *** WARNING ***
This option RETAINS the PRIMARY LOAD ROUTE.
The PRIMARY LOAD ROUTE should be initially
set per NTP.
The RETAIN option will be ENABLED.
Please confirm ("YES", "Y", "NO", or "N"):
```

34 To confirm the command, type:

>YES

and press the enter key.

Example of a MAP response:

```
RETAIN option DISABLED.
```

How to schedule automatic image taking for XA-Core (end)

35 To check the status of automatic image taking, type:

>AUTODUMP STATUS

and press the enter key.

Example of a MAP response

```
Successful Image:  990215_CM
Taken:  1999/03/17 21:47:32:04.138 WED.
On Volume: F17LIMAGE

Successful Image:  990215_MS
Taken:  1999/03/17 21:47:32:04:138 WED.
On Volume: F17LIMAGE

SCHEDULED-Image Dump is ON.

RETAIN option is OFF.

Next scheduled dump is MONDAY at 22:30 hours.
Next image to be dumped on F02LIMAGE.
```

36 Determine if the retain option is off. XA-Core has the retain option on or off. In the example of a MAP response of step 35, the text RETAIN option is OFF indicates the retain option is off..

If RETAIN option is	Do
ON	step 37
OFF	step 38

37 For additional help, call the next level of support.

38 You have completed this procedure.

How to schedule tape drive maintenance in XA-Core

Application

Use the following procedure to schedule maintenance for the digital audio tape (DAT) drive.

Interval

Perform this procedure approximately every 180 days (6 months).

Common procedures

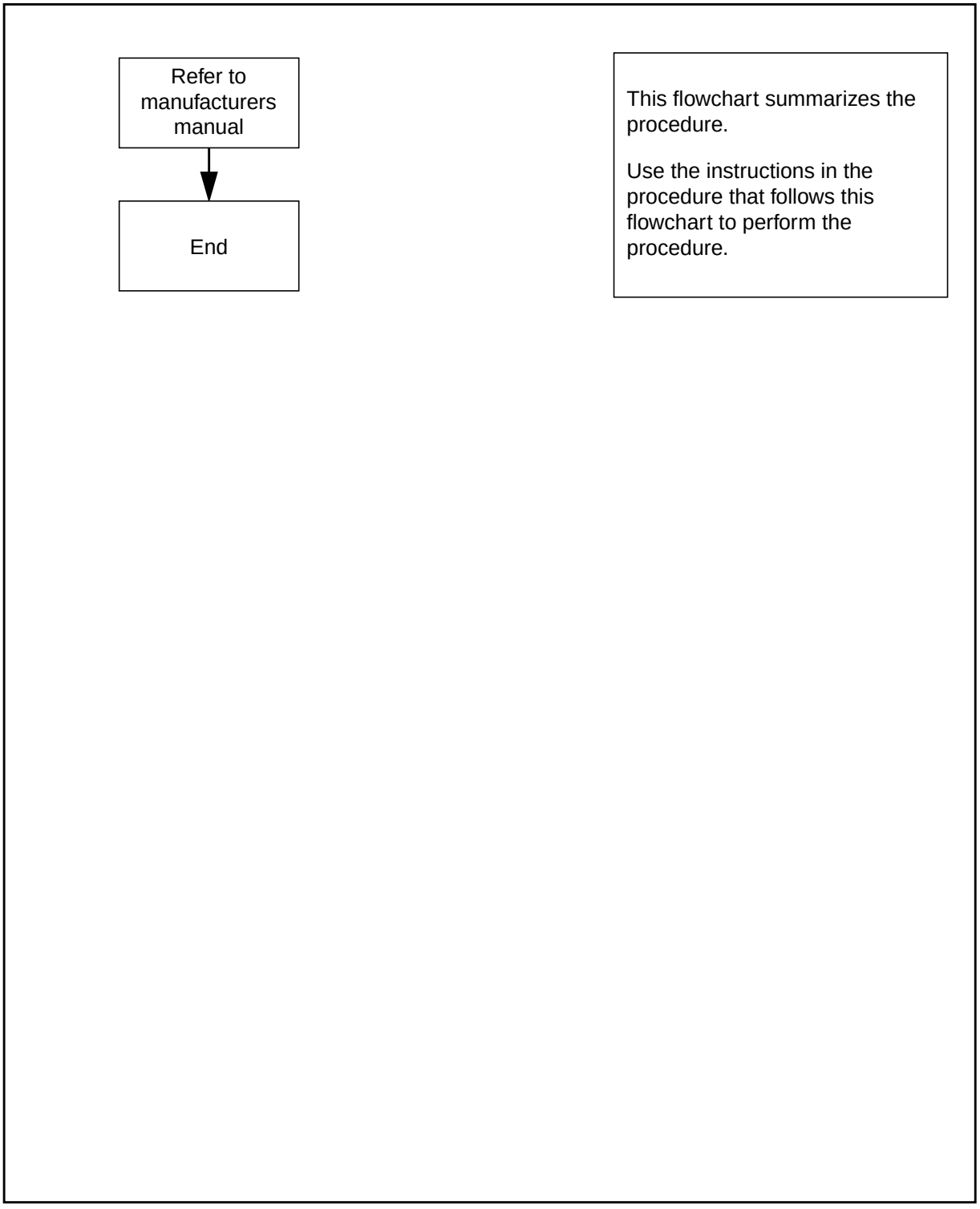
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to schedule tape drive maintenance in XA-Core (continued)

Summary of How to schedule tape drive maintenance in XA-Core



How to schedule tape drive maintenance in XA-Core (end)

How to schedule tape drive maintenance in XA-Core

At your current location

1 Set up a routine maintenance schedule according to the information contained in the manufacturer's equipment manual.

2 You have completed this procedure.

How to test wrist-strap grounding cords in XA-Core

Application

Use this procedure to test the resistance of wrist-strap grounding cords in the. The resistance must have minimum and maximum values as follows.

- The resistance must be low enough to allow static electricity to discharge from the human body.
- The resistance must be high enough to prevent electrocution if the equipment develops a short circuit while you are wearing the wrist strap.

Interval

Perform this procedure every 30 days (monthly).

Common procedures

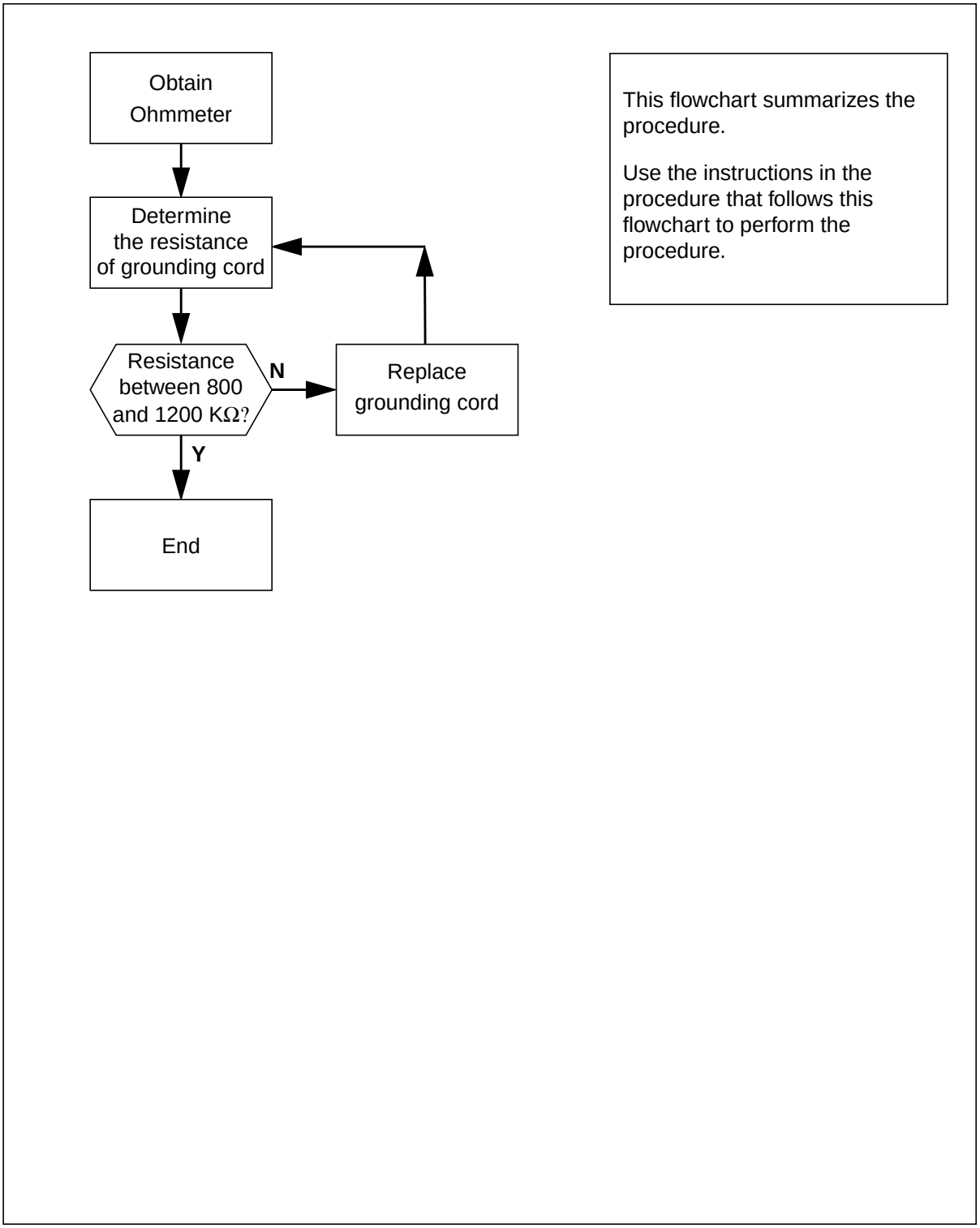
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to test wrist-strap grounding cords in XA-Core (continued)

How to test wrist-strap grounding cords in XA-Core



How to test wrist-strap grounding cords in XA-Core (end)

How to test wrist-strap grounding cords for XA-Core

DANGER

Risk of electrocution

Do not use a grounding cord with a resistance less than 800 KW. A resistance lower than 800 KW opens you to the risk of electrocution. Electrocution can occur if the equipment short-circuits while you are wearing the wrist strap.

WARNING

Risk of static damage to electronic equipment

Do not use a grounding cord with a resistance greater than 1200 KW. A resistance greater than 1200 KW cannot conduct static charges correctly to ground nor protect electronic equipment against possible damage from electrostatic discharge.

At the XA-Core shelf

1 Get an ohmmeter.

2 Disconnect the grounding cord from the wrist strap.

3 Use the ohmmeter to measure the resistance between the opposite ends of the grounding cord.

IfIf the resistance is	Do
between 800 KW and 1200 KW	7
less than 800 KW or greater than 1200 KW	4

4 Discard the grounding cord that has faults.

5 Get a new grounding cord.

6 Test the new grounding cord.

IfIf the resistance is	Do
between 800 KW and 1200 KW	7
less than 800 KW or greater than 1200 KW	4

7 Connect again the wrist strap to the grounding cord.

8 You have completed this procedure.

Selection of DAT tapes approved by Nortel Networks

Application

Use this procedure to select digital audio tape (DAT) drive tapes approved by Nortel Networks. This procedure is to be used whenever a DAT tape is replaced, and whenever a new DAT tape is used following the cleaning of DAT drive tape heads.

Interval

Tapes are replaced based on office usage routines and on the DAT drive head cleaning frequency recommended by Nortel Networks for new and used tapes.

Common procedures

This procedure does not refer to any common procedures.

Action

Follow the recommendations provided in these paragraphs.

Recommended tapes

The brands approved by Nortel Networks are:
Hewlett Packard (HP), Maxell, 3M, Verbatim

The tape lengths approved by Nortel Networks are:
60 Meter (60M) and 90 Meter (90M) tapes from any of the manufacturers listed above.

Note: The use of 120 Meter (120M) tapes of any brand is not recommended by Nortel Networks.

Recommended tape drive head cleaning cartridges

The types of DAT drive head cleaning cartridges approved by Nortel Networks are listed under CPC code A0627569.

5 Introduction to trouble locating and clearing procedures

Introduction

This chapter describes how to perform trouble locating and clearing maintenance procedures on the DMS SuperNode (SN) and DMS SuperNode SE (SNSE) XA-Core (XAC). Each procedure contains the following sections:

- application
- interval
- common procedures
- action

Application

This section describes the purpose of the procedure.

Interval

This section describes when to perform the procedure.

Common procedures

This section lists common procedures used during the routine maintenance procedure. A common procedure is a series of steps that repeats in maintenance procedures. Common procedures include card removal and replacement.

Action

This section provides a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

How to perform a manual REx test on XA-Core

Application

Use this procedure to perform a manual routine exercise (REx) test on an eXtended Architecture Core (XA-Core).

Interval

A manual REx test is a test of software and hardware performed when required. Before performance of the REx test, operating company personnel must determine if the switch has stability. The switch needs stability to support testing and without a change to switch operations. Operating company personnel cannot perform a manual REx when the switch CPU occupancy is greater than 40%. Operating company personnel cannot perform a manual REx when the switch is in an E2 condition (potential degradation or outage). REx tests are available in groups called REx test classes. Perform a manual REx test on one of REx test classes as follows.

- PE
- SM
- IO
- BASE
- ALL
- FULL

The classes of REx tests have the following differences:

- PE class of REx test is:
  - — A REx test on a processor element (PE) card that is a different PE card for each REx test performed.
  - — The REx tests are out-of-service tests.
- SM class of REx test is:
  - — A REx test on a shared memory (SM) card that is a different SM card for each REx test performed.
  - — The REx tests are out-of-service tests.
- IO class of REx test is:
  - — A REx test on an input/output processor (IOP) card and related packlets. The REx test is on a different IOP card and related packlets for each REx test performed.
  - — The REx tests are out-of-service tests.

How to perform a manual REx test on XA-Core (continued)

- BASE class of REx test is:
  - — A REx test while in service on all PE, SM, and IOP cards (with related packlets).
  - — The BASE class also performs an image test.
  - — By default, BASE REx tests run each day of the week except Thursday.
- ALL class of REx test is:
  - — A REx test while in service on all PE, SM, and IOP cards, and on all packlets.
  - — A REx test while out of service on a different PE card, a different SM card, and a different IOP card (with related packlets) for each REx test.
- FULL class of REx test is:
  - — A REx test while in service on all PE, SM, and IOP cards, and on all packlets.
  - — A REx test while out of service on a different PE card, a different SM card, and a different IOP card (with related packlets) for each REx test.
  - — The FULL class also performs an image test.
  - — By default, FULL REx tests run each Thursday of the week.

Common procedures

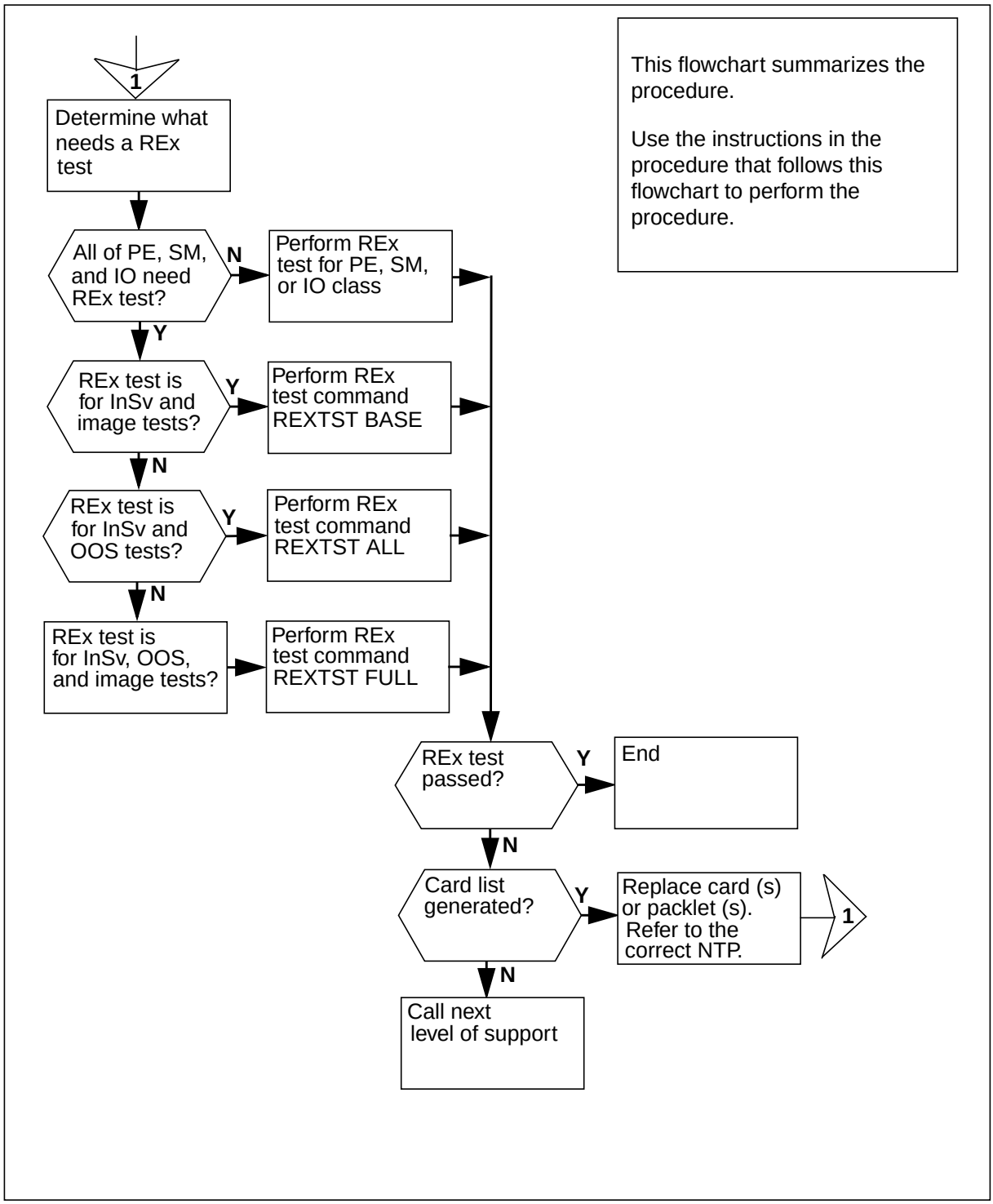
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of exact steps. Use the flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to perform a manual REx test on XA-Core (continued)

How to perform a manual REx test on XA-Core



How to perform a manual REx test on XA-Core (continued)

How to perform a manual REx test on XA-Core

CAUTION
Possible service degradation
Confirm with office personnel to make sure that a REx test can perform now. Nortel Networks recommends that REx tests start during a low traffic period because of the high level of processing required.

At your current location

1 To access the XACMTC level of the MAP display, type:

>**MAPCI;MTC;XAC;XACMTC**

and press the enter key.

The following is a sample MAP display.

```
 XAC      MS      IOD      Net      PM      CCS      Lns     Trks     Ext     APPL
  .       .        .        .       .        .        .       .       .       .


XACMtc
 0 Quit          Front:   111111111  Rear: 111111   SM     PE      IO      PKLT
                 123456789012345678  456789012345   .      .       .       .
                Sta: -.-.--..-.-----..-  .--.--------.   0      0       0       0
                Dep:
 4
 5
 6
 7              Traps:       Per Minute:  = 0           Total = 1
 8              Last Image run at:     1999/02/15 13:13
 9                restart type= reload
10                  Result    = pass
11 Image        Last XARExTst run at:  1999/03/15 14:25
12 RExTst_      Last XARExTst Type:    full
13 RExInt_      Last XARExTst Result:  notRun
14 Alarm_
15              XACMTC:
16
17 Indicat_
18 Query_

 XMAP0
Time  14:12   >
```

How to perform a manual REx test on XA-Core (continued)

2 Determine what needs a test by the REx test.

If the REx test is for	Do
PE cards	step 3
SM cards	step 6
IOP cards and related packlets	step 9
all PE, SM, and IOP cards/packlets	step 12

3 To start a REx test on all of the PE cards, type:

>**REXTST RUN PE CONTINUE**

and press the enter key.

Example of a MAP display

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step4
anything else	step 26

4 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   PE InSv test is running

RExTst   PE Out of Service test is running

RExTst completed
RExTst Test run at 19:06:41, Class: pe, Result: pass.
```

5 Go to step 21.

6 To start a REx test on all of the SM cards, type:

>**REXTST RUN SM CONTINUE**

and press the enter key

Example of a MAP display

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
```

How to perform a manual REx test on XA-Core (continued)

```
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step7
anything else	step 26

7 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   SM InSv test is running

RExTst   SM Out of Service test is running

RExTst completed
RExTst Test run at 19:08:36, Class: sm, Result: pass.
```

8 Go to step 21.

9 To start a REx test on all of the IO cards, type:

>**REXTST RUN IO CONTINUE**

and press the enter key

Example of a MAP display

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step10
anything else	step 26

10 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   IOP InSv test is running

RExTst   IOP Out of Service test is running

RExTst completed
RExTst Test run at 19:15:10, Class: io, Result: pass.
```

How to perform a manual REx test on XA-Core (continued)

11 Go to step 21.

12 Determine the range of REx test required. The range of REx tests are:

- in-service (InSv) tests
- out-of-service (OOS) tests
- image tests

If the REx test is for	Do
InSv and OOS tests	step 13
InSv and image tests	step 16
InSv, OOS, and image tests	step 19

13 Start InSv and OOS REx tests on the cards, packlets, and links of the PE, SM, and IO subsystems. The InSv REx tests are on all the cards, packlets, and links of the PE, SM, and IO subsystems. The OOS REx tests are on one card of the PE, SM, and IO subsystems (with related packlets). To start the ALL class of REx tests, type:

>**REXTST RUN ALL CONTINUE**

and press the enter key.

Example of a MAP display

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step14
anything else	step 26

14 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   PE InSv test is running

RExTst   SM InSv test is running

RExTst   IOP InSv test is running

RExTst   PE Out of Service test is running

RExTst   SM Out of Service test is running

RExTst   IOP Out of Service test is running
```

How to perform a manual REx test on XA-Core (continued)

```
RExTst completed
RExTst Test run at 19:19:17, Class: all, Result: pass.
```

15 Go to step 21.

16 Start InSv REx tests on all cards, packlets, and links of the PE, SM, and IO subsystems. To start the BASE class of REx tests, type:

>REXTST RUN BASE CONTINUE

and press the enter key.

Example of a MAP display:

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step17
anything else	step 26

17 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   PE InSv test is running

RExTst   SM InSv test is running

RExTst   IOP InSv test is running

RExTst   Image test is running

RExTst completed
RExTst Test run at 19:24:23, Class: base, Result: pass.
```

18 Go to step 21.

19 Start InSv and OOS REx tests on the cards, packlets, and links of the PE, SM, and IO subsystems. The InSv REx tests are on all the cards, packlets, and links of the PE, SM, and IO subsystems. The OOS REx tests are on one card of the PE, SM, and IO subsystems (with related packlets). An image test also starts. To start the FULL class of REx tests, type:

>**REXTST RUN FULL CONTINUE**

and press the enter key

How to perform a manual REx test on XA-Core (continued)

Example of a MAP display

```
Warning: the RExTst command may affect component
redundancy.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

If the MAP response indicates	Do
a need to confirm	step 20
anything else	step 26

20 To confirm the command, type:

>**Y**ES

and press the enter key.

Example of a MAP display:

```
Command submitted.
RExTst   PE InSv test is running

RExTst   SM InSv test is running

RExTst   IOP InSv test is running

RExTst   PE Out of Service test is running

RExTst   SM Out of Service test is running

RExTst   IOP Out of Service test is running

RExTst   Image test is running

RExTst completed
RExTst Test run at 19:29:37, Class: full, Result: pass.
```

21 Determine from the MAP display if the REx test passed.

If the MAP response indicates	Do
the REx test passed	step27
the REx test failed and you have not replaced all the cards on the card list	step22
the REx test failed and you replaced all the cards on the card list	step26
other response	step26

22 Record the location, description, slot number, and product engineering code (PEC), including suffix, of all the cards and packlets on the list.

23 Select a card or packlet from the list of step that needs replacement.

How to perform a manual REx test on XA-Core (end)

24 Perform the correct procedure to replace the card or packlet in step 23. When you complete the procedure, return to this point.

25 Go to step 1.

26 For additional help, call the personnel responsible for the next level of support.

27 You have completed this procedure.

How to repair an XA-Core cooling unit

Application

Use this procedure to identify and correct faults in an XA-Core cooling unit.

Definition

An XA-Core cooling unit consists of three fan drawers and a cooling unit filter. Replace one or cooling unit fan drawers to repair a cooling unit fault. An XA-Core cooling unit fault can cause components in the XA-Core cabinet to overheat and fail.

Common procedures

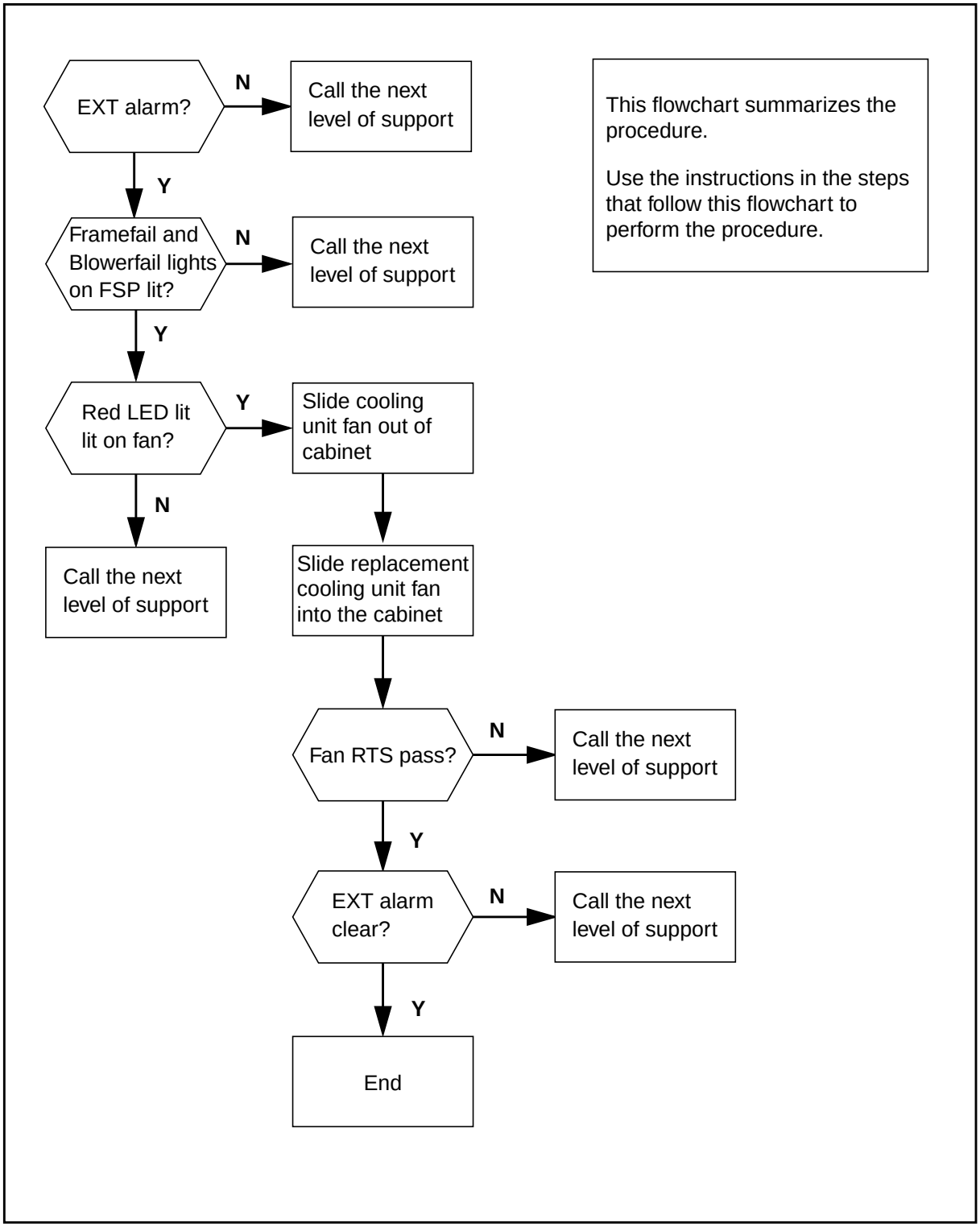
There are no common procedures.

Action

This procedure contains a summary flowchart as an summary of the procedure. Follow the exact steps to perform this procedure.

How to repair an XA-Core cooling unit (continued)

How to repair an XA-Core cooling unit



How to repair an XA-Core cooling unit (continued)

How to repair an XA-Core cooling unit

DANGER
Next level of support
If the cooling unit configuration you find in the cabinet is different from the following description, call your next level of support.

WARNING
Risk of static electricity damage
Make sure that you have protection against electrostatic discharge (ESD). Wear a wrist strap connected to the wrist-strap grounding point of the frame supervisory panel (FSP) while handling circuit packs or packlets.

CAUTION
Loss of service
Read and make sure you thoroughly understand the instructions in this procedure before performing the cooling unit fan replacement. Do not allow the cooling unit to remain un-powered for more than 2 min.

At the XA-Core MAP

1 Examine the EXT MAP level. Determine the location of the cabinet that has a problem cooling unit fan.

If the EXT FSP alarm is	Do
active	step 2
not active	step 14

At the XA-Core cabinet

2 Check that the FRAME and BLOWER FAIL alarm lamps are lit on the frame supervisory panel (FSP).

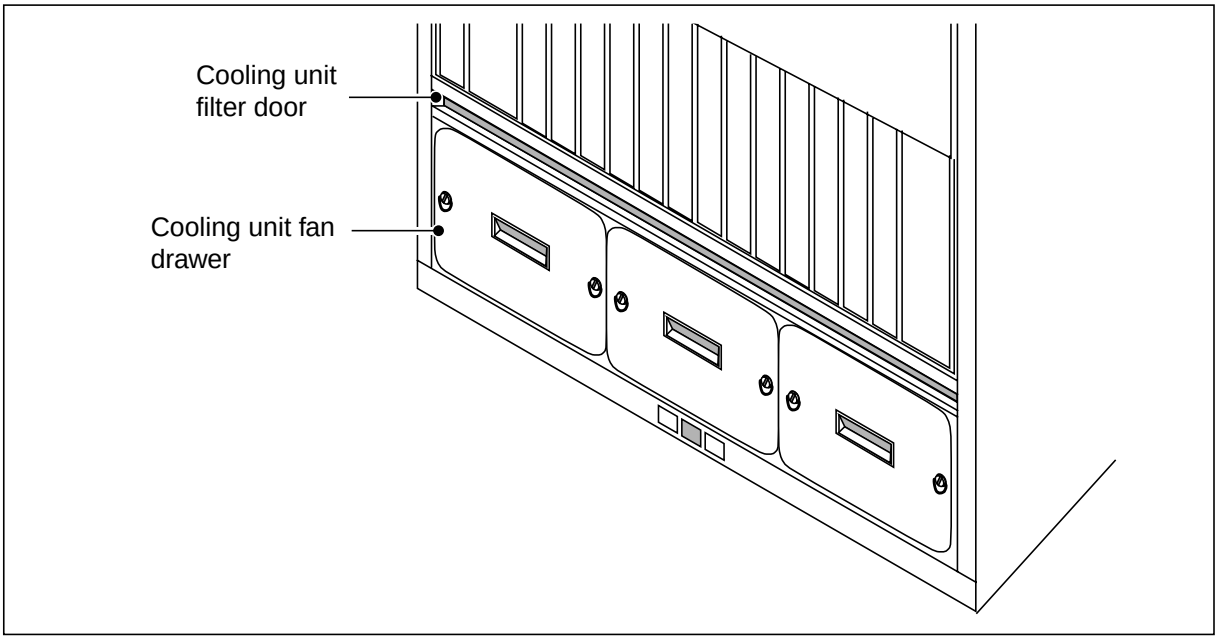
If the FANFAIL and BLOWER-FAIL lamps are	Do
on	step 3
off	step 14

How to repair an XA-Core cooling unit (continued)

3 Open the front doors of the XA-Core cabinet completely.

4 Locate the cooling unit fan drawers in the lower front section of the cabinet.

XA-Core cooling unit fan drawer and filter door locations



5 Determine if all fans are in a working state. Check the red LEDs on the fan drawers.

If a red LED is	Do
lit	step 6
not lit	step 14

6 Get a replacement cooling unit fan.

7 Loosen the locking screws on the trouble cooling unit fan drawer.

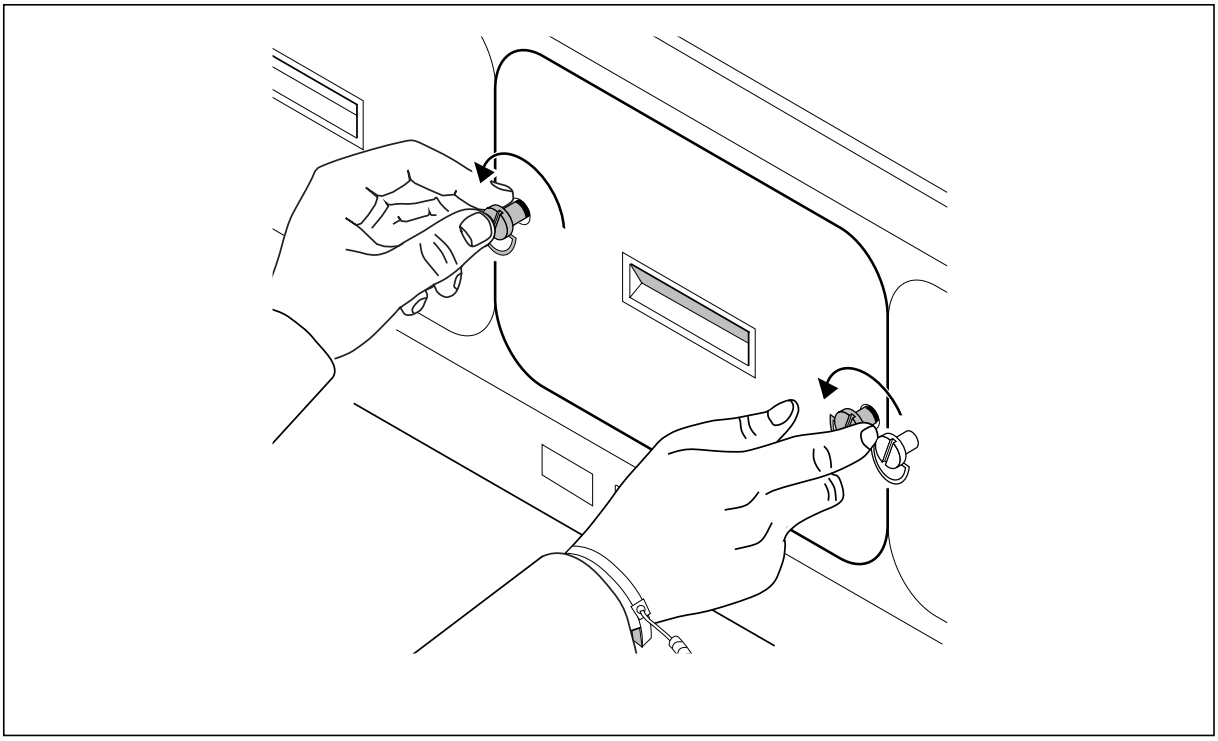
a Turn the locking screws in a counter-clockwise direction.

b Pull the fan drawer halfway from the slot in the cooling unit.

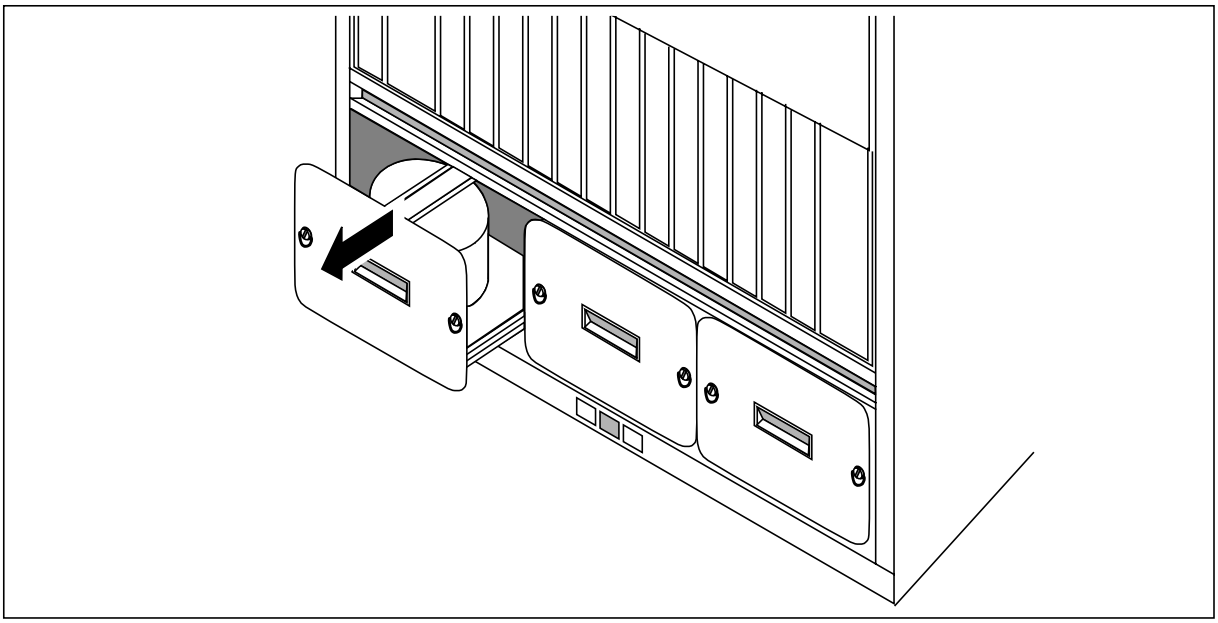
c Wait for the fan to spin down.

How to repair an XA-Core cooling unit (continued)

Loosen the locking screws on the cooling unit fan drawers



Open the cooling unit fan drawer



How to repair an XA-Core cooling unit (continued)

8

DANGER
Loss of cooling unit
If you leave the cooling unit disconnected for an extended period of time can cause the equipment in the cabinet to overheat.

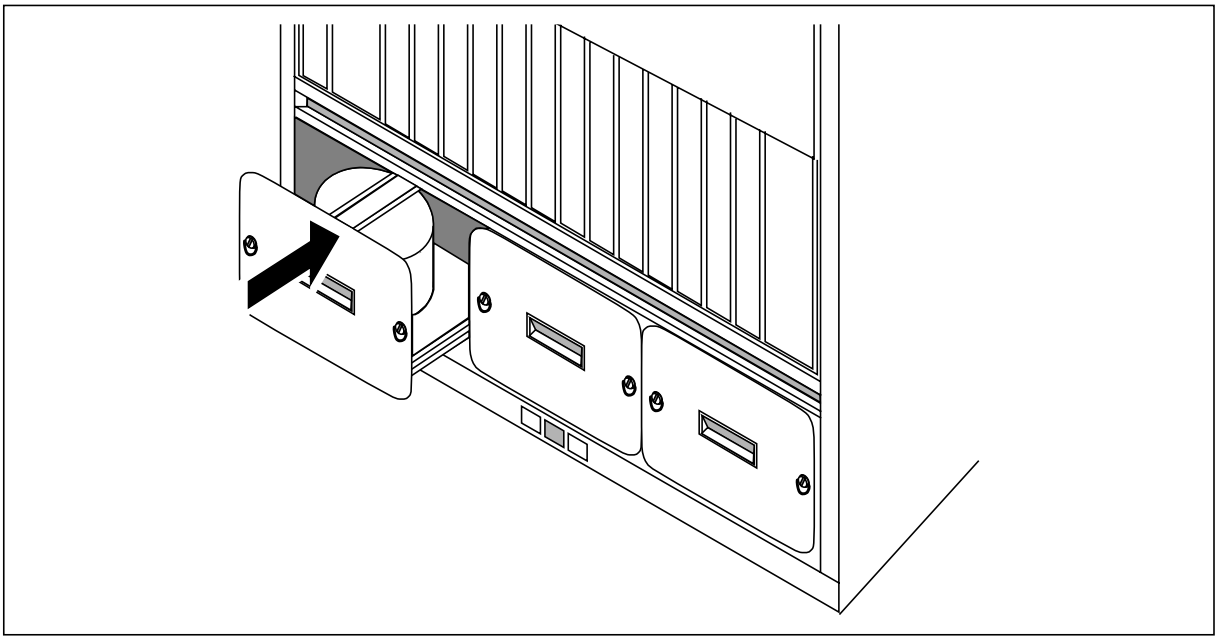
Remove the fan drawer completely from the cooling unit shelf and place in a safe location away from the physical shelf.

9 Insert the replacement fan drawer into the empty cooling unit slot.

a Align the fan drawer with the physical shelf slot. Slide the fan drawer into the physical slot. Do not force the fan drawer into the physical slot.

b Use your fingers or thumbs to push on the side edges of the fan drawer faceplate. Push on the faceplate until the fan drawer is fit into position.

Close the cooling unit fan drawers



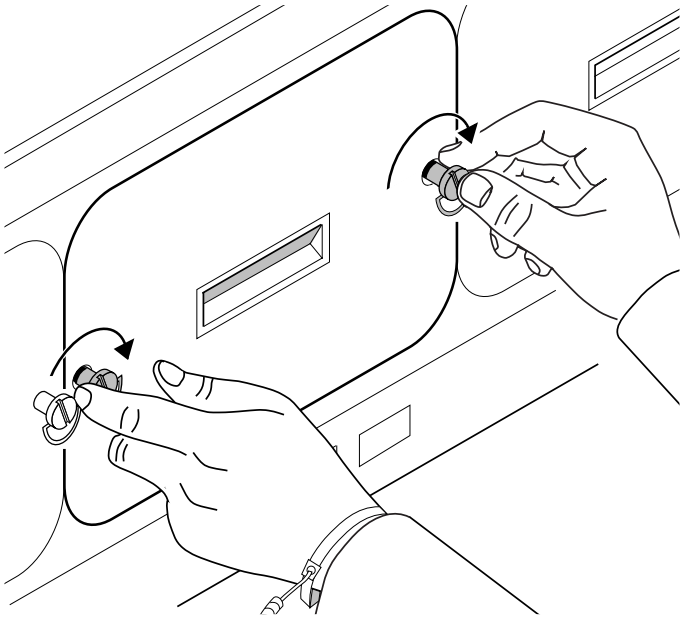
10 Make sure that the fans power up. Make sure that the green LEDs light on all fan drawers.

If the cooling unit fans are	Do
in service	step 11
not in service	step 14

How to repair an XA-Core cooling unit (end)

11 Tighten the locking screws on the cooling unit fan drawers. Turn the locking screws in a clockwise direction.

Tighten the locking screws on the cooling unit fan drawers



12 Determine if the FRAME and BLOWER FAIL alarm lights are off.

If FRAME and FAN FAIL lamps are	Do
off	step 13
on	step 14

At the XA-Core MAP terminal

13 Determine if the FSP alarm on the EXT MAP level is clear.

If FRAME and FAN FAIL lamps are	Do
on	step 14
off	step 15

14 Call the next level of support.

15 You have completed this procedure. Return to the procedure that sent you to this procedure and continue as indicated.

DMS-100 Family

XA-Core

Maintenance Manual

Copyright © 2000, 2001 Nortel Networks,
All Rights Reserved

NORTEL NETWORKS CONFIDENTIAL: The information contained in this document is the property of Northern Telecom. Except as specifically authorized in writing by Northern Telecom, the holder of this document shall keep the information contained herein confidential and shall protect same in whole or in part from disclosure and dissemination to third parties and use same for evaluation, operation, and maintenance purposes only.

Publication number: 297-8991-510
Product release: CSP15
Document release: Standard 05.03
Date: May 2001
Published in Canada

NORTEL NETWORKS™