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DMS
Peripheral Module Software Release Document

SN09 (DMS) Standard 17.02 January 2006

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DMS
Peripheral Module Software Release Document

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Publication history

January 2006

Standard 17.02. PLLT0022. This document release includes the following changes:

- per CR Q01216493, added IOM Load Instructions at the end of the "Load lineup udates" section.
- per CR Q01236946, revised the "Prepare for an automated PM update using PMUPGRADE" procedure.
- per CR Q010339712, revised the "Update the ENET" procedure.

September 2005

Preliminary 17.01. PLLT0022. This document release includes the following changes:

- modified the "Overview of release" chapter to reflect the SN09 load lineup.

July 2005

Standard 16.03. PLLT0021. This document release includes the following changes:

- modified the MS upgrade procedure, per CR Q01134433.

June 2005

Standard 16.02. PLLT0021. This document release includes the following changes:

- modified the "Overview of release" chapter to reflect the SN08 load lineup.
- updated the MS section according to CR Q01134433 for clarity.

March 2005

Preliminary 16.01. PLLT0021. This document release includes the following changes:

- modified the "Overview of release" chapter to reflect the SN08 load lineup.

December 2004

Standard 15.02. PLLT0020. This document release includes the following changes:

- modified the “Overview of release” chapter to reflect the SN07 load lineup.
- removed EDC qualifier from NTMX77 and NTAX74 firmware load information, per CR Q01003604.
- revised ENET upgrade procedure, per CR Q00907819.
- revised multiple entries in the PM to XPM processor firmware cross–reference section, per CR Q00836223.

August 2004

Preliminary 15.01. PLLT0020. This document release includes the following changes:

- modified the “Overview of release” chapter to reflect the SN07 load lineup.

February 2004

Standard 14.09. SN06. This document release includes:

- modified the “Overview of release” chapter, “Overview of update process” chapter, and the “Update procedures” chapter to add MS load requirements for back–to–back ONP.

December 2003

Standard 14.08. SN06. This document release includes:

- modified the ”Overview of release” chapter to update the HIOP mapping per CR Q00779492.
- added DTC and DTC7 SX05 information to the ”Overview of release” chapter, per CR Q00771935.

October 2003

Standard 14.07. SN06. This document release includes:

- modified the ”Overview of release” chapter to change the CMR load from CMR10a to CMR17b.

September 2003

Standard 14.06. SN06. This document release includes:

- modified the ”Overview of release” chapter based on editorial comments.

September 2003

Standard 14.05. SN06. This document release includes:

- modified the ”Prepare for an automated PM update using PMUPGRADE” procedure per CR Q00739363.

August 2003

Standard 14.04. SN06. This document release includes:

- modified the ”Overview of release” chapter per CR Q00738316.

August 2003

Standard 14.03. SN06. This document release includes:

- modified the “Prepare for an automated PM update using PMUPGRADE” procedure per CR Q00728316.

June 2003

Standard 14.02. SN06. Made additional updates based on editorial comments.

June 2003

Standard 14.01. PLLT0019. This document release includes:

- modified the procedure “Update the DTM (EDRAM)” in chapter “Update Procedures” per feature A89009742.
- modified the “Overview of update process” and “Update procedures” chapters, and the “Prepare for an automated PM update using PMUPGRADE” procedure per CR Q00553829.

February 2003

Standard 13.08. PLLT0018. This document release includes:

- modified the procedure “Update a DTU” in chapter “Update Procedures” per CR Q00457700.
- added the MTM1EX to the list of EXECs for the MTM in “Appendix B: PM EXECs” per CR Q00492352.
- added SPM upgrade references in “About this Doc”, chapter “Overview of Release”, chapter “Overview of update process”, and procedure “Update the DTC or DTCI” in chapter “Update procedures” per CR Q00271650.
- added description of the Concurrency setting in procedure “Perform an automated PM update” in chapter “Update procedures” per CR Q00271569.
- updated the table “PMUPGRADE commands” in chapter “Overview of automated update process” per CR Q00271568.
- updated the section “ADAS updates” in chapter “Overview of update process” per CR Q00272481.
- modified the table “PMUPGRADE error messages” in chapter “Overview of automated update process” per CR Q00271567.

- modified the section “ENET update requirements with Spectrum Peripheral Module” in chapter, “Overview of release”; and added section “Primary copy” to procedure “Prepare for an automated PM update using PMUPGRADE” in chapter “Update procedures” per CR Q00558984.
- Added section “SPM Updates” to chapter “Overview of update process” per CR Q00505500.
- Added section “Automatic $XREF file generation for PM loads and their corresponding patches” to procedure “Prepare for an automated PM update using PMUPGRADE” in chapter “Update procedures” per CR Q00553829.

December 2002

Standard 13.07. PLLT0018. This document release includes:

- added precaution to ENET upgrade.

November 2002

Standard 13.06. PLLT0018. This document release includes:

- updated the cross–reference tables in chapter “Overview of Release” to reflect updates in the LLT18 release PM load (PM load tape PLLT0018).
- updated the XA–Core component firmware cross–reference table in chapter “Overview of Release” to reflect updates in the LLT18 release PM load.

October 2002

Standard 13.05. PLLT0018. This document release includes:

- updated the cross–reference tables in chapter “Overview of Release” to reflect changes in the LLT18 release PM load (PM load tape PLLT0018).
- updated the XA–Core component firmware cross–reference table in chapter “Overview of Release” to reflect changes in the LLT18 release PM load.
- for PM type DTM with EDRAM card NT1X80BA, changed software load to ED16AA05 for LLT18 in chapter “Overview of release”.
- updated EDRAM PM load in chapter “Appendix C” to reflect changes in the LLT18 release PM load.

July 2002

Standard 12.03. PLLT0017. This document release includes:

- updated the cross–reference tables in chapter “Overview of Release” to reflect changes in the LLT17 release PM load (PM load tape PLLT0017).
- for PM type DTM with EDRAM card NT1X80BA, changed software load to ED16AA04 for LLT17 in chapter “Overview of release”.

April 2002

Preliminary 12.02. PLLT0017. This document release includes:

- added Succession Solutions upgrade information to support the SN04 release in chapter “Overview of Release”.
- updated the cross–reference tables in chapter “Overview of Release” to reflect changes in the NCS017/SN04 release PM load (PM load tape PLLT0017).
- added the procedure “Update the HLIU/HSLR (DLIU)” to Chapter “Update Procedures”.
- corrected the update procedure “Update the HLIU/HSLR (DLIU)” per CSR UZ10433.
- added information to support upgrade of Succession sites with LIU7 external routers in the update procedure “Update the HLIU/HSLR (DLIU)” per CSR UZ10436.
- changed the SMA2 PM software load for the current release, previous releases and baseline to UPFWNU01.

February 2002

Preliminary 12.01. PLLT0017. This document release includes:

- updated chapter “Overview of Release” to reflect the NCS017 release PM load (PM load tape PLLT0017).

June 2001

Standard 11.02. PLLT0015. This document release includes:

- change XA–Core component firmware cross–reference Computing module interface card (CMIC) from PK12CE11 to baseline release PK10CU10.
- update PM–to–load cross–reference table IOM (standard) to iomrayo1.
- update PM–to–load cross–reference table DTM PM to *edrmae08.*

May 2001

Standard 11.01. PLLT0015. This document release includes:

- revised table PM-to-load cross-reference per change to PLLT0015 and PLNS0006

December 2000

Standard 10.03. LLT00014. This document release includes:

- revised procedure “Use broadcast mate loading to update XPMs”
  - — added activities to perform to reduce potential broadcast mate loading failures to section Prerequisites

— added ATTENTION box to step 23 regarding actions to take when the LOADPM INACTIVE ALL command fails

- added "Appendix D: EDRAM base load and voice files"
  - — includes PEC code requirements for each EDRAM load indicating that both EDRAM loads are not supported in all PCLs
  - — includes Load history for EDRMxxyy
  - — includes voice files applicable to EDRMxxyy and ED16xxyy

December 2000

Standard 10.02. LLT00014. This document release includes

- addition of section "XPM processor to XPM firmware load cross-reference" in chapter "Overview of release"
  - — includes WARNING box regarding possible XPM processor damage, service interruption, and/or degradation
  - — includes table XPM processor to XPM firmware load cross-reference to identify valid XPM firmware loads for XPM processors supported in this release
- revised reference in Series II (XPM) update procedures
  - — table "PM to XPM processor firmware cross-reference" now reads: section "Peripheral module to XPM processor firmware cross-reference"
    - – changed due to user requirement to read and reference applicable tables since the XPM valid firmware loads for each release have been added
- revised procedure "Update the ENET"
  - — revised step 13 to read: Repeat step 6 through step 12 for each shelf in the plane
  - — revised step 36 to incorporate additional condition for ENET updates when an SPM is present on the switch
- revised procedure "Update the IOM"
  - — added paragraph text to CAUTION box in section Application
  - — added paragraph text to CAUTION box in section Application
  - — removed steps to determine if the IOM needs to reloaded and download the IOM since the IOM must be reprogrammed when a new edition of the IOM load name is released

September 2000

Preliminary 10.01. LLT00014. This document release includes

- XA-Core update requirements in chapter "Overview of release"

— added subsection “XA-Core component firmware updates” to section “Changes in update process”

— added section “XA–Core component firmware cross-reference”

– added table “XA-Core component firmware cross-reference”

— added XA-Core card types to table “PM-to-load cross-reference”

– included description, hardware requirements, and load names

- changes to baseline and new release columns in tables “PM to XPM processor firmware cross-reference (non-HDLC)” and “PM to XPM processor firmware cross-reference (HDLC)” in chapter “Overview of release” applicable to BASE15 per XPM design/development
- revised table PM-to-load cross-reference per PLLT0014 and PLNS0005
- revised procedure “Update the MS multi-port card (NT9X17)”

  — removed non-applicable statement from section “Update sequence” regarding the MS should be updated as part of the front-end update
- revised procedure “Use broadcast mate loading to update XPMs”

  — added activities to perform to reduce potential broadcast mate loading failures to section Prerequisites

  — added ATTENTION box to step 23 regarding actions to take when the LOADPM INACTIVE ALL command fails

August 2000

Standard 09.03. LLT00013. This document release includes

- revised PM-to-load cross-reference to include change to Star Hub PM load lineup (PLNS0004)

  — HUB13BG replaces HUB13BC for Star Hub
- revised procedure “Update the MS”

  — edited steps to include additional steps required for XA-Core

August 2000

Standard 09.02. LLT00013. This document release includes

- addition of the PM load tape (PLLT0013) supported by this document on the front cover because of an ISO finding in the SDCs
- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- changes in software delivery process for patch current message switch (MS) load included on PM load tape in chapters “Overview of release,” “Overview of update process,” and “Overview of automated update process”

- addition of ILD baseline and new release information to table “PM to XPM processor firmware cross-reference (non-HDLC)” in chapter “Overview of release” to resolve CSR reported against procedure “Prepare for an automated PM update using PMUPGRADE”
- changes to PM-to-load cross-reference per PM load lineup (PLLT0013)
- addition of Star Hub PM load lineup (PLNS0004)
- addition of PM-to-PRSU cross-reference for QLI13BB_000510
- addition of SET CARRYOVER and SET SPMPATCH commands to table PMUPGRADE commands in chapter “Overview of automated update process”
- addition of XA-Core step procedures and examples to the following modules
  - — “Prepare for a manual PM update”
  - — “Prepare for an automated PM update using PMUPGRADE”
- revisions to “Prepare for an automated PM update using PMUPGRADE”
  - — add subsection “Carryover loads” to section “Notes”
  - — add step SET CARRYOVER ON to copy all PM loads for the office as required by office policy
    - – updated *Example of response* text as required
  - — add step SET SPMPATCH
    - – updated *Example of response* text as required
- revised procedure “Perform an automated PM update”
  - — added note in section Application for requiremens to perform an update for the DCH with SWUPGRADE
  - — added note to section Application regarding SWUPGRADE’s four hour pause after the update for each ENET plane
  - — added CAUTION to concurrency value set to UNLIMITED
- addition of XA-Core examples to manual update procedures for Series I and Series III PM types
  - — no change required for manual update procedures for Series II PMs
- node configuration change to ”Update the ILD” to include Star Hub
- revised procedure “Update the enhanced DCH card (NTBX02)”
  - — edited ATTENTION box in section Application regarding the use of PANTHER to perform a DCH update
- step command syntax changes to procedure “Update the NIU”
  - — step 12 changed to BSY INACTIVE

— step 21 changed to RTS INACTIVE

- step command syntax changes to procedure “Update the XPM processor circuit card firmware”

  — revised steps 11 and 18 to read LOADFW INACTIVE

- addition of update procedures to support Star Hub

  — Update the RLD

  — Update the Star Hub

  — Update the UMP

July 2000

Standard 08.05. LLT00012. This document release includes

- addition of the PM load tape (PLLT0012) supported by this document on the front cover because of an ISO finding in the SDCs
- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- addition of tables “PM to XPM processor firmware cross-reference (non–HDLC)” and “PM to XPM processor firmware cross-reference (HDLC)” to replace table “XPM processor (NTAX74, NTMX77, or NTSX05) firmware baseline” in chapter “Overview of release”

  — revised tables to reflect the baseline loads for XPM processors at the BASE13 software release

  — removal of non-supported NTMX77 and NTAX74 from column “XPM processor” for DTCI, LGCI, and LTCI PM types

  — removal of non-supported NTMX77 from column “XPM processor” for RCC2

  — addition of ILD baseline and new release information to satisfy reference in procedure “Prepare for an automated PM update using PMUPGRADE”

  — edited entire section “Peripheral module to XPM processor firmware cross-reference” including correction of firmware baselines for BASE13 per XPM design/development

- changes to table “PM-to-load cross-reference” in chapter “Overview of release”

  — ADAS peripheral module loads, PM description, and PM PEC requirements identified as applicable in tablePM-to-load cross-reference

    – APU loads are identified by AAC, ULC, and UTC followed by the release version/issue

  - VPU load is identified by VPC followed by the release version/issue
- identified QLI12BC as a PPXL for DTC, LGC, LTC supporting ISDN with NTSX05
- added MSA12BC to support ESA with NTMX45
- removed IDAA09I (BASE08) as PM load for ILD since ILDRAD15 is the baseline for BASE13
- added ATS12BI and LTS12BI to support LIU7 32 meg PM types
- replaced LCME12AZ with LCME12BA
- removed ETI12BC as a supported PM load for DTCI, LGCI, and LTCI with NTMX77 since the ETI load is UCS DMS-250 PCL only
- removed non-supported CRI11BD_990503 PM load for RCC2
- revised Notes to identify non-support of the NTMX77 processor for DTCI, LGCI, LTCI, and RCC2 in this release
- revised Notes to identify non-support of the NTAX74 processor for DTCI, LGCI, and LTCI for the LLT00011 and LLT00012 releases

- added section “PM-to-PRSU cross-reference” and identified PRSUs applicable to QLI12BC_000502
  - identified PRSUs applicable to QLI12BC_000502
  - identified PM types that use the QLI load
- addition of SET CARRYOVER command to table PMUPGRADE commands in chapter “Overview of automated update process”
- revisions to “Prepare for an automated PM update using PMUPGRADE”
  - add subsection “Carryover loads” to section “Notes”
  - add step SET CARRYOVER ON to copy all PM loads for the office as required by office policy
  - updates to applicable *Example of response* text to include Carryover
  - correct reference to section “Peripheral module to XPM processor firmware cross-reference”
- revised procedure “Perform an automated PM update”
  - added note in section Application for requiremens to perform an update for the DCH with SWUPGRADE
  - added note in section Application for required four hour pause for each ENET plane during the update shift
- revised procedure ”Update the enhanced DCH card (NTBX02)”

— edited ATTENTION box in section Application regarding the use of PANTHER to perform a DCH update

- step command syntax changes to procedure “Update the NIU”
  — step 12 changed to BSY INACTIVE
  — step 21 changed to RTS INACTIVE
- step command syntax changes to procedure “Update the XPM processor circuit card firmware”
  — revised steps 15 and 26 to read LOADFW INACTIVE
- addition of XA-Core step procedures and examples to the following modules
  — “Prepare for a manual PM update”
  — “Prepare for an automated PM update using PMUPGRADE”
- addition of XA-Core examples to manual update procedures for Series I and Series III PM types
  — no change required for manual update procedures for Series II PMs
- removed inaccurate notes regarding the PM becomes ISTB when performing a confirmation to the load name change in the inventory table and when posting the PM prior to loading the PM from the following Series I PM update procedures: ATM, CTM, DCM, DES, DTM, ESTU, LM, MTM, OAU, RMM, STM, T8A, TAN, TM2, TM4, and TM8
- restructure of Series II (XPM) update procedures. The restructure is a result of:
  — out-of-order steps regarding BASE level determination for the office update prior to XPM firmware update requirement determination
  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM
- restructure of Series III (ISN) update procedures
  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

July 2000

Standard 07.05. LLT00011. This document release includes:

- addition of the PM load tape (PLLT0011) supported by this document on the front cover because of an ISO finding in the SDCs

- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- renamed section “Peripheral module to firmware baseline cross-reference” to read “Peripheral module to XPM processor firmware cross-reference”
  - — addition of tables “PM to XPM processor firmware cross-reference (non–HDLC)” and “PM to XPM processor firmware cross-reference (HDLC)” to replace table “XPM processor (NTAX74, NTMX77, or NTSX05) firmware baseline” in chapter “Overview of release”
  - — revised tables to reflect the baseline loads for XPM processors at the BASE12 software release
  - — removal of non-supported NTAX74 processor from column “XPM processor” for DTCI, LGCI, and LTCI PM types
  - — addition of ILD baseline and new release information to table “PM to XPM processor firmware cross-reference (non-HDLC)” to satisfy reference in procedure “Prepare for an automated PM update using PMUPGRADE”
  - — replaced original text of installation information with a CAUTION box to refer the user to the appropriate installation method (IM) procedures rather than confusing the user with this information as a requirement for a PM software update
  - — edited entire section “Peripheral module to XPM processor firmware cross-reference”
- changes to table “PM-to-load cross-reference” in chapter “Overview of release”
  - — ADAS peripheral module loads, PM description, and PM PEC requirements identified as applicable in tablePM-to-load cross-reference
    - – APU loads are identified by AAC, ULC, and UTC followed by the release version/issue
    - – VPU load is identified by VPC followed by the release version/issue
  - — replaced LCME11BD with LCME12BA
  - — replaced SXFWAD05 with SXFWAE09 since this is the baseline for PM types with NTSX05 in BASE12
  - — removed IDAA09I (BASE08) as PM load for ILD since ILDRAD08 is the baseline for BASE12
  - — revised Notes to identify non-support of the NTAX74 processor for DTCI, LGCI, and LTCI

- changes to procedure “Prepare for an automated PM update using PMUPGRADE”
  - — replaced Patch File Distribution from T0 to S01T in MAP display examples
  - — changed conditional text for If/Do to read BASE10 or lower PCL
- revised procedure “Perform an automated PM update”
  - — added note in section Application for requiremens to perform an update for the DCH with SWUPGRADE
  - — added note in section Application for required four hour pause for each ENET plane during the update shift
- revised procedure ”Update the enhanced DCH card (NTBX02)”
  - — edited ATTENTION box in section Application regarding the use of PANTHER to perform a DCH update
- step command syntax changes to procedure “Update the NIU”
  - — step 12 changed to BSY INACTIVE
  - — step 21 changed to RTS INACTIVE
- step command syntax changes to procedure “Update the XPM processor circuit card firmware”
  - — revised steps 15 and 26 to read LOADFW INACTIVE
- removed inaccurate notes regarding the PM becomes ISTB when performing a confirmation to the load name change in the inventory table and when posting the PM prior to loading the PM from the following Series I PM update procedures: ATM, CTM, DCM, DES, DTM, ESTU, LM, MTM, OAU, RMM, STM, T8A, TAN, TM2, TM4, and TM8
- restructure of Series II (XPM) update procedures. The restructure is a result of:
  - — out-of-order steps regarding BASE level determination for the office update prior to XPM firmware update requirement determination
  - — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM
- restructure of Series III (ISN) update procedures
  - — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

July 2000

Standard 06.08. LLT00010. This document release includes

- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- renamed section “XPM processor firmware baselines” to read “Peripheral module to XPM processor firmware cross-reference” in chapter “Overview of release”
  - — renamed table “XPM processor (NTAX74 or NTMX77) firmware baseline” to read “PM to XPM processor firmware cross-reference”
  - — revised tables to reflect the baseline loads for XPM processors at the BASE11 software release
  - — addition of ILD baseline and new release information to table “PM to XPM processor firmware cross-reference”
- changes to table “PM-to-load cross-reference” in chapter “Overview of release”
  - — ADAS peripheral module loads, PM description, and PM PEC requirements identified
    - – APU loads are identified by AAC, ULC, and UTC followed by the release version/issue
    - – VPU load is identified by VPC followed by the release version/issue
  - — replaced ILDRAB07 with ILDRAB08
  - — removed IDAA09I (BASE08) as PM load for ILD since ILDRAB08 is the baseline for BASE11
  - — replaced IOMHAW01 with IOMHAX01
- changes to procedure “Prepare for an automated PM update using PMUPGRADE”
  - — replaced Patch File Distribution from T0 to S01T in MAP display examples
- revised procedure “Perform an automated PM update”
  - — added note in section Application for requiremens to perform an update for the DCH with SWUPGRADE
- revised procedure ”Update the enhanced DCH card (NTBX02)”
  - — edited ATTENTION box in section Application regarding the use of PANTHER to perform a DCH update

- removed inaccurate notes regarding the PM becomes ISTb when performing a confirmation to the load name change in the inventory table and when posting the PM prior to loading the PM from the following Series I PM update procedures: ATM, CTM, DCM, DES, DTM, ESTU, LM, MTM, OAU, RMM, STM, T8A, TAN, TM2, TM4, and TM8
- restructure of Series II (XPM) update procedures. The restructure is a result of:
  - — out-of-order steps regarding BASE level determination for the office update prior to XPM firmware update requirement determination
  - — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM
- restructure of Series III (ISN) update procedures
  - — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM
- step command syntax changes to procedure “Update the XPM processor circuit card firmware”
  - — revised steps with LOADFW PM to read LOADFW INACTIVE

July 2000

Standard 05.15. LLT00009. This document release includes

- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- renamed section “XPM processor firmware baselines” to “Peripheral module to XPM processor firmware cross-reference” in chapter “Overview of release”
  - — renamed table “XPM processor (NTAX74 and NTMX77) firmware baseline” to “PM to XPM processor firmware cross-reference”
  - — revised table to reflect the baseline loads for XPM processors at the BASE10 software release
  - — addition of ILD baseline and new release information to table “PM to XPM processor firmware cross-reference”
- changes to table “PM-to-load cross-reference” in chapter “Overview of release”
  - — ADAS peripheral module loads, PM description, and PM PEC requirements identified

  - APU loads are identified by AAC, ULC, and UTC followed by the release version/issue
  - VPU load is identified by VPC followed by the release version/issue

— replaced DPP008 with DPP009

— removed IDAA09I (BASE08) as PM load for ILD since ILDRAB07 is the baseline for BASE10

— replaced IOMHAW01 with IOMRAX01

- changes to procedure “Prepare for an automated PM update using PMUPGRADE”

  — replaced Patch File Distribution from T0 to S01T in MAP display examples

- revised procedure “Perform an automated PM update”

  — added note in section Application for requiremens to perform an update for the DCH with SWUPGRADE

- revised procedure ”Update the enhanced DCH card (NTBX02)”

  — edited ATTENTION box in section Application regarding the use of PANTHER to perform a DCH update

- restructure of Series II (XPM) update procedures

  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

- restructure of Series III (ISN) update procedures

  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

July 2000

Standard 04.14. LLT00008. This document release includes

- revisions to chapters “Overview of release” and “Overview of update process” to remove duplication of information and organize technical information in appropriate chapter location
- renamed section “XPM processor firmware baselines” to “Peripheral module to XPM processor firmware cross-reference” in chapter “Overview of release”

  — renamed table “XPM processor (NTAX74 and NTMX77) firmware baseline” to “PM to XPM processor firmware cross-reference”

— revised table to reflect the baseline loads for XPM processors at the BASE09 software release

— addition of ILD baseline and new release information to table “PM to XPM processor firmware cross-reference”

- changes to table “PM-to-load cross-reference” in chapter “Overview of release”

  — ADAS peripheral module loads, PM description, and PM PEC requirements identified

    – APU loads are identified by AAC, ULC, and UTC followed by the release version/issue

    – VPU load is identified by VPC followed by the release version/issue

  — replaced DPP008 with DPP009

  — removed IDAA09I (BASE08) as PM load for ILD since ILDRAB07 is the baseline for BASE09

  — replaced IOMHAW01 with IOMRAX01

- changes to procedure “Prepare for an automated PM update using PMUPGRADE”

  — replaced Patch File Distribution from T0 to S01T in MAP display examples

- restructure of Series II (XPM) update procedures

  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

- restructure of Series III (ISN) update procedures

  — combined PRSU application and PRSM database confirmation steps without the need to access, apply, update, exit, access, update, exit PRSM

April 2000

Standard 07.04. LLT00011. This document release includes:

- changes to customer service toll free telephone number.
- Electronic mail (email address) added and corporate trademark information updated.
- revision of “Overview of release”, PM-to-load cross-reference”, and Load history to reflect the current PM load lineup.

- Revised the ENET procedure to inform customer that it is normal for a SPM equipped ENET to go into a critical alarm state. Revised "Update the DCH" to include steps for DCH in an integrated services node (ISN) TOPS message switch (TMS).

April 2000

Preliminary 09.01. NCS13. Initial release of document for LLT00013. This document:

- lists the XPM13 load names in tables "PM-to-load cross-reference and "XPM processor (NTAX74, NTMX77, or NTSX05) firmware baseline" ?? indicates areas in need of authentication.
- includes procedural changes made to PMs. Older out–of-date references were deleted and the procedures were updated accordingly.
- includes a dual method of preparing for an automated PM update using PMUPGRADE. Operating company personnel must identify the method used to deliver PRSUs. The options are SLM or XA-Core tape cartridge.
- references XA-Core through-out where applicable.

November 1999

Standard 08.03. LLT00012. This document release includes:

- revision of "Overview of release"
  - — addition of ATTENTION box to alert the user to upgrade the SuperNode Data Manager (SDM) load prior to the one night process (ONP) in section "Non-computing module software loads"
  - — replaced original text of installation information with a CAUTION box to refer the user to the appropriate installation method (IM) procedures rather than confusing the user with this information as a requirement for a PM software update
  - — revision of tables "Base-release-and-PCL-release, PM-to-load cross-reference", and Load history to reflect the current PM load lineup
- revisions to "Prepare for an automated PM update using PMUPGRADE"
  - — removal of 9-track tape references
  - — addition of section "$XREF patch control file delivered via X.25 NOP links"
  - — revision of applicable steps to include information for $XREF patch control file and PRSUs delivered via X.25 NOP links
- revision of "Prepare for a manual PM update"

— addition of section “$XREF patch control file delivered via X.25 NOP links”

— updated $XREF indicates patch, step 8 RE FILE command

— removal of 9-track tape references

— removal of step procedures for 9-track tape

- revision of “Overview of Automated update process”

  — updated the “Available automated functionality” table

  — removal of non-applicable BASE software level references, and other minor editing clarifications

- revision of procedure “Update the ENET” to remove crosspoint card steps and eliminate a service-affecting report
- revised the following update procedures to correct the DBAUDIT command syntax order: “Update the DTC/DTCO”, “Update the DTCI”, “Update the XPM processor card”, “Use broadcast mate loading to update XPMs”, and “Use parallel loading to update XPMs”.
- Electronic mail (email address) added and corporate trademark information updated.

September 1999

Preliminary 08.02. LLT00012. Revised the ENET procedure to correct the step order when determining if both ENET planes are updated. References to SX05 firmware baseline changed to reflect current load lineup. Corrected table XPM processor firmware baseline to reflect SXFWAD05 as current firmware baseline. Revised PM-to-load cross-reference load name for DTCI with ETI.

September 1999

Standard 07.03. LLT00011. Revised “Overview of release,” “Overview of automated update process,” and “Perform an automated PM update” to include specific update instructions for the ENET when an SPM is present on the DMS. Revised the ENET procedure to correct the step order when determining if both ENET planes are updated. Corrected table XPM processor firmware baseline to reflect SXFWAD05 as current firmware baseline. Revised PM-to-load cross-reference table to reflect the current PM load lineup.

August 1999

Preliminary 08.01. LLT00012. Initial release of document.

July 1999

Standard 07.02. LLT00011. Revised software delivery process information to include the “Patches: Yes” or “Patches: No” label text changes for PM load and PRSU files on SLM tape cartridge. Revised “Prepare for a manual

PM update" for the MFR command required by the backup volume format SLM tape cartridge and added steps to copy PM load and PRSU files to a backup SLM disk volume. Revised table PM-to-load cross-reference and revised table PM-to-PRSU cross-reference. Document includes Nortel Networks company name, logo, and confidentiality statement.

June 1999

Standard 06.06. LLT00010. Revised software delivery process information to include the "Patches: Yes" or "Patches: No" label text changes for PM load and PRSU files on SLM tape cartridge. Revised "Prepare for a manual PM update" for the MFR command required by the backup volume format SLM tape cartridge and added steps to copy PM load and PRSU files to a backup SLM disk volume. Document includes Nortel Networks company name, logo, and confidentiality statement.

June 1999

Standard 05.13. LLT00009. Revised software delivery process information to include the "Patches: Yes" or "Patches: No" label text changes for PM load and PRSU files on SLM tape cartridge. Revised "Prepare for a manual PM update" for the MFR command required by the backup volume format SLM tape cartridge and added steps to copy PM load and PRSU files to a backup SLM disk volume. Document includes Nortel Networks company name, logo, and confidentiality statement.

June 1999

Standard 04.12. LLT00008. Revised software delivery process information to include the "Patches: Yes" or "Patches: No" label text changes for PM load and PRSU files on SLM tape cartridge. Revised "Prepare for a manual PM update" for the MFR command required by the backup volume format SLM tape cartridge and added steps to copy PM load and PRSU files to a backup SLM disk volume. Document includes Nortel Networks company name, logo, and confidentiality statement.

About this document

When to use this document

Use this document to update the software in DMS-500 peripheral modules (PM) and hardware types to release SN09 DMS. Also, use this document as a guide for Succession Solution sites to update software PMs and hardware types. This document provides load names, update procedures, and other release-specific information. It may be used by maintenance technicians with a range of experience in switching, PM software, and PM software updating.

How to use this document

After receiving this document and the PM load tape, perform the following tasks.

1 Review the chapter "Overview of release" in this document. This chapter provides release notes, load names, and other information critical to updating PMs and other hardware types.

2 Review the chapter "Overview of manual update process" in this document. This chapter summarizes the update process and describes when to use each procedure in this document.

3 Review the chapter "Overview of automated update process" in this document. This chapter describes the PMUPGRADE and SWUPGRADE PM utilities.

4 Perform the procedure "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" in this document.

5 Schedule the update of each PM and hardware type in the office.

6 Update the PMs and hardware types, following the schedule and using the appropriate procedures in this document. Perform the procedure "Start a PM update shift" when you begin a PM update shift, and perform the procedure "Finish a PM update shift" when you complete a PM update shift.

Compliance with local policies

This document is written for all Nortel Networks DMS Family customers updating to LLT00020. However, many telephone companies have company-specific and office-specific policies regarding PM updates. Review

these policies and resolve any differences between the policies and this document before beginning the PM update process.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, such as 01.01. The first two digits indicate the version, which increases each time the document is updated to support a new software release. The second two digits indicate the issue, which increases each time a document is re-issued within the same software release.

References in this document

The following documents are referred to in this document:

- *ADAS Peripheral Module Software Release Document,* 297-2211-211
- *DMS-100 Family Distributed Processing Peripheral Commands and Messages Guide,* 297-1001-545
- *LGC/LTC, RCC2 Remote Firmware Upgrade,* IM 65-6364
- *NTSX05AA/CA Processor Upgrade,* IM 65-0260
- *Post-Release Software Manager (PRSM) Operating Procedures,* 297-8991-540
- *DMS–SPM Upgrades*, NN10053–461
- *MG 4000 Upgrades*, NN10054–461
- *IW–SPM (ATM) Upgrades*, NN10055–461
- *IW–SPM (IP) Upgrades*, NN10056–461
- *DPT–SPM Upgrades*, NN10058–461
- *SuperNode Data Manager User Guide,* 297-5061-303
- *XA-Core Maintenance Manual,* 297–8991–510

Messages and syntax used in this document

Precautionary messages

Precautionary messages indicate possible risks. The types of precautionary messages used in Nortel Networks documentation include danger, warning, caution, and attention messages.

Danger message

A danger message indicates the possibility of personal injury.

DANGER

Risk of electrocution

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines that are active until the fuses have been removed.

Warning message

A warning message indicates the possibility of equipment damage.

WARNING

Damage to the backplane connector pins

Align the card before seating it to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

Caution message

A caution message indicates the possibility of service interruption or degradation.

CAUTION

Possible loss of billing data

Busying the links may result in a loss of billing data. Perform these steps during a maintenance window or a period of low traffic.

Attention message

An attention message alerts the reader to a special condition.

ATTENTION

Office policy may require additional copies of the load.

Syntax for commands, parameters, and responses used in this document

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.

>LOADPM

Commands and fixed parameters

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

>LOADPM INACTIVE

Variables

Variables are shown in lowercase letters.

>LOADPM UNIT unit_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

MAP responses that correspond to MAP commands are shown in a different type style.

```
LOADPM UNIT 1 LOADED
```

Example of command syntax

The following example illustrates the syntax used in this document.

1 Load the unit. Type

>LOADPM UNIT unit_no
and press the Enter key.

where

unit_no is the number of the unit

Example of a MAP response:

```
LOADPM UNIT 1 LOADED
```

How procedures are organized

Each procedure in this document contains a summary flowchart and a list of steps. The flowchart summarizes the procedure, and the list of steps provides

detailed instructions for the procedure. Review the summary flowchart, and then follow the list of steps to perform the procedure.

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Overview of release

This chapter provides release notes, load names, and other information critical to peripheral module (PM) and other hardware type updates. Use this information to perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE.”

Handling of files on the ESD server

The following information consists of general recommendations for the handling of various files. The actual upgrade processes using electronically delivered files are addressed in the respective NTPs and Upgrade Guides. Customers are responsible to transfer software from the ESD server to the point of use for upgrade activities.

SDM software

The SDM load is delivered to the server as a tarred and gzipped file.

- This file can be transferred to the SDM intact *IF* the destination SDM has adequate free space (approximately 5GB) and has the gzip utility installed. If both conditions are true, then the SDM tar.gz file can be FTP¿
  directory specified in the Upgrade Guide.
- If either condition is not true, then the file should be unpacked on the server and the individual files FTP¿
  Upgrade Guide.

Note: Please note that untarring files on the SDM runs approximately 4 times slower than untarring on the ESD server. The SDM Upgrade Guide recommends unpacking the file on the ESD server and includes instructions for transfer to the SDM.

PCL software

The PCL load will be delivered as a tarred and gzipped file. (i.e. GHVU0180.180.V.XAPPC2.VAULT.x.D.tar.gz). The delivered compressed file will be approximately 100MB. The uncompressed files will total approximately 250MB.

- Compact Core (3PC) has explicit instructions documented in the Upgrade Guide for transfer and loading of the 3PC, STORM, & PCL loads. These should be followed.
- BRISC & XACore require special handling of the PCL to preserve its status as a bootable image. The process for FTPing a PCL image is provided in the next section of this document.

PM software

Series I, II, & III peripheral loads, XPMs along with the relevant patches and XREF file will be delivered in a single tarred gzip file (I,e, GPPL0180.180.V.PM.NAP.VAULT.x.D.tar.gz). The delivered compressed file will be approximately 80–100MB. The uncompressed files will total 120 MB (GPPL) to180MB (PLLT).

- If the SDM has sufficient free space available and has the GZIP utility installed, the entire compressed file may be transferred to the SDM and unpacked into a directory on the SDM. PMUPGRADE can be used to copy the required files from the SDM to the PMLOAD volume on the Core. The PMUPGRADE instructions are captured in the Peripheral Module Release Document.
- Alternatively, GUNZIP the compressed file on the ESD server. Either unTAR the files onto the ESD server or transfer to the SDM and unTAR the file there.
- If manual transfers of the files are to be done, then the individual peripheral load files can be ftp¿ volume. Please use the appropriate record lengths and attributes listed below when ftping the loads. Loads that are designated as images should use the procedure for FTPing a PCL image.

Record lengths and attributes to use for the FTP process

File Extension	PM Type	FTP Requirements
.bin 1020	Series III Loads	BIN 1020 FIX
.bin 1024	XPM Loads	BIN 1024 FIX
.bin 128	Patch	BIN 12 FIX
.bin 138	MS Firmware	BIN 138 FIX

Record lengths and attributes to use for the FTP process (continued)

File Extension	PM Type	FTP Requirements
.bin 339		BIN 339 FIX
.bin 2048	IOM Loads	BIN 2048 FIX
.bin 39		BIN 39 FIX
.bin 55	LCM Loads	BIN 55 FIX
.bin 1536	SPM CEM Loads	BIN 1536 FIX
.txt 54		ASCII 54 VAR
.txt 60		ASCII 60 VAR
.txt 76		ASCII 76 VAR
.txt 80		ASCII 80 VAR
.txt 86		ASCII 86 VAR
.txt 256		ASCII 256 VAR
.patch	Patch	BIN 128 FIX
.xref	Patch X–Ref File	ASCII 80 VAR
SPMLDEXT_WNN (.txt256)	SPM Decoder Loads	ASCII 256 VAR

Loads delivered to an RDD server

There is no specific directory path required for load delivery on the RDD. It depends on where the disk space has been allocated to accommodate the loads. As long as the ”loads” directory has world read/execute access and the file permissions of the loads are world read access, then the RDD tools (IFTRAN) can access the files for delivery purposes.

Regarding a suggested directory path, one way is to create a loads directory alongside the /patches and /patatadmin directories. This would result in the following directory structure:

..../patches
..../patatadmin
..../loads

Documentation required

Have the following documents at hand for references as needed.

- Peripheral Module Release Document
  — For Wireless GSM, Vol. 1–2: 411–2231–599P1, 411–2231–599P2
  — For Wireline, 297–2663–599
  — For International, 297–9051–599
- The section on FTPing a PCL image that follows in this document.
- SuperNode Data Manager Upgrade Guide, NN1060–461
- Carrier Voice over IP Network Upgrade Overview, NN10440–450
- The individual product upgrade documentation

How to FTP PCL images and prepare for an ONP

The DMS FTP client requires a non–standard procedure to FTP an image file that will successfully boot. These procedures for FTPing image files to the Core or Call Server are documented for the first time in SN09.

This procedure is applicable to BRISC & XACORE. Compact Core (PPC3) has a separate documented procedure.

When a software load file is electronically delivered to a dropbox server an email notification will be sent to the identified contacts to confirm the delivery. The email will be titled ”Electronic Delivery Confirmation for ANYDMSUSA1 – PRODUCTCODE”. Within the body of the email the Order will be referenced as well as the address & directory of the dropbox server, the file name, and the size of the file delivered. The file name will be of the format:
PRODUCTCODE.xxX.R.PCL.PPC2.VAULT.X.D.tar.gz (i.e. SN000006.6.R.PCL.PPC2.VAULT.42.D.tar.gz).

Complete the following steps to transfer the file to the Core/Call Server.

Steps of procedure

On the dropbox server

1 Unzip and untar the load file. Type

>gunzip <file>.tar.gz (unzips the file; results will be <file>.tar)
>tar xvf <file>.tar (uncompresses the file; results will be a directory <file>)
>cd <file> (change directory to see loads)
>ls (lists directory; results will be the CM and MS files)

2 If the Core has an SDM, FTP the uncompressed files to the SDM for staging using Binary transfer mode and a record length of 1020. If the office is using an EIU for IP connectivity, the uncompressed files can be left on the dropbox or moved to a server accessible to the Core.

3 Log into the Core. List the image volume (i. e. S00DIMAGE) where the image file is to be transferred to. Type

>DISKUT
>LF <volume_name>
>QUIT

4 On the DMS Core, set up the FTP user. Type

>FTP
>SHOWSVUSERS
>ADDUSERINFO NORTEL NORTEL :/<volume_name> Y
where <volume_name> is from step 2

>SHOWSVUSERS
>QUIT

5 Using the DMS FTP client, FTP to the remote server (i.e. the SDM or dropbox). CD to the appropriate directory. List (ls) the directory or filename to ensure the file to be transferred is present.

6 Transfer the file to the DMS. Type

>BIN (set transfer mode to binary)
>LREL '1020 img' (set record length and image attribute; command will generate an error that can be ignored)
>GET '<file name>' '/<volume_name>/<loadname_order#>' (transfer file to image volume as load name and the order number from the Electronic Delivery confirmation email)
>BYE (quit FTP)

7 List image volume to validate that the file is marked with the image attribute (I). Type

>LF <volume_name>
Example:

```
SN000006539509_CM      I  F            0    1020   204817 409634 050308
                              ^
```

If this attribute is not set to I, the file will not load. If you need further assistance, contact Nortel Software Delivery Support at 1–800–4–NORTEL ERC 936.

Note: Do not datafill the ITOC with this image.

Prepare for ONP

Electronic Software Delivery follows the same schedule for sending software as is used for shipping physical media (tapes & CDs) so the electronically delivered PCL file will be delivered 7–8 days prior to the scheduled ONP date. Nortel will perform an I–5 Day precheck. During this precheck, the Nortel prime will validate the presence of the PCL image file on the Core image volume, and that the file attribute is set to I. Transfer the PCL image file to the image volume anytime prior to the I–5 day precheck.

Delete the undatafilled image following the successful ONP.

Changes in update process

This section describes changes in the PM update process.

Succession Solutions software updates

This information applies to all DMS–100, DMS–250 and DMS–500 Succession Solutions offices, whether upgrading an existing release or installing an initial release.

ATTENTION

Succession Solutions software updates require that steps in the procedure must be performed in a specific order. Please refer to the upgrade procedures in the applicable Solution Upgrades FCAP document for your system.

Each network component includes tools and utilities to assist in upgrading the software for the component.

The upgrade timelines can require several maintenance windows. The end–to–end upgrade process can be aborted between any of the component upgrades and at specific abort points within each component.

XA-Core component firmware updates

ATTENTION

For optimal robustness and to avoid component outages, offices must update all XA–Core component firmware loads after the ONP for this release with the new release firmware load.

Refer to the following for update procedures, Baseline Release and firmware load names:

- section “Upgrade firmware on the occasion of a software upgrade” Chapter 4 of the *XA-Core Maintenance Manual,* 297-8991-510, to update the XA-Core components.
- table “PM-to-load cross-reference for the applicable firmware load names for this release and previous releases.

- table “XA-Core component firmware cross-reference” for the baseline and new release firmware loads.

Message switch load on PM load tape is patch current

ATTENTION

The message switch (MS) can require additional memory to support this release. Contact the next level of support or the Nortel Networks software delivery prime for additional information.

The PM load tape for this release includes the patched current MS load file, which is not a back-up load. Use procedure “Update the MS” in this document and update the MS with all other PMs. Refer to figure PM configurations P-side to C-side in chapter “Overview of update process” for PM update sequence requirements.

MS load requirements for back–to–back ONP

The Back–to–Back ONP is designed to upgrade the PCL release of a switch over two consecutive nights. For example, the first upgrade would be to SN04 and the second or final upgrade to SN06. Prior to the first upgrade, the PM software and MS must be updated with loads compatible with the final PCL release. When this occurs, the MS is updated with a load that exceeds the standard 3 CSP limit. This condition is not permitted unless PRSU file SEA87 is applied and activated in the current CM load. Therefore, when updating the MS with a load that is 4 or more CSP levels greater than the current CM load, PRSU file SEA87 must be applied and activated in destination CM, or the MS will fail to return to service.

XA-Core tape cartridge contains PM load and PRSU files

With the BASE13 software level, extended architecture core (XA-Core) digital audio tape (DAT) cartridges are delivered to offices with XA-Core. When the XA-Core tape cartridge label text indicates *Patches: Yes*, the tape contains PM load and post-release software update (PRSU) files, including pre-patched XPM load (PPXL) files. When the XA-Core tape cartridge indicates *Patches: No*, the office receives any applicable PRSUs through prior software delivery methods.

ADAS peripheral module (PM) loads on SLM or XA-Core tape cartridges

Automated directory assistance service (ADAS) peripheral module loads are delivered on the same tape cartridge with the PM load and post-release software update (PRSU) files. ADAS workstation software loads are delivered on a separate digital audio tape (DAT). Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for load

names, update procedures, other release-specific information, and to coordinate an ADAS software update with the office PM update.

Note: ADAS-specific PMs must be updated prior to other PMs in their node.

ENET update requirements with Spectrum Peripheral Module

The spectrum peripheral module (SPM) is a multi-application high speed digital multiplex system (DMS) Series III PM type and provides customized network access capabilities.

Note: This section applies only to the DMS–SPM. It does not apply to other types of SPMs, including Media Gateway 4000 (MG 4000), Interworking SPM (IW–SPM), and the Dynamic Packet Trunking (DPT–SPM).

When a DMS–SPM is present on the DMS, perform a manual update for the ENET (enhanced network) in order to maintain communication with the DMS–SPM. Do not use SWUPGRADE PM to perform an automated update for the ENET when an DMS–SPM is present on the DMS. Only the administration, preparation, and planning activities of the automated process are supported for the ENET when a DMS–SPM is present on the DMS. Refer to the *DMS–SPM Upgrades module*, NN10053–461, for details regarding upgrade procedures for the DMS–SPM.

PPXL files require audit before manual update of table PMLOADS

The manual update of table PMLOADS requires the LFAUDIT command for pre-patched XPM load (PPXL) files in offices at BASE12 or a higher product computing-module load (PCL). The LFAUDIT command identifies the post-release software update (PRSU) files in the PPXL to the post-release software manager (PRSM) database.

The procedure “Prepare for a manual PM update” in this document includes the LFAUDIT command. PMUPGRADE automatically performs the LFAUDIT command during the procedure “Prepare for an automated PM update using PMUPGRADE” in this document.

SLM tape cartridge contains PM load and PRSU files

The satellite distribution center (SDC) uses backup volume format to manufacture the SLM tape cartridge. The procedure “Prepare for a manual PM update” in this document describes the required multi-file restore (MFR) command syntax to copy PM load and PRSU files from the SLM tape cartridge to the SLM disk volume. The backup volume format does not impact the automated PM update process.

When the system load module (SLM) tape cartridge label text indicates *Patches: Yes*, the tape contains PM load and post-release software update (PRSU) files, including pre-patched XPM load (PPXL) files. When the SLM

tape cartridge indicates *Patches: No*, the office receives any applicable PRSUs through prior software delivery methods.

Note: PRSU and *patch* are used interchangeably in this document.

Integrated services node auto imaging

ATTENTION

Follow office policy on imaging when upgrading the nodes in the office for this release. Office policy can vary from the steps described in this document.

Integrated services node (ISN) auto imaging (IAI) is available for DMS updates.

For IAI to take an image of table datafill changes and PRSU applications during the ISN update, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Automated PM updates

Two command interpreter (CI) level utilities, PMUPGRADE and SWUPGRADE PM, automate PM updates. Refer to "Overview of automated update process" to determine the level of available functionality.

BASE release to PCL release cross-reference

Some update procedures in this document require the user to make a decision based on the office's current BASE PCL. The following table lists each BASE release and the PCLs applicable to the release.

BASE release to PCL release cross-reference

BASE release	NA100	NCS	UCS	Succession
BASE15	LEC0014/LET0014	LLT00014	UCS14	
BASE16	LEC0015/LET0015	LLT00015	UCS15	

Note: If the office's current PCL release is LLT0014 and updates to LLT00017, the office's BASE release is BASE15 until the one night process (ONP) is complete.

BASE release to PCL release cross-reference (continued)

BASE release	NA100	NCS	UCS	Succession
BASE17	LEC0017/LET0017	LLT00017		SN04
BASE 18				SN05
BASE 19				SN06
BASE 20				SN07
BASE 21				SN08
BASE 22				SN09

Note: If the office's current PCL release is LLT0014 and updates to LLT00017, the office's BASE release is BASE15 until the one night process (ONP) is complete.

Release notes

This section contains feature descriptions applicable to the current and previous PCL releases to help prevent problems during the PM update process. Refer to section "Troubleshoot update problems" in chapter "Overview of update process" for specific problems enountered during previous releases and update verification issues for the current release.

RLCM emergency stand-alone processor circuit card (BASE13)

This software release introduces the remote line concentrating module (RLCM) emergency stand-alone (ESA) circuit card (NTMX45AA). There are no hardware changes associated with the NTMX45 circuit card. The NTMX45AA circuit card permits firmware downloading to the loadable bank when the shelf is in-service (InSv) or manual busy (ManB).

Note: The ESA shelf has only one unit, thererfore the `UNIT_NO` parameter in the LOADFW command is not required.

NTSX05 processor (BASE12)

CAUTION
Loss of service

To perform XPM processor firmware installations or planned protocol changes, refer to the appropriate installation method (IM) described in the following paragraphs.

Use IM 65-0260, *NTSX05AA/CA Processor Upgrade,* to upgrade from NTMX77AA or NTAX74AA to NTSX05AA or NTSX05CA peripheral processors and optional NTSX06BA or NTSX06CA peripheral remote loader (PRL) for host-ISDN or host non-ISDN peripherals.

Use IM 65-6364, *LGC/LTC, RCC2 Remote Firmware Upgrade,* to upgrade processor firmware for host-ISDN or host non-ISDN peripherals provisioned with NTMX76 supporting HDLC protocol.

Failure to follow these installation methods results in an interruption of service.

The NTSX05 processor is the fourth generation processor circuit card introduced into XMS-based peripheral modules (XPM) and common peripheral modules (CPM). This processor uses the same hardware slots in XPM and CPM shelves as previous processor circuit cards. The NTSX05 processor design provides more real time and memory capacity.

The following integrated services digital network (ISDN) and non-ISDN peripheral modules can use the NTSX05 processor.

- digital trunk controller with ISDN (DTCI)
- line trunk controller (LTC) with remote ISDN line drawer (ILD) support
- line group controller (LGC) with remote ILD support
- LGC with ISDN (LGCI)
- LTC with ISDN (LTCI)

In-service firmware downloading (BASE11)

This feature uses the LOADFW command to allow firmware loading for an XPM while the unit is in-service (InSv). In-service firmware downloading supports NTMX77, NTAX74, and NTSX05 processors. This feature reduces the time one XPM unit is out-of-service (OOS).

The system performs the following firmware loadfile verifications when the **QUERYPM CNTRS** command is entered at the MAP display:

- loadfile record length

  Note: The MAP display indicates a LOADFW command failure if the record length does not equal 54.

- 32-bit cyclic redundancy check (CRC) and 16-bit checksum

  Note: The computing module (CM) sends a message to the XPM to verify the firmware loadfile. The XPM extracts and computes the CRC and checksum from the firmware loadfile. The XPM compares the computed values to the extracted values and sends the results to the CM.

The user can upgrade the XPM firmware after the firmware loadfile verificaiton.

Change the CMR load name in field OPTCARD

CAUTION
Possible service interruption
Refer to procedure "Update the CMR circuit card (NT6X78)" in this document for specific steps to change the CMR load name in field OPTCARD in the PM inventory table to prevent service interruptions or outages.

Do not use a chained command, such as CHA OPTCARD cmr_load, and do not enter the dollar sign ($) command while in the OPTCARD range. Either of these commands deletes all OPTCARD entries below the CMR load and leads to service outages.

Central processing unit occupancy

Central processing unit (CPU) occupancy directly affects loading times. Loading times increase with higher CPU occupancy. If CPU occupancy exceeds 38%, consider updating one PM at a time or rescheduling the PM update.

Note: This recommendation is based on a SuperNode (SN) 40 with junctored network (JNET).

LOADPM parameters

Do not use the central control (CC) parameter with the LOADPM command unless the parameter is specifically included in the update procedure in this document. When a PM is loaded with the LOADPM command, the PM receives the new load from the CC even though the MAP display indicates

that mate loading is occurring. When the CC parameter is not used, the new load is routed from the CC to the PM through the mate unit. When the CC parameter is used, the new load is routed directly from the CC to the PM.

Do not use the FORCE parameter with a command unless the parameter is specifically included in the update procedure in this document. The FORCE parameter forces the DMS switch to skip some functions, such as diagnostic tests, which can lead to service interruptions.

SMU and RCU firmware

A subscriber carrier module 100-urban (SMU) can have a remote carrier urban (RCU) as a subtending PM. The firmware in the RCU can require an update before the PM software in the SMU. Refer to the documentation that accompanies the RCU firmware, EMA14-27-030, or your Site Notification Package to determine if you must update the RCU firmware before the SMU update. Direct any questions about RCU firmware updates to your next level of support or personnel responsible for RCU firmware maintenance.

Non-computing module software loads

Some offices can require updates to non-computing module (non-CM) software loads as part of the PM software update. Non-CM information in this document is provided for reference only.

ADAS loads

Automated directory assistance service (ADAS) peripheral module loads are delivered on the same tape cartridge with the PM load and post-release software update (PRSU) files. ADAS workstation software loads are delivered on a separate digital audtio tape (DAT). Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for load names, update procedures, other release-specific information, and to coordinate an ADAS software update with the office PM update.

Note: ADAS-specific PMs must be updated prior to other PMs in their node.

EDRAM loads

The voice files for the enhanced digital recorded announcement machine (EDRAM) card (NT1X80) are delivered separate from the PM load tape. The EDRAM card load name is entered in table TMINV and posted as a digital trunk module (DTM) PM type. Refer to “Appendix C: EDRAM base load and voice files” applicable to the product engineering code(s) supported in this release.

Network Applications Vehicle

A Network Applications Vehicle (NAV) is not considered as part of the DMS-100 Family, but NAV peripherals can require software upgrades or

additional changes before a DMS switch PCL application. Refer to NAV documentation for instructions on the necessary preparations for a PCL application when NAV peripherals are associated.

SuperNode Data Manager

ATTENTION

In offices equipped with SuperNode Data Manager (SDM), the SDM non–computing module load (NCL) must be upgraded 1 day prior to the ONP.

For a DMS switch equipped with SuperNode Data Manager (SDM), the SDM non-computing module load (NCL) must be upgraded 1 day prior to the ONP. Refer to the *SuperNode Data Manager Upgrade Guide,* 297-5051-304 for details regarding upgrade procedures for the SDM.

TPC loads

Loads for TOPS position controllers (TPC) are delivered separate from the PM load tape. Refer to the *TPC Release Notes* for load name, update procedures, and other release-specific information.

Peripheral module loads

A software release can include the following PM load file types.

- base loads
- post-release software upate (PRSU) files
- pre-patched XPM load (PPXL) files

Note: Depending on the release and scheduled deployment, the PM load file delivery does not always include all of these file types.

Base loads

Base loads are the traditional PM load files. The load name consists of two fields – the PM load type and the PM edition code:

- load_type consists of the first three to four characters of the load name

Naming conventions for PM load_type

Syntax	Example
zzz	**LCM**01D, **MTM**KA02, **D1T**005, **ETC**04BF1, **ECL**06GBH
zzzz	**LCME**06BH, **RMTM**KA01, **MPCX**33AB,
Note: The character *z* represents a letter or digit.	

- edition_code consists of the remaining three to five characters to identify the load version

Naming conventions for PM edition_code

Syntax	Example
xxnn	MTM**KA02**
nnxx	LCME**06BH**
nnn	D1T**005**
nnx	LCM**01D**
nnxxn	ETC**04BF1**
nnxxx	ECL**06GBH**
Note: The character *x* represents a letter, the character *n* represents a digit.	

Post-release software update files

A PRSU file is software created for one of the following purposes:

- a procedure replacement to correct software deficiencies delivered to all affected sites
- an enhancement to the original design delivered to all affected sites and activated on a per office basis
- a data corruption software fix delivered only to the affected office
- a delivery mechanism for early feature deployment that contains new features and is activated on a per site basis by a controlled password

Note: For naming conventions and additional PRSU application information, refer to *Post-Release Software Manager (PRSM) Operating Procedures,* 297-8991-540.

Post-release software update file storage

This section includes recommendations for the PRSU file storage for new loads, previous loads, and older loads.

PRSU files for new loads

Keep a copy of the PRSU files until the office completes the one night process (ONP). PRSM uses these files to populate the PRSM database.

The PRSU files for the new ISN PM loads can be deleted when the office completes the ONP. Check office policy.

Keep PRSU files for the new XPM loads on one of the following devices:

- SFDEV (store file device)
- the same device that contains the PM load entered in table PMLOADS
- a device entered in table PADNDEV

PRSU files for previous release PM loads

Do not delete PRSU files for the previous release PM loads until the following actions occur.

- The office completes all PM updates for this release.
- PRSM completes a successful DBAUDIT.
- PRSM completes a successful FILEAUDIT.

PRSM's daily FILEAUDIT validates the PRSUs for previous loads and changes the status to not needed (NN). PRSM no longer lists these files in any PRSM reports.

If the PRSU files for previous loads are deleted before the actions listed above occur, PRSM can not validate these files. PRSM changes the status to Needs Validating (NV) for the PRSUs assigned to the new PM loads. PRSM's daily FILEAUDIT attempts to validate these PRSUs each day. The attempt fails and the switch generates numerous PRSM logs.

If PRSU files for previous loads are moved to another device during the PM update, confirm the device is entered in table PADNDEV. If the new device is entered in table PADNDEV, the FILEAUDIT validates these PRSUs.

PRSU files for older loads

A DMS switch can have PRSU files for old PM loads. Check office policy for storage of these files. If these files are deleted, the following is increased:

- available storage space
- the speed of PRSM automated processes

Pre-patched XPM load (PPXL) files

PPXL files have corrective PRSU files built into the PM load files. PPXLs do not reduce the number of PRSUs for a given load. PPXLs reduce the number of PRSUs applied manually to the load.

PPXLs have a date extension added to the base load name. For example, ECL05BX_950215 would be the pre-patched load for base load ECL05BX.

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL file. Obsolete PRSUs are not removed, and PRSUs not included in the PPXL file are not applied.

CAUTION
Possible service interruption
PPXLs automate the manual PRSU application process. Failure to use the ASSIGN command for each PM unit inhibits PRSU application for the PPXL.

Use the PATCHLIST command at the CI level to display a list of PRSUs included with a PPXL file. List the volume before using this command.

```
>XPMLFP
>PATCHLIST  FILE  <PPXL file_name>
```

Note: The volume must be listed before using this command.

Enter the base load name only in the applicable PM inventory table. In order to determine the full PPXL file name, the PM loader software uses the base load name in the inventory table to index field ACTFILE in table PMLOADS. The following are sample tuples from table PMLOADS.

SLM disk volume sample tuple from table PMLOADS

```
          LOADNAME
           ACTFILE       ACTVOL
           BKPFILE       BKPVOL      UPDACT
-----------------------------------------
           ECL07BI
   ECL07BI_951105   S00DPMLOADS
   ECL07BI_951105   S01DPMLOADS         N
```

XA-Core disk volume sample tuple from table PMLOADS

```
          LOADNAME
           ACTFILE       ACTVOL
           BKPFILE       BKPVOL      UPDACT
-----------------------------------------
           ECL12BC
   ECL12BC_YYMMDD   F17LPMLOADS
   ECL12BC_YYMMDD   F02LPMLOADS         N
```

Download or copy the PRSUs to the same disk volume with the PPXL. The PRSUs must reside on the DMS switch prior to entering the load name in table PMLOADS. If the PRSUs for a PPXL are not on the DMS switch, problems develop later in the PM update process. For security, duplicate this volume on another disk.

Note: If the SLM or XA-Core tape cartridge label text indicates *Patches: Yes*, the tape includes the required PRSUs for XPM and ISN load files.

The XPM can have additional PRSUs applied or removed after the PPXL file is loaded. Any PRSUs built into the PPXL can be removed from the load if the PRSU file is present on the disk.

The manual update of table PMLOADS requires the LFAUDIT command for pre-patched XPM load (PPXL) files in offices at BASE12 or a higher product computing-module load (PCL). The LFAUDIT command identifies the post-release software update (PRSU) files in the PPXL to the post-release software manager (PRSM) database. The procedure “Prepare for a manual PM update” in this document includes the LFAUDIT command. The procedure “Prepare for an automated PM update using PMUPGRADE” in this document automatically performs the LFAUDIT command before an update of table PMLOADS.

Peripheral module to XPM processor firmware cross-reference

This section contains required information for XPM processor firmware updates for PMs that are not provisioned with high-level data link control (HDLC) protocol and PMs that are provisioned with HDLC protocol.

CAUTION
Loss of service

To perform XPM processor firmware installations or planned protocol changes, refer to the appropriate installation method (IM) described in the following paragraphs.

Use IM 65-0260, *NTSX05AA/CA Processor Upgrade,* to upgrade from NTMX77AA or NTAX74AA to NTSX05AA or NTSX05CA peripheral processors and optional NTSX06BA or NTSX06CA peripheral remote loader (PRL) for host-ISDN or host non-ISDN peripherals.

Use IM 65-6364, *LGC/LTC, RCC2 Remote Firmware Upgrade,* to upgrade processor firmware for host-ISDN or host non-ISDN peripherals provisioned with NTMX76 supporting HDLC protocol.

Failure to follow these installation methods results in an interruption of service.

The following table lists applicable XPM processors, firmware baselines and new firmware releases for PMs that are not provisioned with HDLC protocol. The XPM processor must have a firmware load at the baseline release or a later release such as the new release.

PM to XPM processor firmware cross-reference (non-HDLC)

PM	Description	XPM processor	Baseline release	New release
DTC	Digital trunk controller (DTC)	NTMX77	UPFWNO04	UPFWNV03
	DTC with CCS7 (DTC7)	NTMX77	UPFWNO04	UPFWNV03
	DTC with ISDN (DTCI)	NTSX05	SXFWAF10	SXFWAL01
ILD	ISDN line drawer controller	NT6X45	ILDRAG01	ILDRAG01
LGC	Line group controller (LGC)	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LGC with subtending RCC	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LGC with subtending RCC2	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LGC with ISDN (LGCI)	NTSX05	SXFWAF10	SXFWAL01
	LGCI with subtending RCC	NTSX05	SXFWAF10	SXFWAL01
	LGCI with subtending RCC2	NTSX05	SXFWAF10	SXFWAL01
LTC	Line trunk controller (LTC)	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LTC with subtending RCC	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LTC with subtending RCC2	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LTC with ISDN (LTCI)	NTSX05	SXFWAF10	SXFWAL01
	LTCI with subtending RCC	NTSX05	SXFWAF10	SXFWAL01
	LTCI with subtending RCC2	NTSX05	SXFWAF10	SXFWAL01

Note: The XPM processor must have a firmware load at the baseline release or a later release such as the new release. Refer to section “XPM processor to XPM firmware load cross-reference” in this chapter.

—continued—

PM to XPM processor firmware cross-reference (non-HDLC) (continued)

PM	Description	XPM processor	Baseline release	New release
PDTC	DTC with PCM-30 (PDTC) and ISDN	NTMX77	UPFWNO04	UPFWNV03
PLGC	LGC with PCM-30 (PLGC) and ISDN	NTMX77	UPFWNO04	UPFWNV03
	PLGC with ISDN and subtending RCC	NTMX77	UPFWNO04	UPFWNV03
	PLGC with ISDN and subtending RCC2	NTMX77	UPFWNO04	UPFWNV03
RCC	Remote cluster controller (RCC)	NTMX77	UPFWNO04	UPFWNV03
RCC2	Remote cluster controller 2 (RCC2)	NTAX74	UPFWNO04	UPFWNV03
SMA	Subscriber carrier module-100 access (SMA)	NTAX74	UPFWNO04	UPFWNV03
SMA2	Subscriber carrier module-100 access 2 (SMA2)	NTAX74	UPFWNU01	UPFWNV03
SMS	Subscriber carrier module-100S (SMS)	NTMX77	UPFWNO04	UPFWNV03
SMSR	Subscriber carrier module-100S remote (SMSR)	NTMX77	UPFWNO04	UPFWNV03
SMU	Subscriber carrier module-100 urban (SMU) or SMU with ISDN (SMUI)	NTMX77	UPFWNO04	UPFWNV03
TMS	TOPS message switch (TMS)	NTMX77	UPFWNO04	UPFWNV03
	TMS with PCM-30	NTMX77	UPFWNO04	UPFWNV03

Note: The XPM processor must have a firmware load at the baseline release or a later release such as the new release. Refer to section “XPM processor to XPM firmware load cross-reference” in this chapter.

—end—

The following table lists applicable XPM processors, firmware baselines and current firmware releases for PMs provisioned with an NTMX76 supporting HDLC protocol. The XPM processor must have a firmware load at the baseline release or a later release such as the new release.

PM to XPM processor firmware cross-reference (HDLC)

PM	Description	XPM processor	Baseline release	New release
LGC	LGC with subtending RCC	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LGC with subtending RCC2	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LGC with subtending Star Hub	NTMX77 NTSX05	UPFWQG04 SXFWAF10	UPFWQN03 SXFWAL01
	LGCI with subtending RCC	NTSX05	SXFWAF10	SXFWAL01
	LGCI with subtending RCC2	NTSX05	SXFWAF10	SXFWAL01
LTC	LTC with subtending RCC	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LTC with subtending RCC2	NTMX77 NTSX05	UPFWNO04 SXFWAF10	UPFWNV03 SXFWAL01
	LTC with subtending Star Hub	NTMX77 NTSX05	UPFWQG04 SXFWAF10	UPFWQN03 SXFWAL01
	LTCI with subtending RCC	NTSX05	SXFWAF10	SXFWAL01
	LTCI with subtending RCC2	NTSX05	SXFWAF10	SXFWAL01
PDTC	DTC with PCM-30 (PDTC) and ISDN	NTMX77	UPFWNO04	UPFWNV03
PLGC	LGC with PCM-30 (PLGC) and ISDN	NTMX77	UPFWNO04	UPFWNV03
RCC	Remote cluster controller	NTMX77	UPFWNO04	UPFWNV03
RCC2	Remote cluster controller 2	NTAX74	UPFWNO04	UPFWNV03
	RCC2 with host peripheral provisioned with NTSX05 processor	NTAX74	UPFWQG04	UPFWQN03
	RCC2 with Star Hub	NTAX74	UPFWQG04	UPFWQN03

Note: The XPM processor must have a firmware load at the baseline release or a later release such as the new release. Refer to section “XPM processor to XPM firmware load cross-reference” in this chapter.
Note: An MX77–based host XPM with an indirectly subtending Star Hub (connected to subtending remote XPM) must also use the Q.921 firmware (UPFWQxxx).

XPM processor to XPM firmware load cross-reference

The following table contains released and valid XPM processor firmware loads for this release for the specified XPM processor type.

WARNING

Possible XPM processor damage, service interruption, and/or degradation

If the office requires spare or replacement XPM processors, the firmware load delivered with the new XPM processor can be a higher edition code than the firmware load released with this PCL and is backward compatible to this PCL.

An attempt to perform an XPM processor firmware update to the spare or replacement XPM processor with a firmware load released with this PCL results in possible XPM processor damage, service interruption, and/or degradation.

XPM processor to XPM firmware load cross-reference

XPM processor type	LLT00020
NTMX77 and NTAX74	UPFWNO04 UPFWNQ03 UPFWNR04 UPFWNS01 UPFWNU01 UPFWNV03 UPFWQG04 UPFWQH04 UPFWQI03 UPFWQJ04 UPFWQK01 UPFWQM01 UPFWQN03
NTSX05	SXFWAF10 SXFWAG04 SXFWAH01 SXFWAJ01 SXFWAJ02 SXFWAK02 SXFWAL01

XA-Core component firmware cross-reference

This section contains baseline and new release firmware load information for the following XA-Core components for this release. Refer to section "Upgrade firmware on the occasion of a software upgrade" chapter 4 of the *XA-Core Maintenance Manual,* 297-8991-510, to update the XA-Core components.

XA-Core component firmware cross-reference

Card type	Description	XA-Core component	Baseline release	New release
AMDI packlet	ATM Multi–node Data Interface packlet (AMDI packlet)	NTLX05BA	Please Ref. to Table PM–to–load cross reference	No change
PE	Processor Element (PE)	NTLX02CA	Please Ref. to Table PM–to–load cross reference	No change
Atlas PE	High Performance Processor Element (HPPE). (Atlas PE)	NTLX02DA	Please Ref. to Table PM–to–load cross reference	FW XAPE02AB_396
CMIC	Computing Module Interface Card	NTLX05AB	Please Ref. to Table PM–to–load cross reference	No change
ETHR packlet	ETHeRnet data interface packlet (ETHR packlet)	NTLX09AA	Please Ref. to Table PM–to–load cross reference	No change
HCMI C	Computing Module Interface Card	NTLX17AA	Please Ref. to Table PM–to–load cross reference	XREC01FC_05185_PKG

Note: Offices **must** update the XA-Core firmware loads with the indicated new release after the ONP is completed, or within the first maintenance window.

XA-Core component firmware cross-reference (continued)

Card type	Description	XA-Core component	Baseline release	New release
HIOP	High Performance Input/Output circuit Pack (HIOP)	NTLX04AA NTLX04BA NTLX04CA	Please Ref. to Table PM–to–load cross reference	FW XHIO02AA_224_UPGR *Note:* NTLX04AA and NTLX04BA XHIO02AH_484_UPGR*Note:* NTLX04CA DLL XHIO03CC_05185_LDLL for all card types
IOP	Input Output Processor The IOP requires one of the four PECs listed in column XA-Core component.	NTLX03AA NTLX03AB NTLX03BA NTLX03BB	Please Ref. to Table PM–to–load cross reference	No change

Note: Offices **must** update the XA-Core firmware loads with the indicated new release after the ONP is completed, or within the first maintenance window.

Peripheral modules supported by this release

The following table lists each PM and hardware type supported by this release, along with the PM load names for this release and recent releases. Use this table to identify the PMs to be updated in the office.

The first three columns help identify the type of PM. The column Type lists the kind of PM or other hardware type as posted at the MAP display. The column Description describes the service provided by the PM. The column Hardware lists the product engineering code (PEC) for some cards in some PMs, which can help identify the type of PM in the switch or the type of load for that PM.

> ***Note:*** This table includes a standard set of product engineering codes (PECs). The specific PECs for the office can be different than the ones listed in the table.

Gating hardware is any hardware required for a particular release. Any PECs that are gating hardware are identified in the table.

The middle columns list loads for each PM for recent releases. Only PMs with loads that changed since the office's current release need to be updated.

For assistance with acronyms used in this table, refer to "Appendix C: List of terms" in this document.

Note: Date extensions for pre-patched loads are not included.

ATTENTION

An issue of a load in the CD version of this document can differ from an issue of a load on the PM load tape. For example, ECL07BE can be listed in the CD version of this document as ECL07BA. This difference is because of the production schedule of the CD. Refer to the document that accompanied the PM load tape for the correct load names and issues.

Load lineup updates

IMPORTANT: The load lineup shown here is a snapshot at the time of publication. The latest load lineupis on the internet at nortel.com.

PM-to-load cross-reference

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
ATM	ATM		ATMKA02	ATMKA02	ATMKA02	ATMKA02
CMR	CMR	NT6X78AA and up	CMR17B	CMR17B	CMR17B	CMR17B
CTM	CTM	NT1X81AA and up	MTMKA02	MTMKA02	MTMKA02	MTMKA02
	CTM on ISM shelf	NTFX4101	MTMKA02	MTMKA02	MTMKA02	MTMKA02
DCH	D-channel handler (enhanced)	NTBX02BA	EDH19BE	EDH20CE	EDH20CE	EDH22AO
	Enhanced DCH for SMUI	NTBX02BA	ESH13BB	ESH13BB	ESH13BB	ESH13BB
	Enhanced DCH for TMS	NTBX02BA	EXC13BB	EXC13BB	EXC13BB	EXC13BB

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

—continued—

PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
DCM	DCM		ADCMQA01	ADCMQA01	ADCMQA01	ADCMQA01
	Remote DCM		RDCMPA02	RDCMPA02	RDCMPA02	RDCMPA02
DES	DES		ADCMQA01	ADCMQA01	ADCMQA01	ADCMQA01
	Remote DES		RDCMPA02	RDCMPA02	RDCMPA02	RDCMPA02
DPP	DPP non-turbo		DPP009	DPP009	DPP009	DPP009
	DPP turbo (5.25 in.)		DPT036	DPT036	DPT036	DPT036
	DPP turbo (3.5 in. 1 Gbyte)		D1T009	D1T009	D1T009	D1T009
	DPP turbo (3.5 in. 2 Gbyte)		D2T009	D2T009	D2T009	D2T009
DTC	DTC with NTMX77	NTMX77A and up	ECL14BC UPFWNU01	ECL14BC UPFWNV03	ECL14BC UPFWNV03	ECL14BC UPFWNV03
DTC	DTC with NTSX05	NTSX05AA and up	QLI19BE SXFWAJ02	QLI20CE SXFWAK02	QLI20CE SXFWAK02	QLI22AO SXFWAL01

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

—continued—

PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	DTC with CCS7	NTMX77AA and up	ED714BC UPFWNU01	ED714BC UPFWNV03	ED714BC UPFWNV03	ED714BC UPFWNV03
DTC	DTC with CCS7	NTSX05AA and up	QD717AY1	QD717AY1	QD717AY1	QD717AY1
	DTCI with NTMX77	NTMX77AA and up	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	DTCI with NTAX74	NTAX74AA and up	(see note 6)	(see note 6)	(see note 6)	(see note 6)
	DTCI with NTSX05	**NTSX05AA** and up	QLI19BE SXFWAJ02	QLI20CE SXFWAK02	QLI20CE SXFWAK02	QLI22AO SXFWAL01
DTC7	DTC plus w/SS7 with NTSX05	NTSX05AA	QD717AY1	QD717AY1	QD717AY1	QD717AY1
DTC7 (IP–XPM)	DTC plus w/SS7 with NTSX05DA for TOPS–IP	NTSX05DA	SXFWAJ02 QTP19BE	SXFWAK02 QTP20CE	SXFWAK02 QTP20CE	SXFWAL01 QTP22AO
DTM	EDRAM	NT1X80AA	*EDRMAE11*	*EDRMAE11*	*EDRMAE11*	*EDRMAE11*
		NT1X80BA	*ED16AA07*	*ED16AA07*	*ED16AA07*	*ED16AA07*

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
DTU	DTU for BERT and OHBT tests	NT4X23AA and up	DTUBAD01	DTUBAD01	DTUBAD01	DTUBAD01
	EDTU with NT4X45	NT4X45	DTUDAB02/ DTUDAA01	DTUDAB02/ DTUDAA01	DTUDAB02/ DTUDAA01	DTUDAB02/ DTUDAA01
	DTU datafilled for off-hook balance tests	NT4X23AA and up	DTUHAA02	DTUHAA02	DTUHAA02	DTUHAA02
EIU	EIU	NT9X84AA and up	ETC19BO	ETC20CQ	ETC21BK	ETC22BN
	EIU billing server		non applicable	non applicable	non applicable	non applicable
ENET	ENET	**NT9X13KA**	ENC19BO	ENC20CQ	ENC21BK	ENC22BN
ESA	ESA with NT6X45	NT6X45	ESA10AQ	ESA10AQ	ESA10AQ	ESA10AQ
	Internationa l	NT6X45	PES10AQ	PES10AQ	PES10AQ	PES10AQ
	ESA with NTMX45	NTMX45	MSA14BC UPFWNU01	MSA14BC UPFWNV03	MSA14BC UPFWNV03	MSA14BC UPFWNV03

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

—continued—

PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
ESTU	ESTU		EMMAB09 ITMAB06	EMMAB09 ITMAB06	EMMAB09 ITMAB06	EMMAB09 ITMAB06
FRIU	FRIU	NTEX31BA and up	F8C19BT	F8C20CU	F8C21BM	F8C22BS
HLIU	High–speed link inter-face unit	NTEX22CA NTEX76AA NTEX78AA	HCA19BT	HCA20CU	HCA21BM	HCA22BS
HSLR	High–speed link router	NTEX22CA	HCA19BT	HCA20CU	HCA21BM	HCA22BS
ILD	ISDN line drawer controller	NT6X45DA	ILDRAF04	ILDRAG01	ILDRAG01	ILDRAG01
IOM	IOM (standard)		IOMRBC01	IOMRBC01	IOMRBC01	IOMRBC01
	IOM (high speed)		IOMHAX01	IOMHAX01	IOMHAX01	IOMHAX01
	NOTE: Refer to “IOM Load Instructions” at the end of this section on page 1–50 and following.					
LCM	LCM (64 KB)	NT6X51AA	LCM01D	LCM01D	LCM01D	LCM01D
	LCM (256 KB)	NT6X51AB	XLCM18AW	XLCM18AW	XLCM18AW	XLCM18AW

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	OPM (64 KB)	NT6X51AA	LCM01D	LCM01D	LCM01D	LCM01D
	OPM (256 KB)	NT6X51AB	XLCM18AW	XLCM18AW	XLCM18AW	XLCM18AW
	RLCM (64 KB)		LCM01D	LCM01D	LCM01D	LCM01D
	RLCM (256 KB)		XLCM18AW	XLCM18AW	XLCM18AW	XLCM18AW
	RLCM with EDC	NT6X51BA	EDC10BH UPFWQM01	EDC10BH UPFWQN03	EDC10BH UPFWQN03	EDC10BH UPFWQN03
LCME	LCME		LCME18AW	LCME18AW	LCME18AW	LCME18AW
LGC	LGC with NTMX77	NTMX77AA and up NT6X78AA and up	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B
	LGC with NTMX77 and subtending RCC	NTMX77AA and up NT6X78AA and up	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LGC with NTMX77 and subtending RCC2	NTMX77AA and up NT6X78AA and up	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B
	LGC with NTSX05	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B
	LGC with NTSX05 and subtending RCC	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B
	LGC with NTSX05 and subtending RCC2	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LGCI with NTAX74	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)
	LGCI with NTAX74 and subtending RCC	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)
	LGCI with NTAX74 and subtending RCC2	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LGCI with NTMX77	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	LGCI with NTMX77 and subtending RCC	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	LGCI with NTMX77 and subtending RCC2	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	LGCI with NTSX05	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH222AO

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LGCI with NTSX05 and subtending RCC	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH22AO
	LGCI with NTSX05 and subtending RCC2	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH22AO
LIM	LIM	NT9X13DD *or* NT9X13DB with NT9X14DB	LPC19BO	LPC20CQ	LPC21BK	LPC22BN
LIU7	LIU7 with 8 Mbyte and 36-link channelized access	NTEX26AA NTEX22BA and up	ARS19BT	ARS20CU	ARS21BM	ARS22BS

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LIU7 with 2 cards and 8 Mbyte non-channelized V.35 access	NT9X77AA *or* NT9X77AB NTEX22BA and up	LRS19BT	LRS20CU	LRS21BM	LRS22BS
	LIU7 with 2 cards and 8 Mbyte and DS-0A non-channelized V.35 access	NT9X77AA *or* NT9X77AB NTEX22BA and up	LRS19BT	LRS20CU	LRS21BM	LRS22BS
	LIU7 with 32 Mbyte and channelized access	**NTEX26AA NTEX22CA**	ATS19BT	ATS20CU	ATS21BM	ATS22BS
	LIU7 with 2 cards and 32 Mbyte non-channelized V.35 access	**NT9X77AA** *or* **NT9X77AB NTEX22CA**	LTS19BT	LTS20CU	LTS21BM	LTS22BS

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LIU7 with 2 cards and 32 Mbyte DS-0A non-channe lized access	**NT9X78 NTEX22BA and up**	LTS19BT	LTS20CU	LTS21BM	LTS22BS
LM	LM		BLMTB01	Not supported	Not supported	Not supported
	Remote LM		BRLMVA03 ERLMVA02			
LTC	LTC with NTMX77	NTMX77AA and up NT6X78AA and up	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B
	LTC with NTMX77 and subtending RCC	NTMX77AA and up NT6X78AA and up	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B
	LTC with NTMX77 and subtending RCC2	NTMX77AA and up NT6X78AA	ECL14BC UPFWNU01 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B	ECL14BC UPFWNV03 CMR17B

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LTC with NTSX05	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B
	LTC with NTSX05 and subtending RCC	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B
	LTC with NTSX05 and subtending RCC2	**NTSX05AA** and up NT6X78AA and up	QLI19BE SXFWAJ02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI20CE SXFWAK02 CMR17B	QLI22AO SXFWAL01 CMR17B
	LTCI with NTAX74	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LTCI with NTAX74 and subtending RCC	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)
	LTCI with NTAX74 and subtending RCC2	NTAX74AA and up NT6X78AA and up **NTBX02BA** **NTBX01AC** *or* **NTBX01BA**	(see note 6)	(see note 6)	(see note 6)	(see note 6)
	LTCI with NTMX77	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
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Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LTCI with NTMX77 and subtending RCC	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	LTCI with NTMX77 and subtending RCC2	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)	(see note 7)	(see note 7)	(see note 7)
	LTCI with NTSX05	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH22AO
	LTCI with NTSX05 and subtending RCC	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH22AO

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
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Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	LTCI with NTSX05 and subtending RCC2	**NTSX05AA** and up NT6X78AA and up NTBX02BA	QLI19BE SXFWAJ02 CMR17B EDH19BE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI20CE SXFWAK02 CMR17B EDH20CE	QLI22AO SXFWAL01 CMR17B EDH22AO
MPC	MPC for X.25 1980 CCIT compliant protocol (MPC0)	NT1X89AA and up	MPC003AC	MPC003AC	MPC003AC	MPC003AC
	MPC for X.25 1984 CCIT compliant protocol (MPC4)	NT1X89AA and up	MPC403AC	MPC403AC	MPC403AC	MPC403AC
	Asynchronous MPC (MPCA)	NT1X89AA and up	MPCA03AC	MPCA03AC	MPCA03AC	MPCA03AC

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	MPC for TATS CRTSIM (MPCC)	NT1X89AA and up	MPCC03AC	MPCC03AC	MPCC03AC	MPCC03AC
	MPC for X.25 protocol in packet switch network and synchronous V.32 dialup (MPCX)	NT1X89AA and up	MPCX33AB	MPCX33AB	MPCX33AB	MPCX33AB
MS	Message switch		MUC19BO	MUC20CQ	MUC21BK	MUC22BN
	MS multi-port card	NT9X17BB *or* NT9X17CA *or* NT9X17DA	MPF19BO	MPF20CQ	MPF21BK	MPF22BN

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
MTM	MTM		MTMKA02	MTMKA02	MTMKA02	MTMKA02
	MTM on ISM shelf	NTFX42AA	MTMKA02	MTMKA02	MTMKA02	MTMKA02
	Remote MTM		RMTMKA01	RMTMKA01	RMTMKA01	RMTMKA01
MTU	MTU	NT2X11BA and up	MTULJ04	MTULJ04	MTULJ04	MTULJ04
NIU	NIU		NRS19BO	NRS20CQ	NRS21BK	NRS22BN
OAMP	OAMP		OAM33BB	OAM33BB	OAM33BB	OAM33BB
PDTC	DTC with PCM-30 (PDTC) and NTMX77	NTMX77AA and up	ODT19BE UPFWNU01	ODT20CE UPFWNV03	ODT20CE UPFWNV03	ODT22AO UPFWNV03

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

—continued—

PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
PLGC	PLGC with NTMX77 and ISDN	NTMX77AA and up NT6X78AA and up NTBX02BA	OGI19BE UPFWNU01 CMR17B EDH19BE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI22AO UPFWNV03 CMR17B EDH22AO
	PLGC with NTMX77, subtending RCC, and ISDN	NTMX77AA and up NT6X78AA and up NTBX02BA	OGI18BA UPFWNU01 CMR17B EDH19BE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI22AO UPFWNV03 CMR17B EDH22AO
	PLGC with NTMX77, subtending RCC2, and ISDN	NTMX77AA and up NT6X78AA and up NTBX02BA	OGI19BE UPFWNU01 CMR17B EDH19BE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI20CE1 UPFWNV03 CMR17B EDH20CE	OGI22AO UPFWNV03 CMR17B EDH22AO
RCC	RCC with NTMX77	NTMX77AA and up NT6X78AA and up	ESR14BC UPFWNU01 CMR17B	ESR14BC UPFWNV03 CMR17B	ESR14BC UPFWNV03 CMR17B	ESR14BC UPFWNV03 CMR17B

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
RCC2	RCC2 with NTMX77	NTMX77AA and up NT6X78AA and up NTBX02BA	(see note 7)			
	RCC2 with NTAX74	**NTAX74AA** and up NT6X78AA and up NTBX02BA **NTBX01AC** *or* **NTBX01BA**	XRI17AY UPFWNU01 CMR17B EDH19BE	XRI17AY UPFWNV03 CMR17B EDH20CE	XRI17AY UPFWNV03 CMR17B EDH20CE	XRI17AY UPFWNV03 CMR17B EDH22AO
RLD	Remote line drawer		RLDAA02	RLDAA02	RLDAA02	RLDAA02
RMM	RMM		RMM10A	RMM10A	RMM10A	RMM10A

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
SMA	SMA with NTAX74	NTAX74AA and up NT6X78AA and up NTBX02BA **NTBX01AC** *or* **NTBX01BA**	XSC13BB UPFWNU01 CMR17B EDH19BE	XSC13BB UPFWNV03 CMR17B EDH20CE	XSC13BB UPFWNV03 CMR17B EDH20CE	XSC13BB UPFWNV03 CMR17B EDH22AO
SMA2	SMA2 with NTAX74	NTAX74AA and up NT6X78AA and up NTBX02BA **NTBX01AC** *or* **NTBX01BA**	XM219BE UPFWNU01 CMR17B EDH19BE	XM220CE UPFWNV03 CMR17B EDH20CE	XM220CE UPFWNV03 CMR17B EDH20CE	XM222AO UPFWNV03 CMR17B EDH22AO
SMS	SMS with NTMX77	NTMX77AA and up NT6X78AA and up	ESS13BC UPFWNU01 CMR17B	ESS20CE UPFWNV03 CMR17B	ESS20CE UPFWNV03 CMR17B	ESS22AO UPFWNV03 CMR17B
SMSR	SMSR with NTMX77	NTMX77AA and up	ECR13BC UPFWNU01	ECR13BC UPFWNV03	ECR13BC UPFWNV03	ECR13BC UPFWNV03

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
SMU	SMU with NTMX77	NTMX77AA and up NT6X78AA and up	ESU13BB UPFWNU01 CMR17B	ESU13BB UPFWNV03 CMR17B	ESU13BB UPFWNV03 CMR17B	ESU13BB UPFWNV03 CMR17B
	SMU with ISDN (SMUI) and NTMX77	NTMX77AA and up NT6X78AA and up NTBX02BA	ESI13BB UPFWNU01 CMR17B ESH13BB	ESI13BB UPFWNV03 CMR17B ESH13BB	ESI13BB UPFWNV03 CMR17B ESH13BB	ESI13BB UPFWNV03 CMR17B ESH13BB
STAR	Star Hub remote LCM supporting remote drawers	NTTR77AA	HUBAA06	HUBAA06	HUBAA06	HUBAA06
STM	STM		MTMKA02	MTMKA02	MTMKA02	MTMKA02
	STM on ISM shelf	NTFX42AA	MTMKA02	MTMKA02	MTMKA02	MTMKA02
T8A	T8A		TTMNA01 TKMTKA02	TTMNA01 TKMTKA02	TTMNA01 TKMTKA02	TTMNA01 TKMTKA02

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
TAN	TAN		MTMKA02	MTMKA02	MTMKA02	MTMKA02
TM2	TM2		BTMKA02	BTMKA02	BTMKA02	BTMKA02
TM4	TM4		BTMKA02	BTMKA02	BTMKA02	BTMKA02
TM8	TM8		BTMKA02	BTMKA02	BTMKA02	BTMKA02
	TM8 on ISM shelf	NTFX42AA	BTMKA02	BTMKA02	BTMKA02	BTMKA02
UMP	Universal maintenanc e pack	NTTR73AA	DUMPAQ11	DUMPAQ11	DUMPAQ11	DUMPAQ11
VPU	VPU	NTEX22BB NTMX97AA NTMX99AA	–non applicable	–non applicable	–non applicable	–non applicable
XLIU	XLIU		XRC19BT	XRC20CU	XRC21BM	XRC22BS

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
XA–Core	ATM Multi–node Data Interface packlet (AMDI packlet)	NTLX05BA	PK12CE12	PK12CE12	PK12CE12	PK12CE12
	High Performanc e Processor Element (HPPE) (Atlas PE)	NTLX02DA	FW XAPE02AB_ 396	FW XAPE02AB_ 396	FW XAPE02AB_ 396	FW XAPE02AB_ 396
	Computing Module Interface Card (CMIC)	**NTLX05AB**	PK12CE12	PK12CE12	PK12CE12	PK12CE12
	ETHeRnet Data interface packlet (ETHR packlet)	NTLX09AA	EP14DO03	EP14DO03	EP14DO03	EP14DO03

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 8: This release is the XPM20 version of the QD7 load and is only being released in the TOPS market in TOPS–IP IP–XPM DTC peripherals.

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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	Computing Module Interface Card (HCMIC)	**NTLX17AA**		XREC01DE_203_PKG	XREC01EG_04493_PKG	XREC01EG_04493_PKG
	High performance Input Output (circuit) Processor (HIOP)	NTLX04AA or NTLX04BA or NTLX04CA	FW XHIO02AA_224_UPGR for NTLX04AA and NTLX04BA XHIO02AH_484_UPGR for NTLX04CA DLL XHIO02AK_508_LDLL for all card types	FW XHIO02AA_224_UPGR for NTLX04AA and NTLX04BA XHIO02AH_484_UPGR for NTLX04CA DLL XHIO03AC_143_LDLL for all card types	FW XHIO02AA_224_UPGR for NTLX04AA and NTLX04BA XHIO02AH_484_UPGR for NTLX04CA DLL XHIO03BB_04493_LDLL for all card types	FW XHIO02AA_224_UPGR for NTLX04AA and NTLX04BA XHIO02AH_484_UPGR for NTLX04CA DLL XHIO03CC_05185_LDLL for all card types

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
Note 7: This release does not support the NTMX77 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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PM-to-load cross-reference (continued)

Type	Description	Hardware	SN06 DMS	SN07 DMS	SN08 DMS	SN09 DMS
	Input Output Processor (IOP)	NTLX03AA *or* NTLX03AB *or* NTLX03BA *or* NTLX03BB	XAIO01AK	XAIO01AK	XAIO01AK	XAIO01AK
	Processor Element (PE)	**NTLX02CA**	XAPE01AG	XAPE01AG	XAPE01AG	XAPE01AG
XPM proc. firm.		NTAX74AA and up	UPFWNU01	UPFWNV03	UPFWNV03	UPFWNV03
		NTMX77AA and up	UPFWNU01	UPFWNV03	UPFWNV03	UPFWNV03
		NTSX05AA and up	SXFWAJ02	SXFWAK02	SXFWAK02	SXFWAL01
	Baseline for RLCM EDC	NT6X51BA	UPFWQM01	UPFWQN03	UPFWQN03	UPFWQN03

Note 1: A load name in *italic* is a non-CM software load. Refer to section “Non-computing module software loads” in this chapter.
Note 2: A PEC in **bold** is gating hardware for this PM or load for this release.
Note 3: A load name in **bold** is a pre-patched load. Refer to section “PM-to-PRSU cross-reference” in this chapter.
Note 4: Refer to section “Peripheral module to XPM processor firmware cross-reference” in this chapter to determine if the XPM firmware needs to be updated.
Note 5: Refer to section “XA-Core component firmware cross-reference” in this chapter to determine if the XA-Core component needs to be updated.
Note 6: This release does not support the NTAX74 processor for this PM type. The office must upgrade to the supported XPM processor and perform an update with the specified firmware and load files for this PM.
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IOM Load Instructions

Note: This information is an update to bulletin 2004005140 due to a problem experienced with the prior baseline load in an uncommon configuration and to clarify the correct baseline software loads. If instructions in bulletin 2004005038 or 2004005140 were already completed, then please skip the procedure below and simply update your IOMs to the new baseline load, IOMRBC01. If instructions in bulletin 2004005038 or 2004005140 were not completed, please proceed to complete the full set of instructions detailed below.

Intermittent stability issues on IOM

Users may experience DAT tape operation failures, DDUs going SYSBSY during DAT tape operations, or instability in X.25 links. The following specific scenarios have been encountered:

1 X.25 reverse interrupt would cause links to drop out of service.

2 Lost semaphores result in DDU SYSBSY.

3 Lost timers result in going DDU SYSBSY.

4 SCSI error recovery failures on SCSI commands time–outs would cause DAT tape failures and DDUs to go SYSBSY.

5 IOM SCSI protocol did not allow SCSI bus disconnects during data phase. This would cause DAT operation to hold the SCSI bus for longer than the 15 seconds CM logic allowed for DDU operations resulting in BUSY/TIME_OUT replies to DDU operations.

6 CM only allowed 60 seconds for DAT command to complete. Newer model DAT drives used in NTFX32CB Rel 18 and later DATs could take up to 5 minutes to recover data. The IOM would time out the command and lock up the SCSI bus for 60 seconds. This causes tape read and write errors and DDUs to go SYSBSY. Typically tapes are worn out when we see this issue.

7 CM drops DDU out of service on the first BUSY/TIME_OUT reply resulting in DDU going SYSBSY for temporary busy conditions.

Solutions to the above issues require CM patches, a DAT firmware update and a new IOM peripheral load. DAT firmware is deployed by cycling a firmware update load through the IOM. Because of the significant enhancements, IOMRBC01 is declared the baseline load for IOM's on CSP17+ core loads. If problems are experienced on earlier IOM loads, Nortel's technical assistance personnel will require that IOMRBC01 be loaded prior to further troubleshooting.

Recommendations

Apply software updates as specified below.

CM patches, DAT firmware and the new IOM load are deployed to address the 7 issues listed in the problem statement.

A prerequisite for following the below procedure, is to ensure the listed patches have been previously downloaded. IOM load IOMRBC01 requires CM patches (CUT46 and CUT49) and DAT drive firmware upgrade (DAT drives must have N300 or 0601 firmware).

IOMRBC01 contains modifications to QIOM ROM function which indicates current DAT drive firmware load and, if update is required, which load (IOM7BC01 or IOM9BC01) is required to update NTFX32CA firmware. The IOMRBC01 load will not return to service a drive which has incorrect firmware.

IOM loads IOM9BC01 (for Sony SDT–9000 drive component) and IOM7BC01 (for Sony SDT–7200 drive component) will upgrade DAT drive firmware to 0601 or N300 respectively but will not support normal IOM operations. So customers must install these loads to upgrade DAT firmware and then reload the IOM with IOMRBC01.

Obtaining new IOM loads

Customers may access the IOM loads referenced above through the SOFTWARE DOWNLOADS section on NORTELNETWORKS.COM. Refer to the attached text file for instructions to the webpage containing the necessary files.

There are three pertinent files:

1 Maintenance Release Notes¿
on issues resolved in this load.

2 FTP Instructions¿
downloading this load.

3 IOM Loads¿
IOM9BC01 and IOM7BC01).

If it is impractical to download these updates, a load tape shipment may be requested through the Nortel Networks account representative.

Overview of update process

This chapter describes the peripheral module (PM) update process and includes the following:

- recommendations on the best methods to update PMs in sets
- sample checklists to assist in scheduling and recording the PM update
- information to abort a PM update and troubleshoot update problems

Software delivery process

The software delivery process has two primary activities to update software in existing in-service (InSv) offices.

- PM update process
- front-end update process

This document focuses on the PM update process, which includes all software for all PMs and certain hardware types such as the digital test unit (DTU) and the enhanced network (ENET).

Peripheral module update process

The PM update process begins with the receipt of this document and the PM load tape. The PM update process should be completed before the image tape is shipped to Nortel Networks to prepare for the front-end update.

The PM update process has three phases:

1 Prepare for a PM update

2 Plan the PM update

3 Perform the PM update

Prepare for the peripheral module update

ATTENTION
Operating company personnel familiar with the office and experienced with PM software updates should prepare an office for the PM update.

Preparation for a PM update involves the following activities:

- Receive the tapes and documentation.
- Verify if the PMs have any gating hardware.
- Run the PMUPGRADE utility or manually perform the following steps:
  - — Identify the PM loads and PM types to be updated in the office.
  - — Copy the necessary PM load and post-release software update (PRSU) files.
  - — Perform an audit of each pre-patched XPM load (PPXL) file with the PRSM LFAUDIT command.
  - — Update table PMLOADS.
- Determine if the peripheral/remote loader (PRL) circuit card can be used to update any PMs.

The PM update process can be automated, manual, or a combination of both processes. The following tables list reference chapters and sections in this document required to use either update process.

Automated PM update

For automated updates	Refer to the following chapters and sections
	chapter “Overview of update process” chapter “Overview of automated update process” chapter “Update procedures” • section “Prepare for an automated PM update using PMUPGRADE” • section “Start a PM update shift” • section “Perform an automated PM update” • section “Finish a PM update shift”

Manual PM update

For manual updates	Refer to the following chapters and sections
	chapter “Overview of update process” chapter “Update procedures” • section “Prepare for a manual PM update” • section “Start a PM update shift” • sections for manual PM update procedures • section “Finish a PM update shift”

Office policy can require modifications to this procedure. For example, some operating companies and offices have unique policies to copy and back-up software loads.

This document does not include steps to delete old load names from table PMLOADS or old load files from the disk volume. Check office policy. Available memory can determine if load files are deleted during a PM update shift, after a PM update shift, or after the completion of the office’s PM update. Office alarm-clearing policy determines when old load files are deleted from table PMLOADS.

To confirm completion of each activity, use a checklist similar to the next sample.

Office preparation checklist

Office:_____	**Completed by (initials)**	**Date**
Receive PM load tape and this document.	_____	_____
Receive PRSU files.	_____	_____
Review this chapter and chapter “Overview of release.”	_____	_____
Determine if the PMs have any gating hardware.	_____	_____
Run PMUPGRADE or manually perform the following steps:	_____	_____
Print table PMLOADS.	_____	_____
Print PM inventory tables.	_____	_____
Identify the PM loads and PM types in the office to be updated.	_____	_____
Identify the PMs of each type in the office to be updated.	_____	_____
Identify which PMs have XMS-based peripheral module (XPM) processor firmware to be updated.	_____	_____
Copy the new PM loads required by the office.	_____	_____
Audit each PPXL file with the LFAUDIT command.	_____	_____
Identify the PRSUs required by the new PM loads.	_____	_____
Copy the PRSUs.	_____	_____
Update table PMLOADS.		
Determine if the PRL circuit card is available to update any PMs.	_____	_____

Peripheral module identification

The best way to identify an office's PMs is to review the office's PM inventory tables printed during "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE." The following table lists the inventory tables that can be available in an office.

Inventory table to PM cross-reference

Inventory table	PMs supported by table
C7LINK	LIU7 linkset
DCHINV	DCH
DCMINV	DCM, DES
DPP	DPP
ENINV	ENET
EXNDINV	OAMP
IOC	IOC, IOM
IRLNKINV	Dual RCC configurations
LCMINV	LCM, LCME
LCMDRINV	ILD
LIMINV	LIM
LIUINV	EIU, FRIU, LIU7, XLIU
LMINV	LM
LTCINV	DTC, LGC, LTC, PDTC, PLGC, SMA, SMA2, SMS, SMU, TMS
LTCRINV	SMSR
MPC	MPC (NT1X89) or IOM (NTFX30)
MSFWLOAD	MS multi-port card
NIUINV	NIU
OFCVAR	DTU, MTU
RCCINV	RCC, RCC2
RMMINV	RMM

—continued—

Inventory table to PM cross-reference(continued)

Inventory table	PMs supported by table
TMINV	CTM, DTM (EDRAM) MTM, OAU, STM, T8A, TAN, TM2, TM4, TM8
TSTEQUIP	ESTU
XESAINV	ESA
—end—	

Use the FORMAT PACK command to view tuple entries in a packed format. The following example displays a tuple in an expanded format.

>POS DTC 0

```
DTC   0
           1001     DTE    0    18      1    E    30 6X02AA  ED707BI
                                                    (        ABTRK  DTCEX)$
 (0 10 17 0) (0 10 17 1) (0 10 17 2) (0 10 17 3) (0 10 17 4) (0 10 17 5)
 (0 10 17 6) (0 10 17 7) (0 10 17 8) (0 10 17 9) (0 10 17 10) (0 10 17 11)
 (0 10 17 12) (0 10 17 13) (0 10 17 14) (0 10 17 15) $
                   (CONTINUITY ) (     UTR16 ) (   MSG6X69 ) (   STR17IC )$
     NORTHAM     MX77AA MX77AA
                            MX77NF01
                                                       (   CCS7) (STRDTRE)$
     6X40AA                                           N
```

The following example displays a tuple in a packed format.

>FORMAT PACK
>POS DTC 0

```
DTC 0 1001 DTE 0 18 1 E 30 6X02AA ED707BI (ABTRK DTCEX) $ (0 10 17 0)
(0 10 17 1) (0 10 17 2) (0 10 17 3) (0 10 17 4) (0 10 17 5) (0 10 17 6)
(0 10 17 7) (0 10 17 8) (0 10 17 9) (0 10 17 10) (0 10 17 11) (0 10 17 12)
(0 10 17 13) (0 10 17 14) (0 10 17 15) $ (CONTINUITY ) (UTR16 ) (MSG6X69 )
(STR17IC ) $ NORTHAM MX77AA MX77AA MX77NF01 (CCS7) (STRDTRE) $ 6X40AA N
```

Peripheral module circuit cards

Some PMs have circuit cards with separate software loads to update. These circuit cards update with the serving PM or with separate update procedures. The following table lists PM circuit cards and the update method.

PM circuit cards with separate loads

PEC	Description	Update method
NTFX30	Input output module (IOM)	Update separately.
NT1X80	Enhanced digital recorded announcement machine (EDRAM) card	Update separately.
NT1X81	Conference trunk module (CTM) card	Update separately.
NT6X54DA	Integrated services digital network line drawer line drawer (ILD) controller	Update separately.
NT6X78	CLASS modem resource (CMR) circuit card	Update with the serving PM.
NT9X17	Message switch multi-port circuit card	Update separately.
NTAX74	XPM PLUS processor card	Update with the serving PM.
NTBX02	Enhanced ISDN D-channel handler (DCH) circuit card	Update separately.
NTMX77	XPM PLUS processor circuit card	Update with the serving PM.
NTSX05	PowerPC enhanced processor circuit card	Update with the serving PM.

Note: Use the update procedure in this document when the circuit card must be updated and the serving PM is not updated.

Prepare for a PM update using the PRL circuit card

The PRL circuit card is an optional circuit card for an XPM unit, which reduces XPM update simplex time. The PRL circuit card is loaded with the new PM load while the XPM unit is in-service (InSv). The XPM unit is updated from the local PRL circuit card.

Imaging is available with PRL circuit cards for XPMs that do not support integrated services digital network (ISDN). The local image is the initial PM load file source in the event of a recovery.

Pre-loading the PRL circuit card

CAUTION
Possible service interruption
Pre-loading the PRL can change the PM to in-service trouble (ISTb).

Offices can load the PRL circuit cards during business hours of low traffic periods since circuit card loading is a background task. Pre-loading the PRL can cause the PM to change status to ISTb because of the load mismatch between the PRL circuit card and the PM. The same load mismatch occurs when the PM inventory table is updated with the new PM load name prior to the PM update.

The XPMSTOR command loads the PRL flash memory. XPMSTOR uses the same computing module (CM) resources as traditional PM loading and broadcast loading. XPM real-time must be available for background tasks. The following table lists the recommended resource levels to use the XPMSTOR command.

Recommended resource levels for XPMSTOR

Resource	Single PM unit	Set of PMs
CPOCC	50 percent or less	50 percent or less
Active XPM unit real-time	less than 60 percent	less than 50 percent

The NOWAIT parameter can be used to load a single PRL circuit card.

PRL supported XPMs

ATTENTION
XPMs with an NTAX74 XPM processor do not support the PRL.

The PRL circuit card is optional in the following XPMs.

XPMs with optional PRL circuit card support

Type	Description
DTC	Digital trunk controller (DTC)
	DTC with CCS7 (DTC7)
	DTC with ISDN (DTCI)
LGC	Line group controller (LGC)
	LGC with subtending RCC

—continued—

XPMs with optional PRL circuit card support(continued)

Type	Description
	LGC with subtending RCC2
	LGC with ISDN (LGCI)
	LGCI with subtending RCC
	LGCI with subtending RCC2
LTC	Line trunk controller (LTC)
	LTC with subtending RCC
	LTC with subtending RCC2
	LTC with ISDN (LTCI)
	LTCI with subtending RCC
	LTCI with subtending RCC2
PDTC	DTC with PCM-30
PLGC	LGC with PCM-30
RCC	Remote cluster controller (RCC)
RCC2	Remote cluster controller 2 (RCC2) with ISDN
	RCC2 with ISDN and subtending RCC2
SMS	Subscriber carrier module-100S (SMS)
SMSR	Subscriber carrier module-100S remote (SMSR)
SMU	Subscriber carrier module-100 urban (SMU)
	SMU with ISDN
TMS	TOPS message switch
	TMS with PCM-30
	—end—

Sample datafill

Datafill for the PRL circuit card is entered in field OPTCARD in the appropriate PM inventory table. Review the PM inventory tables to identify PMs with a PRL circuit card. The following illustrations are examples of a tuple in table LTCINV with PRL circuit card assignments.

Example of NTMX77 datafill

```
LTCNAME
   FRTYPE  FRNO  SHPOS  FLOOR  ROW  FRPOS  EQPEC      LOAD
                                                      EXECTAB
                                                       CSLNKTAB
                                                        OPTCARD
TONESET      PROCPEC
                      E2LOAD

OPTATTR PEC6X40
_____________________________________________________________
SMS 0
      SME   0    32   0    C    1 6X02AA    NSS31BE2
                                             (POTS POTSEX)$
                            ( 0 40) ( 0 42) ( 1 40) ( 0 30)$
                           ( MSG6X69 )(UTR17)
(   CMR16 CMR33AI5) ( NT7X05AA 13)$
NORTHAA    MX77AA MX77AA

6X40AC
```

Example of NTSX06 datafill

```
LTCNAME
   FRTYPE  FRNO  SHPOS  FLOOR  ROW  FRPOS  EQPEC      LOAD
                                                        EXECTAB
                                                         CSLNKTAB
                                                          OPTCARD
TONESET      PROCPEC
                      E2LOAD

OPTATTR PEC6X40
_____________________________________________________________
LTC 3
      1005  LTEI  0  51  1  P  13  6X02NA    QLI12BC
(POTS POTSEX) (KEYSET KSETEX) (ABTRK DTXEX) (PRAB DTXEX)$
(0 11 2 0) (0 11 2 1) (0 11 2 2) (0 11 2 3) (0 11 2 4) (0 11 2 5)
(0 11 2 6) (0 11 2 7) (0 11 2 8) (0 11 2 9) (0 11 2 10) ( 0 11 2 11)
(0 11 2 12) (0 11 2 13) (0 11 2 14) ( 0 11 2 15)$
(UTR15)  (MSG6X69 ) (ISP16) $
NORTHAM  SX05AA (PRL)$  SX05AA  (PRL) $
                                              0
                     SXFWAE09   $
 6X40FA             N
```

Overview for non-ISDN XPMs

The procedure "Use the PRL circuit card to update an XPM" in this document provides step-by-step instructions to use the PRL circuit card. The following table summarizes the PRL specific commands. The PRL allows operating company personnel to load a PM with the least amount of central processing unit (CPU) resources and the least simplex time.

CAUTION
Possible service interruption
Do not use a load_name variable with the LOADPM LOCAL LOADFILE command. Adding the load name to the command can inhibit PRSU application.

Use the PRL to load an XPM

Command	Activity	Maintenance state
>XPMSTOR PM	Loads the PRL circuit cards in both InSv units with the new PM load.	Active unit InSv Inactive unit InSv
>BSY INACTIVE	Busies the inactive unit.	Active unit InSv Inactive unit is manually busy (ManB)
>LOADPM INACTIVE LOCAL LOADFILE	Loads the Bsy PM unit with the new PM load.	Active unit InSv Inactive unit ManB
>RTS INACTIVE	Returns the Bsy PM unit to service and takes an image.	Active unit InSv Inactive unit InSv
>SWACT	Switches activity between the two units.	Inactive unit InSv Active unit InSv
>BSY INACTIVE	Busies the inactive unit.	Inactive unit ManB Active unit InSv
>LOADPM INACTIVE LOCAL LOADFILE	Loads the Bsy PM unit with the new PM load.	Inactive unit ManB Active unit InSv
>RTS INACTIVE	Returns the Bsy PM unit to service and takes an image.	Active unit InSv Inactive unit InSv

Overview for ISDN XPMs

Offices can change the steps in procedure "Use the PRL circuit card to update an XPM" in this document to update an ISDN XPM. The PRL does

not support imaging for ISDN XPMs. If both PRL circuit cards are loaded, problems could develop during the PM update if a load is corrupted or if the active unit fails. Individual loading of the PRL circuit card for each unit reduces the potential for a problem, but increases elapsed loading time and the impact on CPU resources for XPMSTOR.

The following table summarizes the PRL specific commands to use a PRL circuit card to update an ISDN XPM.

Use the PRL to load an ISDN XPM

Command	Activity	Maintenance state
>XPMSTOR INACTIVE	Loads the PRL circuit card in the inactive unit with the new PM load while both units are InSv.	Active unit InSv Inactive unit InSv
>BSY INACTIVE	Busies the inactive unit.	Active unit InSv Inactive unit ManB
>LOADPM INACTIVE LOCAL LOADFILE	Loads the Bsy PM unit with the new PM load.	Active unit InSv Inactive unit ManB
>RTS INACTIVE	Returns the Bsy PM unit to service.	Active unit InSv Inactive unit InSv
>SWACT	Switches activity between the two units.	Inactive unit InSv Active unit InSv
>XPMSTOR INACTIVE	Loads the PRL circuit card in the inactive unit with the new PM load while both units are InSv.	Inactive unit InSv Active unit InSv
>BSY INACTIVE	Busies the inactive unit.	Inactive unit ManB Active unit InSv
>LOADPM INACTIVE LOCAL LOADFILE	Loads the Bsy PM unit with the new PM load.	Inactive unit ManB Active unit InSv
>RTS INACTIVE	Returns the Bsy PM unit to service.	Active unit InSv Inactive unit InSv

Plan the peripheral module update

ATTENTION
Operating company personnel familiar with the office and experienced with PM software updates should plan the PM update.

The PM update plan involves the following activities.

- Run the PMUPGRADE utility or manually determine the update sequence by identifying subtending and serving PMs in the office.
- Determine if the PMs can be grouped in sets.
- Determine if parallel or broadcast mate loading can be used.
- Determine when and how to apply PRSUs to any loads.
- Schedule the update of each PM.

Update sequence

The sequence of PM and hardware type updates varies according to the configuration of the nodes in the office. However, subtending nodes must always be updated prior to any serving node. A subtending node is any node that resides on the peripheral side (P-side) rather than the central side (C-side) of the serving node.

A subtending node can be one or more of the following types:

- a hardware type, such as the Enhanced Network (ENET), acting as a subtending node to the message switch (MS)
- a PM, such as a line concentrating module (LCM), acting as a subtending node to its line group controller (LGC)

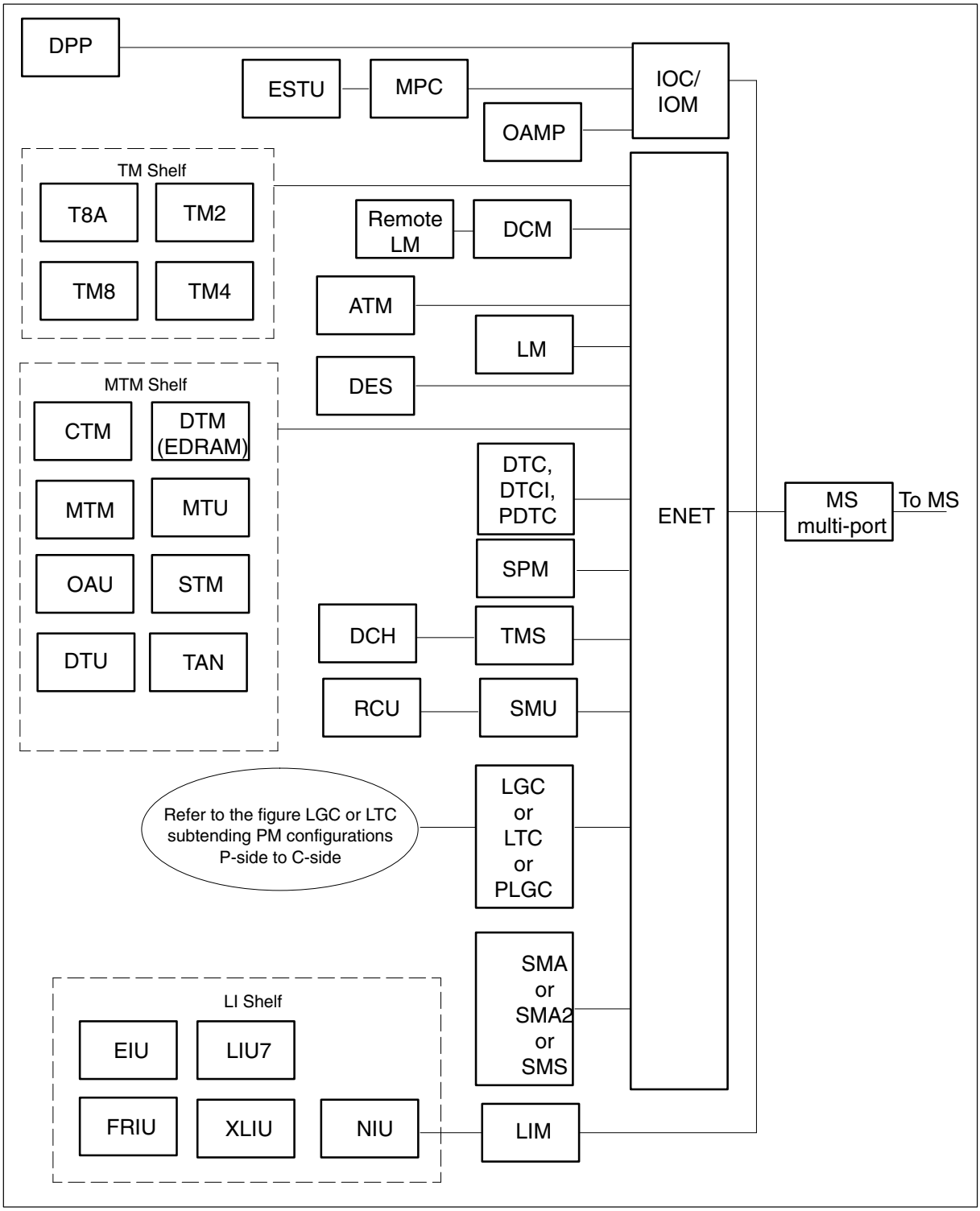
The following figures illustrate possible PM node configurations and possible PM update sequence relationships. For example, in figure LGC or LTC subtending PM configurations P-side to C-side, an emergency stand-alone (ESA) is a subtending PM to an RLCM, which is a subtending PM to a line trunk controller (LTC). For this node, these PMs must be updated in the following sequence:

1 ESA

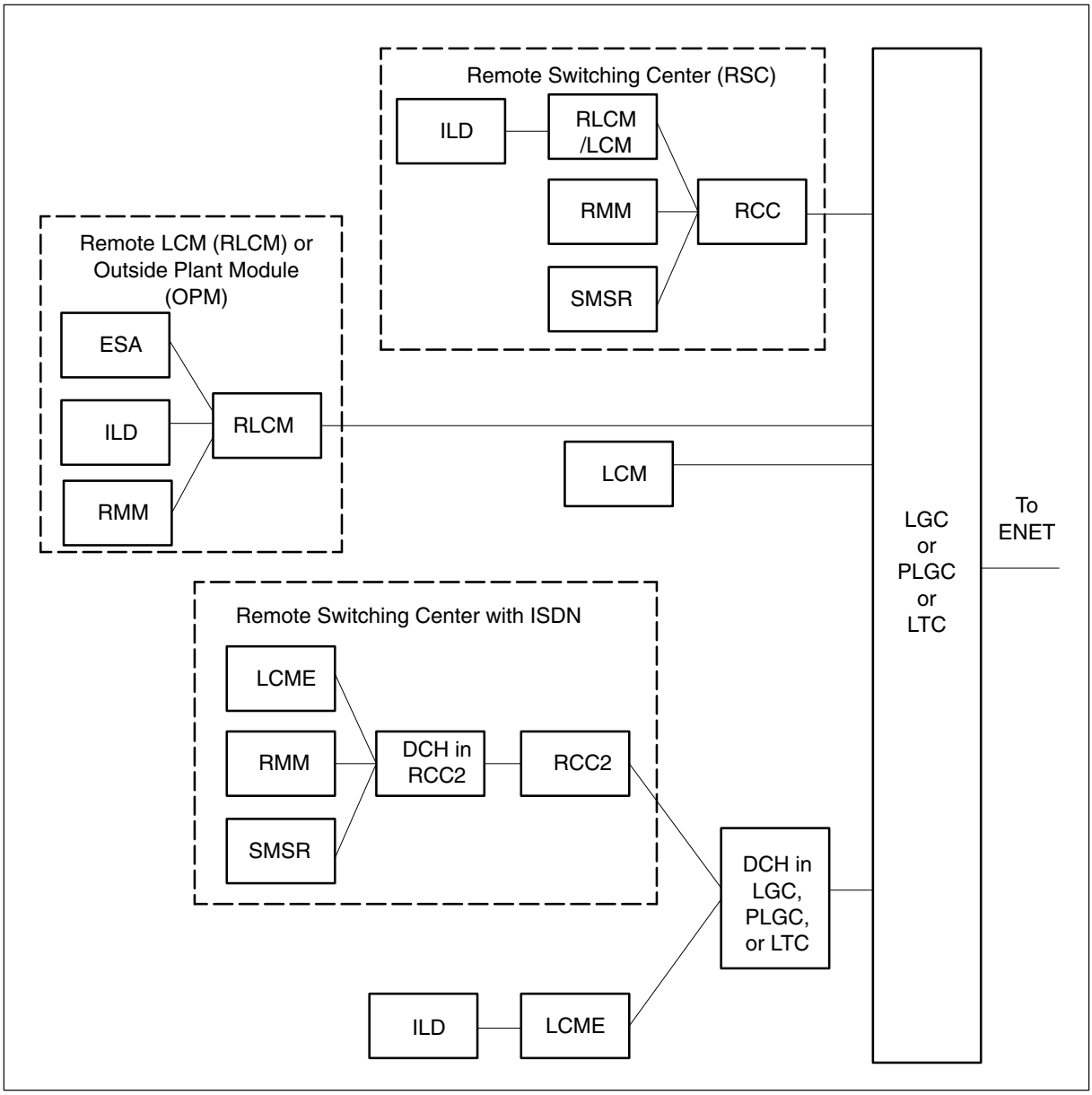
2 RLCM

3 LTC

PM configurations P-side to C-side



LGC or LTC subtending PM configurations P-side to C-side



The following figure, Sample update sequence list P-side to C-side, can be helpful to schedule the office PM update.

Sample update sequence list P-side to C-side

1	2	3	4	5	6	7	8	9
RMM	ESA ILD	LCM	RCC	LGC LGCI	ENET	MS multi-port card	MS	CM
	SMSR	DCH	RCC2	LTC LTCI				
				PLGC				
				PDTC				
	LCME			DTC DTCI				
				SPM				
				SMA				
				SMA2 SMS				
			RCU	SMU SMUI				
				TMS				
			LM (remote)	DCM				
				LM				
				ATM				
				DES				
				T8A				
				TM2				
				TM4				
				TM8				
				CTM				
				DTM (EDRAM)				
				MTM				

Note 1: PMs in *italic* can be updated at any time in the PM update process before the MS multi-port card.

Note 2: * applies to NT1X89 circuit card only.

—continued—

Sample update sequence list P-side to C-side (continued)

1	2	3	4	5	6	7	8	9
OAMP *DTU* *DPP* *ESTU* *MPC**	*IOM*		EIU LIU7 FRIU XLIU NIU	MTU OAU STM TAN *LIM*				
Note 1: PMs in *italic* can be updated at any time in the PM update process before the MS multi-port card. ***Note 2:*** * applies to NT1X89 circuit card only.								
—end—								

Inventory tables should be reviewed from P-side to C-side to identify the sequence of PMs in a node. The following table lists PMs in a node and the activities to identify PMs in the node.

Use inventory tables to identify PMs in a node

PM	Activity	Result
ESA	Review table XESAINV.	Identify serving LCME.
LCM	Review table LCMINV.	Identify serving RCC.
LTC	None. The LTC subtends directly to the ENET.	

D-channel handler (DCH) updates

The DCH circuit cards can be updated prior to other PMs in the node or with the serving PM.

The ISDN DCH circuit card must be updated before its serving PM. The DCH can also be updated prior to other subtending PMs of the serving PM. Figure LGC or LTC subtending PM configurations P-side to C-side illustrates an LGC/LTC node with a subtending RCC2, with DCHs in both PMs. Two possible update sequences for this configuration are:.

- update all DCHs in the node first, update the RCC2s, and update the LGC/LTC.
- update the DCHs in the RCC2s first, update the RCC2s, update the DCHs in the LGC/LTC, and update the LGC/LTC.

In either sequence, always update the DCH before the serving PM.

ADAS updates

Automated directory assistance service (ADAS) peripheral module loads are delivered on the same tape cartridge with the PM load and post-release software update (PRSU) files. ADAS workstation software loads are delivered on a separate digital audio tape (DAT). Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for load names, update procedures, other release-specific information, and to coordinate an ADAS software update with the office PM update.

ADAS related PMs include the application processor unit (APU), voice processor unit (VPU), and the ADAS OA&M Position (HP 9000/712) Workstation. These PMs must be updated in the following order: link interface unit with common channel signaling (LIU7), ethernet interface unit (EIU), application processing unit (APU), voice processor unit (VPU), other PMs in the node including the network interface unit (NIU), and link interface module (LIM). ADAS-specific PMs must be updated prior to other PMs in their node.

It is recommended that you not use ISN auto imaging (IAI) for APUs. Use of IAI for APUs can result in an unusable image. IAI support for APUs is being discontinued.

SPM updates

Specturm Peripheral Module (SPM) loads are delivered on a separate tape cartridge than the PM load and PRSU files. SPM related PMs include the DMS–SPM, Media Gateway 4000 (MG 4000), Interworking–SPM (IW–SPM), and DPT SPM. SPM loads should be updated following DTC updates but before the ENET updates.

To update SPM loads, refer to the following documentation:

- *DMS–SPM Upgrades*, NN10053–461
- *MG 4000 Upgrades*, NN10054–461
- *IW–SPM (ATM) Upgrades*, NN10055–461
- *IW–SPM (IP) Upgrades*, NN10056–461
- *DPT–SPM Upgrades*, NN10058–461

Enhanced network and message switch updates

Loads for the enhanced network (ENET) and message switch (MS) are included on the PM load tape. The update schedule for these hardware types is critical to the PM and office update schedule.

Enhanced network (ENET)

The ENET is updated as part of the PM update process. Update the ENET after the update of all PMs and hardware types in the office.

9X17 firmware

While the MS multi-port circuit card (NT9X17) is part of the MS, it is updated as part of the PM update process. The MS multi-port circuit card should be updated one to two days after the ENET is updated and at least two days before the MS is updated.

Message switch load on PM load tape is patch current

ATTENTION

The message switch (MS) can require additional memory to support this release. Contact the next level of support or the Nortel Networks software delivery prime for additional information.

The PM load tape for this release includes the patched current MS load file, which is not a back-up load. Use procedure “Update the MS” in this document and update the MS with all other PMs. Refer to figure PM configurations P-side to C-side in this chapter for PM update sequence requirements.

MS load requirements for back–to–back ONP

The Back–to–Back ONP is designed to upgrade the PCL release of a switch over two consecutive nights. For example, the first upgrade would be to SN04 and the second or final upgrade to SN06. Prior to the first upgrade, the PM software and MS must be updated with loads compatible with the final PCL release. When this occurs, the MS is updated with a load that exceeds the standard 3 CSP limit. This condition is not permitted unless PRSU file

SEA87 is applied and activated in the current CM load. Therefore, when updating the MS with a load that is 4 or more CSP levels greater than the current CM load, PRSU file SEA87 must be applied and activated in destination CM, or the MS will fail to return to service.

Parallel and broadcast mate loading

The following parallel and broadcast mate loading methods can be used to load sets of some PMs:

- LCM parallel loading
- XPM broadcast mate loading
- XPM parallel loading
- Parallel firmware loading

Do not use XPM broadcast mate loading or XPM parallel loading to update remote PMs, such as the remote cluster controller (RCC) or remote line concentrating module (RLCM). Update each PM individually.

Do not use XPM broadcast mate loading or XPM parallel loading to update DTCs with timing links. To identify the timing source, type the command MAPCI;MTC;MS;CLOCK from the CI level of the MAP display. Offices can use the DTC with timing links as the first DTC in the office to update with the new load.

Do not use parallel or broadcast mate loading to update a PM with a PRL circuit card. Refer to procedure “Use the PRL circuit card to update an XPM” in this document and section “Prepare for a PM update using a PRL circuit card” in this chapter.

LCM parallel loading

All manually busied units of a set of LCMs can be updated with LCM parallel loading and the RTS FORCE command. The RTS FORCE command supports sets of up to 50 LCMs to reduce total LCM update time. Refer to procedure “Use parallel loading to update LCMs or LCMEs” in this document.

The following table shows the time difference between the two LCM update methods.

LCM parallel loading times

# LCMs	Set size	Update method	# minutes per unit	# total minutes per set
100	5	Parallel	15	600
100	50	Parallel with RTS Force	11	44

Note: Times are representative and vary for each office.

XPM broadcast mate loading

All inactive units of a set of XPMs can be updated using XPM broadcast mate loading. The CM messages the active unit of the first XPM in the set. The active unit forwards the message to its inactive unit and the active unit of the second XPM in the set. The active unit in the second XPM forwards the message to its inactive unit and the third XPM in the set. This sequence continues until all XPMs in the set have received the message.

The command line at the MAP display restricts the number of PMs that can be posted in a set. A CI level exec can be created to eliminate this restriction and post sets of up to 35 XPMs. Refer to the procedure “Use an exec to post a large set of XPMs” in this document.

XPM parallel loading

All units of the same number (0 or 1) can be updated with XPM parallel loading. Only inactive units can be updated. Therefore, activity can be switched in some XPMs to align all units in the set. During XPM parallel loading, the CM sends messages directly to each inactive unit.

Parallel firmware loading

Parallel loading can be used to update the XPM processor firmware in a set of up to four XPM units. The set can include up to 10 XPMs. A maximum of four XPM units per set is recommended for optimum performance. Office parameter MAX_FIRMWARE_LOAD_MAIN_TASK in table OFCOPT determines the maximum number of XPMs in the set. The default value is 10, the range is 1 to 128.

Optimal set size

Laboratory tests reveal optimal set sizes for each method. The following table lists the optimal XPM sets and recommended update method.

Optimal XPM set size and recommended update method

XPM or XPM set	Method
first XPM with a base load or PPXL (see note)	Individual
one XPM with a base load	Individual
one XPM with PPXL	Individual
two to 10 XPMs of the same kind	XPM parallel loading. Parallel loading more than 10 XPMs results in unacceptable simplex time for the XPMs beyond the first 10 and could double loading time.
11 to 35 XPMs of the same kind	XPM broadcast mate loading
36 or more XPMs of the same kind	Not recommended. Reduce the set to a smaller number of XPMs and follow the appropriate method.
2 to 50 LCMs of the same kind	LCM parallel loading
More than 50 LCMs of the same kind	Not recommended. Reduce the set to a smaller number of LCMs and use parallel loading.
Note: Office policy can require operating company personnel to update one PM of each type and allow the load to soak for a period of time before the update of the remaining PMs.	

Sets larger than the optimal set sizes can be used. There is no significant reduction in loading time, and the update can fail depending on factors such as CPU occupancy. Refer to "Appendix A: Loading times" in this document for more information.

PMs of the same kind are PMs of the same PM type that use the same load and are located at the same site. A digital trunk controller (DTC) and a digital trunk controller with ISDN (DTCI), for example, are different kinds of PMs because they have different PM types and use different loads.

> ***Note:*** All PMs in the set must have identical CMR configurations. A set cannot contain some PMs with a CMR load and some PMs without a CMR load.

Refer to "Appendix A: Loading times" in this document for assistance to determine the length of time to update individual PMs and the office, laboratory test results, and CPU occupancy.

Checklists

Checklists similar to the following samples can help schedule and confirm the inclusion of all PMs for the PM update.

Update sequence checklist

1	2	3	4	5	6	7
Examples						
DCH (All)	RMM 6 RMM 4 RMM 3 RMM 5	LCM REM 01 01 LCM REM 00 00 LCME REM 01 01 LCME REM 00 00	RCC 1 RCC2 0	LGC 1	ENET 0	NT9X17DA in MS 0
		LIU7 2 LIU7 4 LIU7 6	NIU 0	LIM 1		NT9X17DA in MS1
_____	_____	_____	_____	_____	_____	_____

PM update checklist

PM type	PM #	Current loads	New loads	PRSU status	Subtending PMs
Example					
LGC	LGC 01	ECL05BC MX77NB03	ECL06BH MX77 load ok	ECL PRSUs applied w/ DTC 00 update	LCM REM 01 01 LCM REM 02 01

Perform the peripheral module update

This section describes activities to perform the PM update.

Begin the update

At the start of each PM update shift, verify the office and the PMs to be updated meet the following prerequisites:

- An office image was taken in the last 24 hours.
- All PM logs are enabled.
- Each PM completed its last REX test within the last two weeks.

  Note: For LCM PM types, the customer can perform the REX tests in parallel to complete all LCMs within the two-week requirement. To perform the LCM REX tests in parallel, increase the value of the PARALLEL field for the LCM_REX_TEST tuple in table REXSCHED. Check office policy for any restrictions or limitations.

- All REX tests are suspended.
- The post-release software manager (PRSM) automated processes are not scheduled to start during the shift.

  Note: Enable WARMSWACT in the office as part of normal office policy. Enable WARMSWACT for each PM to be updated.

These prerequisites can be part of the standard maintenance program for the office, which can require additional activities. Perform the procedure “Start a PM update shift” in this document to confirm the office and PMs meet these conditions. Use a checklist similar to the following sample to confirm completion of each activity.

Update shift checklist

Office:_____ **Activities for _____ (date of shift)**	**Completed by (initials)**
Start the shift	
Confirm an office image was taken in the last 24 hours.	_____
Confirm all PM logs are enabled.	_____
Confirm each PM to be updated is in service (InSv).	_____
Confirm each PM to be updated passed its last REX test within the last two weeks.	_____
Suspend all automatic REX tests in the office.	_____
Confirm the PRSM automated processes do not start during the update shift.	_____
Finish the shift	
Resume all automatic REX tests in the office.	_____
Return all PM logs to their original states.	_____
Review recent logs and verify the PMs updated during this shift have remained healthy and InSv.	_____
If required, change the start time of the PRSM automated process to the original value(s).	_____

Update the peripheral modules

Update the PMs during a maintenance window or a period of low traffic. The SWUPGRADE PM utility can be used to perform an automated update on some PMs.

Finish the update

At the completion of each update shift, operating company personnel should return the office to its original state. Verify updated PMs remained InSv. Perform the procedure "Finish a PM update shift" in this document.

Troubleshoot update problems

Occasionally problems can occur during a PM update. This section provides help to troubleshoot update problems and abort a PM update.

Post-release software manager (PRSM)

This section contains notes related to the PRSM utility. This information can help prevent or troubleshoot problems during the PM update.

No corresponding load

PRSM generates the following warning during PRSU application.

```
*WARNING:Though the loadname of the destination has been
*WARNING:changed in PRSM, there is not a corresponding
*WARNING:loadset in PRSM that matches the loadname
*WARNING:that the destination currently has: EDH08BC
```

Solution

Follow the update procedures in this document.

DBAUDIT during PM update

PRSUs for the previous load are tied to the new PM load if a manual or automated DBAUDIT is performed incorrectly during a PM update.

Solution

Follow these precautions.

- Check table AUTOOPTS. If necessary, change the time the PRSM automated processes start. The procedure "Start a PM update shift" includes this step.
- Perform a manual DBAUDIT only when specified in update procedures.

The following are examples of incorrect DBAUDIT execution.

- An automated DBAUDIT starts during a PM unit update.
- A manual DBAUDIT executes after the new load is assigned to the unit but before the unit is loaded with the new load.

- A manual DBAUDIT executes on a subset of units being updated with the same load.

PRSUs do not apply

PRSM fails to apply PRSUs.

Solution

Check for space availability in the store file device (SFDEV) table used to hold temporary files needed for PRSU application. Check table DSLIMIT to ensure the DSMAX value for STOREFS is sufficiently larger than the DSUSED value. If necessary, increase the DSMAX value.

Old PRSUs in PRSM database

The PRSM database shows PRSUs from a previous release.

Solution

A DBAUDIT was not performed during the PM update procedure. Update the PRSM database with the DBAUDIT command.

PRSM data missing during PMLOADS update

When the LFAUDIT command is not performed before the manual PM update of table PMLOADS, the MAP terminal displays one of the following error messages.

SLM example of error message

```
PRSM data missing
To correct, enter the PRSM command level. Then type:
   LFAUDIT PPXL ELIO9AX ELIO9AX_980107 S00DPMLOADS
```

XA-Core example of error message

```
PRSM data missing
To correct, enter the PRSM command level. Then type:
   LFAUDIT PPXL ECL12BC ECL12BC_YYMMDD F17LPMLOADS
```

Solution

Refer to procedure “Prepare for a manual PM update” in this document.

LOADPM failures on ISDN XPMs

A faulty ISDN signaling pre-processor circuit card (NTBX01) can cause a LOADPM failure on an ISDN XPM.

Solution

Check the following:

- Each LOADPM attempt fails at the same percentage of completion.
- A PM181 log report generates the following message.

```
Failed to load.
Fail message received from PM.
```

- Replace the NTBX01 circuit card. The NTBX01 circuit card does not appear on the list of failed cards, but can cause LOADPM failures.

Enhanced dynamic data-sync (EDDS)

Dynamic data describes various state information for an XPM unit, such as link and module states. These states are normally set through link changes and call processing. When an inactive unit returns to service, the unit receives a summary of this state information to preserve its warm SWACT functionality. This state information is encapsulated (enclosed) in the form of data-sync tables tied to the XPM data-sync mechanism.

EDDS reports table mismatches between the active and inactive units during data-sync. If the inactive unit receives a mismatched data-sync table from the active unit, the inactive unit produces a software error (SWERR). This SWERR is generated in PMDEBUG along with a PM189 log.

The data reported by this SWERR usually contains the table-id of the unknown table. The format is “tbl_skipped xx yy zz”, where “xx yy zz” is a sequence of hexi-decimal data where “xx” represents the unknown table-id. For PM updates, this SWERR indicates a valid mismatch in functionality for specific table-ids, as listed in the following table.

If any “tbl_skipped” SWERRs appear that do not match the previously mentioned pattern, report the SWERR to technical support.

The following table lists PMs and associated PM software loads that can generate the “tbl_skipped” SWERR. If these loads, or higher release versions of these loads, are in the active unit of an XPM with a lower release version of the load in the inactive unit, “tbl_skipped” SWERRs can be produced.

Tble_skipped swerr peripheral modules

PM	Load	Table–id
DTC, LGC, LTC	ECL08	#5C, #5D, #5E (ISDN ILD tables)
DTC with CCS7 (DTC7)	ED781	#63, #64 (C7 link manager tables)
DTC, LGC, LTC, RCC, RCC2, SMA, SMA2, SMU	ECL09, ELI09, ESI09, ESR09, XM209, XSC09, XRI09	#5A (SPID info)

Example

If upgrading to ECL09 from ECL07, four “tbl-skipped” SWERRs with unintelligible words appear, as XPM07 only reports a table is being skipped. If upgrading to ECL09 from ECL08, only one “tbl_skipped 5A AB EF” SWERR appears. The table_id skipped is the #5A SPID.

NET LOAD and PM PMLOAD alarms after ONP

If NET LOAD and PM PMLOAD alarms appear at the alarm banner of the MAP display after completion of the ONP, there is a load mismatch between these tables and the load residing in the ENET.

Solution

Review tables PMLOADS and ENINV. Confirm both tables have the name of the new ENET load. If both tables contain the new load name, check table PMLOADS for the old load name. After the ONP SWACT the DMS switch attempted to re-boot the ENET with the old ENET load from table PMLOADS. Delete the old load name.

XPM RTS failure after MX77 update

The MX77 firmware load must be loaded prior to the base load. If it is loaded after the XPM base load. The unit can fail to return to service (RTS) if the firmware load is updated prior to the base load.

Solution

The update procedures in this document provide the correct sequence to update the MX77 firmware and the XPM base load. The following summarizes the correct sequence of steps:

1 Busy the inactive unit.

2 Load the new XPM firmware in the inactive unit.

3 Load the new XPM base load in the inactive unit.

4 Return the inactive unit to service.

5 Switch activity.

6 Repeat these steps for the new inactive unit.

If one unit of an XPM fails to RTS after an update of the MX77 firmware, reload the MX77 firmware and the XPM base load in the correct sequence.

RCC failure to RTS

A remote cluster controller (RCC) fails to RTS during the update.

Solution

Check the RCC's corresponding ESAPXLA table for a possible mismatch between table RCCINV and table ESAPXLA.

Changes in posted set

A posted set of PMs changes during an update procedure. The set was possibly posted by a maintenance state, such as ISTb, rather than a number.

Solution

Do not post by maintenance state. A PM posted as ISTb, for example, can change state to central-side busy (CBsy) and drop from the set. If a posted set of PMs changes during the update procedure, post the set by number.

Data mismatch

Data mismatches can occur during XPM loading. A mismatch can occur between XPM units or between the CM and an XPM. PM logs and MAP responses identify the type of data mismatch.

The following table identifies possible types of mismatched XPM data during an XPM update.

Types of XPM data

Type	Description
Static data	Configuration data, such as node data, terminal types, and port data, that is constant. The CM sends the data to the XPM or the XPM unit during an RTS.
Dynamic data	Status data, such as call states and link states, that changes constantly. XPM applications create and pass the data from the active unit to the inactive unit on an on-going basis.
Derived data	Application-specific data derived from configuration data.
Exec data	Office parameters

Solution

Use the methods in the following table to recover from a data mismatch. Each method reloads the static data, but each method has risks and benefits. The methods are listed in order of severity from least severe to most severe. Office policy and the affected XPMs determine the type of method to use.

Data mismatch recovery

Method	Benefits	Risks
Double warm SWACT the XPM.	Automatic approach that reduces the risk of error and does not cause an outage.	Corrupted dynamic data could be passed from the active side.
1 Busy the inactive unit. 2 Load the CC data. 3 Return the unit to service. 4 Perform a warm SWACT. 5 Repeat for new inactive unit.	Does not cause an outage.	Corrupted dynamic and derived data could be passed from the active side.
1 Busy the inactive unit. 2 Load the CC data. 3 Return the unit to service with NODATASYNC parameter. 4 Perform a cold SWACT. 5 Repeat for new inactive unit.	Automated approach that reduces the risk of error and prevents corrupt dynamic data from being passed from the active unit.	Causes an outage. Warm SWACT is disabled with the NODATASYNC parameter.
1 Busy the XPM. 2 Load the CC data to the XPM. 3 Return the XPM to service.	Guarantees all data originates from the central control (CC).	Causes an outage.

Abort a peripheral module update

ATTENTION

Check office policy before aborting a PM update. An abort can require the next level of support.

When aborting a PM update, return the PM to service with the NODATASYNC parameter. This allows the DMS switch to download new static data to the PM.

Problems during a PM update can cancel the update of a single PM or multiple PMs. If a PM update must be aborted, reload the PM with the load from the previous release. Reload the PMs in reverse order of the update, that is, reload the serving PM prior to reloading the subtending PMs. For

assistance, refer to table PM configurations C-side to P-side and figure Sample update sequence list C-side to P-side at the end of this chapter.

Single PM

Use the appropriate PM update procedure included in this document, and reverse the old_load_name and new_load_name parameters.

ATTENTION

The DMS switch can generate an incompatible software releases and improper sequences warning. Follow the instructions for the reload order for PMs and continue this procedure.

ATTENTION

PRSUs for the previous PM load names must be present in the DMS switch to abort an XPM update.

Following is an example of the command sequence and parameters.

1 Change the load name in the PM inventory table to the name of the previous load name. If a CMR load was included in the original PM update, change the name of the CMR load in the inventory table to the previous CMR load name.

2 Enter PRSM and assign the previous loadname. The command syntax is:

>ASSIGN UPGRADE_LD old_load_name IN DESTSET pm_type pm_no

Note: Perform this command for XPM and EDCH loads only.

3 Post the PM.

4 Busy the PM or the inactive PM unit.

5 Load the PM or inactive unit. If the XPM processor firmware must be reloaded, follow the PM update procedure and reload firmware before the base load.

Note: This step is not always necessary depending on the PM and the XPM processor firmware load. Firmware for an XPM is backwards compatible to three releases.

6 Review the PRSM database and update, if necessary.

7 Return the PM or inactive unit to service. For most PMs use the NODATASYNC parameter. This permits new static data to be downloaded to the PM.

CAUTION
Possible service interruption
The following command can cause the PM and all its subtending PMs to become system-busy (SysB) and can lead to service interruptions.

The following example is the command syntax.

```
>RTS  UNIT  1  NODATASYNC  FORCE
```

Dual PM

Perform the following steps to abort an update for a dual unit PM.

1 Use the SWACT COLD command to switch activity between units. This returns the previous release's functionality to the unit.

CAUTION
Possible service interruption
The following command can cause the PM and all its subtending PMs to become system-busy (SysB) and lead to service interruptions. The outage should be less than 30 seconds.

The following example is the command syntax.

```
>SWACT COLD
```

2 Enter PRSM and assign the previous loadname. The command syntax is:

```
>ASSIGN UPGRADE_LD old_load_name IN DESTSET pm_type pm_no
```

Note: Perform this command for XPM and EDCH loads only.

3 Busy the inactive unit.

4 Load the inactive unit.

5 Return the inactive unit to service using the NODATASYNC parameter.

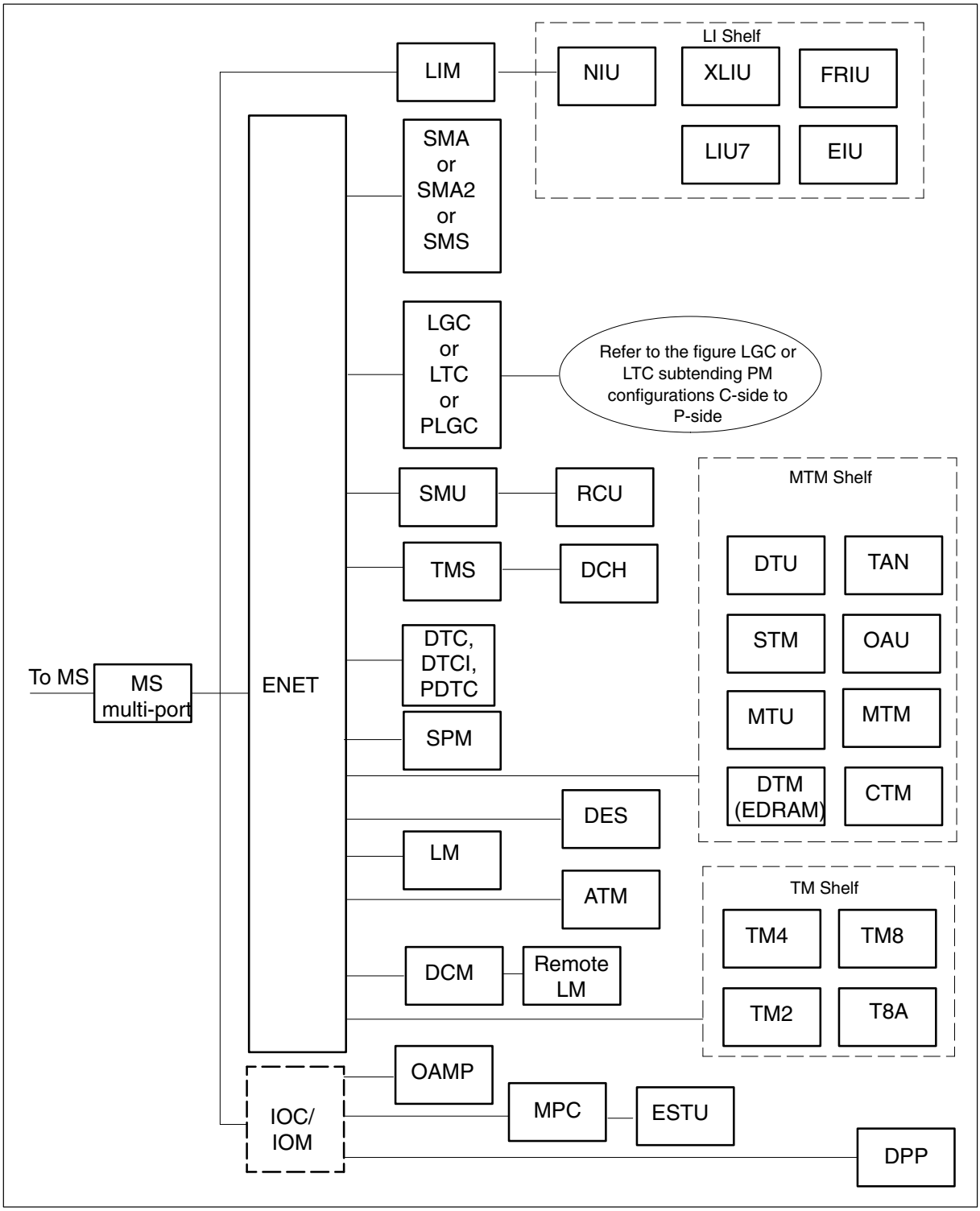
6 Switch activity using the COLD parameter to return the PM to its original operating state.

Multiple PMs

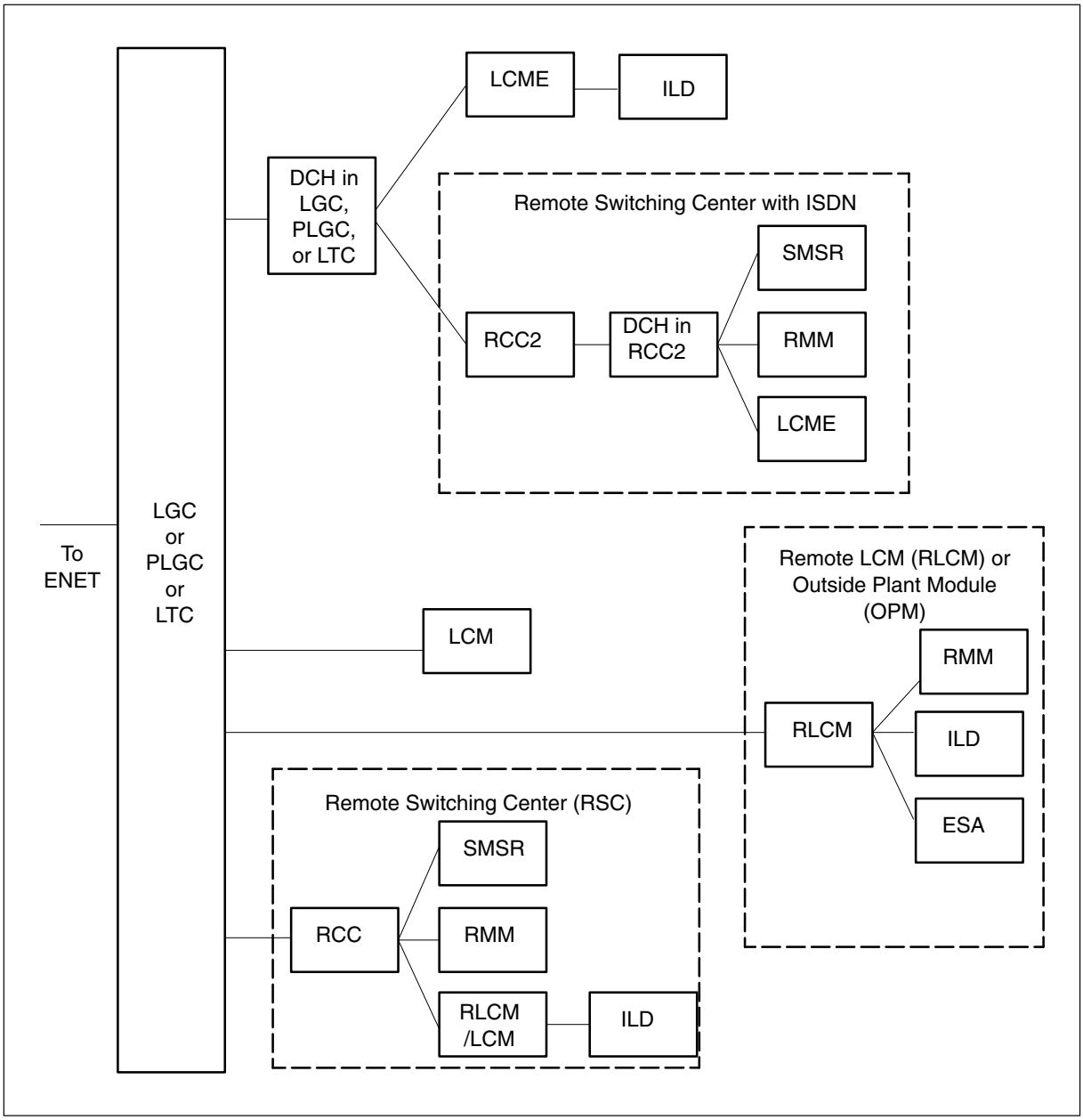
If multiple PMs must be aborted, reload the PMs in the reverse order they were updated. Reload PMs C-side to P-side, or reload the serving PM prior to its subtending PM.

The following figures illustrate possible PM node configurations and PM update sequence relationships C-side to P-side.

PM configurations C-side to P-side



LGC or LTC subtending PM configurations C-side to P-side



The following figure, Sample update sequence list C-side to P-side, can be helpful to load the PMs in reverse order when a PM update must be aborted.

Sample update sequence list C-side to P-side

1	2	3	4	5	6	7	8	9
CM	MS	MS multi-port card	ENET	LGC LGCI	RCC	LCM	ESA ILD	RMM
				LTC LTCI	RCC2	DCH	SMSR	
				PLGC	RCC2	DCH	SMSR	
				PDTC			LCME	
				DTC DTCI			LCME	
				SPM				
				SMA				
				SMA2 SMS				
				SMU SMUI	RCU			
				TMS				
				DCM	LM (remote)			
				LM				
				ATM				
				DES				
				T8A				
				TM2				
				TM4				
				TM8				
				CTM				
				DTM (EDRAM)				
				MTM				

Note 1: PMs in *italic* can be reloaded any time after the MS multi-port card.

Note 2: * applies to NT1X89 circuit card only.

—continued—

Sample update sequence list C-side to P-side (continued)

1	2	3	4	5	6	7	8	9
		LIM	EIU LIU7 FRIU XLIU NIU	MTU OAU STM TAN			*IOM*	*OAMP* *DTU* *DPP* *ESTU* *MPC**
Note 1: PMs in *italic* can be reloaded any time after the MS multi-port card. ***Note 2:*** * applies to NT1X89 circuit card only.								
—end—								

Overview of automated update process

ATTENTION

Nortel Networks is introducing the automated update process functionality over several releases. The current release in the office determines the level of available functionality.

This chapter describes all available functionality for each phase of the automated PM update process. This chapter also describes how to access on-line help, control the automated PM update, and troubleshoot problems.

Peripheral module update process

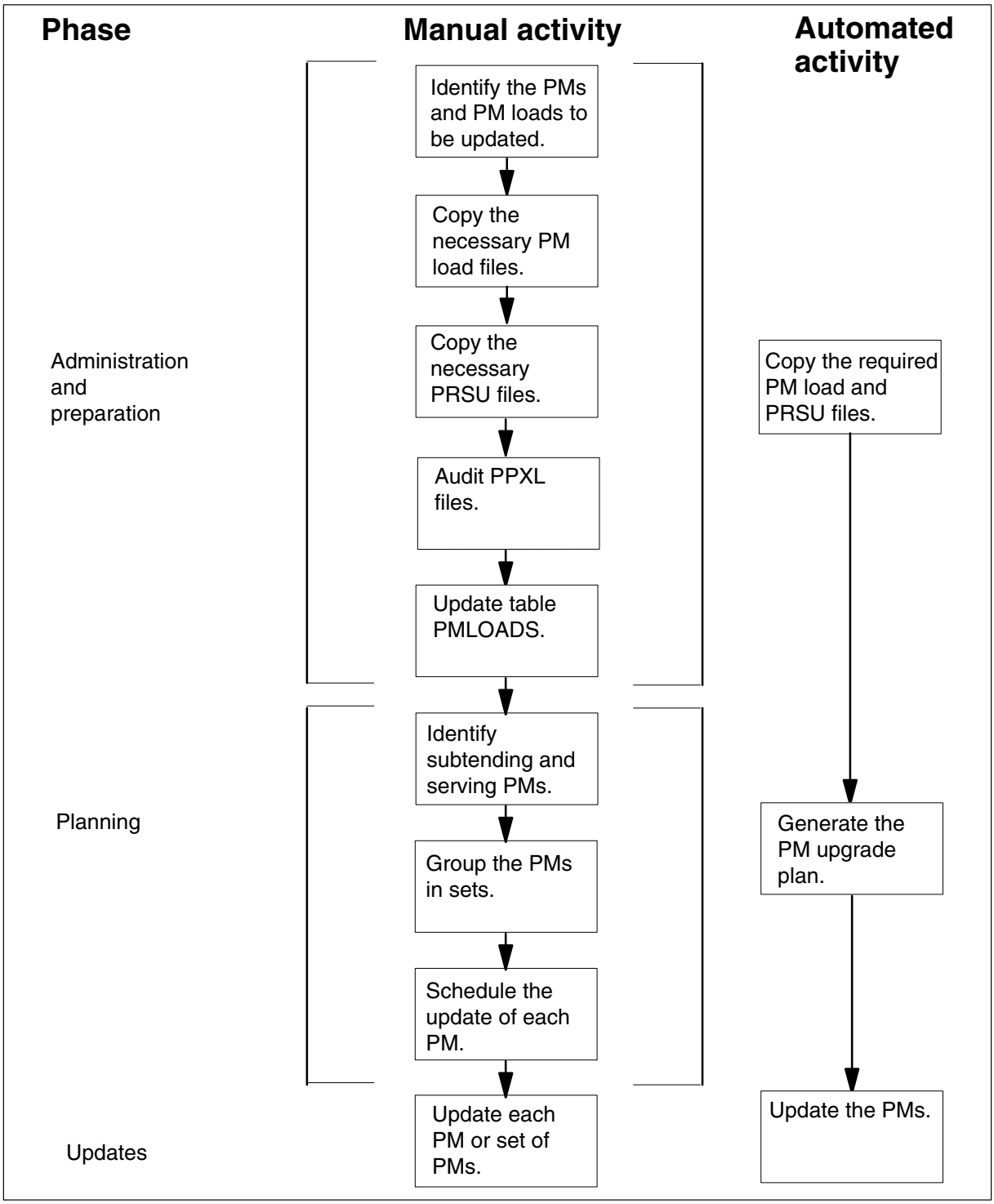
The PM update consists of the following phases and activities.

- Administration and preparation
  - Identify the PM load and post-release software update (PRSU) files.
  - Copy the required PM load and PRSU files.
  - Audit any pre-patched XPM load (PPXL) files.
  - Update table PMLOADS.
- Planning
  - Identify the subtending and serving PMs in the office to be updated.
  - Group the PMs to be updated in sets if possible.
  - Schedule the update of each PM or set of PMs to be updated.
- Updates
  - Update each PM inventory table that needs the new PM load.
  - Update each PM or set of PMs that needs to be updated.

The PM update process can be a manual process, an automated process, or a combination of the two processes. The command interpreter (CI) utilities PMUPGRADE and SWUPGRADE PM support the automated process.

The following figure illustrates the phases of the PM update process and the activities supported by the manual and automated processes.

Overview of PM update process



Alarms generated during the automated PM update process are the same as alarms generated during a manual PM update.

The current software release in the office determines the level of functionality available for automated PM updates. The following table lists BASE layers, automated functionality, and automated activities available for each release. If necessary, refer to section "BASE release to PCL release cross-reference" in chapter "Overview of release" in this document.

Available automated functionality

BASE layer	Automated functionality	Automated activities
BASE10	Administration and preparation	• Select PM load and PRSU files • Copy PM load and PRSU files • Update table PMLOADS
	Planning	• Generate PM upgrade plan
	Updates	• Execute PM upgrade plan for XPMs • Execute PM upgrade plan for LCMs • Execute PM upgrade plan for EIUs, FRIUs, and XLIUs • Execute PM upgrade plan for ICRMs and DSPMs • Execute PM upgrade plan for DCH cards • Execute PM upgrade plan for MS multi-port cards (NT9X17)

—continued—

Available automated functionality (continued)

BASE layer	Automated functionality	Automated activities
BASE11	Administration and preparation	• Select PM load and PRSU files • Copy PM load and PRSU files • Update table PMLOADS
	Planning	• Generate PM upgrade plan
	Updates	• Execute PM upgrade plan for XPMs • Execute PM upgrade plan for LCMs • Execute PM upgrade plan for EIUs, FRIUs, and XLIUs • Execute PM upgrade plan for ICRMs and DSPMs • Execute PM upgrade plan for DCH cards • Execute PM upgrade plan for MS multi-port cards (NT9X17) • Execute PM upgrade plan for ENETs ***Note:*** Do not perform an automated update for the ENET when an SPM is present on the Digital Multiplex System (DMS). Use the procedure “Update the ENET” in this document to perform a manual ENET update. • Execute PM upgrade plan for NIUs

—continued—

Available automated functionality (continued)

BASE layer	Automated functionality	Automated activities
BASE12	Administration and preparation	• Select PM load and PRSU files • Copy PM load and PRSU files • Update table PMLOADS
	Planning	• Generate PM upgrade plan
	Updates	• Execute PM upgrade plan for XPMs • Execute PM upgrade plan for LCMs • Execute PM upgrade plan for EIUs, FRIUs, and XLIUs • Execute PM upgrade plan for ICRMs and DSPMs • Execute PM upgrade plan for DCH cards • Execute PM upgrade plan for MS multi-port cards (NT9X17) • Execute PM upgrade plan for ENETs ***Note:*** Do not perform an automated update for the ENET when an SPM is present on the Digital Multiplex System (DMS). Use the PMUPGRADE Plan Report and the procedure "Update the ENET" in this document to perform a manual ENET update. • Execute PM upgrade plan for NIUs • Execute PM upgrade plan for SPMs
		—end—

Automated administration and preparation

PMUPGRADE automates the following administrative activities of PM updates.

- Select PM load files
- Select PRSU files
- Copy PM load and PRSU files
- Audit any PPXLs for the PRSM database
- Update table PMLOADS

PMUPGRADE simplifies the PM update process and decreases the administrative time to prepare for a PM update. Operating company personnel can continue to perform these administrative tasks manually, if necessary.

Note: If the system load module (SLM) or extended architecture core (XA-Core) tape cartridge label text indicates *Patches: Yes,* the tape includes the required PRSUs for XPM and ISN load files.

Load file selection

PMUPGRADE performs the following actions to select the PM load files to copy for an office.

- PMUPGRADE reviews the PM inventory tables and identifies the PM loads used in the office.
- PMUPGRADE compares the PM loads used in the office to the new PM load files on the PM load tape.
- PMUPGRADE selects all the new PM load files that are a different version than the comparable PM loads used in the office.

The following table lists examples of how PMUPGRADE selects PM load files for the office.

Examples of PMUPGRADE load file selection

Load in office	Load on PM load tape	PMUPGRADE action
ECL05BC	ECL06BH	PMUPGRADE selects ECL06BH. The load on the PM load tape is a later version.
MTMKA02	MTMKA02	PMUPGRADE does not select MTMKA02. The load is the same version.

PMUPGRADE creates the list of selected PM load files for the office. Operating company personnel can exclude or include PM load files from the list. Steps in the procedure “Prepare for an automated PM update using PMUPGRADE” in this document describe how to modify the list of selected files generated by PMUPGRADE.

Post-release software update file selection

ATTENTION

PMUPGRADE uses the XPMxxRTP$XREF patch control file to select PRSUs for the required loads. This file is included when PRSUs are delivered to the office on an SLM or XA-Core tape cartridge labeled *Patches: Yes*.

PMUPGRADE uses the patch control file to select the PRSUs for the required PM loads. The name of the $XREF patch control file is XPMxxRTP$XREF, where xx refers to the PM load tape version.

The $XREF patch control file is not available with all methods of PRSU delivery such as when the office downloads PRSUs electronically from Nortel Networks. If the patch control file is not available, PMUPGRADE bypasses all patching steps and generates the following message.

```
WARNING:  No Patch Control File Found. No patch files
selected.
```

If PMUPGRADE bypasses PRSU selection and generates this message, identify and manually copy the required PRSUs.

File copy

PMUPGRADE automatically copies PM load files and PRSU files to the designated volume. In support of this functionality, PMUPGRADE introduces two new volume types:

- distribution volume
  - — volume that contains the new PM load files, for example, the PM load tape drive
- destination volume
  - — volume where the new PM load files are copied

The following table lists and explains the volume names used by PMUPGRADE.

PMUPGRADE volume names

Volume name	Explanation	Acceptable volume types	Explanation
Load File Distribution	Volume that contains the new PM load files	SLM or XA-Core tape	Automatically set from the Load File Destination volume
Load File Destination	Volume where the new PM load files are copied	SLM or XA-Core disk volume	
Patch File Distribution	Volume that contains the new PM PRSU files	SLM or XA-Core tape SLM or XA-Core disk volume DDU volume SFDEV	If SLM tape is used, it must be the same as the Load File Distribution.
Integrated service node (ISN) Patch Destination	Volume where the new ISN PM PRSU files are copied	SLM or XA-Core disk volume DDU volume SFDEV	SLM disk volume is the only acceptable value if Patch File Distribution is a SLM tape.
XPM Patch Destination	Volume where the new XPM PRSU files are copied	SLM or XA-Core disk volume DDU volume SFDEV	SLM disk volume is the only acceptable value if Patch File Distribution is a SLM tape.
SPM Patch Destination	Volume where the new SPM PRSU files are copied	SLM or XA-Core disk volume DDU volume SFDEV	SLM disk volume is the only acceptable value if Patch File Distribution is a SLM tape.

If the PM inventory table includes a selected load file, PMUPGRADE does not copy the file from the tape or update table PMLOADS. For example, MX77NB03 is not copied from the tape if it is already used in the office.

Prior to copying PM load and PRSU files, PMUPGRADE audits the destination volumes and attempts to verify that sufficient disk space is available. If disk space is not available, PMUPGRADE prompts the user to stop the operation or copy as many files as possible.

PMUPGRADE also checks for duplicate PM load files. If the PM load file exists on the destination volume, PMUPGRADE does not copy the PM load file from the tape or update table PMLOADS.

Audit pre-patched XPM load (PPXL) files

PMUPGRADE audits any PPXLs in the PM update. The audit uses the PRSM LFAUDIT command to identify the PRSUs in the PPXL to the PRSM database.

Update of table PMLOADS

PMUPGRADE updates table PMLOADS for each new load that is copied to the Digital Multiplex System (DMS).

PMUPGRADE issues a warning when it finds a PM load referenced in one of the supported inventory tables, but not entered in table PMLOADS. Following are some reasons this condition could occur:

- A load, such as the NT9X17 firmware load entered in table MSFWLOAD, or the MS software load is not entered in table PMLOADS.
- A load, such as the distributed processing peripheral (DPP) entered in table DPP, is not entered in table PMLOADS.

PMUPGRADE issues an error message if the PRSUs for pre-patched XPM load (PPXL) files do not reside on the DMS switch. The PRSUs for the PPXL must be present and in the same volume as the PPXL. Refer to section "Post-release software update file storage" in chapter "Overview of release" in this document.

Supported loads

PMUPGRADE supports all PM loads that meet the following conditions:

- The office receives the load on SLM or XA-Core tape.
- The load is entered in one of the following inventory tables:
  - APINV
  - CCHINV
  - CSMINV
  - DCHINV
  - DCMINV
  - DLMINV
  - DPP
  - DSPMINV
  - ENINV
  - EXNDINV
  - ICRMINV

- IOC (for BASE12 and higher PCLs)
- IPEINV
- LCMDRINV
- LCMINV
- LCRINV
- LIMINV
- LIUINV
- LMINV
- LTCINV
- LTCRINV
- MDBSINV
- MNCKTPAK
- MPC
- MSBINV
- MSFWLOAD
- MSINV (for BASE11 and higher PCLs)
- NIUINV
- OFCVAR
  - tuple DTULDINFO
  - tuple DTUOHBTLD
  - tuple EDTULDFILE
  - tuple MTULDINFO
- RCCINV
- RMMINV
- STINV
- TMINV
- TPCINV
- TSTEQUIP
- VCHINV
- XESAINV

Note: PMUPGRADE supports the patched current message switch (MS) load included on the PM load tape for this release.

CAUTION
Loss of information for automated PM update
Run PMUPGRADE only on the primary PM load tape. Do not run PMUPGRADE on multiple PM load tapes within a PM update cycle.

Pre-patched XPM load (PPXL) files

PMUPGRADE generates warning and error messages when it encounters one of the following conditions.

Incorrect table PADNDEV datafill

PMUPGRADE could detect an error when it attempts to update table PMLOADS with a PPXL. This error occurs if the XPM Patch Destination volume is not entered in table PADNDEV.

Perform one of the following steps to avoid or recover from this error.

- To avoid the error, datafill table PADNDEV with the XPM Patch Destination volume before performing the START FILECOPY command.
- To recover from the error, list the XPM Patch Destination volume and manually add the tuples to table PMLOADS after PMUPGRADE completes the FILECOPY.

PRSU not found

When PMUPGRADE updates table PMLOADS, it issues an error message if the PRSUs for a PPXL do not reside on the DMS switch. The PRSU for the PPXL must be present and should be in the same volume as the PPXL. Refer to section “Post-release software update file storage” in chapter “Overview of release” in this document.

Automated planning

PMUPGRADE generates a PM upgrade plan based on the results of its FILECOPY phase. PMUPGRADE identifies the PMs in the DMS switch and creates a plan based on serving or subtending PM relationships.

This plan is organized by tasks, and the order of tasks reflects peripheral side (P-side) to central side (C-side) PM configurations. The following figure illustrates a sample PMUPGRADE Plan Report.

Sample PMUPGRADE Plan Report

```
PMUPGRADE PLAN REPORT

Upgrade Layer: 1
-----------------

TASK 1:
SITE:
LOADS:  FROM EDH05AO TO EDH81AZ
NODES:  DCH 1
        DCH 2
        DCH 3
        DCH 4
        DCH 5
        DCH 6
REQUIRES: none
AUTOMATED: NO


TASK 2:
SITE:
LOADS:  FROM ARS04AQ TO ARS08BC
NODES:  LIU7 101
        LIU7 102
        LIU7 103
REQUIRES: none
AUTOMATED: NO


TASK 3:
SITE:
LOADS:  FROM LRS04AQ TO LRS08BC
NODES:  LIU7 104
        LIU7 109
        LIU7 113
        LIU7 114
        LIU7 123
        LIU7 211
REQUIRES: none
AUTOMATED: NO


TASK 4:
SITE:
LOADS:  FROM ERS07BM TO ETC08AX
NODES:  EIU 116
REQUIRES: none
AUTOMATED: NO
```

Sample PMUPGRADE Plan Report (continued)

```
TASK 5:
SITE:
LOADS:  FROM ED707BM TO ED781AZ
        FROM MX77NG03 TO MX77NI05
NODES:  DTC 0
        DTC 1
        DTC 3
        DTC 7
        DTC 9
REQUIRES: none
AUTOMATED: YES


TASK 6:
SITE:
LOADS:  FROM ELI05AO TO ELI81AZ
        FROM MX77NG03 TO MX77NI05
NODES:  DTCI 19
REQUIRES: none
AUTOMATED: YES



Upgrade Layer: 2
-----------------

TASK 7:
SITE:
LOADS:  FROM NRS07BM TO NRS08AX
NODES:  NIU 1
REQUIRES: TASK 5, 6, 4, 2, 3
AUTOMATED: NO


TASK 8:
SITE:   REM4
LOADS:  FROM RMM04A TO RMM05A
NODES:  RMM 6
REQUIRES: TASK 1
AUTOMATED: NO


TASK 9:
SITE:   REM4
LOADS:  FROM ESA05AO TO ESA81AW
NODES:  ESA 4
REQUIRES: TASK 1
AUTOMATED: YES
```

Sample PMUPGRADE Plan Report (continued)

```
Upgrade Layer: 3
-----------------

TASK 10:
SITE:   HOST
LOADS:  FROM LCME05AI TO LCME81BA
NODES:  LCME 07 0
        LCME 07 1
        LCME 08 0
        LCME 08 1
REQUIRES: TASK 1, 8, 9
AUTOMATED: YES


TASK 11:
SITE:   REM4
LOADS:  FROM XLCM05AI TO XLCM81BA
NODES:  LCM 00 0
REQUIRES: TASK 1, 8, 9
AUTOMATED: YES


TASK 12:
SITE:   HST4
LOADS:  FROM XLCM05AI TO XLCM81BA
NODES:  LCM 00 0
REQUIRES: TASK 1, 8, 9
AUTOMATED: YES


TASK 13:
SITE:
LOADS:  FROM LPC07BM TO LPC08AX
NODES:  LIM 1
REQUIRES: TASK 2, 3, 4, 7
AUTOMATED: NO


Upgrade Layer: 4
-----------------

TASK 14:
SITE:
LOADS:  FROM ELI05AO TO ELI81AZ
        FROM MX77NG03 TO MX77NI05
NODES:  LGC 7
REQUIRES: TASK 1, 8, 9, 10, 11, 12
AUTOMATED: YES
```

Review the PM upgrade plan to confirm the order of tasks complies with office policy. If the plan does not comply, use the RUNSTEP command during the automated PM update to change the order of tasks.

After review of the plan, split the PM update tasks into PM update shifts. A PM update shift is the length of time each day required to perform PM updates. A PM update shift can be no more than 14 hours. Office policy and the maintenance window determines the length of the PM update shift. The type and number of PMs determines the number of shifts required to update all PMs in the office. Use office records from previous PM updates and "Appendix A: Loading times" in this document for assistance.

Automated updates

Use the procedure "Perform an automated PM update" and the CI-level utility SWUPGRADE PM to perform an automated PM update on PMs datafilled in the following inventory tables.

- DCHINV
- DSPMINV
- ENINV (BASE11 or higher PCL)

  Note 1: SWUPGRADE pauses for the Nortel Networks recommendation of a four hour soak period after the update of each ENET plane. Office updates from BASE11 or a higher PCL must allow for the four hour pause to remain within the maintenance window.

  Note 2: Do not perform an automated update for the ENET when a spectrum peripheral module (SPM) is present on the DMS switch. Use the procedure "Update the ENET" in this document to perform a manual ENET update.
- ICRMINV
- LCMINV
- LIUINV (EIUs, FRIUs, and XLIUs only)
- LTCINV
- LTCRINV
- MSFWLOAD (BASE10 or higher PCL)
- NIUINV (BASE11 or higher PCL)
- RCCINV
- XESAINV

The automated PM update provides the following functionality.

- Follows the recommended PM update processes and procedures defined in this document.
- Updates the PM inventory table.
- Busies the PM unit or units.
- Updates the PM unit or units with any required loads, such as the following loads.
  - PM software load
  - XPM processor firmware load
  - CLASS modem resource (CMR) load
- Loads the PM unit or units using an efficient method suitable to the office's operating environment.
- Patches the PM software load, if necessary.
- Returns the PM unit or units to service.
- Supports PPXLs.
- Leaves the PMs in their current state if the PM update aborts or fails.
- Checks the office operating environment and PM state before updating.
- Does not update PMs that are already updated, whether the update is performed manually or by an automated process.

One-of-a-kind loading

One-of-a-kind loading occurs when one PM is updated with the new load before other PMs of the same type in the office. The first PM uses the new load for a specified period before the remaining PMs of the same type are updated with the new load.

Use the following process to perform one-of-a-kind loading and an automated PM update.

1 Use the procedure "Prepare for an automated PM update using PMUPGRADE" in this document.

2 Use the procedure "Perform an automated PM update" in this document.

3 Pause before each step that contains a set of PMs that you prefer to use one-of-a-kind loading.

4 Update one PM in the set manually.

5 Continue the automated PM update. SWUPGRADE PM does not reload the PM when it updates the remaining PMs in the set.

Commands

ATTENTION

Use the information in this section for information only. Use the appropriate procedure in this document to perform an automated or partially automated PM update. All the commands for automated PM updates described in this section might not be available depending on the office's current release.

This section describes some of the PMUPGRADE and SWUPGRADE PM commands used during an automated PM update. The PMUPGRADE commands table lists some of the PMUPGRADE commands used during the administration and planning phases of an automated PM update.

PMUPGRADE commands

Command	Parameter	Variable	Description
DISPLAY	**SETTINGS**		Displays PMUPGRADE settings.
	NODES		Lists the PMs and loads for each PM, as entered in the inventory tables.
	LOADS		Lists the PM loads in the DMS switch and the active file, active volume, and inventory table for each load.
	FWINFO		Displays all firmware types and load settings. (BASE11 or higher PCL)
	PLAN		Displays the PM Upgrade Plan generated by PMUPGRADE.
	ALL		Displays all previous reports.
HELP			Accesses on-line information for PMUPGRADE commands.
PMUPGRADE			Accesses the PMUPGRADE utility.
QUIT			Quits the PMUPGRADE utility.
RESET			Resets a single or multiple steps and sets their status to NEEDED, so the step or steps can be re–executed.

—continued—

PMUPGRADE commands (continued)

Command	Parameter	Variable	Description
SET	**LOADDISTRIB**	<volume_name>	Sets the source of the load files to be copied. (BASE09 or higher PCL). Starting in SN07, electronic software delivery (ESD) is supported via FTP. (ftp://<SDM_IP_address><directory_location>)
	LOADDEST	<volume_name>	Sets the load destination volume, which is the volume that holds the copied PM loads.
	PATCHDISTRIB	<volume_name>	Sets the source of the patch files to be copied. Starting in SN07, electronic software delivery (ESD) is supported via FTP. (ftp://<SDM_IP_address><directory_location>)
	PATCHDISTRIB	**LOADDISTRIB**	Sets the Patch Distribution volume to the same volume as the Load Distribution. Use this variable when PMUPGRADE has no PRSU files to copy.
	ISNPATCH	<volume_name>	Sets the ISN patch destination volume to store the ISN PRSU files.
	XPMPATCH	<volume_name>	Sets the XPM patch destination volume to store the XPM PRSU files.
	SPMPATCH	<volume_name>	Set the SPM patch destination volume to store the SPM PRSU files.
	CONFIRMATION	**ON** **OFF**	Sets the MAP display to request user confirmation before executing a command.
	CARRYOVER	**ON** **OFF**	Set the PMUPGRADE utility to copy all PM loads for the office. This does not result in the update of PMs that have no PM load change. The default is OFF.
	INCLUDELOADS	<load_name>	Adds PM loads to the list of PM loads selected by PMUPGRADE.
	EXCLUDELOADS	<load_name>	Removes PM loads from the list of PM loads selected by PMUPGRADE.

—continued—

PMUPGRADE commands (continued)

Command	Parameter	Variable	Description
	FWBASELINE		Identifies the baseline load for a firmware type. Cancels the setting when no parameter is entered. (BASE11 or higher PCL)
	FWNEWREL		Identifies the new release load for a firmware type. Cancels the setting when no parameter is entered. (BASE11 or higher PCL)
	FWPREFERRED		Identifies the CURRENT, BASELINE, or NEWREL load to indicate the preferred replacement load. (BASE11 or higher PCL)
START	**FILECOPY**		Starts the PMUPGRADE process to copy PM load files, copy PRSUs, and update table PMLOADS. Starting in SN07, electronic software delivery (ESD) is supported via FTP. (ftp://<SDM_IP_address> <directory_location>)
	PLAN		Generates the PM upgrade plan.
		—end—	

The SWUPGRADE PM commands table lists some of the SWUPGRADE PM commands used during the update phase of an automated PM update. The table does not list all available commands in the SWUPGRADE level or the SWUPGRADE PM increment. Refer to the applicable one night process (ONP) documentation.

SWUPGRADE PM commands

Command	Parameter	Variable	Description
CANCEL			Cancels the PM update.
DISPLAY			Displays information. “DISP” can be used as a short form of the command.
	STEPS		Displays the steps in the PM Upgrade plan.
		—continued—	

SWUPGRADE PM commands (continued)

Command	Parameter	Variable	Description
	VAR ALL		Displays SWUPGRADE PM environment variables. (BASE10 or higher PCL)
GO			Resumes the execution of the PM update after a pause. The commands CONTINUE and RESUME can be used in place of the GO command.
HELP			Displays information on SWUPGRADE PM commands, steps, or environment variables.
	STEP	<step_name>	Displays information on a specific PM update step.
	VAR	<variable>	Displays information on an environment variable and its current value.
		<command>	Displays information on a SWUPGRADE PM command.
OVERRIDE		<step_name>	Overrides the specified step in the PM upgrade plan. “OVE” can be used as a short form of the command.
PROMPTING			Permits pausing after each automated step.
	ON		Prompts after each automated step to allow the next step to be selected. Prompting ON is the default value.
	OFF		Does not prompt after each automated step.
QUIT			Quits the SWUPGRADE PM level.
RUNSTEP		<step_name>	Runs or executes a specific step.

—continued—

SWUPGRADE PM commands (continued)

Command	Parameter	Variable	Description
SET	**TRACE_DEVICE**	<device_name>	Sets the device to which update output messages are printed.
	CONCURRENCY	<number>	Sets the number of PMs to be updated concurrently during an automated task.
		UNLIMITED	
	SHIFT	**STARTED**	Starts automated PM update shift.
		FINISHED	Finishes automated PM update shift.
		ABORTED	Aborts automated PM update shift.
START			Completes the setup for the automated PM update process.
SWUPGRADE	**PM**		Enters the SWUPGRADE increment for PM updates.
		—end—	

On-line help

Both PMUPGRADE and SWUPGRADE PM provide on-line help. Use the HELP command in either utility to enter the on-line help facility.

PMUPGRADE help

Use the HELP command in the PMUPGRADE utility to display all available PMUPGRADE commands. The following example illustrates the help screen.

```
>help
PMUPGRADE
---------
 The PMUPGRADE CI allows users to prepare and plan for
 the upgrade of peripherals in the office.

 _____________________________________________________
 COMMAND      | FUNCTION
 _____________________________________________________
 HELP         | List and describe all PMUPGRADE commands.
 DISPLAY      | Display one of the PMUPGRADE reports.
 SET          | Set the configurable data for PMUPGRADE.
 START        | Start a phase of PMUPGRADE.
 QUIT         | Exit the PMUPGRADE environment.
```

For additional help on a specific command, type **Q <command>**.

SWUPGRADE PM help

Use the HELP command in the SWUPGRADE PM utility to request help on the SWUPGRADE PM increment or a specific command, step, or environment variable. The following example illustrates the initial help screen.

```
>help
                              SWUPGRADE

Displays information on the SWUPGRADE commands, the steps,
the variables or the SWUPGRADE increment.

The options are:
  <swupgrade command> - Displays a brief description and the
                        syntax of that command.
  STEP <step>         - Displays a brief description of the
                        behavior of that step.
  VAR <variable>      - Displays a brief description and the
                        current value of that variable.
  (no parameters)     - Displays a brief description of the
                        SWUPGRADE increment and a list of the
                        available CI commands.

Parms: [<entity> {STEP <step> STRING,
                  VAR <variable> STRING,
                  (otherwise) <command> STRING}]
```

The following example illustrates a help screen for the START command.

```
>help start

START command
-------------

Starts the Software Upgrade by executing the steps in the
active step list in a sequential fashion starting with the
first one.

The START command is only used to initially start the
process. To continue after the process has paused, use GO,
RESUME or CONTINUE.

NO PARAMETERS.
```

Logs

The following logs can be generated during the automated PM update process.

Logs generated during an automated PM update

Log name	Log number	Description	Action
PM	700	Records the start, finish, and abort times of PM update shifts.	None
PM	701	Records the start time of a PM update task, lists the nodes to be updated, and PM loads to be used during the task	None
PM	702	Records the time of the successful finish of an automated PM update task.	None
PM	703	Records the time of completion of an unsuccessful automated task and reports the success or failure of each node updated during the task.	Examine the nodes that failed to update. Troubleshoot the problem or contact the next level of support.

How to troubleshoot problems

If problems are encountered during the automated PM update, there are many resources available to identify and correct the source of the problem. Following are some resources that could be helpful to troubleshoot problems.

- The section “Messages” in this chapter
- The output from the trace device
- Log PM703 and other PM700 series logs
- Logs that indicate a maintenance problem not related to the PM update, such as a hardware or communications problem

How to control an automated PM update

This section lists the actions to control an automated PM update. Each action includes the required command and an example of the command.

Skip a manual step

Use the OVERRIDE or OVE command to skip a manual step in the automated PM update. The following table lists a possible use and example of the OVERRIDE command.

OVERRIDE command

Use	Example

Skip a manual step.	`OVERRIDE 1_M_DCH`
	or
	`OVE 1_M_DCH`

When a step is overridden, SWUPGRADE PM displays the step as `OVERRIDDEN` and continues with the automated PM update. When the PM update shift is finished, SWUPGRADE PM displays the step as `STEP NOT COMPLETE` in the Step Summary Report.

Run a step out of order

CAUTION
Possible service interruption
If steps are executed in a different order from the PM Upgrade Plan, follow a P-side to C-side sequence. The steps in the PM Upgrade Plan are sequenced P-side to C-side. If steps are executed in a different sequence, service to subtending PMs can be interrupted.

Use the RUNSTEP command to run a step in a different order than specified in the PM Upgrade Plan. Use the RUNSTEP command to modify the PM Upgrade Plan to comply with office policy or support operating conditions unique to the office.

The following table lists one possible use and example of the RUNSTEP command.

RUNSTEP command

Use	Example
Run a specified step.	`RUNSTEP 7_A_DTC`

Stop a step in progress using SET SHIFT FINISHED

Use the SET SHIFT FINISHED command to stop a currently executing step in the automated PM update.

The SET SHIFT FINISHED command performs the following actions:

- Halts the execution of the current step after completing the full update for the PM or PMs currently being updated.
- Finishes the SWUPGRADE PM shift after the current step is halted when a second SET SHIFT FINISHED command is entered.
- Allows the user to quit SWUPGRADE PM.

If the currently executing step is not scheduled to complete before the end of the maintenance shift, the SET SHIFT FINISHED command can be used to stop the step. When the automated PM update is resumed during the next shift, SWUPGRADE PM does not reload the completed PMs. The following table lists possible uses and an example of SET SHIFT FINISHED.

SET SHIFT FINISHED command

Use	Example
Stop SWUPGRADE PM while the utility is executing an automated step.	`SET SHIFT FINISHED`
Finish the SWUPGRADE PM shift while the utility is not executing an automated step.	`SET SHIFT FINISHED`

If SWUPGRADE PM is not executing an automated step and the SET SHIFT FINISHED command is entered, SWUPGRADE PM generates a note to the user to finish the PM update shift. Enter QUIT to exit from SWUPGRADE PM and perform the procedure “Finish a PM update shift” in this document.

Note: The SET SHIFT FINISHED command does not undo any previous maintenance actions. The SWUPGRADE PM session is resumed with the SET SHIFT STARTED command for the next PM update shift.

Stop a step in progress using SET SHIFT ABORTED

Use the SET SHIFT ABORTED command to stop a currently executing step in the automated PM update.

CAUTION
Possible service interruption
The SET SHIFT ABORTED command leaves the PMs being updated in their present service state. Additional maintenance activities could be required to return these PMs to service.

The SET SHIFT ABORTED command performs the following actions:

- Halts execution of the current step after the current maintenance action.
- Leaves the PM or PMs being updated in their present service state.
- Aborts the SWUPGRADE PM shift.
- Allows the user to quit SWUPGRADE PM.

Additional maintenance action can be required to return the PMs to service. For example, the SET SHIFT ABORTED command can be used while the SWUPGRADE PM utility is loading a set of four LGC inactive units. SWUPGRADE PM finishes loading the units, but does not return the units to service. In this example, the user must return each unit to service and confirm each unit is patched properly. The following table lists a possible use and example of SET SHIFT ABORTED.

SET SHIFT ABORTED command

Use	Example
Stop SWUPGRADE PM while the utility is executing an automated step.	`SET SHIFT ABORTED`

After the SET SHIFT ABORTED command is entered, SWUPGRADE PM generates a note to the user to finish the PM update shift. Enter QUIT to exit from SWUPGRADE PM and perform the procedure “Finish a PM update shift” in this document.

Note: The SET SHIFT ABORTED command does not undo any previous maintenance actions. The SWUPGRADE PM shift is resumed with the SET SHIFT STARTED command.

Cancel a session

Use the CANCEL command to permanently cancel the SWUPGRADE PM session. This command erases the PM update step list and plan. To generate a new PM Upgrade Plan, use the START PLAN command in the PMUPGRADE utility.

The PM update shift must be finished before the CANCEL command can be used. The SET SHIFT FINISHED command can be used to finish the shift.

The following table lists a possible use and example of the CANCEL command.

CANCEL command

Use	Example
Cancel SWUPGRADE PM session.	`CANCEL`

Note: The CANCEL command does not undo any previous maintenance actions.

Pause between automated steps

Use of the PROMPTING command forces the DMS switch to pause after each automated step to allow user selection of the next desired step. The following table lists the purpose of the PROMPTING command and an example. PROMPTING ON is the recommended method of operation.

PROMPTING command

Use	Example
Force the DMS switch to pause after each automated step.	`PROMPTING ON`
The DMS switch does not pause after each automated step.	`PROMPTING OFF`

Messages

This section describes possible messages generated by the DMS switch during an automated PM update. The section is divided into the following subsections:

- PMUPGRADE error messages
- PMUPGRADE warning messages

- Other PMUPGRADE messages

PMUPGRADE error messages

The following table lists some of the error messages generated by the DMS switch during the automated PM update process. This table provides a description and action for each message.

PMUPGRADE error messages

Message	Description	Action
`ERROR: Could not select files`	PMUPGRADE could not select the files to be copied due to an internal error.	Contact the next level of support.
`ERROR: Destination volumes inaccessible`	PMUPGRADE could not list a destination volume. Possibly, the volume is not in-service.	Use the SET command to change the destination volume.
`ERROR: Error in volume configuration`	The Volumes settings are not a permitted configuration.	Use the DISPLAY SETTINGS command to display the current volume settings and any errors in the settings. These errors must be corrected before performing a FILECOPY. Refer to this section for valid volume configurations.
`ERROR: Failed to add tuple for <load_name> to table PMLOADS Reason: Did not pass validity check`	PMUPGRADE could not add the tuple for the new load to table PMLOADS.	Manually add the tuple to table PMLOADS.
`ERROR: Failed to add tuple for <load_name> to table PMLOADS Reason: <text>`	PMUPGRADE could not add the tuple for the new load to table PMLOADS.	Use the displayed text to troubleshoot the problem or contact the next level of support. PMUPGRADE continues the FILECOPY phase of the process.
`ERROR: Failed to copy file <load_name> to volume <volume_name> Reason: <text>`	PMUPGRADE detected a logical file system error.	Use the displayed text to troubleshoot the problem or contact the next level of support.

—continued—

PMUPGRADE error messages (continued)

Message	Description	Action
`ERROR: Files with same name on Load Distribution`	The tape has load files with the same name.	Verify the correct tape is being used and the correct unit is specified in the PMUPGRADE settings. If the tape contains duplicate file names, contact the next level of support.
`ERROR: File System Error`	PMUPGRADE could not retrieve file system information on the tape drive.	Troubleshoot the problem or contact the next level of support.
`ERROR: Insufficient DMS memory`	The DMS switch does not have enough memory to run PMUPGRADE.	Troubleshoot the problem or contact the next level of support.
`ERROR: in Volume Configuration, Volume <volume name> is not valid`	One of the volumes specified does not exist.	Use the SET command to set the configuration to an existing volume.
`ERROR: Load Distribution Empty`	The Load Distribution volume does not contain any files.	Verify the correct tape is being used and the correct unit is specified in the PMUPGRADE settings. Use the SET LOADDEST command to change the Load Distribution volume.
`ERROR: Load Distribution inaccessible`	PMUPGRADE could not access the Load Distribution volume.	The service could be busy or the tape could have an error. The tape could need to be ejected through use of another utility. Troubleshoot the problem or contact the next level of support.

—continued—

PMUPGRADE error messages (continued)

Message	Description	Action
`ERROR: Load Distribution must be an SLM tape`	The selected Load Distribution volume is not an SLM tape.	Use the SET LOADDEST command to change the Load Destination volume to an SLM disk. The Load Distribution setting automatically changes to the corresponding SLM tape unit.
`ERROR: System error <text>`	PMUPtem error.	Troubleshoot the problem or contact the next level of support.
`ERROR: Invalid input - FINISHED. Please re-enter value for SHIFT.`	The user attempted to stop the software upgrade while it was processing a set and it faileGRADE detected an internal sysd to process the user request because it was not yet ready to perform the task.	The user is informed of the error and the software upgrade will continue. Once the PM is finished upgrading, the SET SHIFT FINISHED command must be entered again to complete the shift.
—end—		

PMUPGRADE warning messages

The following table lists some of the warning messages generated by the DMS switch during the automated PM update process. This table provides a description and action for each message.

PMUPGRADE warning messages

Message	Description	Action
WARNING: Conflict between ISN Patch Destination and Load Distribution	The same volume is specified as the ISN Patch Destination and the Load Distribution. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.
WARNING: Conflict between ISN Patch Destination and Patch Distribution	The same volume is specified as the ISN Patch Destination and the Patch Distribution. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.
WARNING: Conflict between Load Distribution and Load Destination	The same volume is specified as the Load Distribution and the Load Destination. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.
WARNING: Conflict between Load Destination and Patch Distribution	The same volume is specified as the Load Destination and the Patch Distribution. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.
WARNING: Conflict between XPM Patch Destination and Load Distribution	The same volume is specified as the XPM Patch Destination and the Load Distribution. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.
WARNING: Conflict between XPM Patch Destination and Patch Distribution	The same volume is specified as the XPM Patch Destination and the Patch Distribution. The same volume cannot be a destination volume and a distribution volume.	Use the SET command to change one of the volumes.

—continued—

PMUPGRADE warning messages (continued)

Message	Description	Action
`WARNING: Could not copy all files`	PMUPGRADE could not copy all files to the destination volumes during the FILECOPY phase. One of the destination volumes selected to contain the files does not have enough space.	Use the SET command to change the destination volumes or remove some of the files from the current volume.
`WARNING: File system error`	PMUPGRADE detected an unrecoverable error with the file system.	Troubleshoot the problem or contact the next level of support.
`WARNING: Files with the same name on Patch Distribution`	The Patch Distribution volume has patch files with the same name.	Review the PRSUs on the Patch Distribution volume and verify the correct PRSUs were copied during the FILECOPY phase. If necessary, remove any incorrect PRSUs and manually copy the correct PRSUs.
`WARNING: Format checking bypassed, <image or backup image> with unsupported format`	PMUPGRADE attempted to enter a load in table PMLOADS that has a format not supported by table PMLOADS. The load could be the new MPF load for the MS multi-port card.	Manually remove the load from table PMLOADS.
`WARNING: Invalid ISN Patch Destination`	The volume specified as the ISN Patch Destination does not exist or is not in-service.	Use the SET command to change the volume, or troubleshoot the problem with the identified volume. A valid Patch Destination volume must be an SFDEV, DDU, or SLM or XA-Core volume.
`WARNING: Invalid Load Destination`	The volume specified as the Load Destination volume does not exist or is not in-service.	Use the SET command to change the volume, or troubleshoot the problem with the identified volume.

—continued—

PMUPGRADE warning messages (continued)

Message	Description	Action
WARNING: Invalid XPM Patch Destination	The volume specified as the XPM Patch Destination does not exist or is not in-service.	Use the SET command to change the volume, or troubleshoot the problem with the identified volume. A valid Patch Destination volume must be an SFDEV, DDU, or SLM or XA-Core volume.
WARNING: ISN Patch Destination and Patch Distribution incompatible	If the Patch Distribution has been specified as an SLM or XA-Core tape, the ISN Patch Destination must be an SLM or XA-Core disk on the corresponding drive.	Use the SET command to change the volume, or troubleshoot the problem with the identified volume.
WARNING: ISN Patch Destination Inaccessible	PMUPGRADE is not able to access the volume specified as the ISN Patch Destination volume. The device could be busied.	Troubleshoot the problem or contact the next level of support.
WARNING: ISN Patch Destination is not in switch patch search path	The volume specified for the ISN Patch Destination does not have a corresponding entry in table PADNDEV or it is not specified as SFDEV.	Check table PADNDEV and add or correct the entry.
WARNING: Journal File Unavailable	System journaling is not on. Table modifications are not recorded in the system journal file, which can affect system recovery.	Turn on system journaling.
WARNING: Load <load name> is referenced but is not defined in table PMLOADS	Table PMLOADS does not include the specified load. However, the specified load is entered in an inventory table.	Check both tables and correct the appropriate entry.
WARNING: Load <load name> was not found	The specified load was included or excluded from the list of selected loads, but it does not exist on the load distribution volume.	Check the load name in the PMUPGRADE settings.

—continued—

PMUPGRADE warning messages (continued)

Message	Description	Action
`WARNING: Load Destination inaccessible`	PMUPGRADE can not access the Load Destination volume. The volume could be busied or inoperable.	Troubleshoot the problem or contact the next level of support.
`WARNING: Load Distribution inaccessible`	PMUPGRADE can not access the Load Distribution volume. The volume could be out of service or mounted by another service.	Troubleshoot the problem or contact the next level of support.
`WARNING: No Patch Control File Found`	PMUPGRADE can not find the patch cross-reference file on the Patch Distribution volume. PMUPGRADE recognizes a PRSU cross-reference file with the naming convention XPMxxRTP$XREF, where x is a digit.	If the PRSU cross-reference file is on another volume, move it to the Patch Distribution volume. If no PRSU cross-reference file is available, or if the PRSU cross-reference file uses a different naming convention, PMUPGRADE can not copy any PRSUs from the Patch Distribution volume. Manually copy the PRSUs to the Patch Destination volume. PMUPGRADE copies the load files.
`WARNING: Not all loads added to PMLOADS table`	PMUPGRADE can not add tuples to table PMLOADS for all of the copied loads. The tuple could already exist, or it was invalid.	Use the displayed reason text to troubleshoot the problem, or contact the next level of support.
`WARNING: Not enough space left on volume`	A destination volume does not have enough space for the selected file.	Use the SET command to change the Destination volume or remove some files from the current Destination volume.

—continued—

PMUPGRADE warning messages (continued)

Message	Description	Action
`WARNING: Patch Distribution empty`	The Patch Distribution does not have any files.	Check the Patch Distribution setting and confirm the volume contains the PRSU files and PRSU cross-reference file for the update. Use the SET command if the Patch Distribution setting needs to be changed.
`WARNING: Patch Distribution inaccessible`	PMUPGRADE can not access the Patch Distribution volume. The volume could be busied or out-of-service.	Troubleshoot the problem or contact the next level of support.
`WARNING: User confirmation mode is disabled`	The confirmation mode is turned off. PMUPGRADE does not prompt the user before an action.	Use the command SET CONFIRMATION ON.
`WARNING: XPM Patch Destination and Patch Distribution incompatible`	If the Patch Distribution has been specified as an SLM or XA-Core tape, the XPM Patch Destination must be an SLM or XA-Core disk on the corresponding drive.	Use the SET command to change the appropriate volume setting.
`WARNING: XPM Patch Destination inaccessible`	PMUPGRADE could not access the XPM Patch Destination volume. The device could be busied.	Troubleshoot the problem or contact the next level of support.
`WARNING: XPM Patch Destination is not in switch patch search path`	The volume specified for the XPM Patch Destination does not have a corresponding entry in table PADNDEV, or it is not specified as SFDEV.	Check table PADNDEV and add or correct the entry.

—end—

Other PMUPGRADE messages

The following table lists other possible messages generated by the DMS switch during the automated PM update process. This table provides a description and action for each message.

Other PMUPGRADE messages

Message	Description	Action
`Only one PMUPGRADE session can be running at a time.`	PMUPGRADE is in use. Only one copy can be running at a time, and only one user can be in PMUPGRADE at any given time.	Try again later.
`This PCL does not contain table <table_name>.`	A table supported by PMUPGRADE is not available on the DMS switch.	Continue with the procedure. The table is supported by PMUPGRADE but not supported by the PCL running in the office.
`You are already in the PMUPGRADE environment.`	The PMUPGRADE command was issued while in PMUPGRADE.	Quit PMUPGRADE. Type QUIT and press the Enter key.

Update procedures

The procedures in this chapter describe how to update peripheral modules (PM) and other hardware types during the PM update process.

The *Example of command* illustrations in the update procedures do not always reference the applicable PM load or PRSU file names for this release. Refer to table "PM-to-load cross-reference" in chapter "Overview of release" to determine the applicable load name for each PM and hardware type.

Note: If the system load module (SLM) or extended architecture core (XA-Core) tape cartridge label text indicates *Patches: Yes,* the tape includes the required post-release software update (PRSU) files for XMS-based peripheral module (XPM) and integrated services node (ISN) load files.

Prepare for an automated PM update using PMUPGRADE

Application

CAUTION
Loss of information for automated PM update
Run PMUPGRADE only on the primary PM load tape. Do not run PMUPGRADE on multiple PM load tapes within a PM update cycle.

ATTENTION
Depending on the office's current BASE software release level, all functionality for automated PM updates described in this document is not available. Refer to chapter "Overview of automated update process" for available functionality.

ATTENTION
If the PMUPGRADE tool is used to upgrade Legacy PMs and SPMs, the loadnames associated with MG 4000, IW–SPM, or DPT SPM must be excluded during the file copy and upgrade plan steps.

Separate PMUPGRADE plans will be required for the MG 4000, IW–SPM, or DPT SPM when those components are upgraded using the order specified in the *Upgrading the Succession Network*, NN10261–450, Volume 1.

Use this procedure to prepare an office for a peripheral module (PM) update with the PMUPGRADE utility. Perform this procedure when the PM load tape and post-release software update (PRSU) files for the new release are received.

Prerequisites

Meet the following prerequisites prior to an automated PM update shift.

$XREF patch control file

PMUPGRADE uses the $XREF patch control file to select the required PRSUs. The $XREF file is included when PRSUs are delivered on an SLM or XA-Core tape cartridge labeled *Patches: Yes*. If the $XREF file is not available, PMUPGRADE does not select or copy any PRSUs.

Prepare for an automated PM update using PMUPGRADE (continued)

PMUPGRADE bypasses these steps. The MAP display generates the following message:

```
WARNING:  No Patch Control File Found. No patch files
selected.
```

$XREF patch control file delivered via X.25 NOP links

The $XREF patch control file is specific to the PCL release for a particular office. The $XREF file is only accurate for the time frame of the requested office update. This method of $XREF file delivery only applies to an automated PM update.

An office must request a 20-day check or patch run and the $XREF patch control file from Software Delivery via the SWD Hotline. The following paragraphs describe the only method of $XREF file support in a non-tape environment.

When the office receives the $XREF file via X.25 NOP links, ensure the $XREF file is placed on the Patch File Distribution volume and the corresponding PRSU files are placed on any temporary disk volumes specified as the ISN Patch Destination volume and the XPM Patch Destination volume. PRSUs can not reside on the same volume as the $XREF file.

Note: PRSUs are not applied to the designated PM load files when the PRSU files are not on the specified ISN Patch Destination volume and the XPM Patch Destination volume.

PMUPGRADE communicates the $XREF file name and location to SWUPGRADE PM during the automated PM update. SWUPGRADE PM accesses and automatically applies the PRSUs to any designated PM load files.

This procedure assumes the $XREF file is on the Patch File Distribution volume and the PRSUs are on the specified ISN Patch Destination volume and the XPM Patch Destination volume. This ensures PMUPGRADE does not copy PRSU files from one volume to another volume.

Automatic $XREF file generation for PM loads and their corresponding patches

If a customer chooses to download patches and loads via FTP or other means of file transfer without downloading a $XREF file, a $XREF will be automatically generated if the following conditions are satisfied:

- All PM loads and their corresponding patches are on a temporary distribution disk volume

Prepare for an automated PM update using PMUPGRADE (continued)

- No other $XREF file is present on the distribution volume

This action will copy the PM loads and their corresponding patches from the disk distribution volume to the selected destination volumes and generate a new $XREF file which will be used by SWUPGRADE to upgrade the PMs.

Destination volumes

A destination volume is the volume to which the PM load or PRSU files are copied. Each destination volume must have sufficient free space for the new PM load or PRSU files and meet all office criteria to be ready for use.

PM loads

Review chapter "Overview of release" in this document. Use the information in table PM-to-load cross-reference to change the Load File Selection Report generated during this procedure.

Update sequence

Not applicable

Notes

The following notes provide additional information on the PMUPGRADE utility.

Length of time

Tape operations can take several minutes at each step. For example, the tape can take several minutes to rewind after quitting PMUPGRADE.

Confirmation

This procedure sets CONFIRMATION to ON. The MAP display prompts you after each command and allows you to change the files selected by PMUPGRADE. Setting the CONFIRMATION to OFF disables prompting and requires you to accept the automatic load file selection.

Carryover loads

Carryover loads are PM load files on the PM load tape with the same version of the load currently used in the office. Operating company personnel can issue a `SET CARRYOVER ON` to copy all PM loads for the office. However, this does not result in the update of PMs that have no PM load version change. The default is `Carryover OFF`.

Prepare for an automated PM update using PMUPGRADE (continued)

File copying

PMUPGRADE does not copy files or update table PMLOADS under the following conditions.

- The name of the new load is the same as the current load on the DMS unless `SET CARRYOVER` is ON.
- The new load exists on the Load Destination volume.

Primary copy

The loads for an SPM milestone release are distributed on a separate tape than all other PM loads. As a result, two FILECOPY operations must be performed using the PMUPGRADE tool if the SPM milestone upgrade is scheduled to coincide with the upgrade of other PM types: a “primary” filecopy for the main PM load distribution volume and a “secondary” filecopy for the SPM load tape.

For an office with both PMs and SPMs to be updated, the Primary Copy field should be set to “ON” for the PM upgrade, and “OFF” for the SPM upgrade. Otherwise, Primary Copy should be set to “ON” at all times.

Starting with SN07, the FILECOPY phase of the START command will allow the crafts person to copy PM load and patch files from remote FTP volumes to the destination volumes on the DMS switch.

PRSU files for new ISN loads

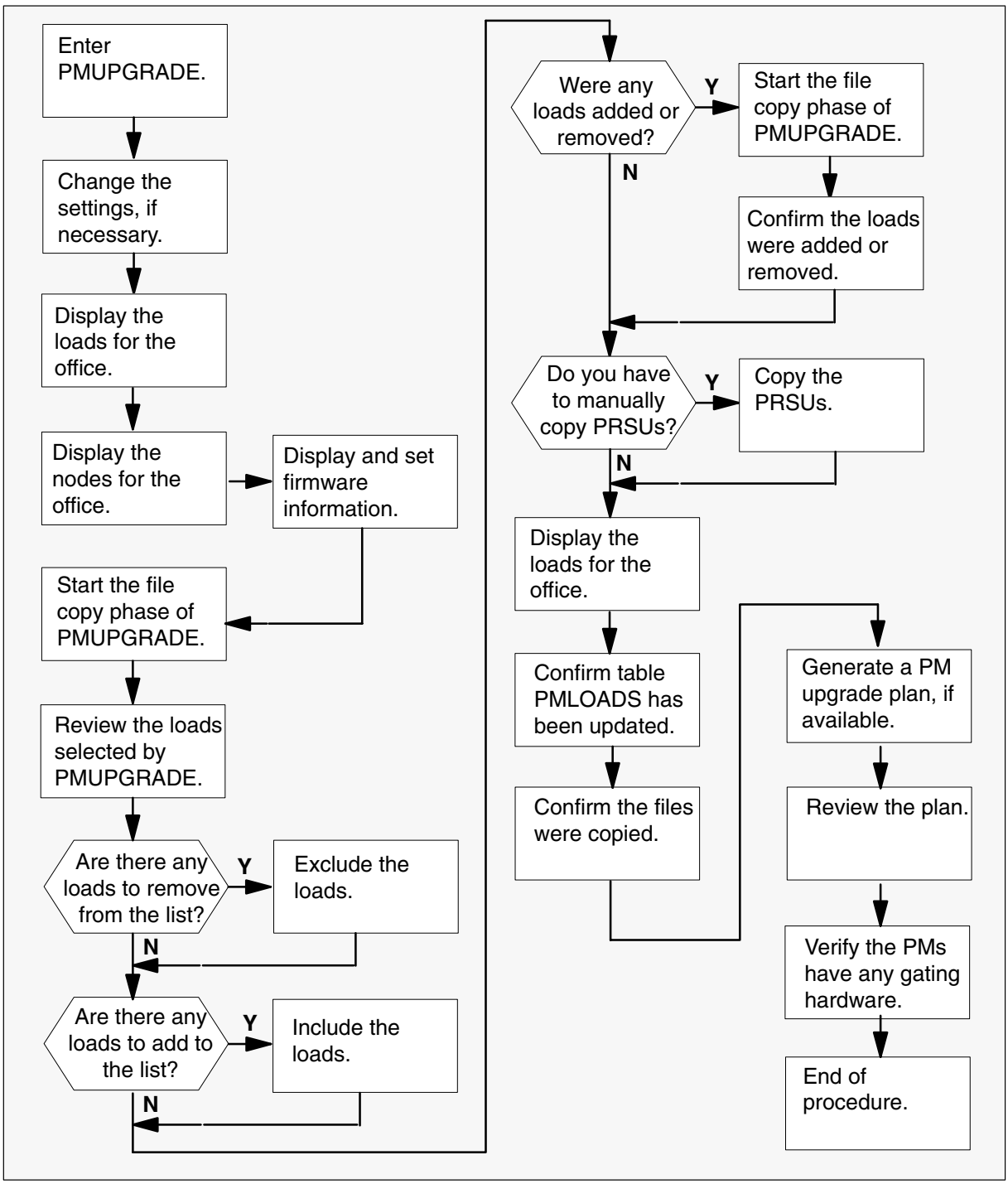
Keep a copy of the integrated services node (ISN) PRSU files associated with the new loads for the one-night process (ONP). The Digital Multiplex Switch (DMS) uses these files to update the post release software manager (PRSM) database, which requires this information to determine prerequisites for removal action. The ISN PRSU files can be erased after the office successfully completes its ONP.

PRSU files for old ISN loads

PRSUs associated with the previous ISN loads can remain at a status of Not Validated (NV). A problem occurs if the office used PATCHER to apply the patches and PRSM can not access the patch files. This problem is not service affecting. The previous PRSU files are not listed after the ONP. If you wish to manually change the PRSU status, perform a VALIDATE with the PRSU file present. The VALIDATE changes the status to Not Needed (NN).

Prepare for an automated PM update using PMUPGRADE (continued)

Summary of procedure



Prepare for an automated PM update using PMUPGRADE (continued)

Steps of procedure

ATTENTION

Review all bulletins and warnings related to this update and the PM software release document before beginning this procedure.

When prompted to confirm a tape is in its appropriate drive, confirm the tape is physically inserted in the drive. Do not use the INSERTTAPE or IT commands on the tape.

At the CI level of the MAP display

1 Send the terminal responses to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD START ONTO PRNTR1
```

Prepare for an automated PM update using PMUPGRADE (continued)

2 Access the PMUPGRADE utility. Type

>PMUPGRADE
and press the Enter key.

Example of response

```
This PCL does not contain table CSCINV
This PCL does not contain table DLMINV
This PCL does not contain table IPEINV
This PCL does not contain table MNCKTPAK
This PCL does not contain table TPCINV
APINV     contains   0 records
DCHINV    contains   6 records
DCMINV    contains   4 records
DPP       contains   0 records
ENINV     contains   0 records
EXNDINV   contains   2 records
LCMINV    contains   9 records
LIMINV    contains   1 records
LIUINV    contains  28 records
LMINV     contains   4 records
LTCINV    contains  14 records
LTCRINV   contains   0 records
MPC       contains   3 records
MSBINV    contains   0 records
MSFWLOAD  contains   3 records
NIUINV    contains   1 records
OFCVAR    contains   0 records
RCCINV    contains   0 records
RMMINV    contains   1 records
STINV     contains   0 records
TMINV     contains  14 records
TSTEQUIP  contains   0 records
XESAINV   contains   1 records
The current PMUPGRADE settings are:

Load File Distribution:  S00T
Load File Destination:   S00DPMLOADS
Patch File Distribution: S00T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            OFF
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
WARNING: User confirmation mode is disabled
```

Prepare for an automated PM update using PMUPGRADE (continued)

Logs and other possible responses

Log or other response	Action
Incompatible destination and distribution volume	Continue with this procedure. The destination and distribution volumes can be changed later in the procedure.
User confirmation mode is disabled.	Continue with this procedure. The mode can be changed later in this procedure.
A load is referenced but not defined in table PMLOADS	Check office policy for the load. Some loads, like the MPF load, should not be entered in table PMLOADS. Some loads, such as the distributed processing peripheral (DPP) load, can be entered in table PMLOADS depending on office policy. Some offices require all loads be entered in table PMLOADS for backup.
A destination volume is not in the DMS switch search path.	The volume is not entered in SFDEV or table PADNDEV. Refer to section “Messages” in chapter “Overview of automated update process” in this document.
The Load File Distribution volume is not correct.	Continue with this procedure and change the Load File Destination volume. PMUPGRADE automatically identifies this volume based on the Load File Destination volume.
Note: The destination volume is the device to which the new PM load or PRSU files are copied. The distribution volume is the device with the new PM load or PRSU files. PMUPGRADE copies from the distribution volume to the destination volume.	

Prepare for an automated PM update using PMUPGRADE (continued)

3 Set confirmation to ON. Type

>SET CONFIRMATION ON
and press the Enter key.

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S00T
Load File Destination:   S00DPMLOADS
Patch File Distribution: S00T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The remainder of this procedure assumes CONFIRMATION is set to ON.

4

ATTENTION

Carryover loads are PM load files on the PM load tape with the same version of the load currently used in the office. Operating company personnel can issue a `SET CARRYOVER ON` to copy all PM loads for the office. However, this does not result in the update of PMs that have no PM load version change. The default is `Carryover OFF`.

Check office policy for carryover load requirements.

If the office	Do
requires all PM loads for the office to be copied	step 5
does not require all PM loads for the office to be copied	step 6

Prepare for an automated PM update using PMUPGRADE (continued)

5 Set carryover to ON. Type

>SET CARRYOVER ON
and press the Enter key.

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S00T
Load File Destination:   S00DPMLOADS
Patch File Distribution: S00T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               ON
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The remainder of this procedure assumes CARRYOVER is set to OFF.

6

ATTENTION
Each destination volume must have sufficient free space for the new PM load or PRSU files and meet all office criteria.

Review the current PMUPGRADE settings. If necessary, change the settings.

If the office receives PM load and PRSU files on an	Do
SLM tape cartridge	step 6a.
XA-Core tape cartridge	step 7

a. Confirm the Load File Distribution setting is correct. If necessary, change the setting. Type

>SET LOADDISTRIB vol_name
and press the Enter key.

where

vol_name is the name of the new Load File Distribution volume

Example of command

```
>SET LOADDISTRIB S01T
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S00DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

Starting in SN07, a remote FTP volume can be specified for the load distribution source. The SDM has been tested and is approved as the remote FTP volume to be used with PMUPGRADE in support of electronically delivered PM load & patch files.

ATTENTION

It is recommended that the user create and store PM load files and patches in an SDM directory created specifically for that purpose. i.e. /swd/pmloads. PM files should not be stored in the SDM root directory for space and file maintenance considerations or in the /swd/sdm/esd directory that is intended for SDM upgrade files. The directory path specified in the SET LOADDISTRIB command should begin from the SDM root directory '/' .

A valid SDM user must be used for logging into the SDM for PMUPGRADE. Guest users such as anonymous will not have adequate permissions to successfully run PMUPGRADE.

Type

>SET LOADDISTRIB 'ftp://<SDM_IP>/<directory_location>'

and press the Enter key.

where

Prepare for an automated PM update using PMUPGRADE (continued)

<SDM_IP> designates the IP address of the SDM containing the PM upgrade files to be copied. The SDM IP address can be found in the SDMINV table on the DMS. The IP address is the IP used to access the SDM from the DMS and not from the network.

<directory_location> designates the directory on the SDM where the PM upgrade files and patches are stored beginning at "/". (The directory path from the highest level directory.)

Because of DMS command interpreter restrictions, the remote FTP volumes must be enclosed in single quotes as shown in the command above and in the example that follows.

Example of command

```
>SET LOADDISTRIB 'ftp://11.22.33.44//swd/pmloads'
```

Please note that the rules described here for identifying the remote volume for the LOADDISTRIB volume also applies to the PATCHDISTRIB volume.

b. Confirm the Load File Destination setting is correct. If necessary, change the setting. Type

>SET LOADDEST vol_name
and press the Enter key.

where

vol_name is the name of the new Load File Destination volume

Example of command

```
>SET LOADDEST S01DPMLOADS
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

Prepare for an automated PM update using PMUPGRADE (continued)

c. Confirm the Patch File Distribution setting is correct. If necessary, change the setting. Type

>SET PATCHDISTRIB vol_name
and press the Enter key.

where

vol_name is the name of the new Patch Distribution volume

Example of command

```
>SET PATCHDISTRIB S01T
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

Example of command for $XREF and PRSU files delivered via X.25 NOP links

```
>SET PATCHDISTRIB S00DTEMP
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S00DTEMP
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV. When the office receives the $XREF file via X.25 NOP links, ensure the $XREF file is placed on the Patch File Distribution volume and the corresponding PRSU files are placed on any temporary disk volumes specified as the ISN Patch Destination volume and the XPM Patch Destination volume. PRSUs can not reside on the same volume as the $XREF file.

Starting in SN07, a remote FTP volume can be specified for the patch distribution source. The SDM has been tested and is approved as the remote FTP volume to be used with PMUPGRADE in support of electronically delivered PM load & patch files.

ATTENTION

It is recommended that the user create and store PM load files and patches in an SDM directory created specifically for that purpose. i.e. /swd/pm–patches. PM files should not be stored in the SDM root directory for space and file maintenance considerations or in the /swd/sdm/esd directory that is intended for SDM upgrade files. The directory path specified in the SET PATCHDISTRIB command should begin from the SDM root directory '/' .

A valid SDM user must be used for logging into the SDM for PMUPGRADE. Guest users such as anonymous will not have adequate permissions to successfully run PMUPGRADE.

Prepare for an automated PM update using PMUPGRADE (continued)

Type

>SET PATCHDISTRIB 'ftp://<SDM_IP>/<directory_location>'
and press the Enter key.

where

SDM_IP designates the IP address of the SDM containing the PM upgrade files to be copied.

directory_location designates where on the SDM the PM upgrade files are stored.

Because of DMS command interpreter restrictions, the remote FTP volumes must be enclosed in single quotes as shown in the command above and the example that follows.

Example of command

```
>SET PATCHDISTRIB 'ftp://10.1.2.3//swd/pm-patches'
```

d. Confirm the ISN Patch Destination setting is correct. If necessary, change the setting. Type

>SET ISNPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new ISN Patch Destination volume

Example of command

```
>SET ISNPATCH S01DPMLOADS
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   S01DPMLOADS
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The ISN patch destination volume name should be entered in table PADNDEV.

Prepare for an automated PM update using PMUPGRADE (continued)

e. Confirm the XPM Patch Destination setting is correct. If necessary, change the setting. Type

>SET XPMPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new XPM Patch Destination volume

Example of command

```
>SET XPMPATCH S01DPMLOADS
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   S01DPMLOADS
XPM Patch Destination:   S01DPMLOADS
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:
```

Note 1: The XPM patch destination volume name should be entered in table PADNDEV.

Note 2: If PRSU files for pre-patched XPM load (PPXL) files are to be copied, refer to section “Post-release software update file storage” in chapter “Overview of release” in this document.

f. Confirm the SPM Patch Destination setting is correct. If necessary, change the setting. Type

>SET SPMPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new SPM Patch Destination volume

Example of command

```
>SET SPMPATCH S01DPMLOADS
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  S01T
Load File Destination:   S01DPMLOADS
Patch File Distribution: S01T
ISN Patch Destination:   S01DPMLOADS
XPM Patch Destination:   S01DPMLOADS
SPM Patch Destination:   S01DPMLOADS
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:
```

Note: The SPM patch destination volume name should be entered in table PADNDEV.

g. Go to step 8.

Prepare for an automated PM update using PMUPGRADE (continued)

7

ATTENTION

The XA-Core command syntax for **drive_no** and **disk_no** correspond to the following identifiers in the XA-Core command examples:

Shelf position is the front (F) or rear (R) shelf position of the input output processor (IOP).

Slot position is the two-digit number of the slot position for the IOP with the tape device.

Packlet position is the upper (U) or lower (L) packlet position of the IOP with the tape device.

In the command example `F17UTAPE`, `F` is the shelf position, `17` is the two-digit slot position, `U` is the packlet position, and `TAPE` identifies the software delivery medium.

Review the current PMUPGRADE settings. If necessary, change the settings.

a. Confirm the Load File Distribution setting is correct. If necessary, change the setting. Type

>SET LOADDISTRIB vol_name
and press the Enter key.

where

vol_name is the name of the new Load File Distribution volume

Example of command

```
>SET LOADDISTRIB F02UTAPE
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F17LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

b. Confirm the Load File Destination setting is correct. If necessary, change the setting. Type

>SET LOADDEST vol_name
and press the Enter key.

where

vol_name is the name of the new Load File Destination volume

Example of command

```
>SET LOADDEST F02LPMLOADS
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

Prepare for an automated PM update using PMUPGRADE (continued)

c. Confirm the Patch File Distribution setting is correct. If necessary, change the setting. Type

>SET PATCHDISTRIB vol_name
and press the Enter key.

where

vol_name is the name of the new Patch Distribution volume

Example of command

```
>SET PATCHDISTRIB F02UTAPE
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV.

Example of command for $XREF and PRSU files delivered via X.25 NOP links

```
>SET PATCHDISTRIB F17LTEMP
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F17LTEMP
ISN Patch Destination:   SFDEV
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Note: The default setting for the ISN Patch Destination volume and the XPM Patch Destination volume is the first entry in table PADNDEV. When the office receives the $XREF file via X.25 NOP links, ensure the $XREF file is placed on the Patch File Distribution volume and the corresponding PRSU files are placed on any temporary disk volumes specified as the ISN Patch Destination volume and the XPM Patch Destination volume. PRSUs can not reside on the same volume as the $XREF file.

Prepare for an automated PM update using PMUPGRADE (continued)

d. Confirm the ISN Patch Destination setting is correct. If necessary, change the setting. Type

>SET ISNPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new ISN Patch Destination volume

Example of command

```
>SET ISNPATCH F02LPMLOADS
```

Note: The ISN patch destination volume name should be entered in table PADNDEV.

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   F02LPMLOADS
XPM Patch Destination:   SFDEV
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:

WARNING: XPM Patch Destination and Patch Distribution incompatible
```

e. Confirm the XPM Patch Destination setting is correct. If necessary, change the setting. Type

>SET XPMPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new XPM Patch Destination volume

Example of command

```
>SET XPMPATCH F02LPMLOADS
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   F02LPMLOADS
XPM Patch Destination:   F02LPMLOADS
SPM Patch Destination:   SFDEV
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:
```

Note 1: The XPM patch destination volume name should be entered in table PADNDEV.

Note 2: If PRSU files for pre-patched XPM load (PPXL) files are to be copied, refer to section “Post-release software update file storage” in chapter “Overview of release” in this document.

f. Confirm the SPM Patch Destination setting is correct. If necessary, change the setting. Type

>SET SPMPATCH vol_name
and press the Enter key.

where

vol_name is the name of the new SPM Patch Destination volume

Example of command

```
>SET SPMPATCH S01DPMLOADS
```

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   F02LPMLOADS
XPM Patch Destination:   F02LPMLOADS
SPM Patch Destination:   F02LPMLOADS
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             ON
IncludeLoads:
ExcludeLoads:
```

Note: The SPM patch destination volume name should be entered in table PADNDEV.

Prepare for an automated PM update using PMUPGRADE (continued)

8 Generate a report of the loads in the office. Type

>DISPLAY LOADS
and press the Enter key.

Example of response

```
                    PMUPGRADE LOAD REPORT
-----------------------------------------------------------------------
LOADNAME          ACTFILE           ACTVOL           Tables Used
-----------------------------------------------------------------------
ARS04AQ           ARS04AQ           <volume name>     LIUINV
BLMTB01           BLMTB01           <volume name>     LMINV
BRLMVA03          BRLMVA03          <volume name>     LMINV
BTMKA02           BTMKA02           <volume name>     TMINV
CMR07A            CMR07A            <volume name>     LTCINV
ECL05AO           ECL05AO           <volume name>     LTCINV
ED707BM           ED707BM           <volume name>     LTCINV
EDH05AO           EDH05AO           <volume name>     DCHINV
ELI05AO           ELI05AO           <volume name>     LTCINV
ERLMVA02          ERLMVA02          <volume name>     LMINV
ESA05AO           ESA05AO           <volume name>     XESAINV
ETC07BM           ETC07BM           <volume name>     LIUINV
F8C07BM           F8C07BM           <volume name>     LIUINV
LCM01D            LCM01D            <volume name>     LCMINV
LCME05AI          LCME05AI          <volume name>     LCMINV
LPC07BM           LPC07BM           <volume name>     LIMINV
LRS04AQ           LRS04AQ           <volume name>     LIUINV
MPC403AD          MPC403AD          <volume name>     MPC
MPF36CJ           MPF36CJ           <volume name>     MSFWLOAD
MTMKA02           MTMKA02           <volume name>     TMINV
MX77NG03          MX77NG03          <volume name>     LTCINV
NRS07BM           NRS07BM           <volume name>     NIUINV
RDCMPA02          RDCMPA02          <volume name>     DCMINV
RMM04A            RMM04A            <volume name>     RMMINV
XLCM05AI          XLCM05AI          <volume name>     LCMINV
XLCM05AI          XLCM05AI          <volume name>     LCMINV
RMM34C            RMM34C            <volume name>
```

Note 1: PMUPGRADE compiles the PMUPGRADE Load Report from table PMLOADS and the PM inventory tables. This example illustrates a report for a typical office.

Note 2: A load can possibly have no entry under Tables Used. For example, RMM34C is an out-dated load no longer used in the office. Check office policy. If necessary, perform the following steps to correct the report.

- Exit PMUPGRADE.
- Delete the out-dated load from table PMLOADS.
- Return to step 2 of this procedure.

Prepare for an automated PM update using PMUPGRADE (continued)

9 Generate a node report for the office. Type

>DISPLAY NODES
and press the Enter key.

Example of response

```
                PMUPGRADE NODE REPORT

Inventory Table :  DCHINV
---------------------------------------------------------------
Nodename          Loads Used
---------------------------------------------------------------
1                   EDH05AO
2                   EDH05AO
3                   EDH05AO
4                   EDH05AO

Inventory Table :  LCMINV
---------------------------------------------------------------
Nodename          Loads Used
---------------------------------------------------------------
HOST  04 0          LCM01D
HOST  04 1          LCM01D
HOST  07 0          LCME05AI
HOST  07 1          LCME05AI
REM4  00 0          XLCM05AI
REM4  01 0          LCM01D
HST4  00 0          XLCM05AI

Inventory Table :  LIUINV
---------------------------------------------------------------
Nodename          Loads Used
---------------------------------------------------------------
LIU7 101            ARS04AQ
LIU7 102            ARS04AQ
LIU7 104            LRS04AQ
LIU7 109            ARS04AQ
FRIU 115            F8C07BM
FRIU 122            F8C07BM
EIU 116             ETC07BM
EIU 130             ETC07BM

Inventory Table :  LTCINV
---------------------------------------------------------------
Nodename          Loads Used
---------------------------------------------------------------
LGC 7               ELI05AO    MX77NG03   CMR07A
DTC 0               ED707BM    MX77NG03
DTC 1               ED707BM    MX77NG03
LTC 0               ECL05AO    MX77NG03
LTC 4               ECL05AO    MX77NG03   CMR07A
LTC 8               ELI05AO    MX77NG03
DTCI 19             ELI05AO    MX77NG03
```

Prepare for an automated PM update using PMUPGRADE (continued)

Note 1: The PMUPGRADE Node Report is compiled from PM inventory tables. The preceding example illustrates a report for some of the PM inventory tables.

Note 2: The nodename information for table MNCKTPAK is obtained from table MNNODE.

10

ATTENTION

This step specifies the preferred firmware load for each firmware type in the PMUPGRADE Firmware Information report. The START FILECOPY command uses this information to select and copy the applicable firmware loads from the PM load tape.

Office policy determines the firmware load to use during the PM update when the PM load tape contains the baseline load and a new release load. Nortel Networks recommends an update of the firmware load for a firmware type only when the current firmware load is below the baseline release.

Determine the XPM firmware preferred load. Perform the following steps.

a. Display the firmware information. Type

>DISPLAY FWINFO
and press the Enter key.

Example of command

```
>DISPLAY FWINFO
```

Example of response

```
                    PMUPGRADE FIRMWARE INFORMATION

Firmware types in the inventory tables
------------------------------------------------------------------
FIRMWARE    TYPE                      BASELINE      NEW RELEASE
TYPE        DESCRIPTION               LOAD          LOAD
------------------------------------------------------------------
STDMX77     Standard MX77 firmware



Firmware loads in the inventory tables
------------------------------------------------------------------
LOAD    CURRENT   FIRMWARE  BASELINE  NEW RELEASE  PREFERRED
NUMBER  LOAD      TYPE      LOAD      LOAD         LOAD
------------------------------------------------------------------
1.      MX77NG03  STDMX77
2.      MX77NF01  STDMX77
```

Note: Go to step 11 if the MAP display response is NONE.

Prepare for an automated PM update using PMUPGRADE (continued)

The PMUPGRADE Firmware Information contains two sections. The first section, Firmware types in the inventory tables, lists the description of all firmware types in the office, which can have a corresponding baseline load and a new release load on the PM load tape.

Firmware types for an office can include any of the following.

- STDMX77 (standard MX77)
- STDAX74 (standard AX74)
- CPMMX77 (MX77 in CPM or host of CPM)
- CPMAX74 (AX74 in CPM or host of CPM)
- STDSX05 (standard SX05)
- ILD (ISDN line drawer)

Note: Examples of CPMs are the remote cluster controller 2 (RCC2) and subscriber carrier module-100 access 2 (SMA2). The host of a CPM can be a line group controller (LGC), LGC with ISDN (LGCI), line trunk controller (LTC), or LTC with ISDN (LTCI).

The second section, Firmware loads in the inventory tables, displays automatically determined and user entered firmware load names for the firmware types in the office.

PMUPGRADE automatically determines the current firmware load names in the office and their type.

The user manually enters the baseline and new release load names for the office's firmware types. Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" in this document to determine the baseline and new release load names for each firmware type.

The PMUPGRADE utility selects the preferred load for the firmware type after the user enters the baseline and new release load names (steps 10b., 10c., 10d., and 10e.). This automatic selection is based on a comparison of the version of the current load used in the office, the baseline load, and the new release load.

- The utility automatically selects the baseline load as the preferred load when the current load is below the baseline load. The START FILECOPY command automatically copies the baseline load file.
- The utility automatically selects the current load as the preferred load when the current load is between the baseline and new release loads. The START FILECOPY command does not copy any firmware load file.

If desired, the user can override the above automatic selection (steps 10f. and 10g.). The user can enter either the current, baseline, or new release load as the preferred load for the load number of the firmware type shown in the PMUPGRADE Firmware Information. In this case, the START FILECOPY command copies the user-selected preferred load.

Prepare for an automated PM update using PMUPGRADE (continued)

b. Set the baseline load for each firmware type listed in the PMUPGRADE Firmware Information. Type

>SET FWBASELINE firmware_type baseline_load
and press the Enter key.

where

firmware_type	is STDMX77, STDAX74, CPMMX77, CPMAX74, STDSX05, or ILD
baseline_load	is the baseline load name for the firmware type

Example of command

```
>SET FWBASELINE STDMX77 MX77NB03
```

Example of response

```
                    PMUPGRADE FIRMWARE INFORMATION

Firmware types in the inventory tables
------------------------------------------------------------------
FIRMWARE    TYPE                     BASELINE      NEW RELEASE
TYPE        DESCRIPTION              LOAD          LOAD
------------------------------------------------------------------
STDMX77     Standard MX77 firmware   MX77NB03



Firmware loads in the inventory tables
------------------------------------------------------------------
LOAD    CURRENT   FIRMWARE BASELINE NEW RELEASE PREFERRED
NUMBER  LOAD      TYPE     LOAD     LOAD        LOAD
------------------------------------------------------------------
1.      MX77NG03  STDMX77  MX77NB03             MX77NG03
2.      MX77NF01  STDMX77  MX77NB03             MX77NF01
```

c. Repeat step 10b. for each firmware type shown in the PMUPGRADE Firmware Information.

d. Set the new release load for each firmware type in the PMUPGRADE Firmware Information. Type

>SET FWNEWREL firmware_type new_release_load
and press the Enter key.

where

firmware_type	is STDMX77, STDAX74, CPMMX77, CPMAX74, STDSX05, or ILD
new_release_load	is the new release load name for the firmware type

Example of command

```
>SET FWNEWREL STDMX77 UPFWNP04
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
                  PMUPGRADE FIRMWARE INFORMATION

Firmware types in the inventory tables
------------------------------------------------------------------
FIRMWARE    TYPE                     BASELINE      NEW RELEASE
TYPE        DESCRIPTION              LOAD          LOAD
------------------------------------------------------------------
STDMX77     Standard MX77 firmware   MX77NB03      UPFWNP04



Firmware loads in the inventory tables
------------------------------------------------------------------
LOAD     CURRENT   FIRMWARE BASELINE NEW RELEASE   PREFERRED
NUMBER   LOAD      TYPE     LOAD     LOAD          LOAD

------------------------------------------------------------------
1.       MX77NG03  STDMX77  MX77NB03 UPFWNP04      MX77NG03
2.       MX77NF01  STDMX77  MX77NB03 UPFWNP04      MX77NF01
```

e. Repeat step 10d. for each firmware type shown in the PMUPGRADE Firmware Information.

Prepare for an automated PM update using PMUPGRADE (continued)

f. Review the automatic preferred load selection. If desired, override the automatic selection with another preferred load. Type

>SET FWPREFERRED load_number preferred_load
and press the Enter key.

where

load_number	is the sequential number generated for the current load and firmware type
preferred_load	is CURRENT, BASELINE, or NEWREL

Note: If the current firmware load in the office is the preferred load, enter CURRENT. If the baseline firmware load on the PM load tape is the preferred load, enter BASELINE. If the new release firmware load on the PM load tape is the preferred load, enter NEWREL.

Example of command

```
>SET FWPREFERRED 2 NEWREL
```

Example of response

```
                    PMUPGRADE FIRMWARE INFORMATION

Firmware types in the inventory tables
------------------------------------------------------------------
FIRMWARE    TYPE                      BASELINE      NEW RELEASE
TYPE        DESCRIPTION               LOAD          LOAD
------------------------------------------------------------------
STDMX77     Standard MX77 firmware    MX77NB03      UPFWNP04



Firmware loads in the inventory tables
------------------------------------------------------------------
LOAD    CURRENT   FIRMWARE  BASELINE  NEW RELEASE  PREFERRED
NUMBER  LOAD      TYPE      LOAD      LOAD         LOAD

------------------------------------------------------------------
1.      MX77NG03  STDMX77   MX77NB03  UPFWNP04     MX77NG03
2.      MX77NF01  STDMX77   MX77NB03  UPFWNP04     UPFWNP04
```

Note: This command can cause the START FILECOPY command to copy the preferred load entered for the load number.

g. Repeat step 10f. to change the preferred load for any load number's firmware type.

Prepare for an automated PM update using PMUPGRADE (continued)

11

ATTENTION

The FILECOPY phase of PMUPGRADE takes about 40 minutes, depending on the number of PM loads and PRSU files.

If the tape contains pre-patched XPM load (PPXL) files, enter the necessary data in table PADNDEV before performing this step. Refer to chapter "Overview of automated update process" chapter in this document.

The PRSUs for the PPXLs must reside on the DMS switch before PMUPGRADE modifies table PMLOADS. Refer to section "Post-release software update file storage" in chapter "Overview of release" for recommendations on the storage of PRSU files.

When prompted to confirm a tape is in its appropriate drive, confirm the tape is physically inserted in the drive. Do not use the INSERTTAPE or IT commands on the tape.

If the SLM or XA-Core tape cartridge label text indicates *Patches: Yes*, the tape includes the required PRSUs for XPM and ISN load files.

Start the filecopy phase of the utility. Type

>START FILECOPY
and press the Enter key.

Example of response

```
Please confirm that the load tape is in drive <volume name>.
Ready to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

Note: The office's method of PRSU delivery can cause the MAP display to differ from the previous example.

Prepare for an automated PM update using PMUPGRADE (continued)

ATTENTION

Starting in SN07, the FILECOPY phase of the START command is extended to support electronic software delivery via FTP. Because the load distribution volume and patch distribution volume are remote FTP volumes, PMUPGRADE prompts the crafts person to supply usernames and passwords. See the example below.

```
>START FILECOPY

Listing the distribution volumes.

Username and password required for FTP access to:

   ftp://47.135.113.23//swd/sdm/esd

Username:
>nortel
Password:
>nortel
Establishing FTP access to:

   ftp://47.135.113.23//swd/sdm/esd

Load files on the load distribution volume:
```

12 Confirm the load and PRSU tapes are in the specified drives. Continue PMUPGRADE. Type

>Y

and press the Enter key.

Example of response

```
Listing the distribution volume.
```

PMUPGRADE takes about 20 minutes to list the Load Distribution Volume.

Example of response

Prepare for an automated PM update using PMUPGRADE (continued)

```
PLNA0010_INFO   D1T005          D2T005          DPP008
DPT030          EMMAB09         ITMAB06         ADCMQA01
ATMKA02         BLMTB01         BRLMVA03        BTMKA02
DTUBAD01        DTUHAA02        DTUDAA00        EDRMAE02
ERLMVA02        MPC003AC        MPC403AC        MPCA03AC
MPCC03AC        MPCX33AB        MTMKA02         MTULJ04
RDCMPA02        RMTMKA01        TKMTKA02        TTMNA01
CMR07A          NSM05BC         AX74XE01        CRI81AZ_970822
ECL81AZ         ECR81AZ         ED781AZ         EDH81AZ
ELI81AZ_970822  ESA81AW         ESH81AZ         ESI81AZ
ESR81AZ         ESS81AZ         ESU81AZ         ETM81AZ
EXC81AZ         ILDRAB03        LCM01D          LCME81BA
MX77NB03        MX77NI05        OAM33BB         RMM05A
UPFWNK01        XLCM81BA        XM281AZ         XRI81AZ_970822
XSC81AZ         ARS08BC         ENC08AX         ETC08AX
F8C08BC         LPC08AX         LRS08BC         MPF08AX
MUC08AX         NRS08AX         XRC08BC

Selecting load files from <volume name>.
```

13

ATTENTION

Identify and enter the correct replacement loadname. If the user does not enter the correct replacement loadname, PMUPGRADE and SWUPGRADE use the incorrect information to plan and perform the automated PM update. Refer to chapter “Overview of release” in this document for assistance.

Observe the MAP display as PMUPGRADE selects load files. Watch for a response like the following example.

Example of response

```
No replacement loadname found on distribution volume for SM206BH1.
Please enter replacement loadname, or "S" (Same) or "Q" (Quit FILECOPY)
```

If you receive a response similar to the one above, determine why PMUPGRADE can not find the replacement loadname and identify the replacement loadname. Refer to chapter “Overview of release” in this document for assistance. When the replacement loadname is identified, enter the appropriate response and allow PMUPGRADE to continue.

The following table lists possible conditions where PMUPGRADE does not find a replacement loadname.

Prepare for an automated PM update using PMUPGRADE (continued)

PMUPGRADE no replacement conditions

Condition	Example	Do
A new load type replaces the current load type.	The XM2 load replaces the SM2 load for SMA2.	Enter the XM2 loadname.
The load is manufacture discontinued.	The MC7 load is manufacture discontinued for MSB7.	Enter S.
A filler PM loadname indicating a PM does not have a load.	The IOM$LOAD value in table MPCINV. The IOM$LOAD value is used as a filler PM loadname.	Enter S.
Note: PMUPGRADE can request several replacement loadnames during a single FILECOPY.		

Prepare for an automated PM update using PMUPGRADE (continued)

14 Wait for PMUPGRADE to generate a report like the following example.

Example of response

```
                          LOAD FILE SELECTION REPORT


CURRENT LOAD      AUTO-SELECTED FILES                  EXCLUDED
------------      -------------------                  --------
ARS04AQ           ARS08BC
BLMTB01           Same Load
BRLMVA03          Same Load
BTMKA02           Same Load
CMR07A            Same Load
ECL05AO           ECL81AZ
ED707BM           ED781AZ
EDH05AO           EDH81AZ
ELI05AO           ELI81AZ_970822
ERLMVA02          Same Load
ESA05AO           ESA81AW
ETC07BM           ETC08AX
F8C07BM           F8C08BC
LCM01D            Same Load
LCME05AI          LCME81BA
LPC07BM           LPC08AX
LRS04AQ           LRS08BC
MPC403AD          Same Load
MPF36CJ           MPF08AX
MTMKA02           Same Load
MX77NG03          MX77NI05
NRS07BM           NRS08AX
RDCMPA02          Same Load
RMM04A            RMM05A
XLCM05AI          XLCM81BA
SM206BH1          XM281AZ

                  INCLUDED LOADS
                  --------------
                  None

Accessing destination volumes:  <volume name>.
Continue:
Please confirm:  ("YES", "Y", "NO", or "N"):
```

Prepare for an automated PM update using PMUPGRADE (continued)

15 Review the Load File Selection Report and determine if any loads need to be added to the report or removed from the report. The following table lists possible conditions when a load should be included or excluded.

Conditions	Example	Do
A new load type is introduced.	A new universal XPM firmware load, UPFW, is introduced for XPMs.	Continue with this procedure. Add the load to the report later in the procedure.
A load type is not needed in the office.	A new MX77 load is not needed in the office, since all XPMs use the new universal XPM firmware load.	Continue with this procedure. Remove the load from the report later in this procedure.

Refer to table PM-to-load cross-reference in chapter “Overview of release” in this document for assistance.

If	Do
one or more loads must be removed from the Load File Selection Report	step 16
one or more loads must be added to the Load File Selection Report	step 16
the Load File Selection Report is complete and no loads should be added or removed	step 21

16 Stop the file copy process. Type

>N
and press the Enter key.

If	Do
one or more loads must be removed from the Load File Selection Report	step 17
one or more loads must be added to the Load File Selection Report	step 18

Prepare for an automated PM update using PMUPGRADE (continued)

17 Remove the loads from the Load File Selection Report. Type

>SET EXCLUDELOADS load_name
and press the Enter key.

where

load_name is the name of the load to be excluded (repeat variable as required)

Example of command

```
>SET EXCLUDELOADS LPC08AX
```

or

```
>SET EXCLUDELOADS LPC08AX MX77NI05
```

Note 1: The list of excluded loads is not cumulative; it is reset with each use of the SET EXCLUDELOADS command.

Note 2: Separate the load names with a blank space.

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  <volume name>
Load File Destination:   <volume name>
Patch File Distribution: <volume name>
ISN Patch Destination:   <volume name>
XPM Patch Destination:   <volume name>
SPM Patch Destination:   <volume name>
Confirmation:            ON
Carryover:               OFF
IncludeLoads:
ExcludeLoads:            LPC08AX
```

If	Do
one or more loads must be added to the Load File Selection Report	step 18
no loads are to be added to the Load File Selection Report	step 19

Prepare for an automated PM update using PMUPGRADE (continued)

18 Add the loads to the Load File Selection Report. Type

>SET INCLUDELOADS load_name
and press the Enter key.

where

load_name is the name of the load to be included (repeat variable as required)

Example of command

```
>SET INCLUDELOADS IOMHAO01
```

or

```
>SET INCLUDELOADS IOMHAO01 MUC08AX
```

Note: The list of included loads is not cumulative; it is reset with each use of the SET INCLUDELOADS command.

Example of response

```
The current PMUPGRADE settings are:

Load File Distribution:  <volume name>
Load File Destination:   <volume name>
Patch File Distribution: <volume name>
ISN Patch Destination:   <volume name>
XPM Patch Destination:   <volume name>
SPM Patch Destination:   <volume name>
Confirmation:            ON
Carryover:               OFF
IncludeLoads:            IOMHAO01
ExcludeLoads:            LPC08AX
```

Prepare for an automated PM update using PMUPGRADE (continued)

19 Repeat the file selection phase of the utility. Type

>START FILECOPY
and press the Enter key.

Example of response

```
Listing the distribution volume.
```

Note: PMUPGRADE does not physically list the tape again, but reuses the previous listing of the distribution volume.

Example of response

```
PLNA0010_INFO   D1T005          D2T005          DPP008
DPT030          EMMAB09         ITMAB06         ADCMQA01
ATMKA02         BLMTB01         BRLMVA03        BTMKA02
DTUBAD01        DTUHAA02        DTUDAA00        EDRMAE02
ERLMVA02        MPC003AC        MPC403AC        MPCA03AC
MPCC03AC        MPCX33AB        MTMKA02         MTULJ04
RDCMPA02        RMTMKA01        TKMTKA02        TTMNA01
CMR07A          NSM05BC         AX74XE01        CRI81AZ_970822
ECL81AZ         ECR81AZ         ED781AZ         EDH81AZ
ELI81AZ_970822  ESA81AW         ESH81AZ         ESI81AZ
ESR81AZ         ESS81AZ         ESU81AZ         ETM81AZ
EXC81AZ         ILDRAB03        LCM01D          LCME81BA
MX77NB03        MX77NI05        OAM33BB         RMM05A
UPFWNK01        XLCM81BA        XM281AZ         XRI81AZ_970822
XSC81AZ         ARS08BC         ENC08AX         ETC08AX
F8C08BC         LPC08AX         LRS08BC         MPF08AX
MUC08AX         NRS08AX         XRC08BC

Selecting load files from <volume name>.
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
                        LOAD FILE SELECTION REPORT


CURRENT LOAD      AUTO-SELECTED FILES                  EXCLUDED
------------      -------------------                  --------
ARS04AQ           ARS08BC
BLMTB01           Same Load
BRLMVA03          Same Load
BTMKA02           Same Load
CMR07A            Same Load
ECL05AO           ECL81AZ
ED707BM           ED781AZ
EDH05AO           EDH81AZ
ELI05AO           ELI81AZ_970822
ERLMVA02          Same Load
ESA05AO           ESA81AW
ETC07BM           ETC08AX
F8C07BM           F8C08BC
LCM01D            Same Load
LCME05AI          LCME81BA
LPC07BM           LPC08AX                              EXCLUDED
LRS04AQ           LRS08BC
MPC403AD          Same Load
MPF36CJ           MPF08AX
MTMKA02           Same Load
MX77NG03          MX77NI05
NRS07BM           NRS08AX
RDCMPA02          Same Load
RMM04A            RMM05A
XLCM05AI          XLCM81BA
SM206BH1          XM281AZ

                  INCLUDED LOADS
                  --------------
                  IOMHAO01

Accessing destination volumes:  <volume name>.
Continue:
Please confirm:  ("YES", "Y", "NO", or "N"):
```

20 Confirm the Load File Selection Report added or removed the specified load names.

If the Load File Selection Report	Do
does not show the excluded load names	step 16
does not show the included load names	step 16
shows the excluded and/or included load names	step 21

Prepare for an automated PM update using PMUPGRADE (continued)

21 Confirm the action. Type

>Y

and press the Enter key.

Example of response if a $XREF patch control file is not available

```
Selecting patch files.

WARNING:  No Patch Control File Found.  No patch files selected.

Do you wish to continue?

Please confirm ("YES", "Y", "NO", or "N"):
```

Example of response if a $XREF patch control file is available

```
Selecting patch files.

Checking for file duplicates and volume free space

Creating the list of files to copy.

Copying load and patch files to destination volumes.
Continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

If a $XREF patch control file	Do
is not available	step 22
is available	step 25

Prepare for an automated PM update using PMUPGRADE (continued)

22

ATTENTION

PMUPGRADE uses the $XREF patch control file to select PRSUs for copying. Depending on the method of PRSU delivery, this file is not available. If the file is not available, PMUPGRADE generates a warning that no patch control file has been found.

Determine the status of the PRSU files.

If PRSU files	Do
need to be manually copied to the destination volumes	step 23
do not need to be manually copied to the destination volumes	step 24
are not applicable to this release	step 24

23 Select and manually copy the PRSU files. Perform the following steps.

ATTENTION

Do not respond to the PMUPGRADE prompt at this time. Copy the PRSU files from another MAP terminal. Then, return to the terminal where PMUPGRADE is active.

From another MAP terminal

a. Use the Load File Selection Report generated by PMUPGRADE to identify the PRSUs to be copied.

b. Access the office's disk utility.

c. Copy the ISN PRSUs to the ISN Patch Destination volume identified in the PMUPGRADE settings.

d. Copy the XPM PRSUs to the XPM Patch Destination volume identified in the PMUPGRADE settings.

e. Quit the disk utility.

Prepare for an automated PM update using PMUPGRADE (continued)

From the terminal where PMUPGRADE is active

24 Confirm the action. Type

>Y
and press the Enter key.

Example of response

```
Checking for file duplicates and volume free space.
Creating the list of files to copy.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

25

ATTENTION
This portion of the FILECOPY phase takes about 20 minutes depending on the number of PM load and PRSU files.

Confirm the action. Type

>Y
and press the Enter key.

Example of response

```
Adding new loads to PMLOADS table.
The FILECOPY phase is complete.
```

Prepare for an automated PM update using PMUPGRADE (continued)

26

ATTENTION

If the PMUPGRADE tool is used to upgrade Legacy PMs and SPMs, the loadnames associated with MG 4000, IW–SPM, or DPT SPM must be excluded during the file copy and upgrade plan steps.

Separate PMUPGRADE plans will be required for the MG 4000, IW–SPM, or DPT SPM when those components are upgraded using the order specified in the *Upgrading the Succession Network*, NN10261–450, Volume 1.

Loads for the DMS–SPM, MG 4000, IW SPM, and DPT SPM are stored on a separate load tape. The following steps enable you to upgrade these peripherals (and others whose loads are stored on a separate tape) using the PMUPGRADE utility.

If there are	Do
additional loads on separate load tapes to include in the upgrade plan	step 27
no additional loads on any other load tapes	step 30

Note: The following steps add the loads from the separate load tape to the PMUPGRADE Plan. The devices can then be upgraded in the “Perform an automated PM update” procedure.

27 Set the PRIMARYCOPY parameter to OFF. Type

>SET PRIMARYCOPY OFF

and press the Enter key.

Note: The SET PRIMARYCOPY command turns the primary–copy mode ON and OFF (default ON). If ON, the FILECOPY phase of PMUPGRADE performs the primary filecopy from the main PM load distribution volume (or tape). If turned OFF, the FILECOPY phase will supplement the previous filecopy with loads from another secondary PM load distribution volume (or tape). The secondary filecopy lists previous loads as ’Same Load’.

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
Releasing load distribution volume -- please wait.
The current PMUPGRADE settings are:

Load File Distribution:  F02UTAPE
Load File Destination:   F02LPMLOADS
Patch File Distribution: F02UTAPE
ISN Patch Destination:   F02LPMLOADS
XPM Patch Destination:   F02LPMLOADS
SPM Patch Destination:   F02LPMLOADS
Confirmation:            ON
Carryover:               OFF
PrimaryCopy:             OFF
IncludeLoads:
ExcludeLoads:
```

28 Remove the load tape and replace it with the next load tape.

29 Go to step 11.

Prepare for an automated PM update using PMUPGRADE (continued)

30 Generate a PMUPGRADE Load Report for the office. Type

>DISPLAY LOADS
and press the Enter key.

Example of response

```
                    PMUPGRADE LOAD REPORT
-------------------------------------------------------------------
LOADNAME         ACTFILE          ACTVOL           Tables Used
-------------------------------------------------------------------
ARS04AQ           ARS04AQ           <volume name>     LIUINV
BLMTB01           BLMTB01           <volume name>     LMINV
BRLMVA03          BRLMVA03          <volume name>     LMINV
BTMKA02           BTMKA02           <volume name>     TMINV
CMR07A            CMR07A            <volume name>     LTCINV
ECL05AO           ECL05AO           <volume name>     LTCINV
ED707BM           ED707BM           <volume name>     LTCINV
EDH05AO           EDH05AO           <volume name>     DCHINV
ELI05AO           ELI05AO           <volume name>     LTCINV
ERLMVA02          ERLMVA02          <volume name>     LMINV
ESA05AO           ESA05AO           <volume name>     XESAINV
ETC07BM           ETC07BM           <volume name>     LIUINV
F8C07BM           F8C07BM           <volume name>     LIUINV
LCM01D            LCM01D            <volume name>     LCMINV
LCME05AI          LCME05AI          <volume name>     LCMINV
LPC07BM           LPC07BM           <volume name>     LIMINV
LRS04AQ           LRS04AQ           <volume name>     LIUINV
MPC403AD          MPC403AD          <volume name>     MPC
MPF36CJ           MPF36CJ           <volume name>     MSFWLOAD
MTMKA02           MTMKA02           <volume name>     TMINV
MX77NG03          MX77NG03          <volume name>     LTCINV
NRS07BM           NRS07BM           <volume name>     NIUINV
RDCMPA02          RDCMPA02          <volume name>     DCMINV
RMM04A            RMM04A            <volume name>     RMMINV
XLCM05AI          XLCM05AI          <volume name>     LCMINV
ARS08BC           ARS08BC           <volume name>
ECL81AZ           ECL81AZ           <volume name>
ED781AZ           ED781AZ           <volume name>
EDH81AZ           EDH81AZ           <volume name>
ELI81AZ           ELI81AZ_970822    <volume name>
ESA81AW           ESA81AW           <volume name>
ETC08AX           ETC08AX           <volume name>
F8C08BC           F8C08BC           <volume name>
LCME81BA          LCME81BA          <volume name>
LRS08BC           LRS08BC           <volume name>
MPF08AX           MPF08AX           <volume name>
MUC08AX           MUC08AX           <volume name>
MX77NI05          MX77NI05          <volume name>
NRS08AX           NRS08AX           <volume name>
RMM05A            RMM05A            <volume name>
XLCM81BA          XLCM81BA          <volume name>
XM281AZ           XM281AZ           <volume name>
MTULJ04           MTULJ04           <volume name>
```

Prepare for an automated PM update using PMUPGRADE (continued)

31 Review the load report and confirm the selected new loads have been added to the report.

32

> **ATTENTION**
> PMUPGRADE can detect an error when it attempts to update table PMLOADS with a PPXL. An error can be detected when the XPM Patch Destination volume is not entered in table PADNDEV. An error can also be detected when the PRSUs for the PPXL do not reside on the DMS switch. To recover from this error, manually add the tuples to table PMLOADS.

Confirm PMUPGRADE updated table PMLOADS. Perform the following steps.

a. Access table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Display the contents of the table. Type

>LIST ALL
and press the Enter key.

c. Confirm each new load was added to table PMLOADS.

d. Exit the table. Type

>QUIT
and press the Enter key.

33

> **ATTENTION**
> The office's PMUPGRADE settings can require changes to this step.

Confirm PMUPGRADE copied the PM load and PRSU files to the correct destination volume.

a. Access the DISKUT utility. Type

>DISKUT
and press the Enter key.

Prepare for an automated PM update using PMUPGRADE (continued)

b. List the files on the Load File Destination volume. Type

>LISTFL vol_name
and press the Enter key.

where

vol_name is the name of the Load File Destination volume

Example of command

```
>LISTFL S01DPMLOADS
```

c. If necessary, repeat step 33b. for each Patch Destination volume.

d. Confirm each new file has been copied to the volume.

e. Exit the utility. Type

>QUIT
and press the Enter key.

34 Start the generation of the PM upgrade plan. Type

>START PLAN
and press the Enter key.

Example of response

```
Generating the PM Upgrade Plan.
Using results from FILECOPY generated on 1997/09/15  15:33:53.221 MON
The PLAN phase is now complete.
```

35 Display the PM upgrade plan. Type

>DISPLAY PLAN
and press the Enter key.

The PMUPGRADE Plan Report organizes the PM update by tasks and layers. A task is a set of PMs of the same type at the same site with the same load requirements. A layer is a grouping of tasks.

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response

```
                    PMUPGRADE PLAN REPORT

Upgrade Layer: 1
-----------------

TASK 1:
SITE:
LOADS:  FROM EDH05AO TO EDH81AZ
NODES:  DCH 1
        DCH 2
        DCH 3
        DCH 4
REQUIRES: none
AUTOMATED: NO

TASK 2:
SITE:
LOADS:  FROM ARS04AQ TO ARS08BC
NODES:  LIU7 101
        LIU7 102
REQUIRES: none
AUTOMATED: NO

TASK 3:
SITE:
LOADS:  FROM LRS04AQ TO LRS08BC
NODES:  LIU7 104
LIU7 109
REQUIRES: none
AUTOMATED: NO

TASK 4:
SITE:
LOADS:  FROM F8C07BM TO F8C08BC
NODES:  FRIU 115
FRIU 122
REQUIRES: none
AUTOMATED: NO

TASK 5:
SITE:
LOADS:  FROM ETC07BM TO ETC08AX
NODES:  EIU 116
        EIU 130
        EIU 131
REQUIRES: none
AUTOMATED: NO
```

Prepare for an automated PM update using PMUPGRADE (continued)

Example of response (continued)

```
TASK 7:
SITE:
LOADS:  FROM ED707BM TO ED781AZ
        FROM MX77NG03 TO MX77NI05
NODES:  DTC 0
        DTC 1
REQUIRES: none
AUTOMATED: YES

TASK 8:
SITE:
LOADS:  FROM ELI05AO TO ELI81AZ
        FROM MX77NG03 TO MX77NI05
NODES:  DTCI 19
REQUIRES: none
AUTOMATED: YES


Upgrade Layer: 2
----------------

TASK 9:
SITE:
LOADS:  FROM NRS07BM TO NRS08AX
NODES:  NIU 1
REQUIRES: TASK 2, 3, 4, 5, 6
AUTOMATED: NO

TASK 10:
SITE:   REM4
LOADS:  FROM RMM04A TO RMM05A
NODES:  RMM 6
REQUIRES: TASK 1
AUTOMATED: NO

TASK 11:
SITE:   REM4
LOADS:  FROM ESA05AO TO ESA81AW
NODES:  ESA 4
REQUIRES: TASK 1
AUTOMATED: YES


Upgrade Layer: 3
----------------

TASK 12:
SITE:   HOST
LOADS:  FROM LCME05AI TO LCME81BA
NODES:  LCME 07 0
        LCME 07 1
REQUIRES: TASK 1, 10, 11
AUTOMATED: YES
```

Prepare for an automated PM update using PMUPGRADE (continued)

36 Review the PMUPGRADE Plan Report

- Confirm all PMs that require upgrading are included in the plan report.

  Note: For loads added to the Loadfile Selection Report with the SET INCLUDELOADS command, the associated PMs must be manually updated. Refer to section “Plan the update” in chapter “Overview of update process” to determine the appropriate location for manually updated PMs in the plan report.

- Confirm the correct PM loads are included with each task in the plan report. Give special attention to XPM processor firmware loads.

  Note: Refer to section “PM to XPM processor firmware cross-reference” in chapter “Overview of release” in this document for assistance.

- Confirm the sequence of tasks in the plan report conforms to office policy.

  Note: If the sequence of tasks does not comply, use the RUNSTEP command during the automated PM upgrade to change the order of tasks.

- Confirm offline PMs that are being installed or commissioned in the office are not included in the plan report. If an offline PM is included in the plan report
  - update the appropriate PM inventory table. Change the loadname field for that PM to the new loadname from the loadfile selection report.
  - repeat steps 34 and 35. Ensure the offline PMs are not included in the new plan report.

37 Exit the PMUPGRADE utility. Type

>QUIT
and press the Enter key.

38 Stop the terminal responses from printing. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

Prepare for an automated PM update using PMUPGRADE (end)

39

ATTENTION

Check office policy concerning additional copies of PM load and PRSU files. Some offices require additional copies of PM load and PRSU files on a parallel device.

Remove the PM load tape from the tape drive.

At your desk

40 Review PM inventory tables LTCINV, LTCRINV, and RCCINV (when these tables are applicable to the office) to determine if any XPMs have the optional peripheral/remote loader (PRL) circuit card (NT7X05 or NTSX06).

If any XPMs	Do
have the PRL circuit card	step 41
do not have the PRL circuit card	step 42

41 Check office policy. Refer to section “Prepare for a PM update using the PRL circuit card” in chapter “Overview of update process” for more information.

42 Confirm each PM to be updated has any required gating hardware. Gating hardware is a specific product engineering code (PEC) required by a PM to support this release. Review this information in table PM-to-load cross-reference in chapter “Overview of release” in this document.

Note: All PMs do not have gating hardware.

If each PM	Do
has the required hardware	step 43
does not have the required hardware	Contact the next level of support. This office is not prepared for a PM software update.

43 You have completed this procedure and prepared the office for a PM update.

Perform an automated PM update

Application

Use this procedure to perform an automated PM update on PMs entered in the following tables:

- DCHINV

  Note: Use procedure "Update the enhanced DCH card (NTBX02)" to update a DCH in ISDN XPMs when spare DCHs are not provisioned.

- DSPMINV
- ENINV

  Note 1: SWUPGRADE pauses for the Nortel Networks recommendation of a four hour soak period after the update of each ENET plane. Office updates must allow for the four hour pause to remain within the maintenance window.

  Note 2: Do not perform an automated update for the ENET when a spectrum peripheral module (SPM) is present on the DMS switch. Use the procedure "Update the ENET" in this document to perform a manual ENET update.

- ICRMINV
- LCMINV
- LIUINV (EIUs, FRIUs, and XLIUs only)
- LTCINV
- LTCRINV
- MNCKTPAK (BASE12 or higher PCL)
- MSFWLOAD
- NIUINV
- RCCINV
- XESAINV

Repeat this procedure for each PM update shift. A PM update shift is the length of time it takes to perform PM updates each day. A PM update shift can last up to 14 hours. Office policy and the maintenance window determine the length of the PM update shift.

Prerequisites

Perform the procedures "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load names are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM to be updated is in-service (InSv).
- Each PM to be updated passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.
- The PMUPGRADE utility generated a PM Upgrade Plan.

Required information

Not applicable

Update sequence

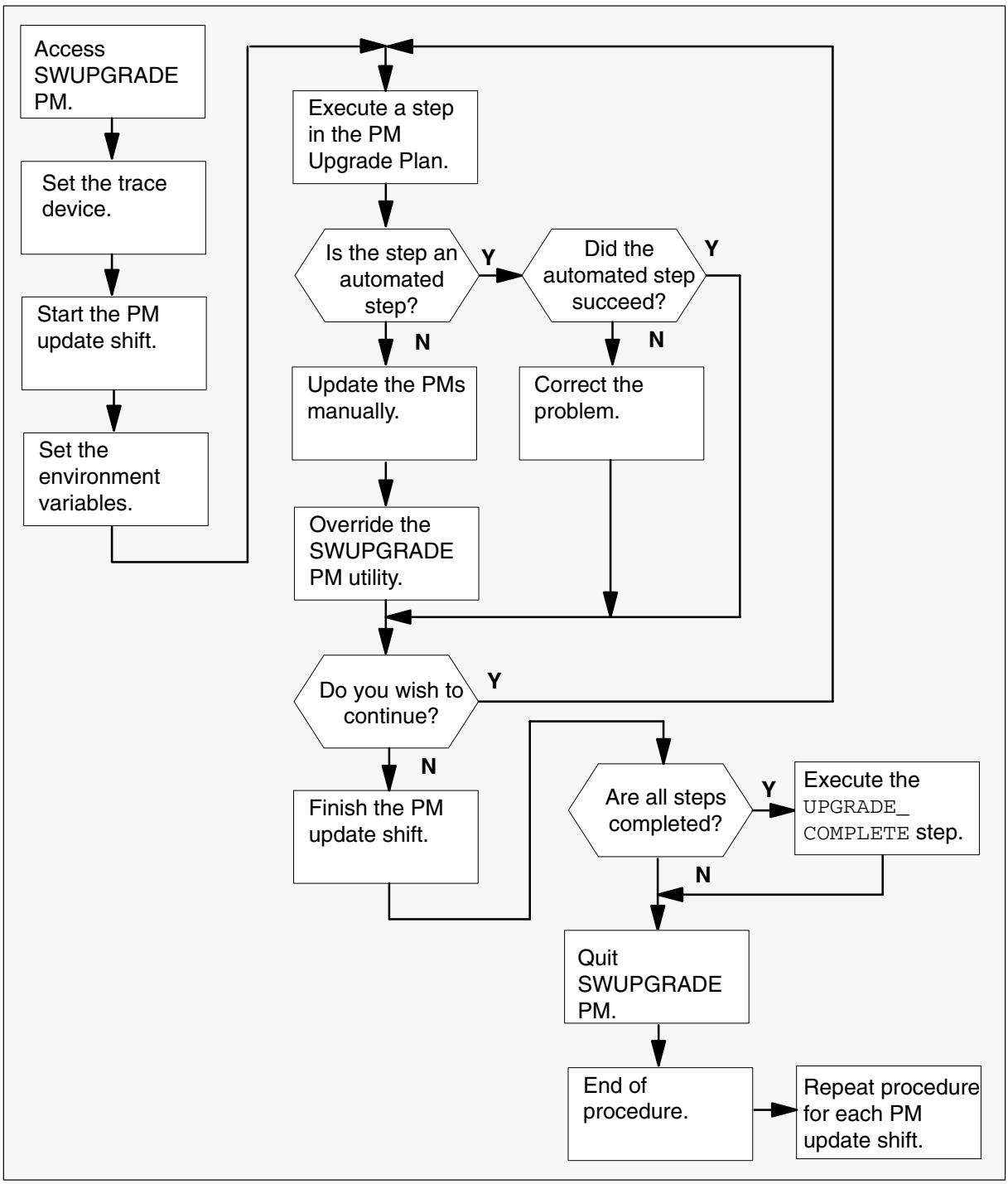
Not applicable

Notes

None

Perform an automated PM update (continued)

Summary of procedure



Perform an automated PM update (continued)

Steps of procedure

ATTENTION

Review all bulletins and warnings related to this update and the PM software release document before beginning this procedure.

At the CI level of the MAP display

1 Send the terminal responses to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD START ONTO PRNTR1
```

2 Enter the SWUPGRADE PM increment for automated PM updates. Type

>SWUPGRADE PM
and press the Enter key.

Example of console response

```
Generating the SWUPGRADE step list.
Using the PM Upgrade Plan generated by PMUPGRADE on 1997/09/16 16:29:54.640 THU

Total of 21 SWUPGRADE steps were generated from the PM Upgrade plan.

SWUPGRADE:
```

Note: SWUPGRADE PM displays a message similar to the previous example when the SWUPGRADE PM increment is first entered. SWUPGRADE PM displays only the SWUPGRADE prompt on later entries, such as the next PM update shift.

Perform an automated PM update (continued)

Logs or other responses

Log or other responses	Action
SWUPGRADE cannot generate the step list.	The PM Upgrade Plan was never generated, or PMUPGRADE has not completed the PM Upgrade Plan. Perform the procedure “Prepare for an automated PM update using PMUPGRADE” in this document or wait for PMUPGRADE to complete the plan. When complete, return to this step.
The PM Upgrade Plan being used by SWUPGRADE is not the correct plan.	Perform the procedure “Prepare for an automated PM update using PMUPGRADE” in this document. When complete, return to this step.
The MAP response is different from the example.	SWUPGRADE could be in another platform such as CM, CMMOCK, or READY. Troubleshoot the problem or contact the next level of support.
The PM Upgrade Plan is empty.	Confirm all PMs have the new load. If all PMs do not have the load, perform the procedure “Prepare for an automated PM update using PMUPGRADE” in this document. When complete, return to this step.

Perform an automated PM update (continued)

3

ATTENTION

Use at least two devices with this procedure. Use one device to perform the automated PM update. Use the second device as a trace device to monitor the progress of the automated PM update.

Some offices use a third device during the automated PM update. Use the third device as a MAP terminal. Post the PMs and monitor PM loading, patching, and service status.

Send the output of each device to a printer for record keeping.

Establish a second device as a trace device. Type

>SET TRACE_DEVICE dev_name
and press the Enter key.

where

dev_name is the name of the device

Example of command

```
>SET TRACE_DEVICE TTY0
```

The second device records SWUPGRADE PM operations during the automated PM update.

4 Confirm the trace device displays the following message.

Example of trace device response

```
This device is selected for TRACEing.
```

If the device	Do
displays the previous message	step 5
does not display the previous message	Confirm the correct device is selected as the trace device. If necessary, repeat step 3.

Perform an automated PM update (continued)

5

CAUTION
Possible service interruption
If not already completed, perform the procedure "Start a PM update shift" in this document before continuing this procedure. Failure to perform this procedure can cause SWUPGRADE PM to encounter patching and loading problems during the automated PM update.

Start the PM update shift. Type

>SET SHIFT STARTED
and press the Enter key.

SWUPGRADE PM checks for the availability of a $XREF patch cross-reference file and processes patch cross-reference information.

Example of SLM console response

```
XPM patch files (if any) will be taken from volume S01DPMLOADS.
ISN patch files (if any) will be taken from volume S01DPMLOADS.
Reading patch cross-reference file XPM81RTP$XREF from volume S01DPMLOADS

**********************************************************************
**                                NOTE                              **
**                                ----                              **
**   You are starting a shift to upgrade PMs in the office.         **
**   If you have not already done so, perform the procedure         **
**   "Start a PM update shift" in the Peripheral Module             **
**   Software Release Document at this point.                       **
**                                                                  **
**********************************************************************
```

Perform an automated PM update (continued)

Example of XA-Core console response

```
XPM patch files (if any) will be taken from volume F02LPMLOADS.
ISN patch files (if any) will be taken from volume F02LPMLOADS.
Reading patch cross-reference file XPM81RTP$XREF from volume F02LPMLOADS

**********************************************************************
**                                NOTE                              **
**                                ----                              **
**   You are starting a shift to upgrade PMs in the office.         **
**   If you have not already done so, perform the procedure         **
**   "Start a PM update shift" in the Peripheral Module             **
**   Software Release Document at this point.                       **
**                                                                  **
**********************************************************************
```

If the procedure "Start a PM update shift"	Do
has been performed	step 6
has not been performed	Issue the SET SHIFT FINISHED command. Perform the procedure "Start a PM update shift" in this document. Return to step 5.

Logs or other responses

Log or other response	Action
PM700	No action required. This is an information log that indicates the start of a PM update shift.
`ERROR: SHIFT variable must previously have been set to FINISHED or ABORTED.`	An earlier PM update shift was not finished or aborted. Wait for the earlier shift to finish or abort the shift.
`ERROR: A step is currently being executed.`	A shift is aborting and a step continues to execute. Wait for the shift to abort and reissue the SET SHIFT STARTED command.

Perform an automated PM update (continued)

Log or other response	Action
`WARNING: Could not read patch cross-reference file. Do you wish to start this shift without patches?`	SWUPGRADE PM cannot find a $XREF patch cross-reference file. Depending on the method of patch delivery, a patch cross-reference file may not be available. If a patch cross-reference file is not available, SWUPGRADE PM does not automatically patch the PM loads.
`WARNING: The PM Upgrade shift cannot be started. The following incompatible activities are already in progress:`	An incompatible activity, such as the PRSM autoapply process is in progress. Wait for the incompatible activity to finish and reissue the SET SHIFT STARTED command.

6 Display the SWUPGRADE PM environment variables. Type

>DISPLAY VAR ALL
and press the Enter key.

Example of console response

```
SWUPGRADE variables for target PM:

Variable Name                              Value
-------------------------------------------------------
TRACE_DEVICE                          =    TTY0
SHIFT                                 =    STARTED
CONCURRENCY                           =    UNLIMITED
```

The displayed variables control SWUPGRADE PM for the current PM update shift. TRACE_DEVICE is the trace device established in step 3. SHIFT displays the status of the current PM update shift.

7 Display HELP for the CONCURRENCY variable. Type

>HELP VAR CONCURRENCY
and press the Enter key.

Perform an automated PM update (continued)

8 Review the HELP information for the CONCURRENCY variable. Check office policy to determine the maximum number of PMs to update concurrently.

If the value in CONCURRENCY	Do
needs to be changed	step 9
does not need to be changed	step 10

9

CAUTION
Possible service interruption
A concurrency value set to UNLIMITED can exceed the maintenance window for the PM update shift in large scale offices. Check office policy.

Change the concurrency value. Perform the following steps.

a. Set the concurrency value. Type

>SET CONCURRENCY max_no
and press the Enter key.

where

max_no — is UNLIMITED or the maximum number of PMs the system updates concurrently

Example of command

```
>SET CONCURRENCY 2
```

Note: "UNLIMITED" means the user is not setting a limit. Limits due to Nortel Networks recommendations can be applied by SWUPGRADE PM.

Note: Concurrency does not mean that the process will stop after "x" number of PMs are upgraded. User must enter the "Set Shift Finished" command to stop the process before the end of the current step built in the PMUPGRADE schedule.

b. Display the environment variables and confirm the change. Type

>DISPLAY VAR ALL
and press the Enter key.

Perform an automated PM update (continued)

Example of console response

```
SWUPGRADE variables for target PM:

Variable Name                              Value
-------------------------------------------------------
TRACE_DEVICE                          =    TTY0
SHIFT                                 =    STARTED
CONCURRENCY                           =    2
```

10 Set prompting to on. Type

>PROMPTING ON
and press the Enter key.

Example of console response

```
Prompting turned ON.
```

PROMPTING ON is the recommended method of operation. Set PROMPTING ON to force the DMS switch to pause after each automated step. This allows user intervention for the next required step. The remainder of this procedure assumes prompting is enabled.

11 Begin the automated PM update. Type

>START
and press the Enter key.

Example of console response

```
Setup completed.
Enter GO to begin the execution of steps.
```

or

```
START has already been issued and the SETUP is completed.
```

12 Display the steps of the automated PM update. Type

>DISPLAY STEPS
and press the Enter key.

Example of console response

```
SWUPGRADE steps for target PM:

   1_M_DCH                          Needed      Perm  Act Proc
   2_M_LIU7                         Needed      Perm  Act Proc
   3_M_LIU7                         Needed      Perm  Act Proc
   4_M_FRIU                         Needed      Perm  Act Proc
   5_M_EIU                          Needed      Perm  Act Proc
   6_M_EIU                          Needed      Perm  Act Proc
   7_A_DTC                          Needed      Perm  Act Proc
   8_A_DTCI                         Needed      Perm  Act Proc
   9_M_NIU                          Needed      Perm  Act Proc
   10_M_RMM                         Needed      Perm  Act Proc
   11_A_ESA                         Needed      Perm  Act Proc
   12_A_LCME                        Needed      Perm  Act Proc
   13_A_LCM                         Needed      Perm  Act Proc
   14_A_LCM                         Needed      Perm  Act Proc
   15_M_LIM                         Needed      Perm  Act Proc
   16_A_LGC                         Needed      Perm  Act Proc
   17_A_LTC                         Needed      Perm  Act Proc
   18_A_LTC                         Needed      Perm  Act Proc
   19_A_ENET                        Needed      Perm  Act Proc
   20_M_MS_FIRMWARE                 Needed      Perm  Act Proc
   UPGRADE_COMPLETE                 Needed      Perm  Act Proc
```

SWUPGRADE PM converts the tasks in the PM Upgrade Plan to steps in the automated update. An _A_ in the step name identifies the step as an automated step. An _M_ in the step name identifies the step as a manual step. The order of the steps reflects peripheral side (P-side) to central side (C-side) PM configurations. NEEDED changes to COMPLETED when SWUPGRADE PM completes the step. UPGRADE_COMPLETE closes SWUPGRADE PM.

Note: SWUPGRADE PM does not use the columns with the values of PERM, ACT, and PROC during an automated PM update. Other SWUPGRADE platforms use the columns in this report for other automated updates.

Perform an automated PM update (continued)

13

CAUTION
Possible service interruption
Do not perform an automated update for the ENET when an SPM is present on the DMS switch. Use the procedure "Update the ENET" in this document to perform a manual ENET update.

Review the steps of the automated PM update and identify the next step to be performed as part of this automated PM update. SWUPGRADE PM selects the next step in the plan. The user can select another step, if required.

14 Display HELP on the step you wish to execute. Type

>HELP STEP step_name
and press the Enter key.

where

step_name is the name of the step

Example of command

```
>HELP STEP 7_A_DTC
```

SWUPGRADE PM displays a brief description of the step. The description includes

- the nodes affected by the step
- the PM load(s) and PRSU(s) required by the step
- the steps required prior to the step

Perform an automated PM update (continued)

Example of console response

```
PMUPGRADE task:  7
Node type:       DTC
Automated:       YES
Concurrency:     2

          Nodes:  DTC  0
                  DTC  1
                  DTC  3
                  DTC  7
                  DTC  9
                  DTC  10
                  DTC  11
                  DTC  14
          Loads:
                  ED781AZ
                            Patches:
                            XKB32X8A
                            XKI59X8A
                            XEC00X8A
                  MX77NI05

The Peripheral Module Software Release Document describes the
manual procedure used to perform the above task.
```

15

CAUTION
Possible service interruption
Do not perform an automated update for the ENET when an SPM is present on the DMS switch. Use the procedure “Update the ENET” in this document to perform a manual ENET update.

Determine if the next step to be performed is an ENET step.

If the step is	Do
an ENET step and an SPM is present on the DMS switch	Perform the procedure “Update the ENET” in this document. Go to step18.
an ENET step and an SPM is not present on the DMS switch	Execute the step. Go to step 16.
not an ENET step	Execute the step. Go to step 16.

Perform an automated PM update (continued)

16

CAUTION
Possible service interruption
If steps are executed in a different order from the PM Upgrade Plan, follow a P-side to C-side sequence. The PM Upgrade Plan steps are sequenced P-side to C-side. If steps are executed in a different sequence, service can be interrupted to subtending PMs.

Execute the step. Type one of the following commands.

If you wish to	Do
execute the next step	Type **>GO** and press the Enter key.
execute another step	Type **>RUNSTEP step_name** and press the Enter key. *Example of command* `>RUNSTEP 7_A_DTC`

This command can generate the following log.

Log	Action
PM701	No action required. This is an information log that indicates the start of a PM update task.

If the step is	Do
a manual step (_M_ in step name)	step 17
an automated step (_A_ in step name)	step 19

Perform an automated PM update (continued)

17 Observe the trace device response for the manual step.

Example of trace device response

```
Starting step 1_M_DCH
This device is selected for TRACEing

PMUPGRADE task:     1
Node type:          DCH
Automated:          NO
Concurrency:        2

          Nodes:
                    DCH 1
                    DCH 2
                    DCH 3
                    DCH 4
                    DCH 5
                    DCH 6
          Loads:
                    EDH81AZ
                                   Patches:
                                   XKI81X8A
                                   XED20X8A

Refer to the Peripheral Module Software Release Document and
complete the above task manually.

After the above task has been successfully completed manually,
enter the SWUPGRADE PM commands:

     OVERRIDE 1_M_DCH
     YES

Step 1_M_DCH is not complete.
The SWUPGRADE process has paused.
```

Perform an automated PM update (continued)

18 Perform the task manually. Perform the following steps.

a. Update all nodes manually. Use the appropriate update procedure in this document.

b. Override the SWUPGRADE PM utility. Type

>OVERRIDE step_name
and press the Enter key.

where

step_name is the name of the step

Example of command

```
>OVERRIDE 1_M_DCH
```

c. Confirm the action. Type

>YES
and press the Enter key.

If you want to	Do
continue the PM update shift	step 12
finish the PM update shift	step 21

Perform an automated PM update (continued)

19

ATTENTION

Some offices use a third device during the automated PM update. Use the third device as a MAP terminal to post the PMs and monitor PM loading, patching, and service status.

Use the SET SHIFT FINISHED or SET SHIFT ABORTED commands to stop a currently executing automated step.

The SET SHIFT FINISHED command stops the step after completing the full update for the PM or PMs.

The SET SHIFT ABORTED command stops the step after the current maintenance action for the PM or PMs completes. Maintenance action refers to BSY or LOADPM.

Refer to the section “How to control an automated PM update” in in the “Overview of automated update process” chapter in this document.

Observe the trace device response for the automated step. SWUPGRADE PM confirms the following to ensure the PM is ready for the update:

- CM central processing unit (CPU) occupancy is less than some threshold
- PM is in-service
- PM’s last REX test occurred within the last two weeks and passed
- PM’s central-side (C-side) node is not in overload
- PM can perform a switch of activity (SWACT)
- PM’s peripheral-side (P-side) nodes are updated

Perform an automated PM update (continued)

Example of trace device response

```
Starting step 7_A_DTC.
This device is selected for TRACEing

PMUPGRADE task:  7
Node type:       DTC
Automated:       YES
Concurrency:     2

          Nodes:  DTC  0
                  DTC  1
                  DTC  3
                  DTC  7
                  DTC  9
                  DTC  10
                  DTC  11
                  DTC  14
          Loads:
                  ED781AZ
                            Patches:
                            XKB32X8A
                            XKI59X8A
                            XEC00X8A
                  MX77NI05

Overall upgrade readiness result:  PASSED
```

Perform an automated PM update (continued)

After the initial trace device response for the automated step, the trace device displays the status of each node in the automated step.

Example of trace device response

```
06:55:42 PRSM request: Assigning upgrade_ld DTC 0 unit 0
06:55:42 Busying DTC 0 unit 0
06:55:44 Loading Firmware DTC 0 unit 0
06:55:44 Loading Software DTC 0 unit 0
06:55:44 PRSM request: DBAudit DTC 0 unit 0
06:55:44 PRSM request: Applying prsus DTC 0 unit 0
06:55:44 RTSing DTC 0 unit 0
06:55:44 PRSM request: Assigning upgrade_ld DTC 1 unit 0
06:55:45 Busying DTC 1 unit 0
06:55:48 Loading Firmware DTC 1 unit 0
06:55:48 Loading Software DTC 1 unit 0
06:55:49 PRSM request: DBAudit DTC 7 unit 0
06:55:49 RTSing DTC 7 unit 0
06:55:49 SwActing DTC 0
06:55:49 SwActing DTC 1
06:55:50 PRSM request: Assigning upgrade_ld DTC 0 unit 1
06:55:50 PRSM request: Assigning upgrade_ld DTC 7 unit 1
06:55:50 Busying DTC 0 unit 1
06:55:50 Busying DTC 1 unit 1
06:55:50 Loading Firmware DTC 0 unit 1
06:55:50 Loading Firmware DTC 1 unit 1
06:55:50 Loading Software DTC 0 unit 1
06:55:50 Loading Software DTC 1 unit 1
06:55:50 PRSM request: DBAudit DTC 0 unit 1
06:55:50 PRSM request: DBAudit DTC 1 unit 1
06:55:50 RTSing DTC 0 unit 1
06:55:50 RTSing DTC 1 unit 1
06:55:50 SwActing DTC 0
06:55:50 SwActing DTC 1
06:55:50 PRSM request: Assigning upgrade_ld DTC 3 unit 0
06:55:50 PRSM request: Assigning upgrade_ld DTC 7 unit 0
06:55:50 Busying DTC 3 unit 0
06:55:50 Busying DTC 7 unit 0
06:55:56 Loading Firmware DTC 3 unit 0
06:55:56 Loading Firmware DTC 7 unit 0
06:55:56 Loading Software DTC 3 unit 0
06:55:56 Loading Software DTC 7 unit 0
06:55:56 PRSM request: DBAudit DTC 3 unit 0
06:55:56 PRSM request: DBAudit DTC 7 unit 0
06:55:56 RTSing DTC 3 unit 0
06:55:56 RTSing DTC 7 unit 0
06:55:56 RTSing DTC 14 unit 0
06:55:56 SwActing DTC 3
06:55:56 SwActing DTC 7
```

Perform an automated PM update (continued)

This step can generate the following logs.

Log	Action
PM702	No action required. This is an information log that indicates an automated PM update task completed.
PM 703	A node in the step failed to update. Determine why the node failed.

A SWUPGRADE PM step stops executing when

- There are nodes in the step that are not ready to be updated.
- Every node in the step updates successfully.
- The SET SHIFT FINISHED or SET SHIFT ABORTED command is entered.
- A PM update failure occurs. The first failure stops the step after the update completes for the PMs or the PM unit. The next failure stops the step immediately.
- The SWUPGRADE PM shift exceeds the 14 hour time limit.

After SWUPGRADE PM completes a step, the trace device displays an update status report for each node.

Example of trace device response

```
Overall upgrade result: PASSED

Node DTC  0 : PASSED
Node DTC  1 : PASSED
Node DTC  3 : PASSED
Node DTC  7 : PASSED
Node DTC  9 : PASSED
Node DTC  10 : PASSED
Node DTC  11 : PASSED
Node DTC  14 : PASSED

Finished step 7_A_DTC.

The SWUPGRADE process has been paused due to PROMPTING ON. Enter Go.
```

Perform an automated PM update (continued)

If	Do
every node in the step passed and you want to continue the PM update shift	step 12
every node in the step passed and you want to finish the PM update shift	step 21
a node in the step failed	step 20

Note: Use the QUERYPM command from the MAP display to confirm each node is correctly loaded, patched, and in-service. Office policy can require confirmation that the SWUPGRADE PM utility updated each node.

20

ATTENTION

Office policy determines the level of possible troubleshooting for this step.

Determine why the node failed. Possible reasons why a node can fail an automated update are

- The PM did not pass its last REX test within the last two weeks.
- The PM has a P-side node which is not updated.
- The PM status, or one of its units, changed due to a maintenance problem not related to the automated update.
- The PM load file or required PRSU files are not in the Destination Volume.
- The node encountered a communications problem with its serving PM.
- The node encountered a hardware problem.

Perform an automated PM update (continued)

Review log PM703, related logs, and the trace device output to determine why the node failed the automated update.

If you can	Do
determine why the node failed	Correct the problem. Return to step 16.
determine why the node failed and the reason is because the PM did not pass its last REX test	Use the SET SHIFT FINISHED command to terminate the update shift. Perform a manual REX test on the PM. Start the update shift again. The following error message displays when the user fails to execute the SET SHIFT FINISHED command prior to performing a manual REX test on the PM: `SREX controller permission denied: Rex test conflicts with one running.`
not determine why the node failed	Contact the next level of support. You may have to correct this problem before you continue the PM update shift, skip this problem and continue the PM update shift, or finish the PM update shift.

21

CAUTION
Possible service interruption
Perform the procedure "Finish a PM update shift" in this document before proceeding to step 22. Failure to perform this procedure could affect office operations after the PM update shift.

Finish the automated PM update shift. Type

>SET SHIFT FINISHED
and press the Enter key.

Example of MAP response

```
                SUMMARY REPORT FOR PM SOFTWARE UPGRADE
                ======================================

    Description of the report columns:

    Step name:   The name of the step.
    Since Last:  Elapsed time between the previous step and this step.
    Start:       Start time of this step.
    Elapsed:     The time it took to execute this step.
    Result:      The final status of this step after completion.

Step name             Since Last Start      Elapsed      Result
--------------------  ---------- ---------- ------------ ----------------
1_M_DCH                          16:43:03   00:00:16.475 STEP NOT COMPLETE
2_M_LIU7              00:02:40   16:46:01   00:00:11.864 STEP NOT COMPLETE
3_M_LIU7              00:01:57   16:48:10   00:00:11.350 STEP NOT COMPLETE
4_M_FRIU              00:02:16   16:50:38   00:00:11.586 STEP NOT COMPLETE
5_M_EIU               00:00:39   16:51:29   00:00:12.077 STEP NOT COMPLETE
6_M_EIU               00:01:55   16:53:37   00:00:10.667 STEP NOT COMPLETE
7_A_DTC               00:01:07   16:54:55   00:01:02.183 STEP PASSED
8_A_DTCI              00:02:06   16:58:04   00:00:42.820 STEP PASSED
9_M_NIU               00:00:27   16:59:14   00:00:13.644 STEP NOT COMPLETE
10_M_RMM              00:00:46   17:00:14   00:00:10.423 STEP NOT COMPLETE

************************************************************
**                           NOTE                         **
**                           ----                         **
**  You are finishing a shift to upgrade PMs in the office.  **
**  If you have not already done so, perform the procedure   **
**  "Finish a PM update shift" in the Peripheral Module   **
**  Software Release Document at this point.                 **
**                                                           **
************************************************************
```

Note: STEP NOT COMPLETE indicates SWUPGRADE PM did not perform the step. The step could have been overridden and performed manually.

Perform an automated PM update (continued)

The SET SHIFT FINISHED command can generate the following log.

Log	Action
PM700	No action required. This is an information log that indicates the PM update shift finished.

If the procedure "Finish a PM update shift" in this document	Do
has been performed	step 22
has not been performed	Perform the procedure and go to step 22.

22 Display the steps of the automated PM update. Type

>DISPLAY STEPS
and press the Enter key.

Example of console response

```
SWUPGRADE steps for target PM:

   1_M_DCH                          Overridden      Perm  Act Proc
   2_M_LIU7                         Overridden      Perm  Act Proc
   3_M_LIU7                         Overridden      Perm  Act Proc
   4_M_FRIU                         Overridden      Perm  Act Proc
   5_M_EIU                          Overridden      Perm  Act Proc
   6_M_EIU                          Overridden      Perm  Act Proc
   7_A_DTC                          Completed       Perm  Act Proc
   8_A_DTCI                         Completed       Perm  Act Proc
   9_M_NIU                          Overridden      Perm  Act Proc
   10_M_RMM                         Overridden      Perm  Act Proc
   11_A_ESA                         Completed       Perm  Act Proc
   12_A_LCME                        Completed       Perm  Act Proc
   13_A_LCM                         Completed       Perm  Act Proc
   14_A_LCM                         Completed       Perm  Act Proc
   15_M_LIM                         Overridden      Perm  Act Proc
   16_A_LGC                         Completed       Perm  Act Proc
   17_A_LTC                         Completed       Perm  Act Proc
   18_A_LTC                         Completed       Perm  Act Proc
   19_A_ENET                        Completed       Perm  Act Proc
   20_M_MS_FIRMWARE                 Overridden      Perm  Act Proc
   UPGRADE_COMPLETE                 Needed          Perm  Act Proc
```

Perform an automated PM update (continued)

23 Review the steps generated in step 22 for the automated PM update.

If all steps	Do
except UPGRADE_COMPLETE are complete or overridden	step 24
are not complete or overridden	step 25

24

CAUTION
Possible service interruption
The UPGRADE_COMPLETE step must be executed to complete the PM update. Otherwise, the SWUPGRADE CM tool does not function.

Execute the UPGRADE_COMPLETE step. Perform the following steps.

a. Type

>GO
and press the Enter key.

Example of console response

```
Starting step UPGRADE_COMPLETE.
This device is selected for TRACEing
    PM upgrade complete - all steps have been executed.
    NOTE: Upon issuing the next GO, SWUPGRADE PM will be reset.
 Step UPGRADE_COMPLETE is not complete.
 The SWUPGRADE process has paused.
```

b. Obtain the final record of all completed steps. Type

>DISPLAY STEPS
and press the Enter key.

Perform an automated PM update (continued)

c. Complete the UPGRADE_COMPLETE step. Type

>GO
and press the Enter key.

Example of console response

```
Starting step UPGRADE_COMPLETE.
This device is selected for TRACEing
PM upgrade complete. You may now QUIT out of the SWUPGRADE increment
 Finished step UPGRADE_COMPLETE.

SWUPGRADE Process complete - all steps have been executed.
```

25 Quit the SWUPGRADE PM utility. Type

>QUIT
and press the Enter key.

Example of MAP response if all steps in the PM Upgrade Plan are completed

```
The S/W upgrade is complete or CANCEL has been issued.
Exiting the SWUPGRADE increment...
```

Example of MAP response if all steps in the PM Upgrade Plan are not completed

```
CI:
>
```

26 Stop the terminal responses from printing. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

Perform an automated PM update (end)

27 You have completed this procedure.

If all steps in the PM Upgrade Plan	Do
are not completed	Repeat this procedure for each PM update shift until all steps are completed and all PMs in the office are updated.
are completed	You have updated all PMs in the office.

Prepare for a manual PM update

Application

ATTENTION

Only operating company personnel experienced with PM updates should perform this procedure.

PMUPGRADE automates many of the steps in this procedure. Refer to "Prepare for an automated PM update using PMUPGRADE" in this document.

Use this procedure to prepare an office for a manual peripheral module (PM) update. Perform this procedure once after receiving the PM load and patch tapes.

Note: If the system load module (SLM) or extended architecture core (XA-Core) tape cartridge label text indicates *Patches: Yes*, the tape includes the required PRSUs for XPM and ISN load files.

Prerequisites

Meet the following prerequisites prior to a manual PM update shift.

$XREF patch control file

The $XREF patch control file is included when PRSUs are delivered to the office on an SLM or XA-Core tape cartridge labeled *Patches: Yes.* This patch control file is not included when PRSUs are downloaded directly to the office through the customer services computerized access network (C-SCAN) or other software delivery methods.

Note: In the file name XPMxxRTP$XREF, xx refers to the PM load tape release version. For example, the file XPM10RTP$XREF supports PLNA0010.

$XREF patch control file delivered via X.25 NOP links

This method of $XREF file delivery only applies to an automated PM update. Refer to "Prepare for an automated PM update using PMUPGRADE" in this document.

Update sequence

Not applicable

Required information

None

Prepare for a manual PM update (continued)

Notes

The following notes provide additional information.

PMLOAD alarm

This procedure creates a PMLOAD alarm under the PM banner. The DMS generates this minor alarm when table PMLOADS does not match the active PM load. Local office policy can require modifications to this procedure and to procedure "Start a PM update shift" in this document to reduce the number and length of PMLOAD alarms.

Post-release software update files for new ISN loads

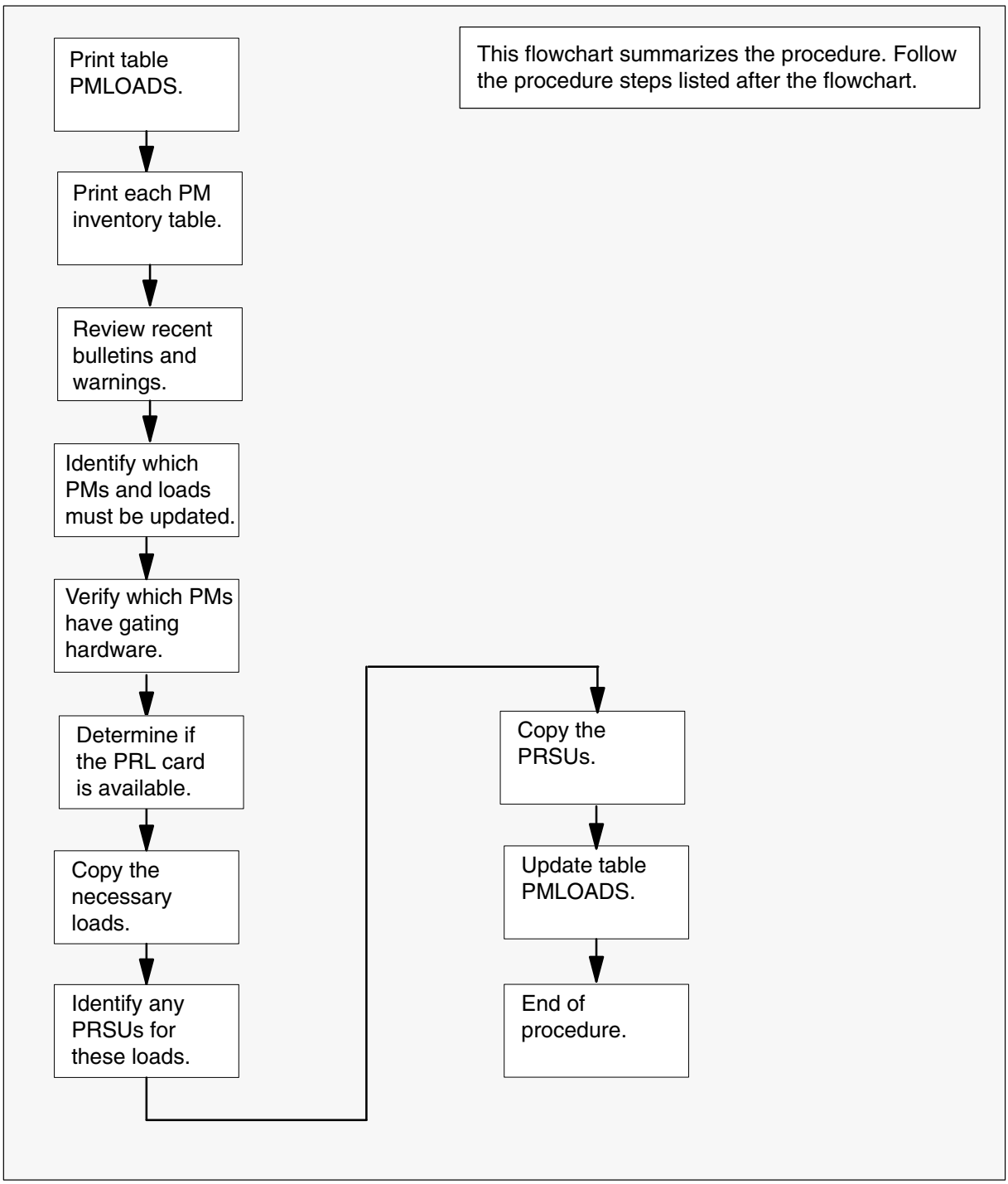
Keep a copy of the integrated services node (ISN) post-release software update files associated with the new loads for the one night process (ONP). These files allow the DMS to populate the post-release software manager (PRSM) database with information on the new files. The PRSM database requires complete information to determine prerequisites for removal action. The ISN PRSU files can be erased after the ONP has completed successfully.

Post-release software update files for old ISN loads

PRSUs associated with the previous ISN loads can remain at a status of Not Validated (NV). A problem occurs if patches for the previous ISN loads were applied with PATCHER and these previous patch files are not accessible by PRSM. This problem is not service affecting. The previous PRSU files are not listed after the ONP. If you wish to manually change the PRSU status, use the PRSM VALIDATE command with the PRSU file present. The VALIDATE command changes the status to Not Needed (NN).

Prepare for a manual PM update (continued)

Summary of procedure



Prepare for a manual PM update (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Send the terminal responses to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the printer name

Example of command

```
>RECORD START ONTO PRNTR1
```

2 Print the contents of table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

To view the tuples in a	Do
packed format	step 2b.
regular or expanded format	step 2c.

b. Change the MAP display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. List the contents. Type

>LIST ALL
and press the Enter key.

d. Close table PMLOADS. Type

>QUIT
and press the Enter key.

Prepare for a manual PM update (continued)

3 Print the contents of each PM inventory table. Perform the following steps.

a. Open an inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the PM inventory table name

Example of command

```
>TABLE LTCINV
```

To view the tuples in a	Do
packed format	step 3b.
regular or expanded format	step 3c.

b. Change the MAP display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. List the contents. Type

>LIST ALL
and press the Enter key.

d. Close the table. Type

>QUIT
and press the Enter key.

e. Repeat steps 3a. through 3d. for each PM inventory table in the office.

At your desk

4 Review all bulletins and warnings related to this update and this PM software release document.

5 Refer to the current release column in table PM-to-load cross-reference in the "Overview of release" chapter in this document. Compare the contents of table PMLOADS and the PM inventory tables to the load names listed in the current release column. If the load name in the current release column is different from the load name in table PMLOADS and the PM inventory tables, the PM must be updated.

Note: A new XPM processor firmware load does not indicate a need to update the firmware for every PM in the office. Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware requires an update.

Prepare for a manual PM update (continued)

6 Review this document and the PM inventory tables to determine if any PMs to be updated have a PRL circuit card. If any PMs have a PRL circuit card, check office policy to determine if the PRL circuit card is used for this office update.

7 Confirm any PM gating hardware requirements. Review this information in table PM-to-load cross-reference in the “Overview of release” in this document.

Note: All PMs and all releases do not have gating hardware.

If each PM	Do
has the required hardware	step 8
does not have the required hardware	Contact the next level of support. This office is not prepared for a PM software update.

8 Copy the necessary PM load and PRSU files.

If the office receives PM load and PRSU files on an	Do
SLM tape cartridge	step 9
XA-Core tape cartridge	step 14

9 Copy the necessary PM load and PRSU files to an SLM disk volume. Perform the following steps.

At the MAP display

a. Access the disk utility. Type

>DISKUT
and press the Enter key.

b. Select an SLM disk volume for the new PM load and PRSU files.

At the SLM tape drive

c. Place the SLM tape cartridge into the SLM tape drive for the selected SLM disk volume.

Prepare for a manual PM update (continued)

At the MAP display

d. Mount the SLM tape cartridge in the SLM tape drive. Type

>IT drive_no
and press the Enter key.

where

drive_no is the SLM tape drive number

Example of command

```
>IT S00T
```

e. List the contents of the tape. Type

>LF drive_no SHORT FIRST
and press the Enter key.

where

drive_no is the SLM tape drive number

Example of command

```
>LF S00T SHORT FIRST
```

Example of MAP display

```
File information for S00T

                                        Create      File     File
File      File                          Date        Org.     Code
Order     Name                          Y/M/D
----------------------------------  -------     ----     ----
          PLNA010                       99/09/24    VOL       200

XPM10RTP$XREF   PLNA0010_INFO   D1T009          D2T009
DPP009          DPT036          EMMAB09         IOMHAX01
IOMRAX01        ITMAB06         ADCMQA01        ATMKA02
BLMTB01         BRLMVA03        BTMKA02         DTUBAD01
DTUHAA02        DTUDAA01        ERLMVA02        MPCC003AC
MPC403AC        MPCA03AC        MPCC03AC        MPCX33AB
MTMKA02         MTULJ04         RDCMPA02        RMTMKA01
TKMTKA02        TTMNA01         CMR07A          AX74XE01
CRI81AZ_980223  ECL81AZ_980223  ECR81AZ_980223  ED781AZ_980223
.......         .......         .......         .......
.......         .......         .......         .......
XBC14X8A$PATCH  XBV19X8A$PATCH  XCQ04X8A$PATCH  XDU62X8A$PATCH
XDU64X8A$PATCH  XED42X8A$PATCH  XEJ43X8A$PATCH  XEJ44X8A$PATCH
XEJ66X8A$PATCH  XEJ68X8A$PATCH  XEJ76X8A$PATCH  XEJ82X8A$PATCH
XJP76X8A$PATCH  XJP80X8A$PATCH  XJP81X8A$PATCH  XJP83X8A$PATCH
XMT02X8A$PATCH  XMT07X8A$PATCH  XNX22X8A$PATCH  XNX41X8A$PATCH
XOD31X8A$PATCH  XOD35X8A$PATCH  XOD36X8A$PATCH  XOD36X8A$PATCH
XOD37X8A$PATCH  XOD39X8A$PATCH  XOD44X8A$PATCH  XOD46X8A$PATCH
XOD48X8A$PATCH  XOD49X8A$PATCH  XOD51X8A$PATCH  XOD52X8A$PATCH
XOD53X8A$PATCH  XOD55X8A$PATCH  XOD56X8A$PATCH  XOD57X8A$PATCH
XOD58X8A$PATCH  XOD60X8A$PATCH  XOD62X8A$PATCH  XOD67X8A$PATCH
XOR18X8A$PATCH  XOR24X8A$PATCH  XOR26X8A$PATCH  XOR29X8A$PATCH
XOR30X8A$PATCH  XRP16X8A$PATCH  XRP19X8A$PATCH  XRR15X8A$PATCH
XRR19X8A$PATCH  XSH05X8A$PATCH  XSI33X8A$PATCH  XSI39X8A$PATCH
XSI40X8A$PATCH  XSI42X8A$PATCH  XVV15X8A$PATCH  XVV16X8A$PATCH
XVV21X8A$PATCH  XWH38X8A$PATCH  XWH41X8A$PATCH  XWH45X8A$PATCH
XWW54X8A$PATCH  XWP24X8A$PATCH  XXW36X8A$PATCH  XXW37X8A$PATCH
.......         .......         .......         .......
.......         .......         .......         .......
```

Note: In the preceding example, the sequential order of PM load and PRSU files on the SLM tape cartridge reads line by line across the columns from left to right. This example is not a complete list of applicable PM load and PRSU files and is for illustration purposes only.

Prepare for a manual PM update (continued)

f. Verify the tape contains each required PM load file.

If each required load file	Do
is on the tape	step 9g.
is not on the tape	Contact the next level of support. The tape could be missing load files critical to the office update.

g. Verify the tape contains the $XREF patch control file.

If the SLM tape cartridge label text	Do
indicates *Patches: Yes*	step 9h.
indicates *Patches: No*	step 9j.

h. Copy the $XREF file to the SLM disk volume. Type

>MFR STDVOL disk_vol drive_no tape_vol $XREF_file
and press the Enter key.

where

disk_vol	is the SLM disk volume name
drive_no	is the SLM tape drive number
tape_vol	is the PCL-specific SLM tape cartridge volume name
$XREF_file	is the $XREF file name

Example of command

```
>MFR STDVOL S00DPMLOADS S00T PLNA0010 XPM10RTP$XREF
```

i. Print the $XREF file to identify the PRSUs for the PM load files.

>PRINT $XREF_file
and press the Enter key.

where

$XREF_file	is the XPMxxRTP$XREF patch control file name

Example of command

```
>PRINT XPM10RTP$XREF
```

Prepare for a manual PM update (continued)

j.

ATTENTION

The PM load files must be copied from the SLM tape cartridge in sequential order based on the output of step 9e. Otherwise, the SLM tape cartridge rewinds unnecessarily and increases the time to complete the copy process. The sequential order of PM load and PRSU files on the SLM tape cartridge reads line by line across the columns from left to right. See example in step 9e.

Copy one PM load file. Type

>MFR STDVOL disk_vol drive_no tape_vol new_load
and press the Enter key.

where

disk_vol	is the SLM disk volume name
drive_no	is the SLM tape drive number
tape_vol	is the PCL-specific SLM tape cartridge volume name
new_load	is the new PM load file name

Example of command for a base load

```
>MFR STDVOL S00DPMLOADS S00T PLNA0010 LPC08BC
```

Example of command for a PPXL

```
>MFR STDVOL S00DPMLOADS S00T PLNA0010 ECL81AZ_980223
```

k. Repeat step 9j. for each required PM load file.

Note: Some offices require all PM load files to be copied. Check office policy. Use the MFR command syntax below to copy a maximum of five PM load files identified in the command string.

>MFR STDVOL disk_vol drive_no tape_vol new_load new_load new_load new_load new_load

Prepare for a manual PM update (continued)

l. List the SLM disk volume contents to verify all PM load files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the SLM disk volume name

Example of command

```
>LF S00DPMLOADS
```

If all PM load files	Do
are in the volume	step 10
are not in the volume	step 9j.

10 Copy the PM load files from the active SLM disk volume to a backup SLM disk volume. Perform the following steps.

a. List the active PM load file SLM disk volume contents. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the SLM disk volume name

Example of command

```
>LF S00DPMLOADS
```

b. Select a different SLM disk volume to store the backup PM load files.

c. Copy one PM load file. Type

>COPY new_load disk_vol
and press the Enter key.

where

new_load is the new PM load file name
disk_vol is the backup SLM disk volume name

Example of command

```
>COPY LPC08BC S01DPMLOADS
```

d. Repeat step 10c. for each PM load file.

e. List the backup PM load file SLM disk volume contents to verify all PM load files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the backup SLM disk volume name

Example of command

```
>LF S01DPMLOADS
```

If all PM load files	Do
are in the backup volume	step 11
are not in the backup volume	step 10c.

11 Identify and copy the PRSU files. Perform the following steps. If there are no PRSUs to copy, go to step 13.

Note: Revise these procedures, if necessary, for offices that receive PRSUs through C-SCAN or other method of PRSU delivery.

Prepare for a manual PM update (continued)

a.

ATTENTION

The PRSU files must be copied from the SLM tape cartridge in sequential order based on the output of step 9e. Otherwise, the SLM tape cartridge rewinds unnecessarily and increases the time to complete the copy process. The sequential order of PM load and PRSU files on the SLM tape cartridge reads line by line across the columns from left to right. See example in step 9e.

Copy one PRSU file. Type

>MFR STDVOL disk_vol drive_no tape_vol prsu_id
and press the Enter key.

where

disk_vol	is the SLM disk volume name
drive_no	is the SLM tape drive number
tape_vol	is the PCL-specific SLM tape cartridge volume name
prsu_id	is the PRSU file name

Example of command

```
>MFR STDVOL S00DPMLOADS S00T PLNA0010 XBV19X8A$PATCH
```

Note: The PRSUs for a pre-patched XPM load (PPXL) file must reside in the same SLM disk volume that contains the PPXL file.

b. Repeat step 11a. for each PRSU file.

Note: Some offices require all PRSU files to be copied. Check office policy. Use the MFR command syntax below to copy a maximum of five PRSU files identified in the command string.

>MFR STDVOL disk_vol drive_no tape_vol prsu_id prsu_id prsu_id prsu_id prsu_id

c. List the SLM disk volume contents to verify all PRSU files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the SLM disk volume name

Example of command

```
>LF S00DPMLOADS
```

If all PRSU files	Do
are in the volume	step 11d.
are not in the volume	step 11a.

d. Eject the SLM tape cartridge. Type

>ET drive_no
and press the Enter key.

where

drive_no is the SLM tape drive number

Example of command

```
>ET S00T
```

At the SLM tape drive

e. Remove the SLM tape cartridge.

At the MAP display

12 Copy the PRSU files from the active SLM disk volume to a backup SLM disk volume. Perform the following steps.

a. List the active PRSU file SLM disk volume contents. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the SLM disk volume name

Example of command

```
>LF S00DPMLOADS
```

b. Select a different SLM disk volume to store the backup PRSU files.

Prepare for a manual PM update (continued)

c. Copy one PRSU file. Type

>COPY prsu_id disk_vol
and press the Enter key.

where

prsu_id is the PRSU file name
disk_vol is the backup SLM disk volume name

Example of command

```
>COPY XBV19X8A$PATCH S01DPMLOADS
```

d. Repeat step 12c. for each PRSU file.

e. List the backup PRSU file SLM disk volume contents to verify all PRSU files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the backup SLM disk volume name

Example of command

```
>LF S01DPMLOADS
```

If all PRSU files	Do
are in the backup volume	step 13
are not in the backup volume	step 12c.

At the MAP display

13 Quit the utility. Type

>QUIT
and press the Enter key.

If any of the new PM loads	Do
are PPXLs and the office is at BASE12 or higher	step 19
are PPXLs and the office is at BASE11 or lower	step 20
are not PPXLs	step 20

14

ATTENTION

The XA-Core command syntax for **drive_no** and **disk_no** correspond to the following identifiers in the XA-Core command examples:

Shelf position is the front (F) or rear (R) shelf position of the input output processor (IOP).

Slot position is the two-digit number of the slot position for the IOP with the tape device.

Packlet position is the upper (U) or lower (L) packlet position of the IOP with the tape device.

In the command example `F17UTAPE`, `F` is the shelf position, `17` is the two-digit slot position, `U` is the packlet position, and `TAPE` identifies the software delivery medium.

Copy the necessary PM load and PRSU files to an XA-Core disk volume. Perform the following steps.

At the MAP display

a. Access the disk utility. Type

>DISKUT
and press the Enter key.

b. Select an XA-Core disk volume for the new PM load and PRSU files.

At the XA-Core tape drive

c. Place the XA-Core tape cartridge into the XA-Core tape drive for the selected XA-Core disk volume.

At the MAP display

d. Mount the XA-Core tape cartridge in the XA-Core tape drive. Type

>IT drive_no
and press the Enter key.

where

drive_no is the XA-Core tape drive number

Example of command

```
>IT F17UTAPE
```

Prepare for a manual PM update (continued)

e. List the contents of the tape. Type

>LF drive_no
and press the Enter key.

where

drive_no is the XA-Core tape drive number

Example of command

```
>LF F17UTAPE
```

Example of MAP display

```
File information for S00T

                                    Create      File     File
File      File                      Date        Org.     Code
Order     Name                      Y/M/D
--------------------------------  -------     ----     ----
          PLNA014                   00/01/04    VOL       200

XPM14RTP$XREF
PLNA0014_INFO
D1T009
D2T009
DPP009
DPT036
EMMAB09
ITMAB06
ADCMQA01
ATMKA02
BLMTB01
BRLMVA03
BTMKA02
DTUBAD01
DTUHAA02
DTUDAA01
EDRMAE06
.......
.......
BAN05IBI$PATCH
BAN05ICG$PATCH
BAN05IHJ$PATCH
BAN05IYA$PATCH
BRY13IBI$PATCH
BRY13ICG$PATCH
BRY13IHJ$PATCH
BRY13IYR$PATCH
DZM09ITH$PATCH
.......
.......
```

f. Verify the tape contains each required PM load file.

If each required load file	Do
is on the tape	step 14g.
is not on the tape	Contact the next level of support. The tape could be missing load files critical to the office update.

g. Verify the tape contains the $XREF patch control file.

If the XA-Core tape cartridge label text	Do
indicates *Patches: Yes*	step 14h.
indicates *Patches: No*	step 14j.

h. Copy the $XREF file to the XA-Core disk volume. Type

>RE FILE disk_vol drive_no tape_vol $XREF_file
and press the Enter key.

where

disk_vol	is the XA-Core disk volume name
drive_no	is the XA-Core tape drive number
tape_vol	is the PCL-specific XA-Core tape cartridge volume name
$XREF_file	is the $XREF file name

Example of command

```
>RE FILE F17LPMLOADS F17UTAPE PLNA0014 XPM14RTP$XREF
```

i. Print the $XREF file to identify the PRSUs for the PM load files.

>PRINT $XREF_file
and press the Enter key.

where

$XREF_file	is the XPMxxRTP$XREF patch control file name

Example of command

```
>PRINT XPM14RTP$XREF
```

Prepare for a manual PM update (continued)

j. Copy one PM load file. Type

>RE FILE disk_vol drive_no tape_vol new_load
and press the Enter key.

where

disk_vol	is the XA-Core disk volume name
drive_no	is the XA-Core tape drive number
tape_vol	is the PCL-specific XA-Core tape cartridge volume name
new_load	is the new PM load file name

Example of command for a base load

```
>RE FILE F17LPMLOADS F17UTAPE PLNA0014 LPC12BH
```

Example of command for a PPXL

```
>RE FILE F17LPMLOADS F17UTAPE PLNA0014 ECL12AA_YYMMDD
```

k. Repeat step 14j. for each required PM load file.

Note: Some offices require all PM load files to be copied. Check office policy.

l. List the XA-Core disk volume contents to verify all PM load files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol	is the XA-Core disk volume name

Example of command

```
>LF F17LPMLOADS
```

If all PM load files	Do
are in the volume	step 15
are not in the volume	step 14j.

Prepare for a manual PM update (continued)

15 Copy the PM load files from the active XA-Core disk volume to a backup XA-Core disk volume. Perform the following steps.

a. List the active PM load file XA-Core disk volume contents. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the XA-Core disk volume name

Example of command

```
>LF F17LPMLOADS
```

b. Select a different XA-Core disk volume to store the backup PM load files.

c. Copy one PM load file. Type

>COPY new_load disk_vol
and press the Enter key.

where

new_load is the new PM load file name
disk_vol is the backup XA-Core disk volume name

Example of command

```
>COPY LPC12BH F02LPMLOADS
```

d. Repeat step 15c. for each PM load file.

e. List the backup PM load file XA-Core disk volume contents to verify all PM load files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the backup XA-Core disk volume name

Example of command

```
>LF F02LPMLOADS
```

If all PM load files	Do
are in the backup volume	step 16
are not in the backup volume	step 15c.

Prepare for a manual PM update (continued)

16 Identify and copy the PRSU files. Perform the following steps. If there are no PRSUs to copy, go to step 18.

Note: Revise these procedures, if necessary, for offices that receive PRSUs through C-SCAN.

a. Copy one PRSU file. Type

>RE FILE disk_vol drive_no tape_vol prsu_id
and press the Enter key.

where

disk_vol	is the XA-Core disk volume name
drive_no	is the XA-Core tape drive number
tape_vol	is the PCL-specific XA-Core tape cartridge volume name
prsu_id	is the PRSU file name

Example of command

```
>RE FILE F17LPMLOADS F17UTAPE PLNA0014 BAN05IBI$PATCH
```

Note: The PRSUs for a pre-patched XPM load (PPXL) file must reside in the same XA-Core disk volume that contains the PPXL file.

b. Repeat step 16a. for each PRSU file.

Note: Some offices require all PRSU files to be copied. Check office policy.

c. List the XA-Core disk volume contents to verify all PRSU files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol	is the XA-Core disk volume name

Example of command

```
>LF F17LPMLOADS
```

If all PRSU files	Do
are in the volume	step 16d.
are not in the volume	step 16a.

d. Eject the XA-Core tape cartridge. Type

>ET drive_no
and press the Enter key.

where

drive_no is the XA-Core tape drive number

Example of command

```
>ET F17UTAPE
```

At the XA-Core tape drive

e. Remove the XA-Core tape cartridge.

At the MAP display

17 Copy the PRSU files from the active XA-Core disk volume to a backup XA-Core disk volume. Perform the following steps.

a. List the active PRSU file XA-Core disk volume contents. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the XA-Core disk volume name

Example of command

```
>LF F17LPMLOADS
```

b. Select a different XA-Core disk volume to store the backup PRSU files.

c. Copy one PRSU file. Type

>COPY prsu_id disk_vol
and press the Enter key.

where

prsu_id is the PRSU file name
disk_vol is the backup XA-Core disk volume name

Example of command

```
>COPY BAN05IBI$PATCH F02LPMLOADS
```

d. Repeat step 17c. for each PRSU file.

Prepare for a manual PM update (continued)

e. List the backup PRSU file XA-Core disk volume contents to verify all PRSU files are in the volume. Type

>LF disk_vol
and press the Enter key.

where

disk_vol is the backup XA-Core disk volume name

Example of command

```
>LF F02LPMLOADS
```

If all PRSU files	Do
are in the backup volume	step 18
are not in the backup volume	step 17c.

At the MAP display

18 Quit the utility. Type

>QUIT
and press the Enter key.

If any of the new PM loads	Do
are PPXLs and the office is at BASE12 or higher	step 19
are PPXLs and the office is at BASE11 or lower	step 20
are not PPXLs	step 20

19 Update the PPXL file names in the PRSM database. Perform the following steps.

a. Access the PRSM utility. Type

>PRSM
and press the Enter key.

b. Audit one PPXL file. Type

>LFAUDIT PPXL loadname loadfilename disk_vol
and press the Enter key.

where

loadname	is the PPXL's base load file name
loadfilename	is the complete PPXL file name with the date extension
disk_vol	is the SLM or XA-Core disk volume location of the PPXL

Example of SLM disk volume command

```
>LFAUDIT PPXL ECL81AZ ECL81AZ_980223 S00DPMLOADS
```

Example of XA-Core disk volume command

```
>LFAUDIT PPXL ECL12AA ECL12AA_YYMMDD F17LPMLOADS
```

Example of MAP response

```
>Audit ok
```

c. Repeat step 19b. for each PPXL file.

d. Quit the PRSM utility. Type

>QUIT
and press the Enter key.

20 Update table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

To view the tuples in a	Do
packed format	step 20b.
regular or expanded format	step 20c.

b. Change the MAP display to a packed format. Type

>FORMAT PACK
and press the Enter key.

Prepare for a manual PM update (continued)

c. Add the new PM load file name. Type

>ADD new_load actfile actvol bkpfile bkpvol N
and press the Enter key.

where

new_load	is the new PM load file name
actfile	is the new PM load file name
actvol	is the active SLM or XA-Core disk volume name
bkpfile	is the new PM load file name
bkpvol	is the backup SLM or XA-Core disk volume name

Example of SLM disk volume command for a base load

```
>ADD LPC08BC LPC08BC S00DPMLOADS LPC08BC S01DPMLOADS N
```

Example of SLM disk volume command for a PPXL

```
>ADD ECL81AZ ECL81AZ_980223 S00DPMLOADS +
ECL81AZ_980223 S01DPMLOADS N
```

Example of XA-Core disk volume command for a base load

```
>ADD LPC12BH LPC12BH F17LPMLOADS LPC12BH F02LPMLOADS N
```

Example of XA-Core disk volume command for a PPXL

```
>ADD ECL12AA ECL12AA_YYMMDD F17LPMLOADS +
ECL12AA_YYMMDD F02LPMLOADS N
```

Note 1: A base load can also be used in field BKPFILE.

Note 2: Automatic load file PRSU application, specified in field UPDACT, is not available. The only acceptable value for field UPDACT is N.

Note 3: Do not add the MS multi-port circuit card (NT9X17) load name to table PMLOADS. Only table MSFWLOAD contains this load name. Update table MSFWLOAD during the procedure “Update the MS multi-port card (NT9X17)” in this document.

d. Confirm the addition. Type

>Y
and press the Enter key.

e. Repeat steps 20c. and 20d. for each PM load file.

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

Prepare for a manual PM update (end)

21 Stop the terminal responses from printing. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the printer name

Example of command

```
>RECORD STOP ONTO PRNTR1
```

22 You have completed this procedure and prepared the office for a PM update. The PM update must now be scheduled. Refer to “Overview of release” and “Overview of update process” in this document.

Start a PM update shift

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to start a peripheral module (PM) update shift and verify the office and each PM meet the following conditions:

- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM passed its last REX test in the last two weeks.

  Note: For LCM PM types, the customer can perform the REX tests in parallel to complete all LCMs within the two-week requirement. To perform the LCM REX tests in parallel, increase the value of the PARALLEL field for the LCM_REX_TEST tuple in table REXSCHED. Check office policy for any restrictions or limitations.

- All REX tests in the office are suspended.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Prerequisites

Perform the procedure “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” in this document.

Note: WARMSWACT should be enabled in the office as part of normal office policy, and each PM to be updated should have WARMSWACT enabled.

Update sequence

Not applicable

Required information

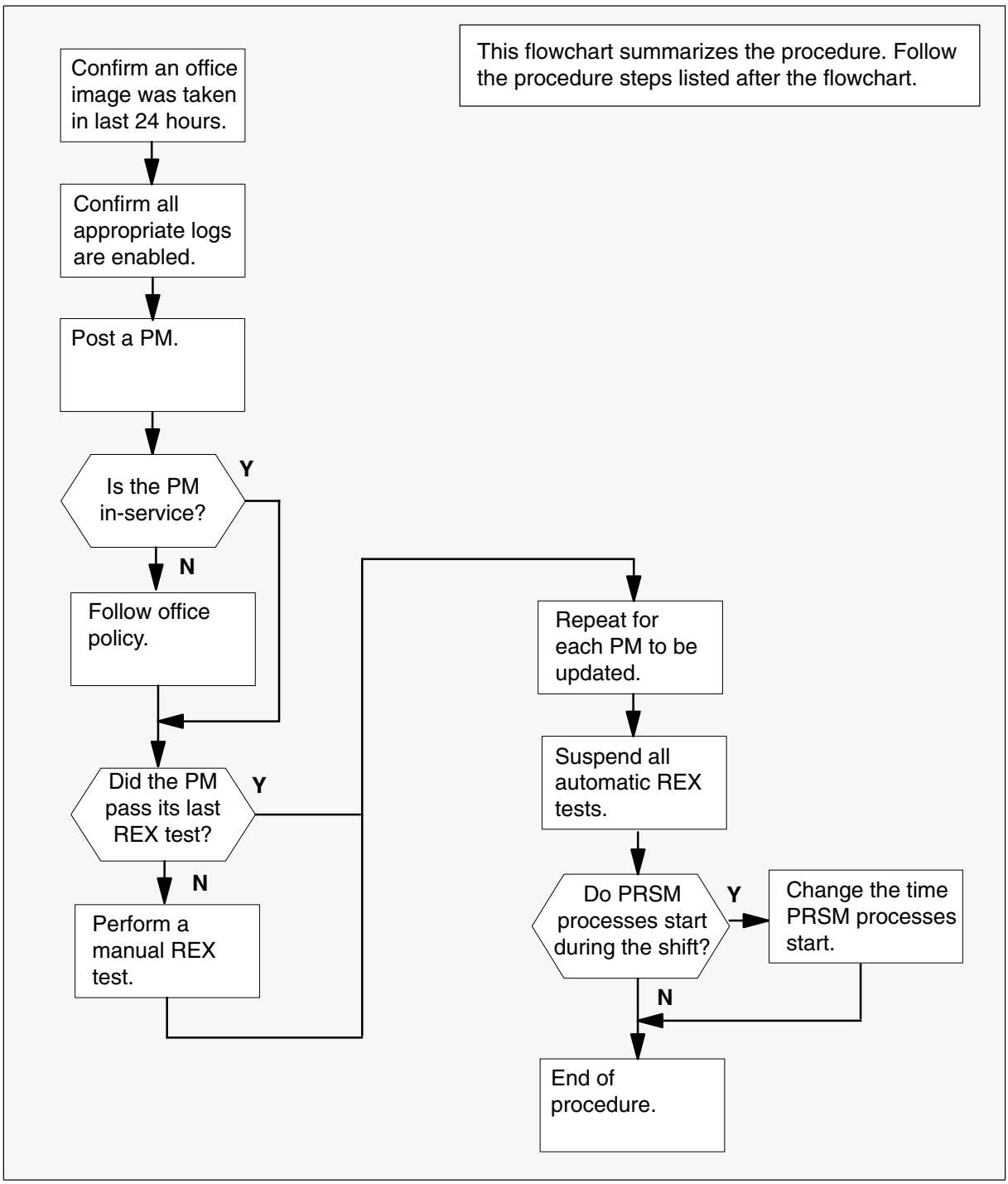
None

Notes

None

Start a PM update shift (continued)

Summary of procedure



Start a PM update shift (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Confirm an office image was taken in the last 24 hours. Perform the following steps.

a. Display a list of recent office images. Type

>AUTODUMP STATUS
and press the Enter key.

b. Review the list of successful images and determine if an office image has been taken in the last 24 hours.

2 Confirm all PM logs are enabled for the PMs to update during this shift. Perform the following steps.

Note: Modify and repeat this step as necessary, depending on the hardware types to be updated during this shift.

a. Access LOGUTIL. Type

>LOGUTIL
and press the Enter key.

b. List all the log reports that are suspended or have thresholds. Type

>LISTREPS SPECIAL
and press the Enter key.

c. Record any PM log numbers that are suspended. Record the numbers and threshold values of any PM logs that have thresholds.

d. Resume any PM logs that are suspended. Type

>RESUME PM log_no
and press the Enter key.

where

log_no is the number of the log to be resumed

Note: Multiple logs can be resumed by telescoping the log numbers with the single RESUME command. All PM logs can be resumed with the command THRESHOLD PM without log numbers.

Example of command

```
>RESUME PM 129 181
```

e. Change the threshold to 0 for any logs that have thresholds. Type

>THRESHOLD 0 PM log_no
and press the Enter key.

where

log_no is the number of the log

Note: Multiple logs can be thresholded by telescoping the log numbers with the single THRESHOLD command. All PM logs can be thresholded with the command THRESHOLD PM without log numbers.

f. Exit LOGUTIL. Type

>QUIT
and press the Enter key.

3 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

4 Post one of the PMs to be updated. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

If the PM is	Do
not in-service	step 5
in-service	step 7

Start a PM update shift (continued)

5 Determine the fault condition of the PM. Type

>QUERYPM FLT
and press the Enter key.

6 The PM must be in-service to be updated. Refer to the ATTENTION box preceding the steps of this procedure for assistance. If you are able to return the PM to service, proceed to step 7.

7 Review the results of the last REX test on the PM. Type

>TST REX QUERY
and press the Enter key.

If the PM	Do
did not pass its last REX test within the last two weeks	step 8
passed its last REX test within the last two weeks	step 9

Note: Some offices can require a QUERYPM DIAGHIST command to verify the health of the PM. Check office policy. A QUERYPM DIAGHIST should be performed on PMs to be updated that are not supported by REX tests.

8 Perform a manual REX test on the PM. Type

>TST REX NOW
and press the Enter key.

If the PM	Do
does not pass the REX test	This PM requires additional maintenance. Refer to the ATTENTION box at the beginning of this procedure.
passes the REX test	step 9

Note: The TST REX NOW command can not be issued when a SWUPGRADE PM shift has been started with the SET SHIFT STARTED command.

9 Repeat steps 4 through 7 for each PM to be updated this shift.

10 Return to the CI level. Type

>QUIT ALL
and press the Enter key.

11 Suspend all automatic REX tests. Type

>REXTEST SUSPEND ALL
and press the Enter key.

Note: Suspension of REX tests can cause a minor MS alarm at the MAP display. The alarm continues until REX tests are resumed at the end of the shift.

12 Confirm the AUTOAPP process start time does not conflict with the PM update start time.

a. Open table AUTOOPTS. Type

>TABLE AUTOOPTS
and press the Enter key.

b. Display the contents of the table. Type

>LIS
and press the Enter key.

c. Review the table to determine if PRSM automated processes are scheduled to start during the PM update shift.

If PRSM automated processes	Do
are scheduled to start during the PM update shift	step 12d.
are not scheduled to start during the PM update shift	step 12h.

d. Record the values in tuple AUTOOPTS.

e. Change the PRSM automated processes start time. Type

>CHA week_day new_time
and press the Enter key.

where

week_day is the day of the week of the PM update shift
new_time is the new time for PRSM automated processes to start

Note: Automated processes can also be delayed one cycle with the AUTOPROC ALL DELAY command.

f. Confirm the change. Type

>Y
and press the Enter key.

Start a PM update shift (end)

g. Display the table to confirm the change was made. Type

>LIS
and press the Enter key.

h. Close the table. Type

>QUIT
and press the Enter key.

13 You have completed this procedure. Perform the appropriate update procedures in this document based on the update schedule established for the office. When the update shift is complete, perform the procedure “Finish a PM update shift.”

Update the ATM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the Autovon trunk module (ATM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The ATM is in-service (InSv).
- All REX tests are suspended in the office.

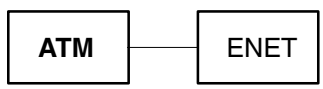
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the ATM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for ATM

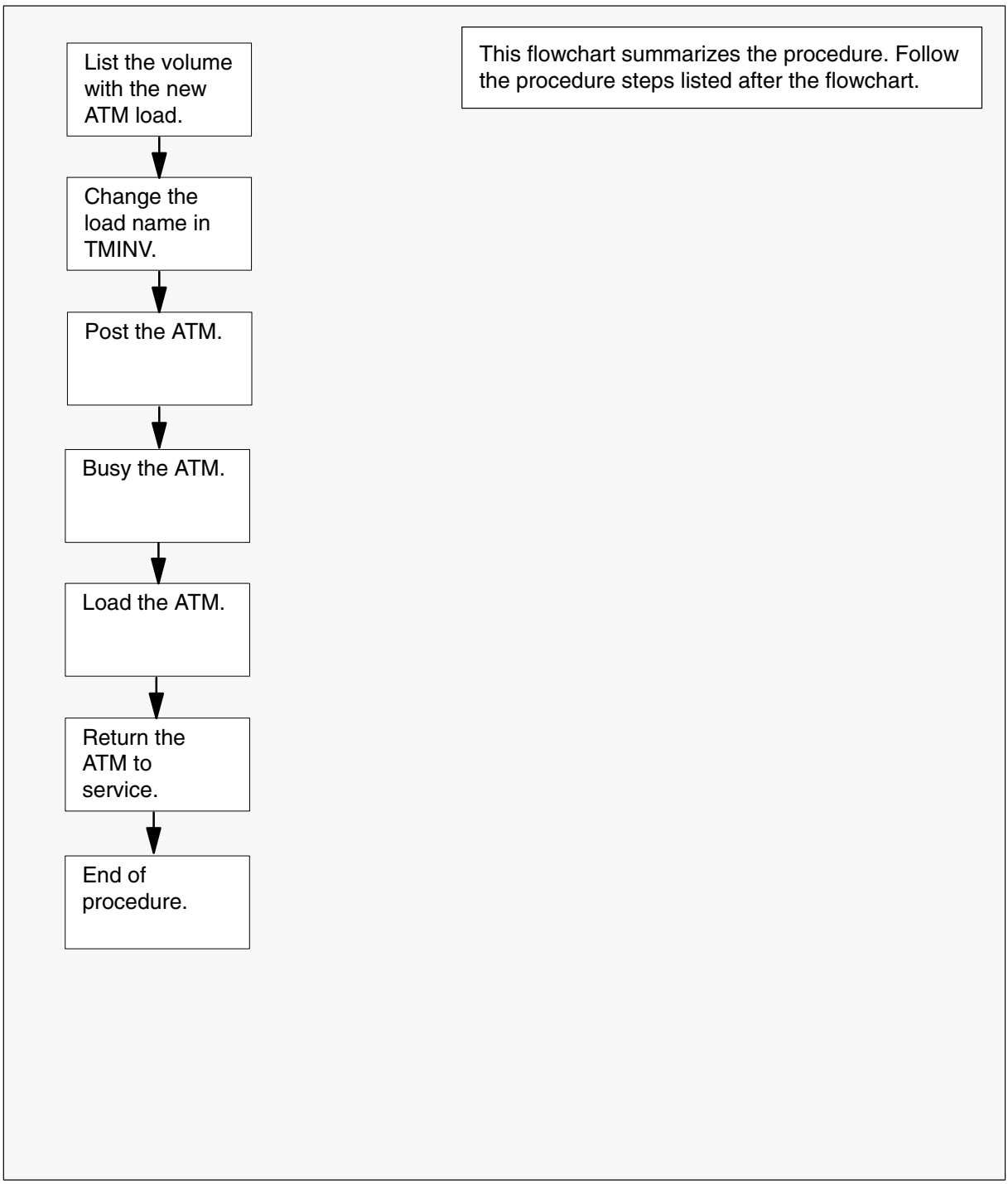


Notes

None

Update the ATM (continued)

Summary of procedure



Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an ATM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the ATM (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the ATM inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the ATM. Type

>POS ATM atm_no
and press the Enter key.

where

atm_no is the number of the ATM

Example of command

```
>POS ATM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ATMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the ATM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the ATM. Type

>POST ATM atm_no
and press the Enter key.

where

atm_no is the number of the ATM

Example of command

```
>POST ATM 11
```

9 Busy the ATM. Type

>BSY
and press the Enter key.

10 Load the ATM. Type

>LOADPM
and press the Enter key.

11 Return the ATM to service. Type

>RTS
and press the Enter key.

12 You have updated the ATM and completed this procedure. Review the update schedule.

If there are	Do
additional ATMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the CMR circuit card (NT6X78)

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the CLASS modem resource (CMR) card (NT6X78) when the serving PM is not updated. Do not use this procedure when the serving PM is updated. The CMR circuit card update occurs during the update of the serving PM.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The serving PM is in-service (InSv).
- The serving PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

None

Update sequence

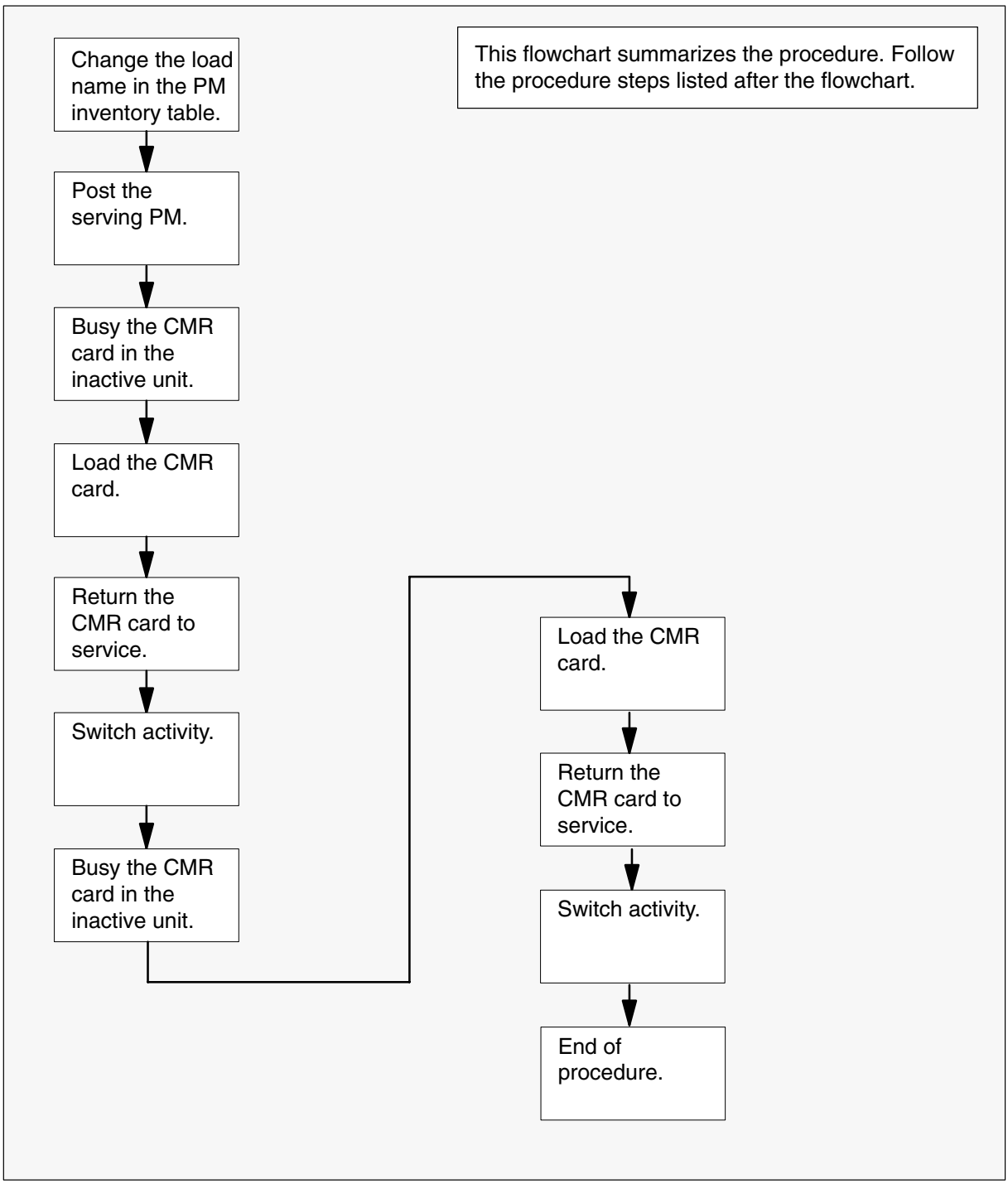
Not applicable

Notes

None

Update the CMR circuit card (NT6X78) (continued)

Summary of procedure



Update the CMR circuit card (NT6X78) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a CMR card to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PM inventory table. Perform the following steps.

a. Open the inventory table of the CMR's serving PM. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the name of the inventory table of the serving PM

If the CMR circuit card is for use in	Do
a host configuration	step 3b.
a remote configuration	step 3d.

b. Position on the datafill tuple for the PM with the CMR card. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

c. Go to step 3e.

d. Position on the datafill tuple for the PM with the CMR card. Type

>POS site_name pm_type pm_no
and press the Enter key.

where

site_name	is the name of the site
pm_type	is the type of PM
pm_no	is the number of the PM

e. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

f. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

g. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load	is the name of the new CMR load

Example of command

```
>CMR07A
```

h. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

i. Exit the OPTCARD field. Type

>$
and press the Enter key.

j. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

4 Close the table. Type

>QUIT
and press the Enter key.

5 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

Update the CMR circuit card (NT6X78) (continued)

6 Post the PM with the CMR card. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM

Note: The PM changes status to ISTb. If the PM does not change to ISTb, confirm the PM inventory table is updated correctly and the correct PM is posted. Do not continue this procedure until the PM is ISTb.

7 Busy the CMR card in the inactive unit. Type

>BSY UNIT unit_no CMR
and press the Enter key.

where

unit_no	is the number of the inactive unit

8 Load the CMR card. Type

>LOADPM UNIT unit_no CC CMR
and press the Enter key.

where

unit_no	is the number of the inactive unit

9 Return the CMR card to service. Type

>RTS UNIT unit_no CMR
and press the Enter key.

where

unit_no	is the number of the inactive unit

10 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

11 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note 1: This DMS switch of activity (SWACT) can cause a major alarm in the serving PM. If you receive this alarm, silence the alarm.

Note 2: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

Update the CMR circuit card (NT6X78) (continued)

12 Confirm the switch of activity. Type

>Y
and press the Enter key.

13 Busy the CMR card in the inactive unit. Type

>BSY UNIT unit_no CMR
and press the Enter key.

where

unit_no is the number of the inactive unit

14 Load the CMR card. Type

>LOADPM UNIT unit_no CC CMR
and press the Enter key.

where

unit_no is the number of the inactive unit

15 Return the CMR card to service. Type

>RTS UNIT unit_no CMR
and press the Enter key.

where

unit_no is the number of the inactive unit

16 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

17 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

18 Confirm the switch of activity. Type

>Y
and press the Enter key.

Update the CMR circuit card (NT6X78) (end)

19 You have updated the CMR card and completed this procedure. Review the update schedule.

If there are	Do
additional CMR cards to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the CTM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update one a conference trunk module (CTM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The CTM is in-service (InSv).
- All REX tests are suspended in the office.

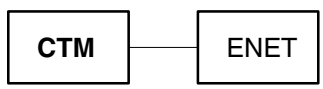
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the CTM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for CTM

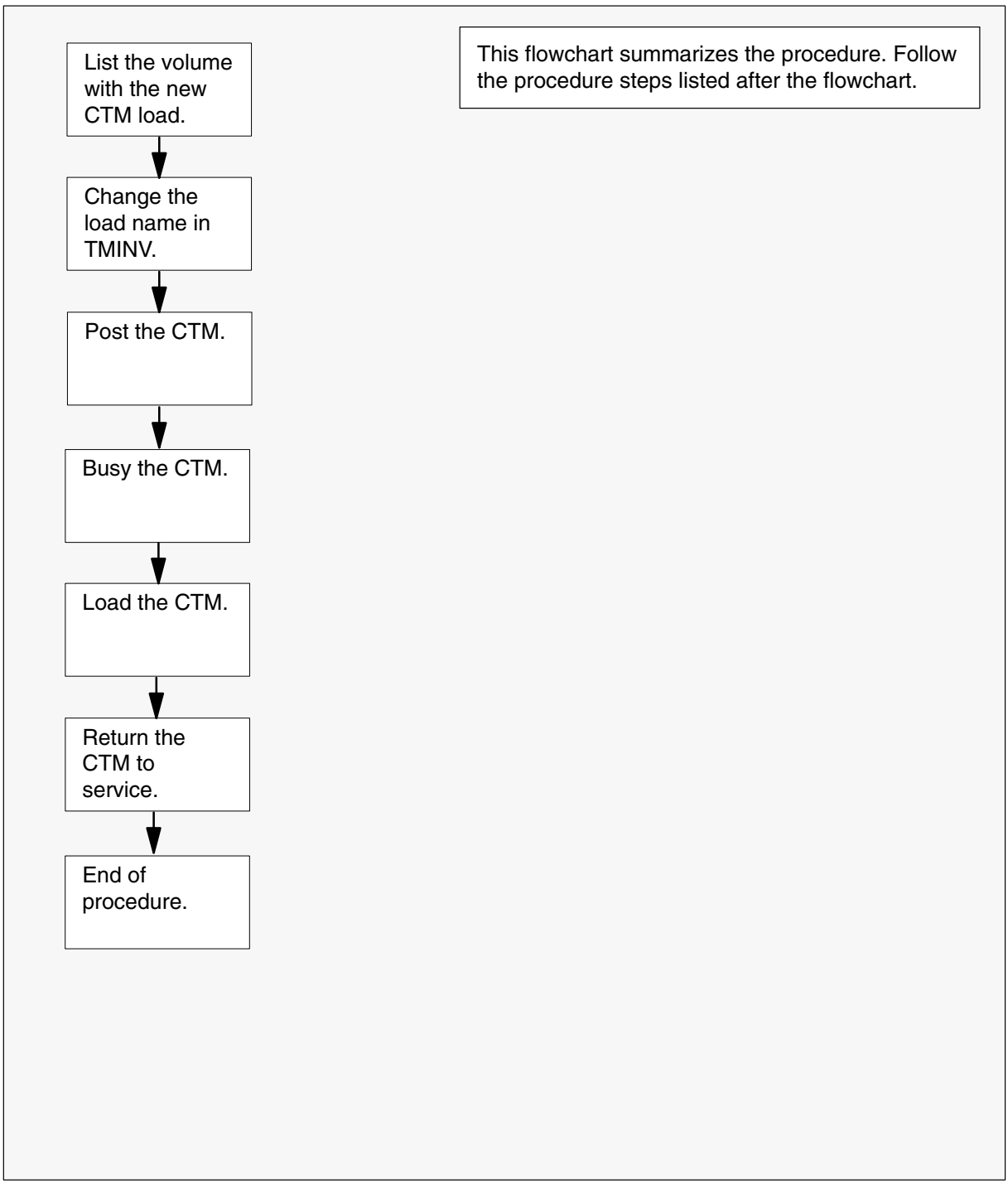


Notes

None

Update the CTM (continued)

Summary of procedure



Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a CTM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the CTM (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the CTM inventory table. Perform the following steps.

a. Open the CTM inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the CTM. Type

>POS CTM ctm_no
and press the Enter key.

where

ctm_no is the number of the CTM

Example of command

```
>POS CTM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD MTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the CTM. Type

>POST CTM ctm_no
and press the Enter key.

where

ctm_no is the number of the CTM

Example of command

```
>POST CTM 11
```

9 Busy the CTM. Type

>BSY
and press the Enter key.

10 Load the CTM. Type

>LOADPM
and press the Enter key.

11 Return the CTM to service. Type

>RTS
and press the Enter key.

12 You have updated the CTM and completed this procedure. Review the update schedule.

If there are	Do
additional CTMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the enhanced DCH card (NTBX02)

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use PANTHER to update enhanced D-channel handler (DCH) circuit cards in ISDN XPMs unless spare DCHs are provisioned.

Use this procedure to update the enhanced DCH circuit card (NTBX02) for the following PM types.

PM type	Load type
LGCs or LTCs with ISDN	EDH
SMU with ISDN	ESH
TMS	EXC

Note: Refer to table "PM-to-load cross-reference" in chapter "Overview of release" to determine the applicable DCH load name for this release.

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load name for the DCH is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The DCH is in-service (InSv).
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Update the enhanced DCH card (NTBX02) (continued)

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is this DCH the first DCH in the office to use the new load?
- Do any post-release software updates (PRSUs) need to be applied manually to the new load?
- Is the new PM load a pre-patched XPM load (PPXL)?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The DCH circuit card can be updated independently of other PMs in the node.

Notes

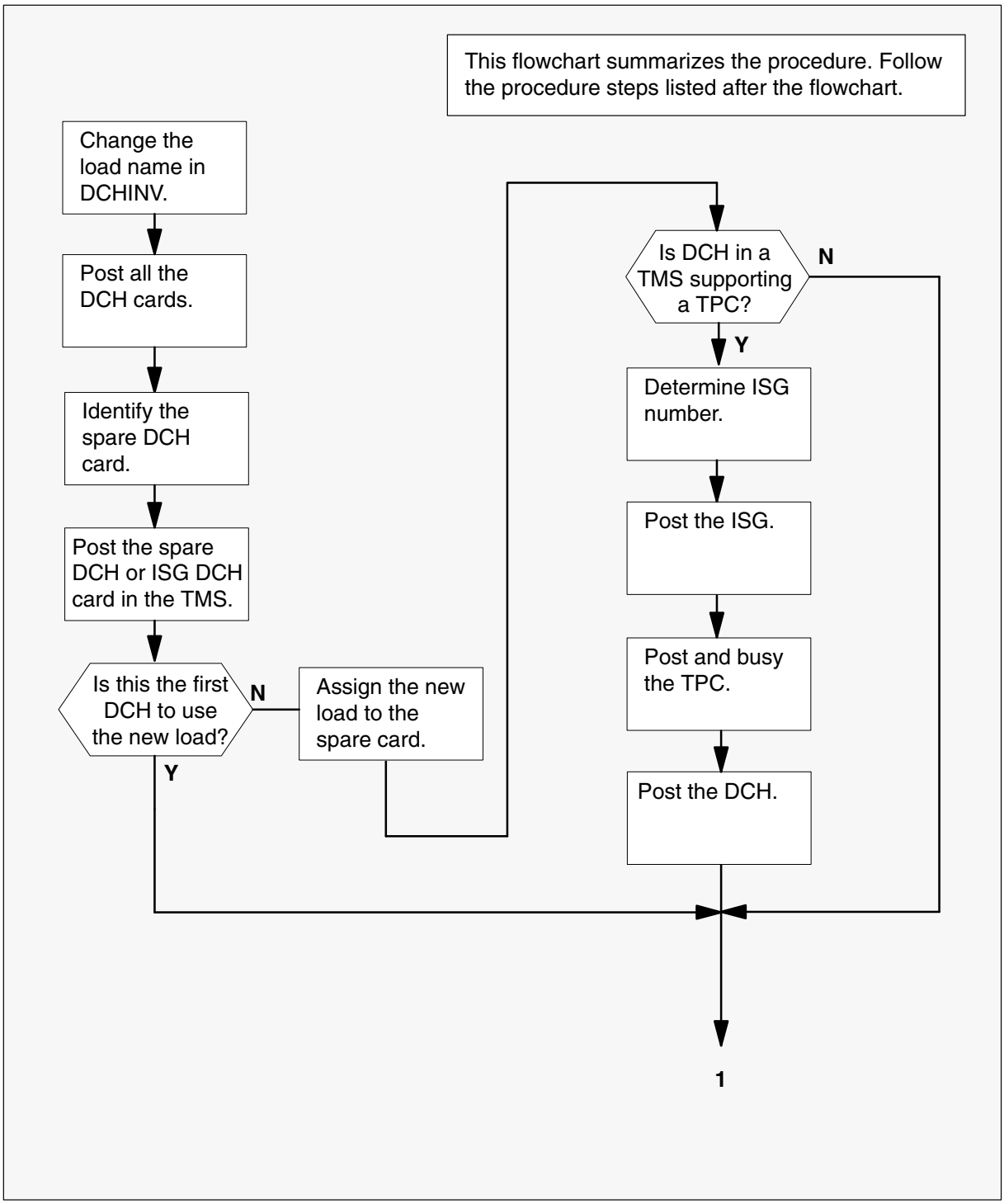
The steps in this procedure update and switch the spare DCH circuit cards, until all DCH circuit cards in the PM are updated. Unless updating a TOPS message switch (TMS), only update spare DCH circuit cards.

The steps in this procedure also describe how to update an ISDN service group (ISG) DCH in a TMS.

CAUTION
Possible service interruption
Unless you are updating a TMS, update only spare DCH circuit cards. Updating an ISG DCH circuit card that is not in a TMS can result in a loss of service.

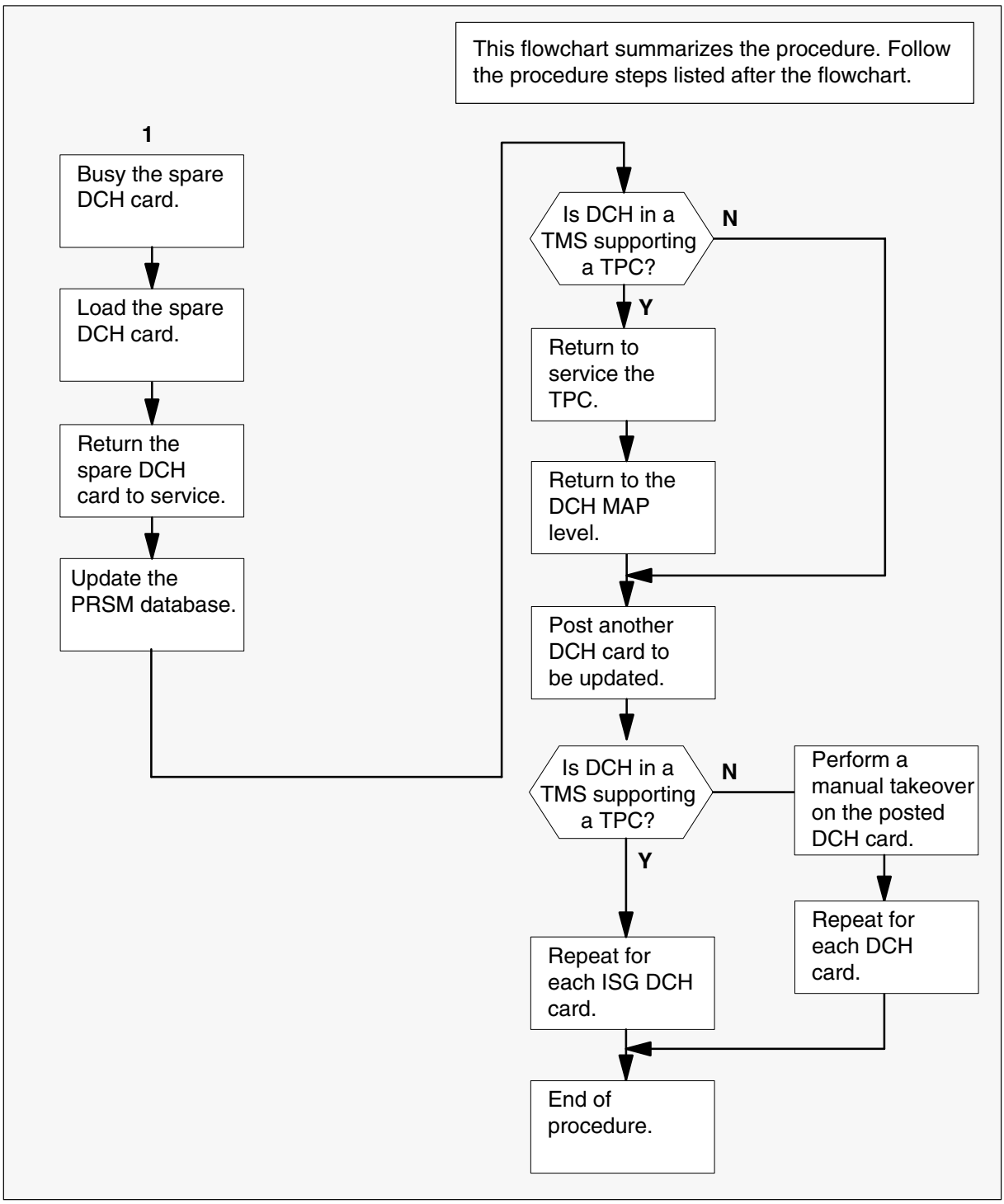
Update the enhanced DCH card (NTBX02) (continued)

Summary of procedure



Update the enhanced DCH card (NTBX02) (continued)

Summary of procedure



Update the enhanced DCH card (NTBX02) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a PM with DCH circuit cards to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the DCH inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE DCHINV
and press the Enter key.

b. Display the contents of the table. Type

>LIS ALL
and press the Enter key.

c. Record the DCH numbers for the PM with DCH circuit cards to update.

d. Position on the datafill tuple for one of the DCH circuit cards to update. Type

>POS dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>POS 1
```

Update the enhanced DCH card (NTBX02) (continued)

e. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD EDH81AZ1
```

f. Confirm the change. Type

>Y
and press the Enter key.

g. Repeat steps 3d. through 3f. for each DCH card to be updated.

h. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the PM that contains the DCH circuit cards. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>POST LGC 1
```

6 Enter the DCH level. Type

>DCH
and press the Enter key.

7 Post all the DCH circuit cards. Type

>POST ALL
and press the Enter key.

Update the enhanced DCH card (NTBX02) (continued)

8 Display all the posted DCH circuit cards. Type

>DISP ALL
and press the Enter key.

Example of MAP display

```
DCH 1    ISG      0    InSv    LTC 2    port 13
DCH 2    spare         InSv    LTC 2    port 15
DCH 3    ISG      2    InSv    LTC 2    port 17
DCH 4    ISG      1    InSv    LTC 2    port 19
```

9 Record the numbers of the displayed DCH circuit cards, and identify the spare DCH circuit card.

10

CAUTION
Possible service interruption
Unless you are updating a TMS, update only spare DCH circuit cards. Updating an ISG DCH circuit card that is not in a TMS can result in a loss of service.

Post the ISG DCH circuit card in a TMS PM or a spare DCH circuit card that is not in a TMS PM. Type

>POST dch_no
and press the Enter key.

where

dch_no is the number of the spare DCH circuit card identified in step 9

Example of command

```
>POST 2
```

11 Review the update schedules for the office. Determine if the spare DCH circuit card is the first DCH circuit card in the office to use the new load.

If the spare DCH circuit card	Do
is the first DCH circuit card in the office to use the new load	step 14
is not the first DCH circuit card in the office to use the new load	step 12

Update the enhanced DCH card (NTBX02) (continued)

12 Assign the new load to the spare DCH circuit card. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> After you perform this step, do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the spare DCH circuit card. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET DCH dch_no
and press the Enter key.

where

new_load	is the name of the new load
dch_no	is the number of the spare DCH card

Example of command

```
>ASSIGN UPGRADE_LD EDH81AZ1 IN DESTSET DCH 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Update the enhanced DCH card (NTBX02) (continued)

13

If the DCH is	Do
in a TMS supporting a TOPS Position Controller (TPC)	step 13a.
not in a TMS supporting a TPC	step 14

a. Determine the ISG number associated with the posted DCH.

Example of MAP display

```
              SysB     ManB     OffL     CBsy     ISTb      InSv
    PM           0        0        9        0        0        55
    TMS          0        0        0        0        0         3
TMS   2 InSv     Links_OOS:    CSide   0,    Pside   0
Unit0:  Act      Insv
Unit1:  Inact    Insv

DCH              0        0        0        0        1         3

DCH  15  ISG  15  InSv  TMS   2  port 15

Post   15
```

b. Go to the ISG MAP level. Type

>ISG
and press the Enter key.

c. Post the ISG recorded in step 13a. Type

>POST n
and press the Enter key.

where

n is the ISG recorded in step 13a.

Update the enhanced DCH card (NTBX02) (continued)

d. Determine and record the TPC(s) associated with the ISG channels. Use the QueryCH command for each in-service ISG channel. Type

>QueryCH n
and press the Enter key.

where

n is the ISG channel. Repeat for all in-service ISG channels.

Example of MAP display

```
              SysB    ManB    OffL    CBsy    ISTb     InSv
    PM           0       0       9       0       0       55
    TMS          0       0       0       0       0        3
TMS   2 InSv       Links_OOS:    CSide   0,    Pside   0
Unit0:  Act        Insv
Unit1:  Inact      Insv
ISG                1111111111    2222222222    33
      123456789    0123456789    0123456789    01
      000000000    00.0000000    000000.000    00

ISG  15   DCH 15   InSv  TMS 2   port 15

      QueryCH  26
      ISG 15  CHNL 26  TDC
      RATE: 56K   IHDLC: Off   PROT: X25DCEL
      CONN: TMS 2   PORT 2   CHNL 1
      REM:  TPC 9
```

The previous example shows ISG channels 12 and 26 as the in-service channels. In this example TPC 9 is associated with channel 26. Repeat the QueryCH command for channel 12 to determine its associated TPC.

e. Post a TPC recorded in step 13d. Type

>PM;POST TPC n
and press the Enter key.

where

n is a TPC recorded in step 13d.

f. Busy the TPC. Type

>BSY
and press the Enter key.

Example of MAP display

```
TPC   9   InSv
Bsy
Inservice MPs on this TPC will be affected.
Please confirm ("YES", "Y", "NO", or "N"):
```

Update the enhanced DCH card (NTBX02) (continued)

g. Confirm the action. Type

>Y
and press the Enter key.

Note: In-service positions are affected.

h. Repeat steps 13e. and 13f. for each TPC.

i. Return to the DCH MAP level and post the DCH. Type

>POST TMS n;DCH;POST x
and press the Enter key.

where

n is the TMS posted in step 5
x is the DCH posted in step 10

14 Busy the DCH circuit card. Type

>BSY
and press the Enter key.

15 Load the DCH circuit card. Type

>LOADPM
and press the Enter key.

16 Return the DCH circuit card to service. Type

>RTS
and press the Enter key.

17 Confirm the PRSU status of the spare DCH circuirt card. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Update the enhanced DCH card (NTBX02) (continued)

b. Update the PRSM database. Type

>DBAUDIT DCH dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>DBAUDIT DCH 0
```

c. Display the PRSU list. Type

>REPORT DEST DCH dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>REPORT DEST DCH 0
```

d. Confirm all PRSUs for the new load are applied to the DCH card.

If	Do
all PRSUs for the new load are applied to the DCH circuit card	step 17i.
all PRSUs for the new load are not applied to the DCH circuit card	step 17e.
PRSUs from the previous load are listed at VA status	step 17b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 17i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the enhanced DCH card (NTBX02) (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_name IN DCH dch_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
dch_no is the number of the DCH

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DCH 0
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DCH 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT DCH dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>DBAUDIT DCH 0
```

g. Display the PRSU list. Type

>REPORT DEST DCH dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>REPORT DEST DCH 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 17i.
does not match the PRSM database	step 17e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

If the DCH is	Do
in a TMS supporting a TPC	step 18
not in a TMS supporting a TPC	step 20

18 Return all TPCs busied in step 13f. to an in-service state. Type

>PM;POST TPC n;RTS
and press the Enter key.

where

n is the TPC busied in step 13f.

19 Return to the DCH MAP level. Type

>POST TMS n;DCH
and press the Enter key.

where

n is the TMS posted in step 5.

20 Post one of the DCH circuit cards that is not updated. Type

>POST dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>POST 1
```

Note: Use the numbers recorded in step 9.

If the DCH is	Do
in a TMS supporting a TPC	step 24
not in a TMS supporting a TPC	step 21

Update the enhanced DCH card (NTBX02) (end)

21 Perform a manual takeover from the newly updated DCH circuit card to the posted DCH circuit card. Type

>SWTCH dch_no
and press the Enter key.

where

dch_no is the number of the DCH

Example of command

```
>SWTCH 2
```

Note: The posted DCH circuit card becomes the spare DCH circuit card.

ATTENTION
Before continuing this procedure, confirm the ISG links have remained in-service. Return to service any links that are C-side busy (CBsy).

22 Repeat steps 10 through 21 for each DCH circuit card until all DCH circuit cards in the PM are updated.

23 Go to step 26 after all DCH circuit cards are updated.

24 Repeat steps 10 through 20 for each ISG DCH circuit card in a TMS until all DCH circuit cards are updated.

25 Go to step 26 after all TMS DCH circuit cards are updated.

26 You have updated the DCH circuit cards in a PM and completed this procedure. Review the update schedule.

If there are	Do
additional DCH circuit cards to update in other PMs during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DCM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a digital carrier module (DCM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The DCM is in-service (InSv).
- All REX tests are suspended in the office.

Required information

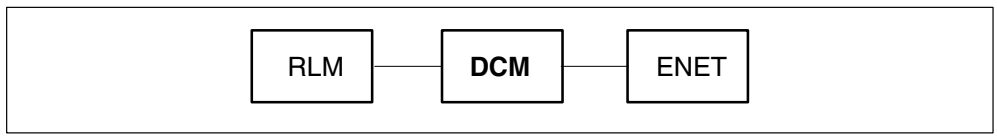
None

Update the DCM (continued)

Update sequence

The following figure illustrates a possible node configuration for the DCM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for DCM



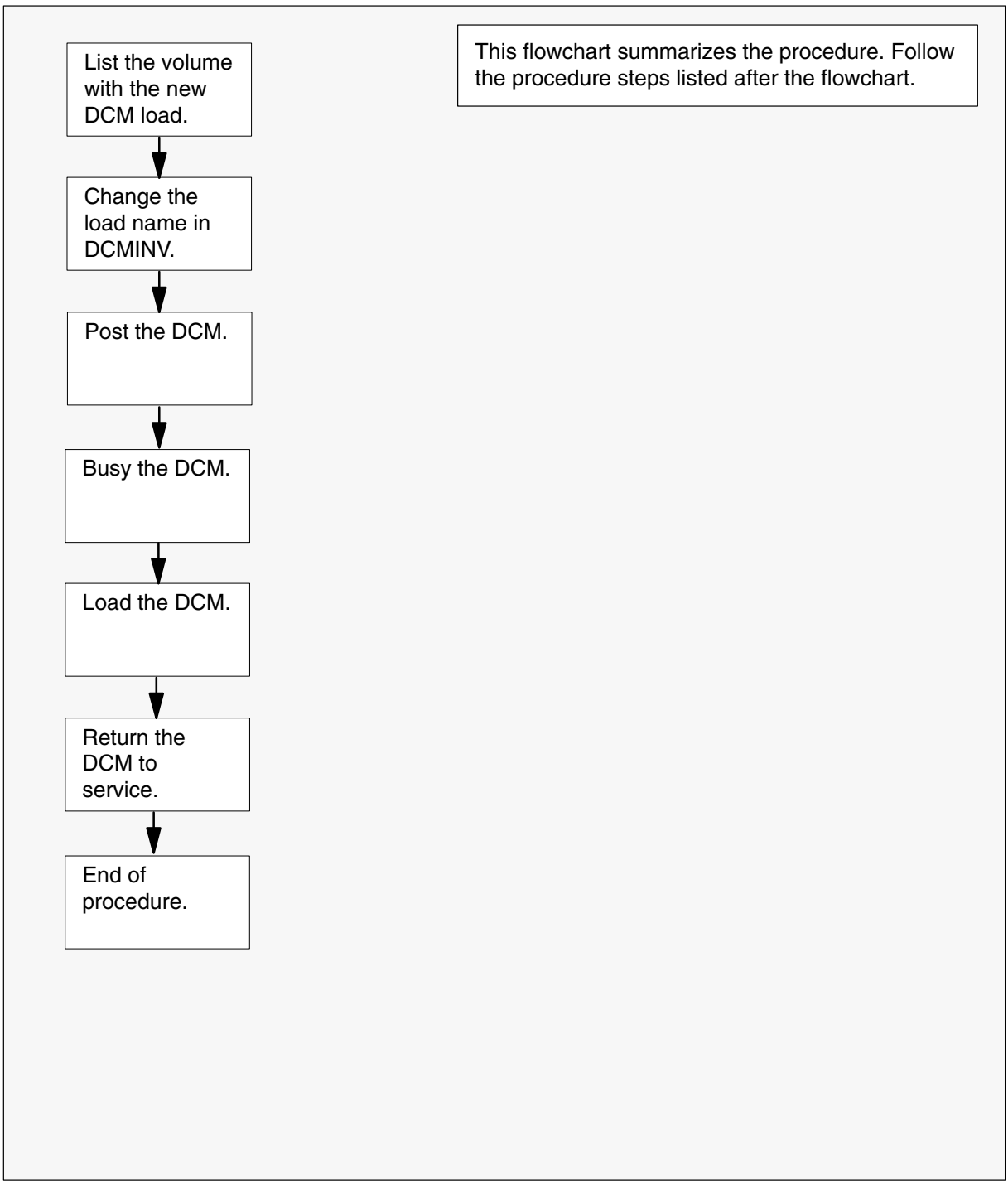
Note: Only a remote DCM can have a remote line module (RLM) as a subtending PM.

Notes

If the DCM is a remote DCM, manually busy the associated RLM prior to the remote DCM update. Return the RLM to service after the remote DCM update.

Update the DCM (continued)

Summary of procedure



Update the DCM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a DCM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the DCM inventory table. Perform the following steps.

a. Open the DCM inventory table. Type

>TABLE DCMINV
and press the Enter key.

b. Position on the datafill tuple for the DCM. Type

>POS DCM dcm_no
and press the Enter key.

where

dcm_no is the number of the DCM

Example of command

```
>POS DCM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ADCMQA01
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the DCM (end)

e. Close the DCM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the DCM. Type

>POST DCM dcm_no
and press the Enter key.

where

dcm_no is the number of the DCM

Example of command

```
>POST DCM 11
```

9 Busy the DCM. Type

>BSY
and press the Enter key.

10 Load the DCM. Type

>LOADPM
and press the Enter key.

11 Return the DCM to service. Type

>RTS
and press the Enter key.

12 You have updated the DCM and completed this procedure. Review the update schedule.

If there are	Do
additional DCMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DES

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a digital echo suppressor (DES).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The PM is in-service (InSv).
- All REX tests are suspended in the office.

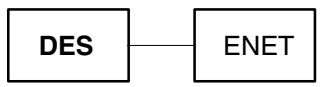
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the DES. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for DES

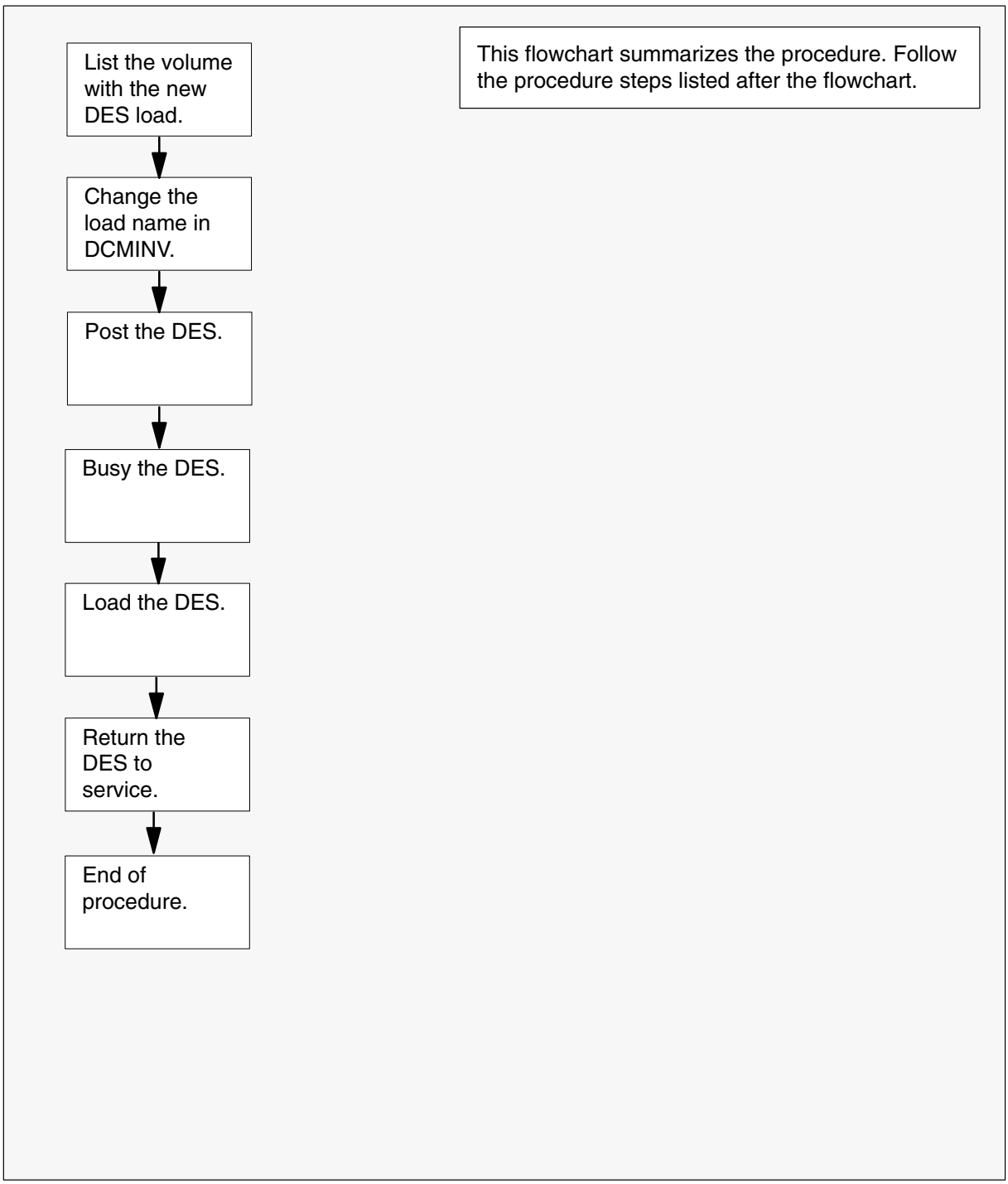


Notes

None

Update the DES (continued)

Summary of procedure



Update the DES (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. For example, if an RTS command fails office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a DES to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the DES (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the DES inventory table. Perform the following steps.

a. Open the DES inventory table. Type

>TABLE DCMINV
and press the Enter key.

b. Position on the datafill tuple for the DES. Type

>POS DES des_no
and press the Enter key.

where

des_no is the number of the DES

Example of command

```
>POS DES 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ADCMQA01
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the PM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the DES. Type

>POST DES des_no
and press the Enter key.

where

des_no is the number of the DES

Example of command

```
>POST DES 11
```

9 Busy the DES. Type

>BSY
and press the Enter key.

10 Load the DES. Type

>LOADPM
and press the Enter key.

11 Return the DES to service. Type

>RTS
and press the Enter key.

12 You have updated the DES and completed this procedure. Review the update schedule.

If there are	Do
additional DESs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DPP (non-turbo)

Application

CAUTION
Possible service interruption and loss of data
Perform this procedure during a maintenance window or a period of low traffic.

Only operating company personnel experienced with DPP updating and maintenance should perform this procedure.

ATTENTION
Since the distributed processing peripheral (DPP) is a revenue collection device, a back-up device can be required before beginning this procedure. Check office policy.

Use this procedure to update the non-turbo DPP.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites for this procedure:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All DPP logs are enabled.
- The non-turbo DPP is in-service (InSv).
- All REX tests are suspended in the office.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the office require DPP polling as part of this update?
- What is the existing site data for the non-turbo DPP?
- What is the office policy for copying and storing this data?

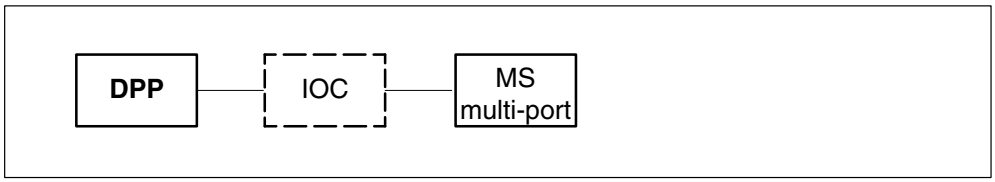
In addition, DPP documentation should be available to assist in troubleshooting problems that can occur during this procedure.

Update the DPP (non-turbo) (continued)

Update sequence

The following figure illustrates a possible node configuration for the DPP. Serving PMs must be updated after the DPP.

Node configuration for DPP



Notes

This section contains load history and baseline firmware information for the DPP.

Load history

The load file for the non-turbo DPP resides on the PM load volume as one file. When downloaded to the DPP, the load file is copied to the DPP disk for addition into the BOOT file.

The following table lists recent releases for the non-turbo DPP load and associated BOOT file name. The Fix column identifies problems corrected from the previous release.

Non-turbo DPP load history

Load	BOOT file	Fix
DPPA9A	DPPA9A	Sequence number header corruption while polling
DPPA9C	DPPA9C	Bad date in maintenance report
DPP003	DPP003	Disk enhancement feature 70 to 90% usage
DPP004	DPP004	DS1 buffer overflow errors while examining logs
DPP007	DPP007	AMATPS compliance
DPP008	DPP008	Checksum error
DPP009	DPP009	Index file corruption

Update the DPP (non-turbo) (continued)

Baseline firmware

The following table lists valid firmware releases for the current non-turbo DPP load. DSI packs have two valid firmware releases, depending on the specific PCB. This table is provided for information purposes only and does not indicate a need to update.

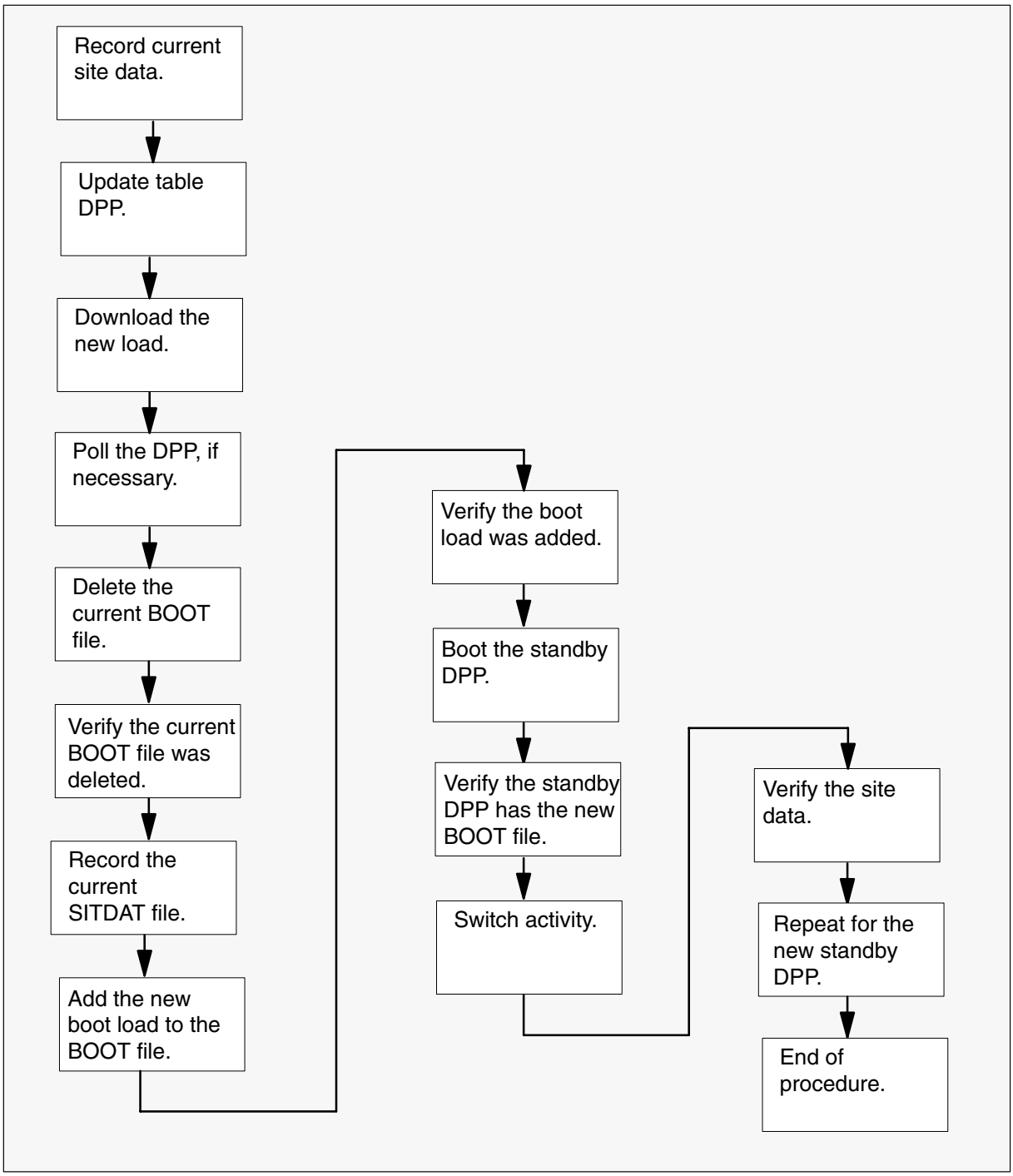
Non-turbo DPP baseline firmware

PCB	Firmware release	Firmware date	BOOT file	BOOT file date
NT6M63CL	DOSN11	19 NOV 1990	DPP009	15 JAN 1998
NT6M66AL	105D03	23 APR 1993	n/a	n/a
NT6M70AC or NT6M70CF	131D03 or 131DSI-2	25 FEB 1991 22 JAN 1991	n/a	n/a
NT6M66AH (Note)	D01D6J (Note)	17 JUN 1992	n/a	n/a

Note: The PCB is for a non-turbo DPP with a 380 Mbyte hard disk drive. This replaces the 6M66AK/AL PCB for a DPP with a 70/140 Mbyte hard disk drive.

Update the DPP (non-turbo) (continued)

Summary of procedure



Update the DPP (non-turbo) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

Because of different DPP configurations, there can be slight differences between the MAP responses illustrated in this procedure and the MAP responses for the DPP being updated.

At the CI level of the MAP display

1 Select a non-turbo DPP to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Send the terminal responses to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD START ONTO PRNTR1
```

Note: Allow the printer to capture terminal responses for the remainder of this procedure. This simplifies the procedure and assists in troubleshooting possible problems.

4 Access the DPP AMA level of the MAP display. Type

>MAPCI;MTC;IOD;DPP AMA
and press the Enter key.

5 Identify the current active processor. Type

>CLK ACT
and press the Enter key.

Example of MAP response

```
B FRI 95 07/21 08:29.58
B COMPUTER
```

Note: Use this information for reference when switching activity between processors during this procedure.

Update the DPP (non-turbo) (continued)

6

CAUTION
Possible loss of site data
Record the site data before continuing this procedure. Loading the DPP can corrupt existing site data.

ATTENTION
Office policy can require additional site data to be recorded.

Record the current site data. Perform the following steps.

a. Display the current AMA hours data. Type

>AMAHRS
and press the Enter key.

Example of MAP response

```
BLOCK CHECK START 00 END 23 HOURS
```

b. Display the current AMAT password. Type

>AMATPSW
and press the Enter key.

Example of MAP response

```
AMAT PASSWORD = 0380 312967
```

c. Display the current BAUD rate. Type

>BAUD
and press the Enter key.

Example of MAP response

```
FOR LINK #01, BAUD RATE = 4800, T1=04 and N2 = 15
FOR LINK #02, BAUD RATE = 4800, T1=04 and N2 = 15
```

d. Display the current collector password. Type

>COLLPSW
and press the Enter key.

Example of MAP response

```
HOST - COLLECTOR PASSWORD
PASS #1 = 0320 215801
PASS #2 = 0320 215801
```

Update the DPP (non-turbo) (continued)

e. Display the current BX.25 R20 parameter. Type

>BX25PARM R20
and press the Enter key.

Example of MAP response

```
R20 = 03
```

f. Display the current BX.25 R22 parameter. Type

>BX25PARM R22
and press the Enter key.

g. Display the current BX.25 T20 parameter. Type

>BX25PARM T20
and press the Enter key.

h. Display the current BX.25 T22 parameter. Type

>BX25PARM T22
and press the Enter key.

i. Display the current BX.25 T24 parameter. Type

>BX25PARM T24

j. Display the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM PRIHDR
and press the Enter key.

Example of MAP response

```
PRIHDR2
```

k. Display the current AMA invalid alarm threshold. Type

>VALPARM INVALID
and press the Enter key.

Example of MAP response

```
AMA INVALID ALARM THRESHOLD = 1
```

l. Display the status of AMA headers. Type

>VALPARM LOGHDR
and press the Enter key.

Example of MAP response

```
LOGGING OF AMA HEADERS DISABLED
```

7 Open table DPP. Type

>TABLE DPP
and press the Enter key.

Update the DPP (non-turbo) (continued)

8 Position on the AMA datafill tuple. Type

>POS AMA
and press the Enter key.

9 Change the current load name to the new load name. Type

>CHA DPPDNLD new_load
and press the Enter key.

where

new_load is the name of the new load

10 Confirm the change. Type

>Y
and press the Enter key.

11 Close the table. Type

>QUIT
and press the Enter key.

12

ATTENTION

The new DPP load takes approximately 15 minutes to download. If the download takes longer than 15 minutes, runs continuously, or does not end with a DOWNLOAD COMPLETE message, resolve the condition or contact the next level of support.

Download the new load to the DPP. Type

>LOADDPP FG new_load
and press the Enter key.

where

new_load is the name of the new DPP load

Example of MAP response

```
DOWNLOAD COMPLETE
```

If office policy for this update	Do
requires the DPP to be polled	step 13
does not require the DPP to be polled	step 14

Update the DPP (non-turbo) (continued)

13 Poll the DPP. Perform the following steps.

a. Display the current AMA record data. Type

>IDXMAINT SUMMARY AMA
and press the Enter key.

b. Note the number of blocks in the primary field.

c. Contact the host office collector (HOC) to request a demand poll on the DPP.

d. Wait for the polling session to finish.

Example of MAP response

```
SES DIS
```

e. Display the current AMA record data. Type

>IDXMAINT SUMMARY AMA
and press the Enter key.

f. Verify the number of blocks in the primary field is 0.

14 Delete the current BOOT file. Type

>BOOT DELETE
and press the Enter key.

Note: The MAP display does not respond to this action. Continue this procedure.

15 Verify the current BOOT file was deleted. Type

>BOOT LIST
and press the Enter key.

Example of MAP response

```
BOOT LIST EMPTY
```

If the MAP display	Do
lists any files in the BOOT LIST	steps 14 and 15
indicates `BOOT LIST EMPTY`	step 16

Update the DPP (non-turbo) (continued)

16

ATTENTION

The following step deletes the current SITDAT file. Failure to delete the SITDAT file can result in an INVALID SITE DATA FILE log report to indicate the corruption of existing site data.

Delete the current SITDAT file. Type

>DELFILE SITDAT 1 255
and press the Enter key.

Example of MAP response

```
***************WARNING*****************
THIS COMMAND MAY CAUSE LOSS OF BILLING DATA.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

17 Confirm the action. Type

>Y
and press the Enter key.

Example of MAP response

```
VERSION 01 DELETED
```

18 Add the new boot load to the BOOT file. Refer to the Non-turbo DPP load history table in the Notes section of this procedure. Type

>BOOT ADD boot_load version_no
and press the Enter key.

where

boot_load	is the name of the boot load
version_no	is the version number

Note 1: A new version number is created each time DPP software is downloaded to the DPP with the LOADDPP command. Use version number 01 the first time the software is downloaded to the DPP. For subsequent updates, use the LSTDIR ALL command at the DPP MAP level to identify the most recent version.

Note 2: Some non-turbo DPPs do not generate the Disk Mode messages.

19 Verify the new boot load was added. Type

>BOOT LIST
and press the Enter key.

Example of MAP response

```
DPP009 01
```

Update the DPP (non-turbo) (continued)

20 Boot the standby DPP. Type

>BOOT STDBY
and press the Enter key.

Example of MAP response

```
The standby processor will not acknowledge commands while
booting is in progress. This will take about 1 minute.
Please wait for a response from the DPP.
```

21 Wait approximately one minute for the following response at the MAP display.

Example of MAP response

```
S/W LOADED
```

22 Verify the boot caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

Example of MAP response

```
ACTIVE ALARMS
   B NO ALARMS
STANDBY ALARMS
   A NO ALARMS
```

Note: If the MAP response indicates a major site file error alarm, continue this procedure. The alarm clears when the new site data file is created during this procedure.

23 Verify the standby DPP has the new BOOT file. Refer to the Non-turbo DPP load history table in the Notes section of this procedure. Type

>VS STDBY
and press the Enter key.

Note 1: If the standby DPP does not have the new BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

24 Switch activity between the active and standby DPPs. Type

>SWACT
and press the Enter key.

Example of MAP response

```
**********************WARNING************************
SWACT DURING HIGH TRAFFIC MAY RESULT IN
LOSS OF SOME RECORDING DURING THE SWACT.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

Update the DPP (non-turbo) (continued)

25 Confirm the action. Type

>Y
and press the Enter key.

Note: Depending on the DPP and office configuration, it can be necessary to wait for the following messages from the MAP display.

Example of MAP response

```
The activity switch will take about 10 seconds.
Please wait for a response from the DPP before issuing
another command.
```

Example of MAP response

```
DISK MODE:  BP
DISK MODE:  BP
GOOD LOGIDX FILE
GOOD EXCIDX FILE
GOOD AMAIDX FILE
```

Note: Some non-turbo DPPs do not generate the Disk Mode messages.

26 Verify the switch of activity caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

Example of MAP response

```
ACTIVE ALARMS
   A NO ALARMS
STANDBY ALARMS
   B NO ALARMS
```

Note: If the MAP response indicates a major site file error alarm, continue this procedure. The alarm clears when the new site data file is created during this procedure.

Update the DPP (non-turbo) (continued)

27

ATTENTION

The following steps verify the site data recorded earlier in this procedure. Additional site data can be required for the office and DPP. Review office policy and *DMS-100 Family Distributed Processing Peripheral Commands and Messages Guide,* 297-1001-545, to ensure all required site data is verified.

Verify the current AMA hours data is correct. Perform the following steps.

a. Display the current AMA hours data. Type

>AMAHRS
and press the Enter key.

Example of MAP response

```
BLOCK CHECK START 00 END 23 HOURS
```

If the current data	Do
is not correct	step 27b.
is correct	step 28

b. Enter the AMA hours data. Type

>AMAHRS start_hour stop_hour
and press the Enter key.

where

start_hour is the starting AMA hour
stop_hour is the ending AMA hour

Example of command

```
>AMAHRS 00 23
```

c. Confirm the action. Type

>YES
and press the Enter key.

Update the DPP (non-turbo) (continued)

28 Verify the current AMAT password is correct. Perform the following steps.

a. Display the current AMAT password. Type

>AMATPSW
and press the Enter key.

Example of MAP response

```
AMAT PASSWORD = 0380 312967
```

If the current data	Do
is not correct	step 28b.
is correct	step 29

b. Enter the AMAT password. Type

>AMATPSW sen_type sen_id
and press the Enter key.

where

sen_type is the AMAT sensor type
sen_id is the AMAT sensor identification

Example of command

```
>AMATPSW 0380 312967
```

29 Verify the current BAUD rate is correct. Perform the following steps.

a. Display the current BAUD rate. Type

>BAUD
and press the Enter key.

Example of MAP response

```
FOR LINK #01, BAUD RATE = 4800, T1=04 and N2 = 15
FOR LINK #02, BAUD RATE = 4800, T1=04 and N2 = 15
```

If the current data	Do
is not correct	step 29b.
is correct	step 30

Update the DPP (non-turbo) (continued)

b. Enter the BAUD rate. Type

>BAUD link_no link_rate
and press the Enter key.

where

link_no	is the link number
link_rate	is the new baud link rate

Example of command

```
>BAUD 1 4800
```

c. Confirm the action. Type

>YES
and press the Enter key.

d. Repeat steps 29a. through 29c. for the second link.

30 Verify the current collector password is correct. Perform the following steps.

a. Display the current collector password. Type

>COLLPSW
and press the Enter key.

Example of MAP response

```
HOST - COLLECTOR PASSWORD
PASS #1 = 0320 215801
PASS #2 = 0320 215801
```

If the current data	Do
is not correct	step 30b.
is correct	step 31

b. Enter the collector password. Type

>COLLPSW list_no off_type off_id
and press the Enter key.

where

list_no	is the password list number (1 or 2)
off_type	is the collector office type
off_id	is the collector office identification

Example of command

```
>COLLPSW 1 0320 215801
```

c. Confirm the action. Type

>YES
and press the Enter key.

d. Repeat steps 30a. through 30c. for the second collector password.

31 Verify the BX.25 R20 parameter is correct. Perform the following steps.

a. Display the current BX.25 R20 parameter. Type

>BX25PARM R20
and press the Enter key.

Example of MAP response

```
R20 = 03
```

If the current data	Do
is not correct	step 31b.
is correct	step 32

b. Enter the BX.25 R20 parameter. Type

>BX25PARM R20 parm_value
and press the Enter key.

where

parm_value is the parameter value

Example of command

```
>BX25PARM R20 03
```

32 Verify the current BX.25 R22 parameter is correct. Perform the following steps.

a. Display the current BX.25 R22 parameter. Type

>BX25PARM R22
and press the Enter key.

If the current data	Do
is not correct	step 32b.
is correct	step 33

Update the DPP (non-turbo) (continued)

b. Enter the BX.25 R22 parameter. Type

>BX25PARM R22 parm_value
and press the Enter key.

where

parm_value is the parameter value

33 Verify the current BX.25 T20 parameter is correct. Perform the following steps.

a. Display the current BX.25 T20 parameter. Type

>BX25PARM T20
and press the Enter key.

If the current data	Do
is not correct	step 33b.
is correct	step 34

b. Enter the BX.25 T20 parameter. Type

>BX25PARM T20 parm_value
and press the Enter key.

where

parm_value is the parameter value

34 Verify the current BX.25 T22 parameter is correct. Perform the following steps.

a. Display the current BX.25 T22 parameter. Type

>BX25PARM T22
and press the Enter key.

If the current data	Do
is not correct	step 34b.
is correct	step 35

b. Enter the BX.25 T22 parameter. Type

>BX25PARM T22 parm_value
and press the Enter key.

where

parm_value is the parameter value

Update the DPP (non-turbo) (continued)

35 Verify the current BX.25 T24 parameter is correct. Perform the following steps.

a. Display the current BX.25 T24 parameter. Type

>BX25PARM T24

If the current data	Do
is not correct	step 35b.
is correct	step 36

b. Enter the BX.25 T24 parameter. Type

>BX25PARM T24 parm_value
and press the Enter key.

where

parm_value is the parameter value

36 Verify the definition of the Number of Blocks Remaining parameter is correct. Perform the following steps.

a. Display the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM PRIHDR
and press the Enter key.

Example of MAP response

```
PRIHDR2
```

If the current data	Do
is not correct	step 36b.
is correct	step 37

b. Change the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM new_def
and press the Enter key.

where

new_def is PRIHDR1 or PRIHDR2

Update the DPP (non-turbo) (continued)

37 Verify the current AMA invalid alarm threshold is correct. Perform the following steps.

a. Display the current AMA invalid alarm threshold. Type

>VALPARM INVALID
and press the Enter key.

Example of MAP response

```
AMA INVALID ALARM THRESHOLD = 1
```

If the current data	Do
is not correct	step 37b.
is correct	step 38

b. Enter the AMA invalid alarm threshold. Type

>VALPARM INVALID alrm_thresh
and press the Enter key.

where

alrm_thresh is the alarm threshold

Example of command

```
>VALPARM INVALID 1
```

Example of MAP response

```
**********************WARNING************************
A CHANGE TO PARAMETERS WILL AFFECT BILLING VALIDATION.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

c. Confirm the action. Type

>Y
and press the Enter key.

38 Verify the status of AMA log headers. Perform the following steps.

a. Display the status of AMA log headers. Type

>VALPARM LOGHDR
and press the Enter key.

Example of MAP response

```
LOGGING OF AMA HEADERS DISABLED
```

If the current data	Do
is not correct	step 38b.
is correct	step 39

b. Enter the status of the AMA log headers. Type

>VALPARM LOGHDR hdr_state
and press the Enter key.

where

hdr_state is OFF or ON

Example of command

```
>VALPARM LOGHDR OFF
```

Example of MAP response

```
LOGGING OF AMA HEADERS DISABLED
```

39 Review the console session. Confirm all data entered in the SITDAT file.

If	Do
all data is correct	step 40
all data is not correct	Repeat the appropriate steps in this procedure and return to this step.
no data was entered	step 42

40 Save the changes to the SITDAT file. Type

>SITDAT WRITE
and press the Enter key.

41 Confirm the action. Type

>Y
and press the Enter key.

Update the DPP (non-turbo) (continued)

42 Boot the new standby DPP. Type

>BOOT STDBY
and press the Enter key.

Example of MAP response

```
The standby processor will not acknowledge commands while
booting is in progress. This will take about 1 minute.
Please wait for a response from the DPP.
```

43 Wait approximately one minute for the following response at the MAP display.

Example of MAP response

```
S/W LOADED
```

44 Verify the boot caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

45 Verify the standby DPP has the new BOOT file. Refer to the Non-turbo DPP load history table in the Notes section of this procedure. Type

>VS STDBY
and press the Enter key.

Note 1: If the standby DPP does not have the new BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

46 Switch activity and restore the DPPs to their original service states. Type

>SWACT
and press the Enter key.

Example of MAP response

```
**********WARNING**********
SWACT DURING HIGH TRAFFIC MAY RESULT IN
LOSS OF SOME RECORDING DURING THE SWACT.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

47 Confirm the action. Type

>Y
and press the Enter key.

Note: Depending on the DPP and office configuration, it can be necessary to wait for the following messages from the MAP display.

Example of MAP response

```
The activity switch will take about 10 seconds.
Please wait for a response from the DPP before issuing
another command.
```

Example of MAP response

```
DISK MODE:  BP
DISK MODE:  BP
GOOD LOGIDX FILE
GOOD EXCIDX FILE
GOOD AMAIDX FILE
```

Note: Some non-turbo DPPs do not generate the Disk Mode messages.

48 Verify the switch of activity caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

49 Stop the terminal responses from printing. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

50 You have updated the non-turbo DPP and completed this procedure. Review the update schedule.

If there are	Do
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DPP (turbo)

Application

CAUTION
Possible service interruption and loss of data
Perform this procedure during a maintenance window or a period of low traffic.

Only operating company personnel experienced with distributed processing peripheral (DPP) updates and maintenance should perform this procedure.

ATTENTION
Since the DPP is a revenue collection device, a back-up device can be required before beginning this procedure, check office policy.

Use this procedure to update the turbo DPP.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites for this procedure:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All DPP logs are enabled.
- The turbo DPP is in-service (InSv).
- All REX tests are suspended in the office.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

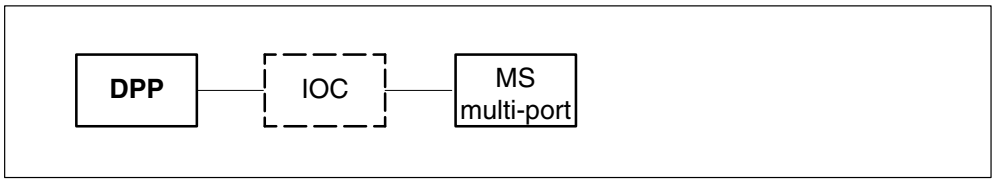
- Does the office require DPP polling as part of this update?
- What is the existing site data for the turbo DPP?
- What is the office policy for copying and storing this data?

In addition, DPP documentation should be available to assist in troubleshooting problems that can occur during this procedure.

Update sequence

The following figure illustrates a possible node configuration for the DPP. Serving PMs must be updated after the DPP.

Node configuration for DPP



Notes

This section contains load history, baseline firmware, and additional information for the DPP.

Load history

The load file for a turbo DPP resides on the PM load volume as one file. When downloaded to the DPP, the load file splits into two files. One of these files must be added to the BOOT file, and the other file must be added into the CP BOOT file.

The following table lists recent releases for the turbo DPP load and the associated BOOT and CP BOOT file names. The Fix column identifies problems corrected from the previous release.

Turbo DPP load history

Load	BOOT file	CP BOOT file	Fix
DPT017	DPG001	CPSA9T	Prolonged file busy
			Disk queue error faults
			AMA index problems
			Close act problems
			Disk enhancement feature 70 to 90% usage
DPT018	DPG002	CPSAO7	Correct CP self tests

—continued—

Update the DPP (turbo) (continued)

Turbo DPP load history (continued)

Load	BOOT file	CP BOOT file	Fix
DPT019	DPG003	CPSA07	DS1 buffer overflow errors while examining logs
DPT020	DPG004	CPSA08	56 Kbyte polling protocol error
DPT021	DPG004	CPSA09	CP file BOOT error
DPT022	DPG005	CPSA09	Accepts LSSGR records larger than 256 bytes
			Invalid record removal
			MMI alarm byte clearing
DPT023	DPG006	CPSA09	Corrects an AMA index corruption
DPT027	DPG010	CPSA09	Corrects a polling problem and jump-back sequence
DPT028	DPG011	CPSA10	Corrects a polling problem with BILLDATS II collector
			Corrects a problem with file deletion during polling
DPT029	DPG012	CPSA11	AMATPS compliance
DPT030	040312	943012	Corrects a problem in the timing window for polling with a collector.
DPT033	040316	943012	Automates recovery from index file corruption, corrects problem with old AMA blocks on disk and eliminates erroneous diagnostics message.
DPT035	040318	943012	Corrects polling problem
			AMACRD is added to index
			Displays full information when deleting AMACRDS
			IDXMAINT EXAMINE NEXT causes CP TIMEOUT

—continued—

Update the DPP (turbo) (continued)

Turbo DPP load history (continued)

Load	BOOT file	CP BOOT file	Fix
DPT036	040319	943012	Displays full information when deleting AMACRDS Resolves BAD AMAIDX when AMA write failure occurs Eliminates 2 old blocks of AMA on disk Resolves re-polling same 100 blocks when files close during polling Limits index to 199 + 1 open file Halts XDIR routine on standby processor during book-up Adds diagnostics patch for CP Boot Error
D1T005	041904	943012	3.5 inch 1 gigabyte turbo
D1T008	041908	943012	Automates recovery from index file corruption. Corrects a problem with old AMA blocks on disk and eliminates erroneous diagnostics messages.
D1T009	041909	943012	Resolves BAD AMAIDX when AMA write failure occurs
D2T005	042004	943012	3.5 inch 2 gigabyte turbo
D2T008	042008	943012	Automates recovery from index file corruption. Corrects a problem with old AMA blocks on disk and eliminates erroneous diagnostics messages. Allows polling of secondary AMA blocks beyond the 1M Block Sequence Number limit.
D2T009	042009	943012	Resolves BAD AMAIDX when AMA write failure occurs

—end—

Update the DPP (turbo) (continued)

Baseline firmware

The following table lists firmware releases that are valid for the current turbo DPP load. Some circuit card have two valid firmware releases, depending on the specific PCB. This information is provided for information purposes only and does not indicate a need for updating.

Turbo DPP baseline firmware

PCB	Firmware release	Firmware date	BOOT file	BOOT file date
NT6M63CJ	DOST02	16 NOV 1990	040312	31 AUG 1998
NT6M63FE	635602	8 APR 1995		
NT6M66BA	BIGDA8	14 JUNE 1994	n/a	n/a
NT6M66CA	662702	10 NOV 1995		
NT6M94AA	CPFA9B	13 MAR 1989	943012	21 SEPT 1995
or	or			
NT6M94BA	CPFC04	22 FEB 1991	943012	21 SEPT 1995
NT6M70AC	131D03	25 FEB 1991	n/a	n/a
or	or			
NT6M70AF	131DSI-2	22 JAN 1991		

Note: NT6M94AA supports the turbo DPP without compression. NT6M94BA supports the turbo DPP with compression. NT6M63CJ and NT6M66BA support the 5.25” disk turbo DPP. NT6M63FE and NT6M66CA support the 3.5” disk turbo DPP.

—end—

Load notes for D1T008 and up and D2T008 and up

For DPPs that contain load D1T008 and up or D2T008 and up, new DPP messages are introduced. These messages provide operating company personnel with information regarding the Index File Manager feature. This feature provides automated detection and correction in the unlikely event of a DPP disk index file corruption.

Two messages are introduced to indicate abnormalities with the index file checking process.

Message

```
CHECK HALTED - DELETE IN PROGRESS
```

Reason for message

If the index file is currently being updated due to a CRD file being closed, the previous message is generated. This message is displayed at the MAP terminal and sent to a log file when a 90% delete or 1:00 A.M. delete needs to be done.

Action

No maintenance action is required, the index file will correct itself with the next file closing.

Message

```
CHECK HALTED - EXCESSIVE RUN TIME
```

Reason for message

When checking or updating the index file, the previous message may be generated if the index file is held open for more than 30 seconds. This message is displayed at the MAP terminal and sent to a log file.

Action

No maintenance action is required. The index file corrects itself with the next file closing.

Commands and messages for D1T008 and up and D2T008 and up

DPP commands and messages are added to implement features for polling secondary AMA, if the sequence number exists on the disk more than once, and to provide more functionality to IDXMAINT commands.

POLLOLD command

Usage: POLLOLD

Parameters: NONE

Description: Toggle DMS switch to poll the oldest or newest data on the DPP if the sequence number exists on the disk more than once. Once polling has finished the program resets to the newest data automatically. No further maintenance is required.

Messages:

```
POLL OLDEST DATA
POLL NEWEST DATA
```

Update the DPP (turbo) (continued)

IDXMAINT CREATE command

Usage: IDXMAINT CREATE DIR <type> <vs> [<seq> <vs2>]

Parameters:

<type> = AMA, EXC, LOG

<vs> = First version included in the index

<seq> = Optional-starting sequence of first primary sequence number

<vs2> = Mandatory if <seq> typed-The version number that <seq> resides in

Messages:

```
<vs2> missing
```

```
idxmaint create dir ama 1 50000
AMA SEQ #00050000 NOT IN FILE
INVALID NUMBER ENTERED
READ FILE CLOSED
```

```
<seq> not in <vs2>
idxmaint create dir ama 1 50000 4
AMA SEQ #00050000 NOT IN FILE
INVALID NUMBER ENTERED
READ FILE CLOSED
```

IDXMAINT EXAMINE command

Usage: IDXMAINT EXAMINE <type> <format> <seq> [old/new]

Parameters:

<type> = AMA, EXC, LOG

<format> = ASCII, EBCDIC HEX PACKED HDR

<seq> = Sequence number to examine

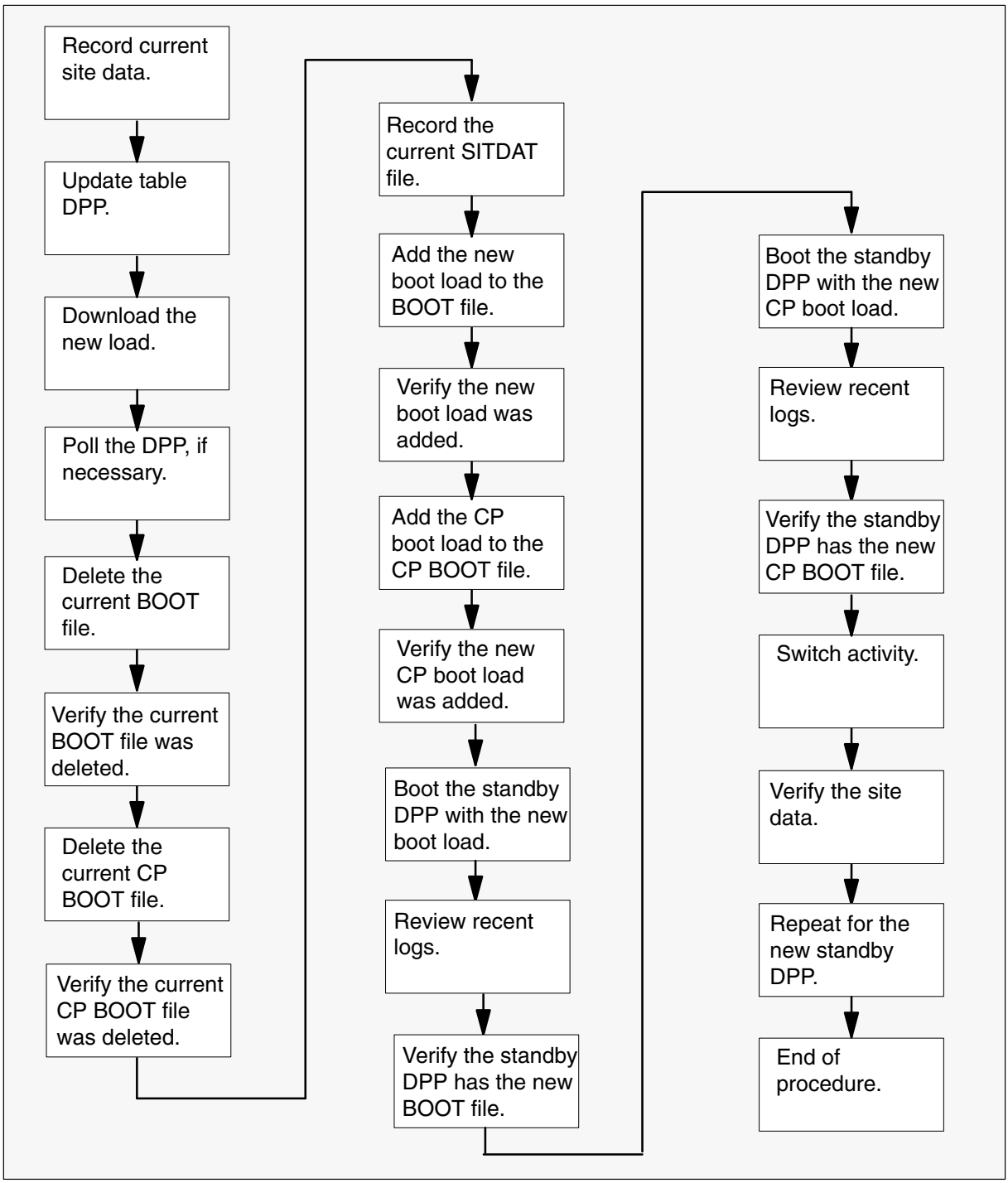
<old/new> = OPTIONAL defaults to NEW, specify which sequence number if a duplicate exists on disk

Messages:

```
idxmaint examine ama hex 59 kajdf
INVALID PARM MUST BE-OLD OR NEW
```

Update the DPP (turbo) (continued)

Summary of procedure



Update the DPP (turbo) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

Because of different DPP configurations, there can be slight differences between the MAP responses illustrated in this procedure and the MAP responses for the DPP being updated.

At the CI level of the MAP display

1 Select a turbo DPP to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Send the terminal responses to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD START ONTO PRNTR1
```

Note: Allow the printer to capture terminal responses for the remainder of this procedure. This simplifies the procedure and assists in troubleshooting possible problems.

4 Access the DPP AMA level of the MAP display. Type

>MAPCI;MTC;IOD;DPP AMA
and press the Enter key.

5 Identify the current active processor. Type

>CLK ACT
and press the Enter key.

Example of MAP response

```
B FRI 95 07/21 08:29.58
B COMPUTER
```

Note: Use this information for reference when switching activity between processors during this procedure.

Update the DPP (turbo) (continued)

6

CAUTION
Loss of site data
Record the site data before continuing this procedure. Loading the DPP with this load can corrupt existing site data.

ATTENTION
Office polity can require additional site data to be recorded.

Record the current site data. Perform the following steps.

a. Display the current AMA hours data. Type

>AMAHRS
and press the Enter key.

Example of MAP response

```
BLOCK CHECK START 00 END 23 HOURS
```

b. Display the current AMAT password. Type

>AMATPSW
and press the Enter key.

Example of MAP response

```
AMAT PASSWORD = 0380 312967
```

c. Display the current BAUD rate. Type

>BAUD
and press the Enter key.

Example of MAP response

```
FOR LINK #01, BAUD RATE = 4800, T1=04 and N2 = 15
FOR LINK #02, BAUD RATE = 4800, T1=04 and N2 = 15
```

d. Display the current collector password. Type

>COLLPSW
and press the Enter key.

Example of MAP response

```
HOST - COLLECTOR PASSWORD
PASS #1 = 0320 215801
PASS #2 = 0320 215801
```

Update the DPP (turbo) (continued)

e. Display the current BX.25 R20 parameter. Type

>BX25PARM R20
and press the Enter key.

Example of MAP response

```
R20 = 03
```

f. Display the current BX.25 R22 parameter. Type

>BX25PARM R22
and press the Enter key.

g. Display the current BX.25 T20 parameter. Type

>BX25PARM T20
and press the Enter key.

h. Display the current BX.25 T22 parameter. Type

>BX25PARM T22
and press the Enter key.

i. Display the current BX.25 T24 parameter. Type

>BX25PARM T24
and press the Enter key.

j. Display the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM PRIHDR
and press the Enter key.

Example of MAP response

```
PRIHDR2
```

k. Display the current CP clock status. Type

>CP CLOCK
and press the Enter key.

Example of MAP response

```
FOR LINK #01, CLOCK SOURCE = EXTERNAL
FOR LINK #02, CLOCK SOURCE = EXTERNAL
```

l. Display the current CP interface. Type

>CP INTERFACE
and press the Enter key.

Example of MAP response

```
FOR LINK #01, CLOCK SOURCE = RS232
FOR LINK #02, CLOCK SOURCE = RS232
```

m. Display the current AMA invalid alarm threshold. Type

>VALPARM INVALID
and press the Enter key.

Example of MAP response

```
AMA INVALID ALARM THRESHOLD = 1
```

n. Display the number of blocks to close a file. Type

>$ VALPARM BLOCKS
and press the Enter key.

Example of MAP response

```
BLOCKS TO CLOSE FILE = 1
```

o. Display the status of AMA headers. Type

>VALPARM LOGHDR
and press the Enter key.

Example of MAP response

```
LOGGING OF AMA HEADERS DISABLED
```

7 Open table DPP. Type

>TABLE DPP
and press the Enter key.

8 Position on the AMA tuple. Type

>POS AMA
and press the Enter key.

9 Change the current load name to the new load name. Type

>CHA DPPDNLD new_load
and press the Enter key.

where

new_load is the name of the new load

10 Confirm the change. Type

>Y
and press the Enter key.

11 Close the table. Type

>QUIT
and press the Enter key.

Update the DPP (turbo) (continued)

12

ATTENTION

The new DPP load takes approximately 30 minutes to download. If the download takes longer than 30 minutes, runs continuously, or does not end with a DOWNLOAD COMPLETE message, resolve the condition or contact the next level of support.

Download the new load to the DPP. Type

>LOADDPP FG new_load
and press the Enter key.

where

new_load is the name of the new DPP load

Example of MAP response

```
DOWNLOAD COMPLETE
```

If office policy for this update	Do
requires the DPP to be polled	step 13
does not require the DPP to be polled	step 14

13 Poll the DPP. Perform the following steps.

a. Display the current AMA record data. Type

>IDXMAINT SUMMARY AMA
and press the Enter key.

b. Note the number of blocks in the primary field.

c. Contact the host office collector (HOC) to request a demand poll on the DPP.

d. Wait for the polling session to finish.

Example of MAP response

```
SES DIS
```

e. Display the current AMA record data. Type

>IDXMAINT SUMMARY AMA
and press the Enter key.

f. Verify the number of blocks in the primary field is 0.

Update the DPP (turbo) (continued)

14 Delete the current BOOT file. Type

>BOOT DELETE
and press the Enter key.

Note: The MAP display does not respond to this action. Continue this procedure.

15 Verify the current BOOT file was deleted. Type

>BOOT LIST
and press the Enter key.

Example of MAP response

```
BOOT FILE EMPTY
```

If the MAP display	Do
lists any files in the BOOT LIST	steps 14 and 15
indicates `BOOT LIST EMPTY`	step 16

16 Delete the current CP BOOT file. Type

>CP BOOT DELETE
and press the Enter key.

Note: Depending on the DPP and office configuration, the MAP display does not respond to this action. Continue this procedure.

17 Verify the current CP BOOT file was deleted. Type

>CP BOOT LIST
and press the Enter key.

Example of MAP response

```
CP BOOT LIST EMPTY
```

If the MAP display	Do
lists any files in the CP BOOT LIST	steps16 and 17
indicates `CP BOOT LIST EMPTY`	step 18

Update the DPP (turbo) (continued)

18

ATTENTION

The following step deletes the current SITDAT file. Failure to delete the SITDAT file can result in an INVALID SITE DATA FILE log report to indicate the corruption of existing site data.

Delete the current SITDAT file. Type

>DELFILE SITDAT 1 255
and press the Enter key.

Example of MAP response

```
***************WARNING*****************
THIS COMMAND MAY CAUSE LOSS OF BILLING DATA.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

19 Confirm the action. Type

>Y
and press the Enter key.

Example of MAP response

```
VERSION 01 DELETED
```

20 Add the new boot load to the BOOT file. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>BOOT ADD boot_load version_no
and press the Enter key.

where

boot_load	is the name of the new boot load
version_no	is the version number

Note 1: A new version number is created each time DPP software is downloaded to the DPP with the LOADDPP command. Use version number 01 the first time the software is downloaded to the DPP. For subsequent updates, use the LSTDIR ALL command at the DPP MAP level to identify the most recent version.

Note 2: Depending on the DPP and office configuration, the MAP display does not respond to this action. Continue this procedure.

21 Verify the new boot load was added. Type

>BOOT LIST
and press the Enter key.

Example of MAP response

```
040319 01
```

Update the DPP (turbo) (continued)

22 Add the new CP boot load to the CP BOOT file. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>CP BOOT ADD cpboot_load version_no
and press the Enter key.

where

cpboot_load	is the name of the new CP boot load
version_no	is the version number

Note 1: A new version number is created each time DPP software is downloaded to the DPP with the LOADDPP command. Use version number 01 the first time the software is downloaded to the DPP. For subsequent updates, use the LSTDIR ALL command at the DPP MAP level to identify the most recent version.

Note 2: Depending on the DPP and office configuration, the MAP display does not respond to this action. Continue this procedure.

23 Verify the new CP boot load was added. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>CP BOOT LIST
and press the Enter key.

Example of MAP response

```
943012 01
```

24 Boot the standby DPP with the new BOOT file. Type

>BOOT STDBY
and press the Enter key.

Example of MAP response

```
The standby processor will not acknowledge commands while
booting is in progress. This will take about 1 minute.
Please wait for a response from the DPP.
```

25 Wait approximately one minute for the following response at the MAP display.

Example of MAP response

```
S/W LOADED
```

Update the DPP (turbo) (continued)

26 Wait approximately two minutes for the DMS switch to generate four DPP100 log reports. The last log indicates CP ACTIVE. These log reports confirm the standby DPP is re-loaded.

Example of logs

```
SI08    DPP100 JUL21 08:38:08 9300  INFO DPP DEVICE INFO
    DPP: AMA                    SEQNO: 139  REASON: 75
    TEXT:  >A CP RESTART
SI08    DPP100 JUL21 08:38:09 9300  INFO DPP DEVICE INFO
    DPP: AMA                    SEQNO: 140  REASON: 84
    TEXT:  >A CP RELOAD

SI08    DPP100 JUL21 08:38:54 9100  INFO DPP DEVICE INFO
    DPP: AMA                    SEQNO: 141  REASON: 75
    TEXT:  >A CP RESTART

SI08    DPP100 JUL21 08:38:59 9300  INFO DPP DEVICE INFO
    DPP: AMA                    SEQNO: 142  REASON: 0
    TEXT:  >A CP ACTIVE
```

27 Verify the boot caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

Example of MAP response

```
ACTIVE ALARMS
   B NO ALARMS
STANDBY ALARMS
   A NO ALARMS
```

Note: If the MAP response indicates a major site file error alarm, continue this procedure. The alarm clears when the new site data file is created during this procedure.

Update the DPP (turbo) (continued)

28 Verify the standby DPP has the new BOOT file. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>VS STDBY
and press the Enter key.

Example of MAP response 5.25 TURBO DPP

```
MPS 6M0403-18  5B  31-AUG-1998  09:01:54.82
040318
DOST02 16-NOV-1990
```

Example of MAP response 1GB TURBO DPP

```
MPS 6M0419-08  EC 13-APR-1998 1:32:31.18
0419-8
6M6356-03
```

Example of MAP response 2GB TURBO DPP

```
MPS 6M0420-08 E2 13-APR-1998 1:32:31.18
0419-8
6M6356-03
```

Note 1: If the standby DPP does not have the new BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

29 Boot the standby DPP with the new CP boot load. Type

>CP BOOT STDBY
and press the Enter key.

30 Wait approximately one minute for the MAP display to respond with the new communication program.

Example of MAP response

```
943012 01
```

31 Wait approximately two minutes for the DMS switch to generate four DPP100 log reports. These log reports confirm the standby DPP is loaded properly.

32 Wait for the MAP display to show the CP is active.

Example of MAP response

```
CP ACTIVE
```

Update the DPP (turbo) (continued)

33 Verify the standby DPP has the new communications program. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>CP VS STDBY
and press the Enter key.

Example of MAP response

```
001-CPFA9B-00 86 13-MAR-1989    16:04:35.75
CPS 6M9430-12 03 21-SEPT-1995   16:19:
943012
```

Note 1: If the standby DPP does not have the new BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

34 Switch activity between the active and standby DPPs. Type

>SWACT
and press the Enter key.

Example of MAP response

```
**********************WARNING************************
SWACT DURING HIGH TRAFFIC MAY RESULT IN
LOSS OF SOME RECORDING DURING THE SWACT.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

35 Confirm the action. Type

>Y
and press the Enter key.

Note 1: Depending on the DPP and office configuration, it can be necessary to wait for the following messages from the MAP display.

Example of MAP response

```
The activity switch will take about 10 seconds.
Please wait for a response from the DPP before issuing
another command.
```

Example of MAP response

```
DISK MODE:  BP
DISK MODE:  BP
GOOD LOGIDX FILE
GOOD EXCIDX FILE
GOOD AMAIDX FILE
CP ACTIVE
CP ACTIVE
```

36 Verify the switch of activity caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

Note: If the MAP response indicates a major site file error alarm, continue this procedure. The alarm clears when the new site data file is created during this procedure.

37

ATTENTION

The following steps verify the site data recorded earlier in this procedure. Additional site data can be required for the office and DPP. Review office policy and *DMS-100 Family Distributed Processing Peripheral Commands and Messages Guide,* 297-1001-545, to ensure all required site data is verified.

Verify the current AMA hours data is correct. Perform the following steps.

a. Display the current AMA hours data. Type

>AMAHRS
and press the Enter key.

Example of MAP display

```
BLOCK CHECK START 00 END 23 HOURS
```

If the current data	Do
is not correct	step 37b.
is correct	step 38

b. Enter the AMA hours data. Type

>AMAHRS start_hour stop_hour
and press the Enter key.

where

start_hour is the starting AMA hour
stop_hour is the ending AMA hour

Example of MAP response

```
>AMAHRS 00 23
```

c. Confirm the action. Type

>YES
and press the Enter key.

Update the DPP (turbo) (continued)

38 Verify the current AMAT password is correct. Perform the following steps.

a. Display the current AMAT password

>AMATPSW
and press the Enter key.

Example of MAP response

```
AMAT PASSWORD = 0380 312967
```

If the current data	Do
is not correct	step 38b.
is correct	step 39

b. Enter the AMAT password. Type

>AMATPSW sen_type sen_id
and press the Enter key.

where

sen_type is the AMAT sensor type
sen_id is the AMAT sensor identification

Example of command

```
>AMATPSW  0123 456789
```

c. The DMS switch prompts for AMAT verification.

Example of MAP response

```
Password entered:  Type = 0123  Id = 456789
Do you wish to continue?
Please confirm ("Yes", "Y", "NO", "N"):
```

d. Confirm the action. Type

>Y
and press the Enter key.

Example of MAP response

```
Command sent to DPP
AMAT PASSWORD = 0123 456789
```

39 Verify the current CP interface is correct. Perform the following steps.

a. Display the current CP interface. Type

>CP INTERFACE

If the current data	Do
is not correct	step 39b.
is correct	step 40

b. Enter the CP interface. Type

>CP INTERFACE link_no clock_inter
and press the Enter key.

where

link_no is the link number
clock_inter is the clock interface

Example of command

```
>CP INTERFACE 1 RS232
```

Example of MAP response

```
**********************WARNING************************
THIS COMMAND MAY CAUSE LOSS OF BILLING DATA.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

c. Confirm the action. Type

>Y
and press the Enter key.

d. Repeat steps 39a. through 39c. for the second link.

Update the DPP (turbo) (continued)

40 Verify the current BAUD rate is correct. Perform the following steps.

a. Display the current BAUD rate. Type

>BAUD
and press the Enter key.

Example of MAP response

```
FOR LINK #01, BAUD RATE = 4800, T1=04 and N2 = 15
FOR LINK #02, BAUD RATE = 4800, T1=04 and N2 = 15
```

If the current data	Do
is not correct	step 40b.
is correct	step 41

b. Enter the BAUD rate. Type

>BAUD link_no link_rate
and press the Enter key.

where

link_no is the link number
link_rate is the new baud link rate

Example of command

```
>BAUD 1 4800
```

Example of MAP response

```
**********************WARNING************************
THIS COMMAND MAY AFFECT POLLING THROUGHPUT.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

c. Confirm the action. Type

>Y
and press the Enter key.

d. Repeat steps 40a. through 40c. for the second link.

Update the DPP (turbo) (continued)

41 Verify the current collector password is correct. Perform the following steps.

a. Display the current collector password. Type

>COLLPSW
and press the Enter key.

Example of MAP response

```
HOST - COLLECTOR PASSWORD
PASS #1 = 0320 215801
PASS #2 = 0320 215801
```

If the current data	Do
is not correct	step 41b.
is correct	step 42

b. Enter the collector password. Type

>COLLPSW list_no off_type off_id
and press the Enter key.

where

list_no	is the password list number (1 or 2)
off_type	is the collector office type
off_id	is the collector office identification

Example of command

```
>COLLPSW 1 0320 215801
```

Example of MAP response

```
**********WARNING**********
CHANGING PASSWORD MAY INHIBIT POLLING
Password 1 entered:  Type = 0320  Id = 215801
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

c. Confirm the action. Type

>Y
and press the Enter key.

d. Repeat steps 41a. through 41c. for the second collector password.

Update the DPP (turbo) (continued)

42 Verify the BX.25 R20 parameter is correct. Perform the following steps.

a. Display the current BX.25 R20 parameter. Type

>BX25PARM R20
and press the Enter key.

Example of MAP response

```
R20 = 03
```

If the current data	Do
is not correct	step 42b.
is correct	step 43

b. Enter the BX.25 R20 parameter. Type

>BX25PARM R20 parm_value
and press the Enter key.

where

parm_value is the parameter value

Example of command

```
>BX25PARM R20 03
```

43 Verify the current BX.25 R22 parameter is correct. Perform the following steps.

a. Display the current BX.25 R22 parameter. Type

>BX25PARM R22
and press the Enter key.

If the current data	Do
is not correct	step 43b.
is correct	step 44

b. Enter the BX.25 R22 parameter. Type

>BX25PARM R22 parm_value
and press the Enter key.

where

parm_value is the parameter value

44 Verify the current BX.25 T20 parameter is correct. Perform the following steps.

a. Display the current BX.25 T20 parameter. Type

>BX25PARM T20
and press the Enter key.

If the current data	Do
is not correct	step 44b.
is correct	step 45

b. Enter the BX.25 T20 parameter. Type

>BX25PARM T20 parm_value
and press the Enter key.

where

parm_value is the parameter value

45 Verify the current BX.25 T22 parameter is correct. Perform the following steps.

a. Display the current BX.25 T22 parameter. Type

>BX25PARM T22
and press the Enter key.

If the current data	Do
is not correct	step 45b.
is correct	step 46

b. Enter the BX.25 T22 parameter. Type

>BX25PARM T22 parm_value
and press the Enter key.

where

parm_value is the parameter value

Update the DPP (turbo) (continued)

46 Verify the current BX.25 T24 parameter is correct. Perform the following steps.

a. Display the current BX.25 T24 parameter. Type

>BX25PARM T24

If the current data	Do
is not correct	step 46b.
is correct	step 47

b. Enter the BX.25 T24 parameter. Type

>BX25PARM T24 parm_value
and press the Enter key.

where

parm_value is the parameter value

47 Verify the definition of the Number of Blocks Remaining parameter is correct. Perform the following steps.

a. Display the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM PRIHDR
and press the Enter key.

Example of MAP response

```
PRIHDR2
```

If the current data	Do
is not correct	step 47b.
is correct	step 48

b. Change the definition of the Number of Blocks Remaining parameter. Type

>$ BX25PARM new_def
and press the Enter key.

where

new_def is PRIHDR1 or PRIHDR2

48 Verify the CP CLOCK status. Perform the following steps.

a. Display the current CP CLOCK status. Type

>CP CLOCK
and press the Enter key.

If the current data	Do
is not correct	step 48b.
is correct	step 49

b. Enter the CP CLOCK status. Type

>CP CLOCK link_no clock_source
and press the Enter key.

where

link_no is the link number
clock_source is the source of the CP clock

Example of command

```
>CP CLOCK 1 EXTERNAL
```

c. Confirm the action. Type

>Y
and press the Enter key.

d. Repeat steps 48a. through 48c. for the second link.

49 Verify the current AMA invalid alarm threshold is correct. Perform the following steps.

a. Display the current AMA invalid alarm threshold. Type

>VALPARM INVALID
and press the Enter key.

Example of MAP response

```
AMA INVALID ALARM THRESHOLD = 1
```

If the current data	Do
is not correct	step 49b.
is correct	step 50

Update the DPP (turbo) (continued)

b. Enter the AMA invalid alarm threshold. Type

>VALPARM INVALID alrm_thresh
and press the Enter key.

where

alrm_thresh is the alarm threshold

Example of command

```
>VALPARM INVALID 1
```

Example of MAP response

```
**********WARNING**********
A CHANGE TO PARAMETERS WILL AFFECT BILLING VALIDATION.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

c. Confirm the action. Type

>Y
and press the Enter key.

50 Verify the number of blocks to close a file is correct. Perform the following steps.

a. Display the number of blocks to close a file. Type

>$ VALPARM BLOCKS
and press the Enter key.

Example of MAP response

```
BLOCKS TO CLOSE FILE = 1
```

If the current data	Do
is not correct	step 50b.
is correct	step 51

b. Enter the number of blocks to close a file. Type

>$ VALPARM BLOCKS no_blocks
and press the Enter key.

where

no_blocks is the number of blocks

Example of command

```
>$ VALPARM BLOCKS 1
```

Example of MAP response

```
BLOCKS TO CLOSE FILE = 1
```

51 Verify the status of AMA log headers. Perform the following steps.

a. Display the status of AMA log headers. Type

>VALPARM LOGHDR
and press the Enter key.

If the current data	Do
is not correct	step 51b.
is correct	step 52

b. Enter the status of AMA log headers. Type

>VALPARM LOGHDR hdr_state
and press the Enter key.

where

hdr_state is OFF or ON

Example of command

```
>VALPARM LOGHDR OFF
```

Example of MAP response

```
LOGGING OF AMA HEADERS DISABLED
```

Update the DPP (turbo) (continued)

52 Review the console session. Confirm all data entered in the SITDAT file.

If	Do
all data is correct	step 53
all data is not correct	Repeat the appropriate steps in this procedure and return to this step.
no data was entered	step 55

53 Save the changes to the SITDAT file. Type

>SITDAT WRITE
and press the Enter key.

Example of MAP response

```
**********WARNING**********
THIS COMMAND WILL AFFECT SITE DATA IN MEMORY OR ON DISK.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

54 Confirm the action. Type

>Y
and press the Enter key.

Example of MAP response

```
SITDAT FILE DISK JOB COMPLETE
```

55 Boot the new standby DPP. Type

>BOOT STDBY
and press the Enter key.

56 Wait approximately one minute for the following response at the MAP display.

Example of MAP response

```
S/W LOADED
```

57 Wait approximately two minutes for the DMS switch to generate four DPP100 log reports. The last log report indicates `CP ACTIVE`. These log reports confirm the standby DPP is loaded.

58 Verify the boot caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

Update the DPP (turbo) (continued)

59 Verify the standby DPP has the new BOOT file. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>VS STDBY
and press the Enter key.

Note 1: If the standby DPP does not have the new BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

60 Boot the standby DPP with the new CP boot load. Type

>CP BOOT STDBY
and press the Enter key.

61 Wait approximately one minute for the MAP display to respond with the new communication program.

Example of MAP response

```
943012 01
```

62 Wait approximately two minutes for the DMS switch to generate four DPP100 log reports. These log reports confirm the standby DPP is properly loaded.

63 Wait for the MAP display to respond the CP is active.

Example of MAP response

```
CP ACTIVE
```

64 Verify the standby DPP has the new communications program. Refer to the Turbo DPP load history table in the Notes section of this procedure. Type

>CP VS STDBY
and press the Enter key.

Example of MAP response

```
001-CPFA9B-00 86  13-MAR-1989   16:04:35.75
CPS 6M9430-12 03  21-SEPT-1995  16:19
943012
```

Note 1: If the standby DPP does not have the new CP BOOT file, re-boot the standby DPP. If the re-boot fails, refer to the ATTENTION box prior to step 1 of this procedure.

Update the DPP (turbo) (continued)

65 Switch activity and restore the DPPs to their original service states. Type

>SWACT
and press the Enter key.

Example of MAP response

```
**********************WARNING************************
SWACT DURING HIGH TRAFFIC MAY RESULT IN
LOSS OF SOME RECORDING DURING THE SWACT.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

66 Confirm the action. Type

>Y
and press the Enter key.

Note 1: Depending on the DPP and office configuration, it can be necessary to wait for the following messages from the MAP display.

Example of MAP response

```
The activity switch will take about 10 seconds.
Please wait for a response from the DPP before issuing
another command.

DISK MODE:  BP
DISK MODE:  BP
GOOD LOGIDX FILE
GOOD EXCIDX FILE
GOOD AMAIDX FILE
CP ACTIVE
CP ACTIVE
```

67 Verify the switch of activity has caused no alarms. Type

>ERRMAP ALARMS
and press the Enter key.

68 Stop the terminal responses from printing. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

Update the DPP (turbo) (end)

69 You have updated the turbo DPP and completed this procedure. Review the update schedule.

If there are	Do
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DTC or DTCI

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this DTC or DTCI has a peripheral remote loader (PRL) circuit card, use this procedure to update the first DTC or DTCI in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining DTCs or DTCIs.

Use this procedure to update the digital trunk controller (DTC) or DTC with ISDN (DTCI).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new loads for the DTC or DTCI are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The DTC or DTCI is in-service (InSv).
- The DTC or DTCI passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new DTC or DTCI load a pre-patched XPM load (PPXL)?

Update the DTC or DTCI (continued)

- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the DTC or DTCI. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for DTC or DTCI

Notes

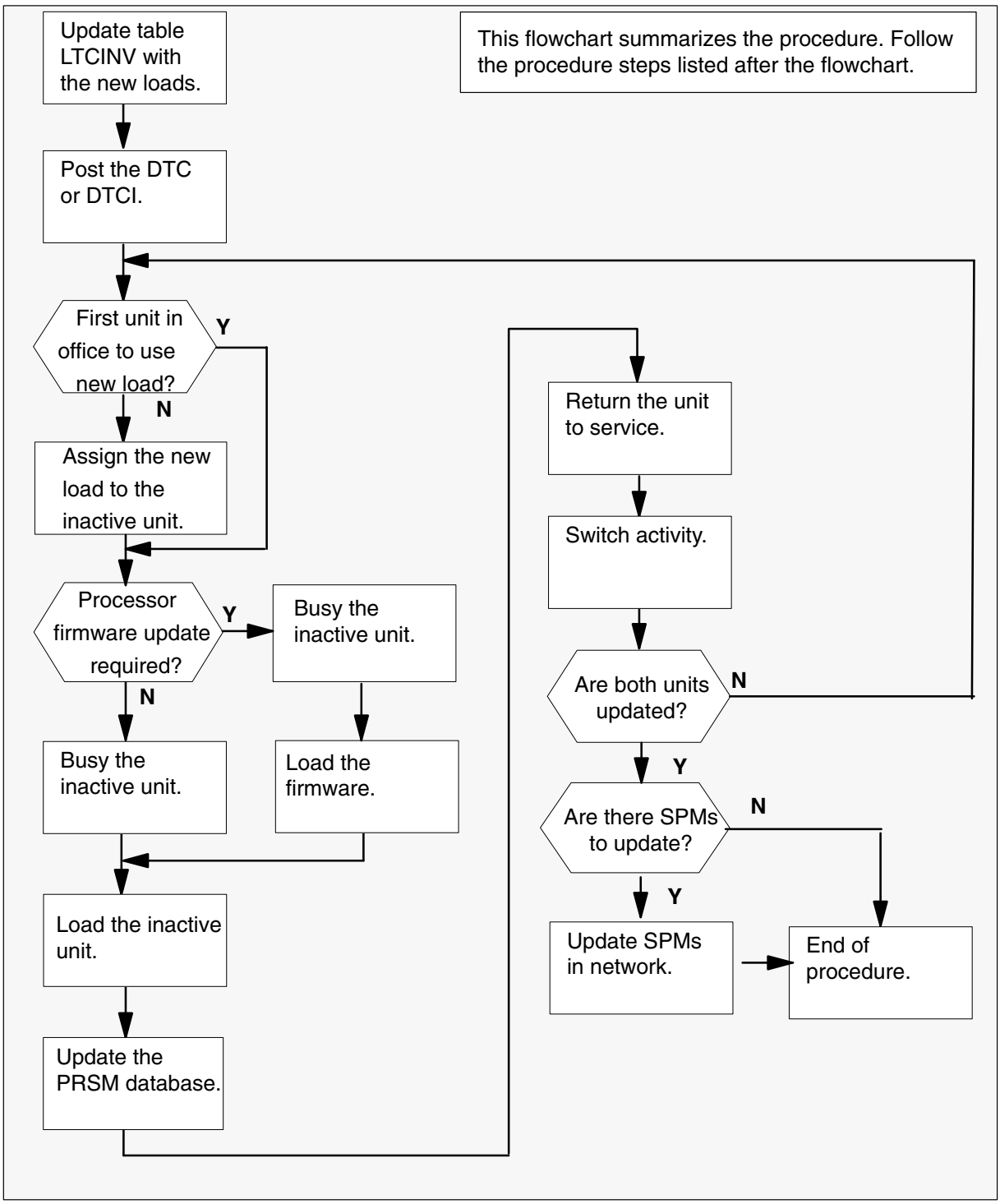
None

Notes

None

Update the DTC or DTCI (continued)

Summary of procedure



Update the DTC or DTCI (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a DTC or DTCI to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the DTC or DTCI inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the DTC or DTCI. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is DTC or DTCI
pm_no is the number of the DTC or DTCI

Example of command

```
>POS DTC 0
```

Update the DTC or DTCI (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The DTC or DTCI changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Periphreal module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the DTC or DTCI (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Close the table. Type

>QUIT
and press the Enter key.

6 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

7 Post the DTC or DTCI. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is DTC or DTCI
pm_no is the number of the DTC or DTCI

Example of command

```
>POST DTC 0
```

Note: The DTC or DTCI changes status to ISTb. If the DTC or DTCI does not change to ISTb, confirm the DTC or DTCI inventory table is updated correctly and the correct DTC or DTCI is posted. Do not continue this procedure until the DTC or DTCI is ISTb.

8 Identify and update the inactive unit.

Update the DTC or DTCI (continued)

9 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

10 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION
Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of command

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Update the DTC or DTCI (continued)

11 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 12
was not changed	step 16

12

ATTENTION

Perform steps 12, 13, and 14 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 12, 13, and 14. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

13 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

14 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

15 Go to step 17.

16 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the DTC or DTCI (continued)

17

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

18 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT DTC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 18i.
all PRSUs for the new load are not applied to the inactive unit	step 18e.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the DTC or DTCI (continued)

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT DTC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is DTC or DTCI
pm_no	is the number of the DTC or DTCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 18i.
does not match the PRSM database	step 18e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

19 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

20 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the DTC or DTCI (continued)

21 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

22 Confirm the switch of activity. Type

>Y
and press the Enter key.

23 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 10
both units are updated	step 24
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

Update the DTC or DTCI (end)

24 You have updated the DTC or DTCI and completed this procedure. Review the update schedule for the office.

If there are	Do
additional DTCs or DTCIs to update during this shift	Follow the guidelines in "Overview of update process" in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining DTCs DTCIs.
SPMs to update during this shift	Upgrade the SPMs using the appropriate document, then return to this step. Refer to Chapter 2 in this document for instructions on SPM upgrades.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Update the DTM (EDRAM)

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the digital test module (DTM) enhanced digital recording announcement machine (EDRAM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The DTM is in-service (InSv).
- The DTM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

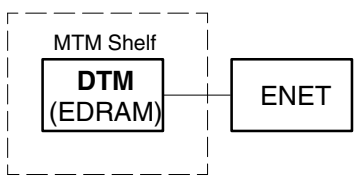
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the DTM (EDRAM). Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for DTM (EDRAM)



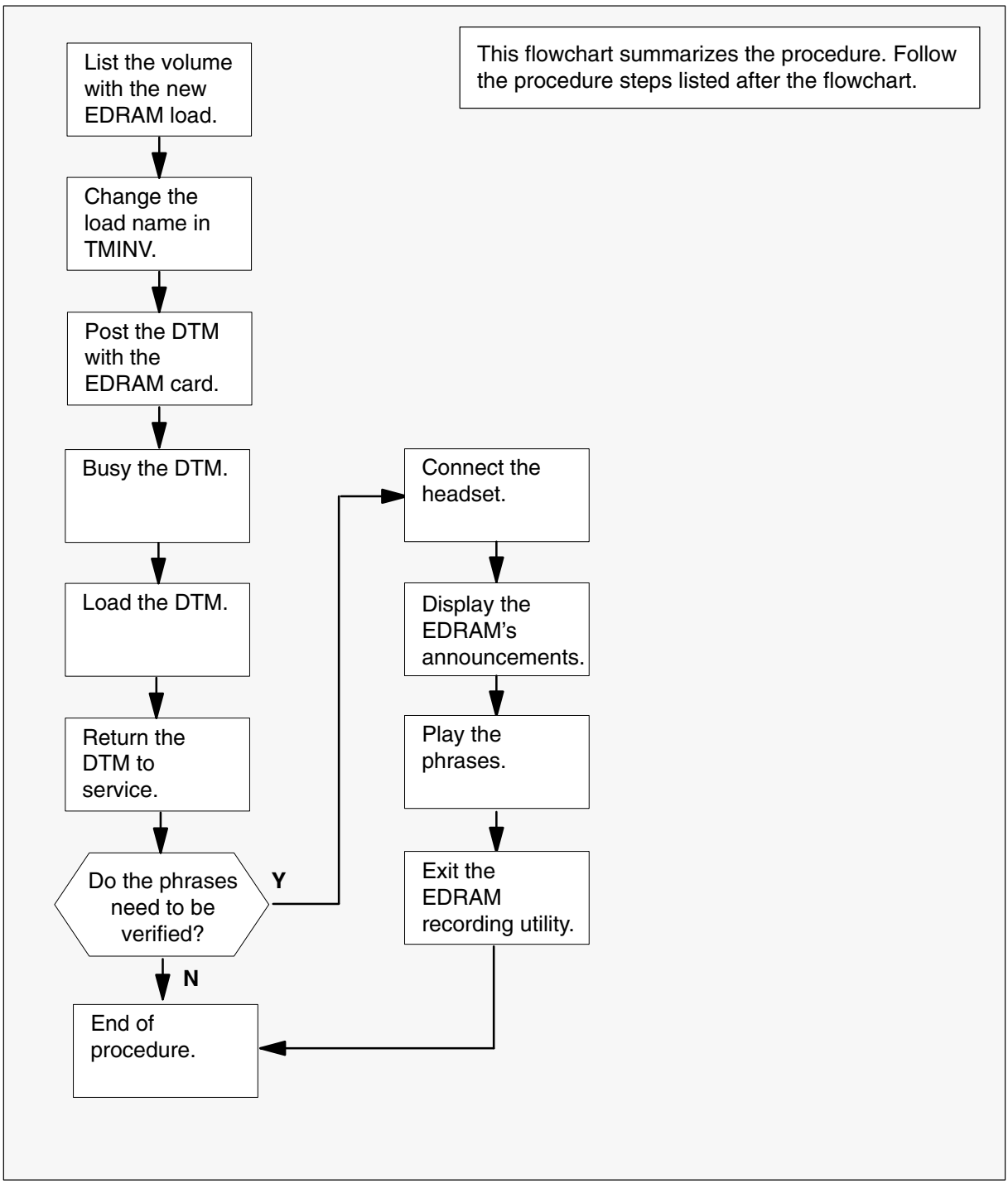
Update the DTM (EDRAM) (continued)

Notes

Each announcement in table EDRAMINV must have a corresponding PROM in table DRAMS.

Update the DTM (EDRAM) (continued)

Summary of procedure



Update the DTM (EDRAM) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. For example, if an RTS command fails office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a DTM with an EDRAM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the firmware load, voice, and tone files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name ALL
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000PMLOADS ALL
```

c. If the volumes containing the voice and tone files have not been listed yet, go to step 2.

d. Once all volumes containing the voice files, tone files, and firmware load have been listed, go to step 5.

Update the DTM (EDRAM) (continued)

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

c. If the volumes containing the voice and tone files have not been listed yet, go to step 2.

d. Once all volumes containing the voice files, tone files, and firmware load have been listed, go to step 5.

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 If firmware, voice, or tone files are not datafilled in table PMLOADS it is necessary to do so before completing the DTM update. Perform the following steps:

a. Open the PMLOADs table. Type:

>TABLE PMLOADS
and press the Enter key.

b. Add the firmware load to the table by typing:

>ADD load_name act_file act_vol bkp_file bkp_vol N
and press the Enter key.

where

load_name is the name of the firmware file
act_file is the name of the firmware file
act_vol is the active disk volume name
bkp_file is the name of the firmware file
bkp_vol is the backup disk volume name

Update the DTM (EDRAM) (continued)

c. Confirm the addition. Type

>Y
and press the Enter key.

d. Add each voice or tone file that will be loaded into the EDRAM to table PMLOADS by typing:

>ADD load_name act_file act_vol bkp_file bkp_vol N
and press the Enter key.

where

load_name	is the name of the voice or tone file
act_file	is the name of the voice or tone file
act_vol	is the active disk volume name
bkp_file	is the name of the voice or tone file
bkp_vol	is the backup disk volume name

e. Confirm the addition. Type

>Y
and press the Enter key.

f. Close the PMLOADS table. Type

>QUIT
and press the Enter key.

7 Update the DTM inventory table. Perform the following steps.

a. Open the DTM inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the tuple for the DTM. Type

>POS DTM dtm_no
and press the Enter key.

where

dtm_no	is the number of the DTM

Example of command

```
>POS DTM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load	is the name of the new load

Example of command

```
>CHA LOAD EDRMAE09
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the PM inventory table. Type

>QUIT
and press the Enter key.

8 If voice and tone files are not datafilled in table EDRAMINV, it is necessary to do so before completing the DTM update. Perform the following steps:

a. Open the EDRAMINV table. Type:

>TABLE EDRAMINV
and press the Enter key.

b. Add each voice or tone file to the table. Type:

>add DTM dtm_no block_no ANN file_name
and press the Enter key.

where

dtm_no	is the number of the DTM
block_no	is the number of the memory block
file_name	is the name of the voice or tone file

c. Confirm the addition. Type

>Y
and press the Enter key.

d. Close the EDRAM inventory table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10 Post the DTM. Type

>POST DTM dtm_no
and press the Enter key.

where

dtm_no	is the number of the DTM

Update the DTM (EDRAM) (continued)

Example of command

```
>POST DTM 11
```

11 Busy the DTM. Type

>BSY
and press the Enter key.

12 Load the DTM. Type

>LOADPM
and press the Enter key.

Note: The LOADPM command loads the DTM with the new EDRAM firmware load and any voice or tone files datafilled in table EDRAMINV for this DTM.

13 Return the DTM to service. Type

>RTS
and press the Enter key.

If the office	Do
requires verification of the phrases	step 14
does not require verification of the phrases	step 16
Note: Office policy can require you to verify the phrases on the EDRAM card after you update the DTM.	

14 Verify the phrases. Perform the following steps.

a. Enter the EDRAM recording utility. Type

>DRAMREC
and press the Enter key.

b. Connect the headset to the EDRAM controller circuit. Type

>CONNECT edram_no clli_name
and press the Enter key.

where

edram_no is the DRAM number of the DTM as datafilled in table DRAMS
clli_name is the name of the headset CLLI

Example of command

```
>CONNECT 4 HSET 22
```

c. Display the EDRAM's phrases. Type

>DISPLAY edram_no
and press the Enter key.

where

edram_no is the DRAM number of the DTM as datafilled in table DRAMS

Example of command

```
>DISPLAY 4
```

d. Play the phrase. Type

>PLAYBACK edram_no phrase_ext
and press the Enter key.

where

edram_no is the DRAM number of the DTM as datafilled in table DRAMS
phrase_ext is the name of the phrase to be played

e. Repeat step 14d. for each phrase to be verified.

f. Disconnect the headset trunk from the EDRAM. Type

>DISCONNECT
and press the Enter key.

g. Exit the EDRAM recording utility. Type

>QUIT
and press the Enter key.

15 If a tone file was loaded into the DTM, verify that the tone generators on the DTM play correctly. Perform the following steps.

a. Enter the EDRAM recording utility. Type

>DRAMREC
and press the Enter key.

Update the DTM (EDRAM) (continued)

b. Connect the headset to the EDRAM controller circuit. Type

>CONNECT edram_no clli_name
and press the Enter key.

where

edram_no is the DRAM number of the DTM as datafilled in table DRAMS
clli_name is the name of the headset CLLI

Example of command

```
>CONNECT 4 HSET 22
```

c. Display the tones the EDRAM can play. Type

>Q PLAYTONE
and press the Enter key.

d. Play a tone. Type

>PLAYTONE edram_no tone_type
and press the Enter key.

where

edram_no is the DRAM number of the DTM as datafilled in table DRAMS
tone_type is the tone generator name to be played

e. Repeat step 15d. for each tone generator to be verified.

f. Disconnect the headset trunk from the EDRAM. Type

>DISCONNECT
and press the Enter key.

g. Exit the EDRAM recording utility. Type

>QUIT
and press the Enter key.

Update the DTM (EDRAM) (end)

16 You have updated the DTM and completed this procedure. Review the update schedule.

If there are	Do
additional DTMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the DTU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a digital test unit (DTU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM and TRK logs are enabled.
- The DTU is in-service (InSv).
- All REX tests are suspended in the office.

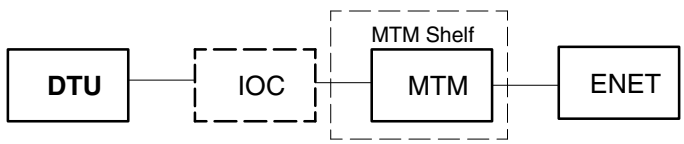
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the DTU. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for DTU



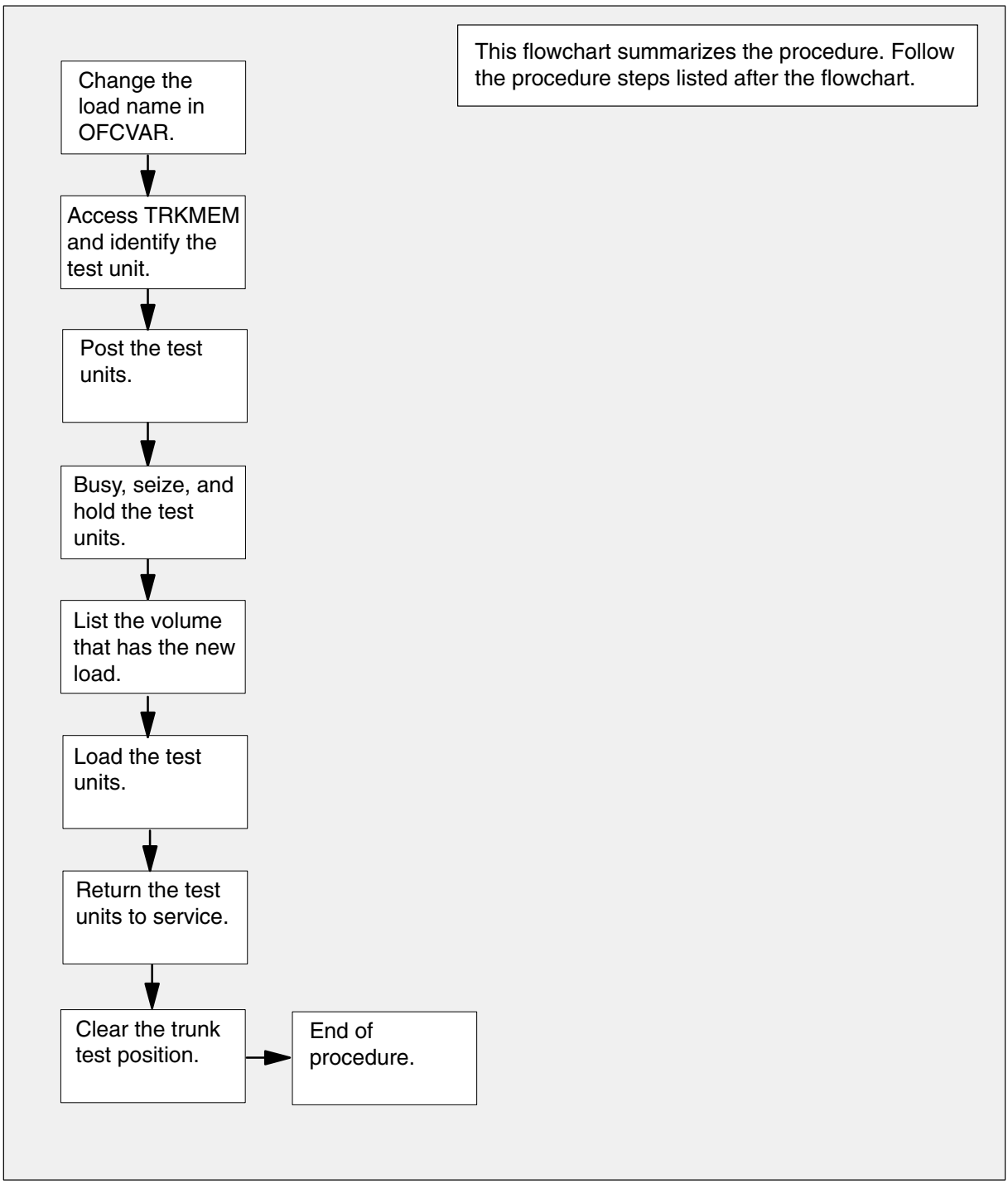
The DTU can be provisioned as a pair. Update the paired DTUs together prior to the serving maintenance trunk module (MTM).

Notes

None

Update the DTU (continued)

Summary of procedure



Update the DTU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another test unit to update.

At the CI level of the MAP display

1 Select a DTU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the DTU load in table office variables. Perform the following steps.

a. Open table OFCVAR. Type

>TABLE OFCVAR
and press the Enter key.

b. Position on the load tuple for the DTU. Type

>POS tuple_name
and press the Enter key.

where

tuple_name is DTULDINFO for a DTU
tuple_name is EDTULDFILE for an EDTU

c. Change the load name to the new load name. Type

>CHA PARMVAL new_load
and press the Enter key.

where

new_load is the name of the new load

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The DTU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Open table TRKMEM. Type

>TABLE TRKMEM
and press the Enter key.

5 Position on the tuple for the DTU. Type

>POS DTU dtu_no
and press the Enter key.

where

dtu_no is the number of the DTU

Example of command

```
>POS DTU 2
```

Example of MAP display

```
DTU      2    0            MTM      20   6
```

Note: The DTU changes status to ISTb. If the DTU does not change to ISTb, confirm the DTU inventory table is updated correctly and the correct DTU is posted. Do not continue this procedure until the DTU is ISTb.

6 Record the number of the MTM listed in the tuple. This MTM is the serving MTM to the test unit.

7 Use the LIS command to scroll through the tuples in table TRKMEM and identify the second DTU served by the MTM.

Example of MAP display

```
DTU      2    0            MTM      20   6
DTU      3    0            MTM      10   2
DTU      9    0            MTM      10   3
DTU      5    0            MTM      16   9
DTU      7    0            MTM      27   8
DTU      4    0            MTM      20   7
```

8 Record the number of the second DTU.

Note: In the previous example, DTU 4 is the second DTU because it shares the same MTM as DTU 2.

9 Close the table. Type

>QUIT
and press the Enter key.

10 Access the TTP level of the MAP display. Type

>MAPCI;MTC;TRKS;TTP
and press the Enter key.

Update the DTU (continued)

11 Post one test unit. Type

>POST G clli_name
and press the Enter key.

where

clli_name is DTU

12 Busy the posted test unit. Type

>BSY
and press the Enter key.

13 Seize the busied test unit. Type

>SEIZE
and press the Enter key.

14 Hold the busied test unit. Type

>HOLD
and press the Enter key.

15 Busy the next posted test unit. Type

>BSY
and press the Enter key.

16 Seize the next posted test unit. Type

>SEIZE
and press the Enter key.

17 Hold the next busied test unit. Type

>HOLD
and press the Enter key.

18 Busy the next posted test unit. Type

>BSY
and press the Enter key.

19 Seize the next posted test unit. Type

>SEIZE
and press the Enter key.

20 Hold the next busied test unit. Type

>HOLD
and press the Enter key.

21 Busy the last posted test unit. Type

>BSY
and press the Enter key.

22 Seize the next posted test unit. Type

>SEIZE
and press the Enter key.

If the load files are on a	Do
DDU device	step 23
SLM or XA-Core device	step 24

23 List the volume with the new load. Perform the following steps.

a. Enter the utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 25.

24 List the volume with the new load. Perform the following steps.

a. Enter the utility. Type

>DISKUT
and press the Enter key.

Update the DTU (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

25 Exit the utility. Type

>QUIT
and press the Enter key.

26

CAUTION
Possible service interruption
The download from the disk volume to the test unit can take up to 20 minutes. Confirm the recording device is not required for higher priority service before loading the DTU.

Load both test units. Type

>LOADFW CC load_name
and press the Enter key.

where

load_name is the name of the load

Note: This single command loads both test units in the pair.

27 Force the release of the posted test unit, which is the last test unit posted. Type

>FRLS
and press the Enter key.

28 Return the test unit to service. Type

>RTS
and press the Enter key.

29 Return the first test unit to the posted position. Type

>NEXT 1
and press the Enter key.

Update the DTU (continued)

30 Force the release of the test unit. Type

>FRLS
and press the Enter key.

31 Return the posted test unit to service. Type

>RTS
and press the Enter key.

32 Return the second test unit to the posted position. Type

>NEXT 2
and press the Enter key.

33 Force the release of the test unit. Type

>FRLS
and press the Enter key.

34 Return the posted test unit to service. Type

>RTS
and press the Enter key.

35 Return the third test unit to the posted position. Type

>NEXT 3
and press the Enter key.

36 Force the release of the test unit. Type

>FRLS
and press the Enter key.

37 Return the posted test unit to service. Type

>RTS
and press the Enter key.

38 Clear the trunk test position. Type

>NEXT
and press the Enter key.

Update the DTU (end)

39 You have updated the DTU and completed this procedure. Review the update schedule.

If there are	Do
additional DTUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the EIU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the ethernet interface unit (EIU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The EIU is in-service (InSv).
- The EIU passed its last REX test.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this EIU?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

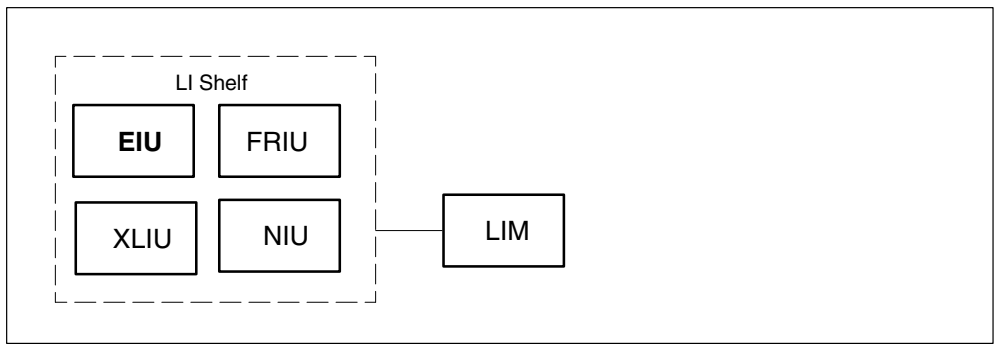
Update sequence

The following figure illustrates a possible node configuration for the EIU. Update the PMs in the node in peripheral side (P-side) to central side

Update the EIU (continued)

(C-side) order. Update the link interface module (LIM) as soon as possible after all its subtending PMs are updated.

Node configuration for EIU



If automated directory assistance service (ADAS) PMs are updated with this office update, the EIU update must be coordinated with the ADAS PM update. Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for the correct update sequence.

Notes

The following notes apply to the EIU update procedure.

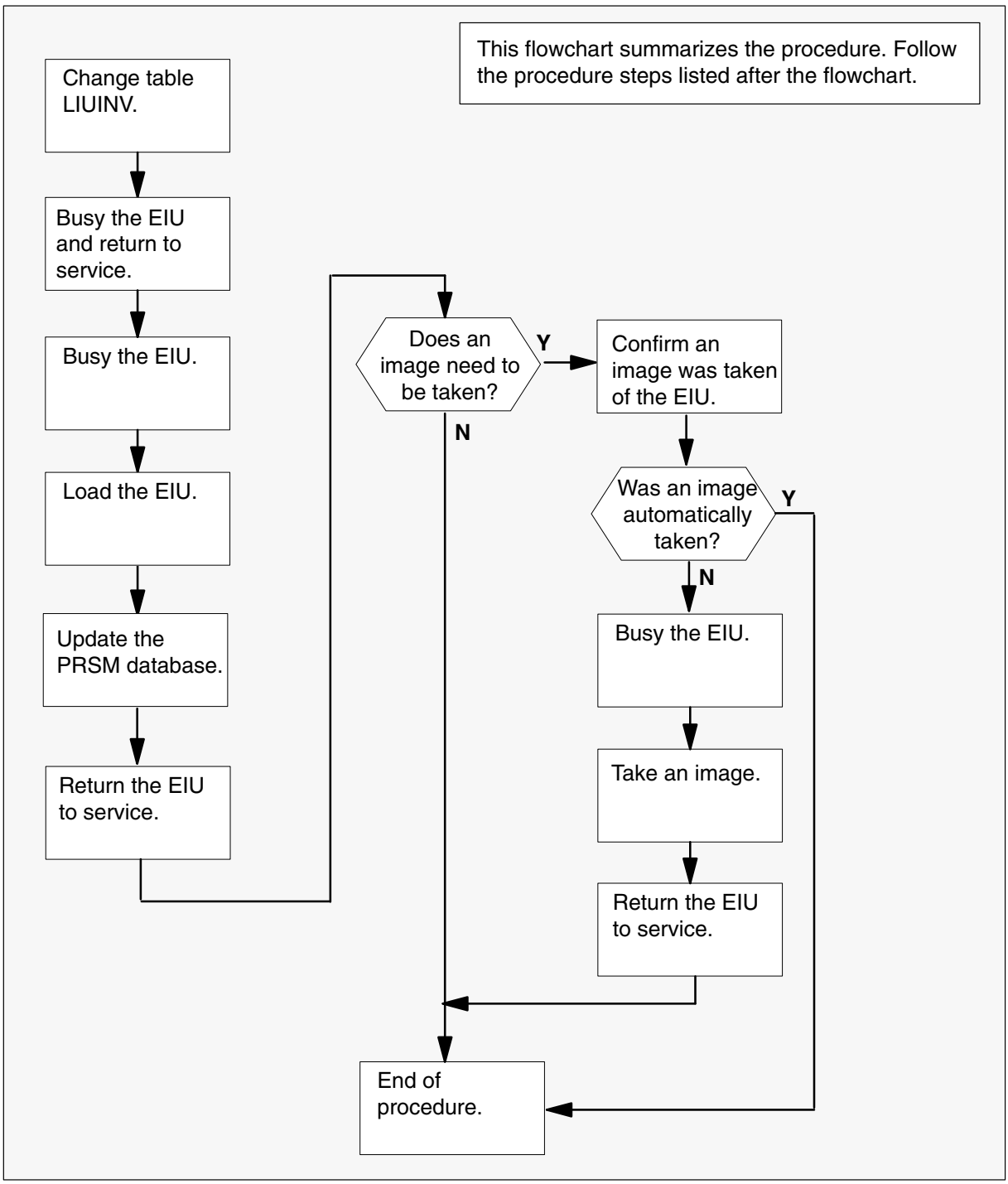
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the EIU update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the EIU (continued)

Summary of procedure



Update the EIU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an EIU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the EIU inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LIUINV
and press the Enter key.

b. Position on the datafill tuple for the EIU. Type

>POS EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>POS EIU 1
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ETC12BF
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The EIU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the EIU. Type

>POST EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>POST EIU 1
```

Note: The EIU changes status to ISTb. If the EIU does not change to ISTb, confirm the EIU inventory table is updated correctly and the correct EIU is posted. Do not continue this procedure until the EIU is ISTb.

6 Ensure the EIU passes an out-of-service test and returns to service. Perform the following steps.

a. Busy the EIU. Type

>BSY
and press the Enter key.

b. Return the EIU to service. Type

>RTS
and press the Enter key.

7 Busy the EIU. Type

>BSY
and press the Enter key.

8 Load the EIU. Type

>LOADPM
and press the Enter key.

Update the EIU (continued)

9 Confirm the PRSU status of the EIU. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>DBAUDIT EIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>REPORT DEST EIU 0
```

d. Compare the displayed PRSM database with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the EIU	step 9i.
all PRSUs for the new load are not applied to the EIU	step 9e.
PRSUs from the previous load are listed at VA status	step 9b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 9i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN EIU eiu_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
eiu_no is the number of the EIU

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN EIU 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>DBAUDIT EIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

Update the EIU (continued)

g. Display the PRSU list. Type

>REPORT DEST EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>REPORT DEST EIU 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 9i.
does not match the PRSM database	step 9e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

10 Return the EIU to service. Type

>RTS
and press the Enter key.

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this EIU	step 11
does not need to be taken of this EIU	step 22
Note: Take an image of the first EIU to be updated. Office policy and the update schedule determines the need for additional images.	

11 Confirm an image was automatically taken of the EIU. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file. Confirm an image was automatically taken of the EIU.

If an image of the EIU	Do
was automatically taken	step 22
was not automatically taken	step 12

Note: If an image of the EIU was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

12

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining EIUs. If an image is not taken, PRSUs must be applied manually each time an EIU is loaded.

This procedure takes an image of a busied EIU. However, an image can be taken of an in-service EIU. Check office policy.

Busy the EIU. Type

>BSY EIU eiu_no
and press the Enter key.

where

eiu_no is the number of the EIU

Example of command

```
>BUSY EIU 1
```

13 Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the EIU (continued)

14 Take an image of the EIU with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE EIU eiu_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device to store the image
eiu_no	is the number of the EIU

Example of SLM command

```
>DUMP ETC12BF S00DPMLOADS ACTIVE RETAIN NODE EIU 0
```

Example of XA-Core command

```
>DUMP ETC12BF F17LPMLOADS ACTIVE RETAIN NODE EIU 0
```

15 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_EIU" appends to the file name, for example, `ETC12BF_EIU`.

16 Delete the original EIU load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file	is the name of the original EIU load file

Example of command

```
>DDF ETC12BF
```

17 Confirm the action. Type

>Y
and press the Enter key.

Update the EIU (continued)

18 Eliminate the "_EIU" extension on the new EIU load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name	is the name of the current EIU load file
new_name	is the name of the current EIU load file without the "_EIU" extension

Example of command

```
>RNF ETC12BF_EIU ETC12BF
```

19 Exit the disk utility. Type

>QUIT
and press the Enter key.

20 Perform a NIL change to the load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name	is the name of the EIU load

Example of command

```
>POS ETC12BF
```

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows the confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

Update the EIU (end)

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

21 Return the EIU to service. Type

>RTS
and press the Enter key.

22 You have updated the EIU and completed this procedure. Review the update schedule.

If there are	Do
additional EIUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the ENET

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Only operating company personnel familiar with the update of the ENET should perform this procedure.

Do not perform other ENET expansions while performing ENET load updates.

Use this procedure to update the enhanced network (ENET).

ATTENTION
The ENET Automatic Update Software within the PMUPGRADE tool performs steps that are not identical to the manual procedure in "Updating the ENET" in this document.
If the manual procedure is used to recover from a PMUPGRADE failure, extra care is required to ensure the ENET components on the opposite plane are fully in service and stable. Failure to do so may result in an outage condition.

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- The ENET is in-service (InSv).
- The ENET passed its last REX test within the last two weeks.
- All ENET logs are enabled.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Update the ENET (continued)

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

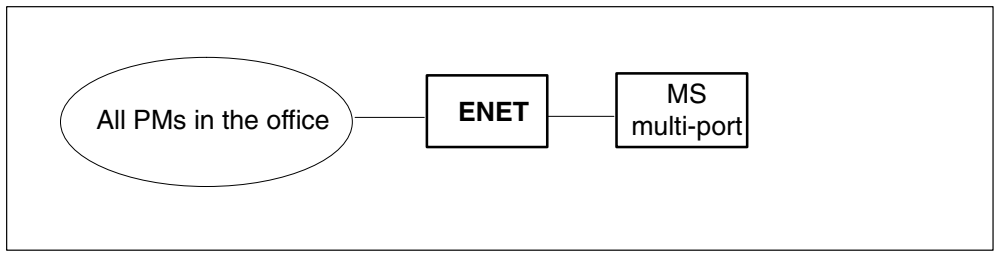
- Do any post-release software updates (PRSUs) need to be applied manually to the new load?
- Does an image need to be taken of this ENET?

For assistance, refer to chapters "Overview of release" and "Overview of update process."

Update sequence

The following figure illustrates a possible node configuration for the ENET. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for ENET



Note: Update the MS multi-port circuit card (NT9X17) one to two days after the ENET updates successfully. Office policy can require an immediate update.

Notes

The following notes apply to the ENET update procedure.

Old load names in table PMLOADS

Office policy determines when old load names are deleted from table PMLOADS. Confirm the old ENET load name is deleted prior to the one night process (ONP). NET LOAD alarms and PM PMLOAD alarms occur during the ONP if table PMLOADS contains both load names.

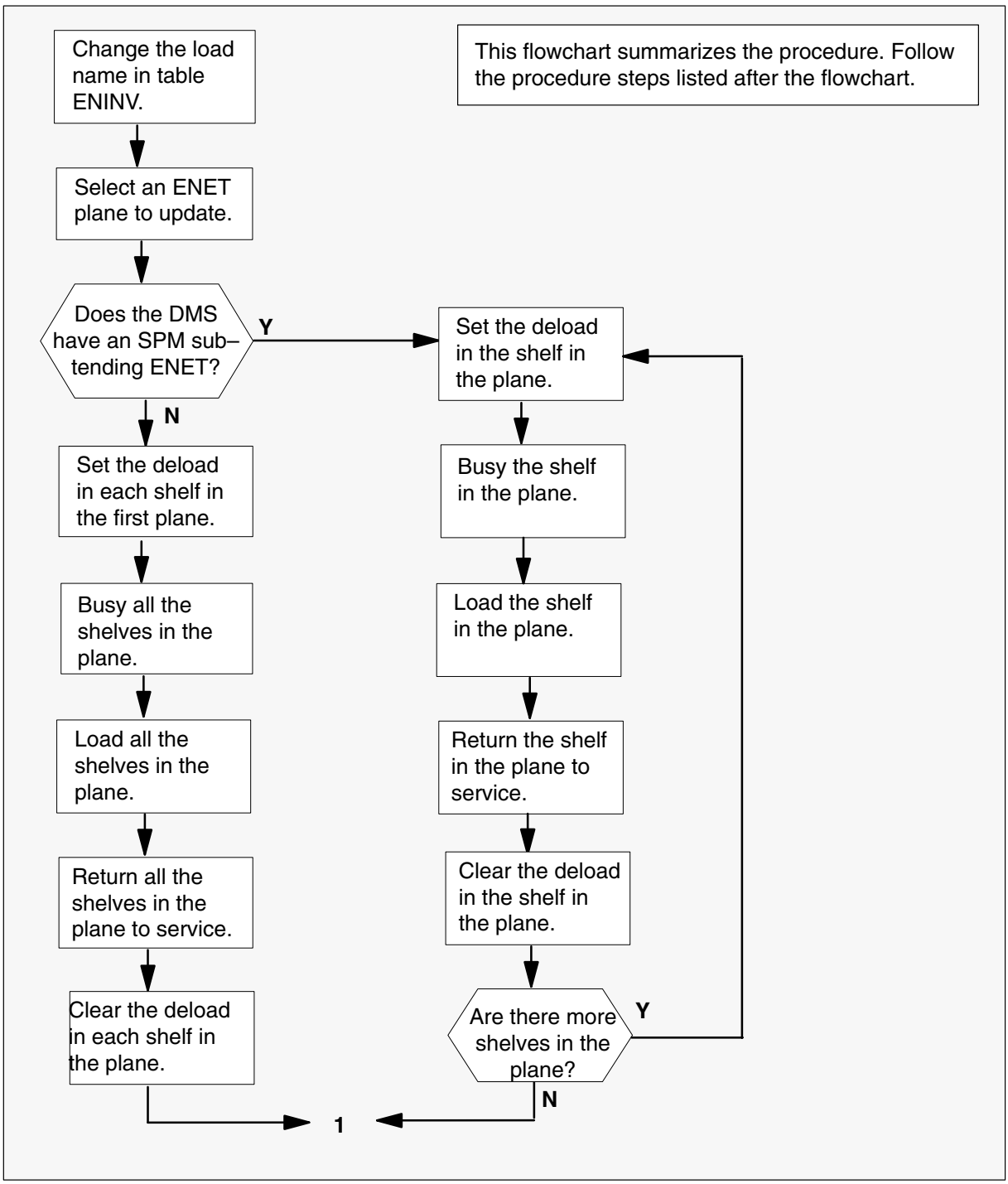
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the ENET update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

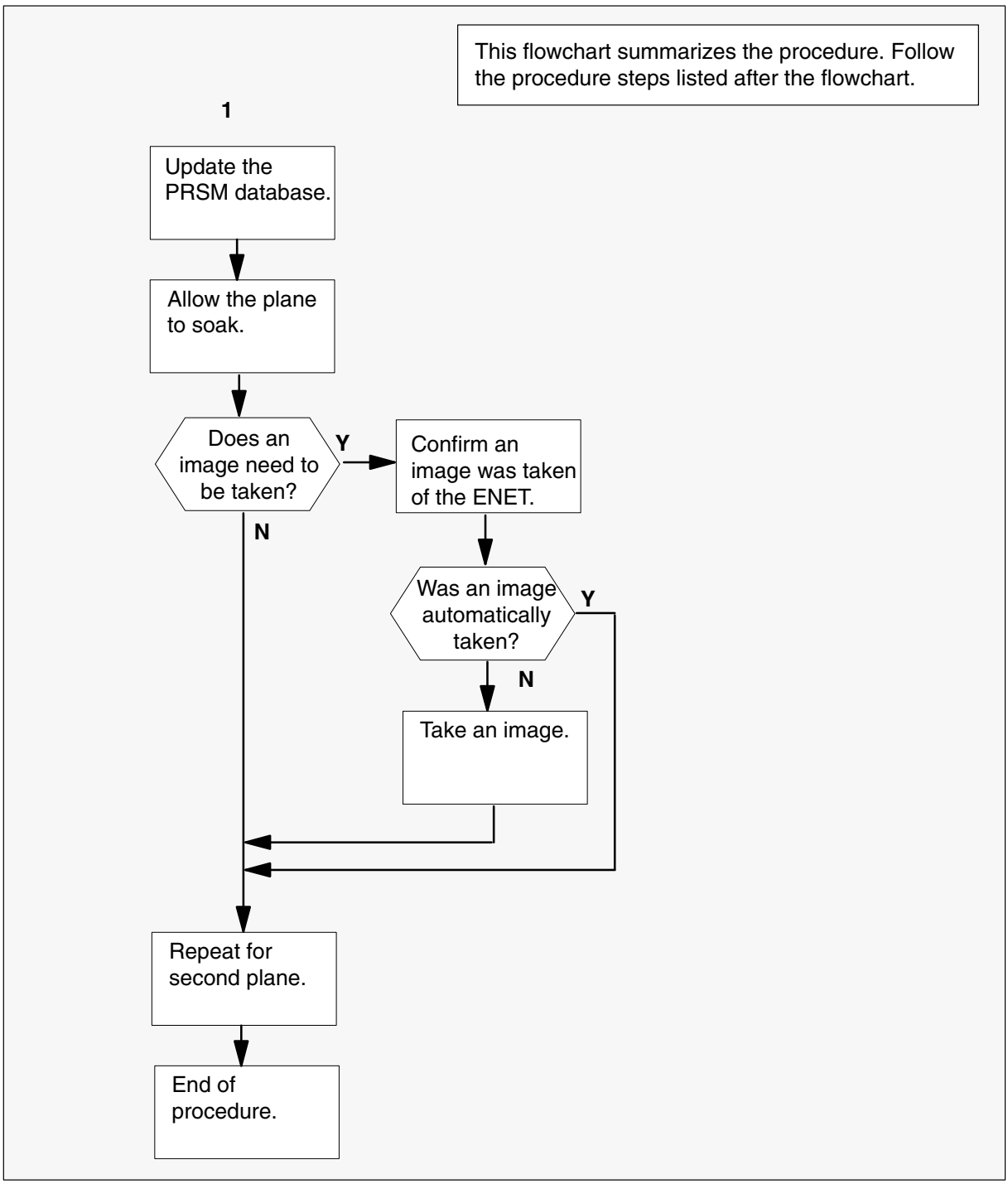
Update the ENET (continued)

Summary of procedure



Update the ENET (continued)

Summary of procedure (continued)



Update the ENET (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another ENET to update.

At the CI level of the MAP display

1 Select an ENET to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the ENET inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE ENINV
and press the Enter key.

b. Position on the datafill tuple for the first ENET shelf to be updated. Type

>POS shelf_no
and press the Enter key.

where

shelf_no is the number of the shelf

Example of command

```
>POS 0
```

c. Change the load name in plane 0 to the new load name. Type

>CHA LOAD0 new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD0 ENC09BE
```

d.

ATTENTION

The MAP displays a warning that the ENET load does not match the current system file. This warning is for information only. No action is required. Continue this procedure.

Confirm the change. Type

>Y
and press the Enter key.

e. Change the load name in plane 1 to the new load name. Type

>CHA LOAD1 new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD1 ENC09BE
```

f.

ATTENTION

The MAP displays a warning that the ENET load does not match the current system file. This warning is for information only, no action is required. Continue this procedure.

Confirm the change. Type

>Y
and press the Enter key.

g. Repeat steps 3b. through 3f. for each shelf in the ENET.

h. Close the table. Type

>QUIT
and press the Enter key.

4 Access the SYSTEM level of the MAP display. Type

>MAPCI;MTC;NET;SYSTEM
and press the Enter key.

Update the ENET (continued)

5 Select an ENET plane to update.

CAUTION
Possible service interruption
If the DMS switch has a Spectrum Peripheral Module (SPM), update the shelf of each plane individually to prevent service interruption and outage.

If the DMS switch	Do
has an SPM subtending ENET	step 6
does not have an SPM subtending ENET	step 13

6

ATTENTION
Do not deload and busy any shelf that is SysB, OffL, or CBsy. Begin with the first shelf in the plane.

Set the deload in the first shelf in the plane. Type

>DELOAD plane_no shelf_no SET
and press the Enter key.

where

plane_no is the number of the plane
shelf_no is the number of the shelf

Example of command

```
>DELOAD 0 0 SET
```

7 Wait 30 minutes to avoid network integrity problems.

8

ATTENTION

When the shelf in the ENET plane is busied, the SPM can go into a critical alarm and the MAP displays a warning. The SPM is ISTb, and the warning is for information only. No action is required. Check office policy and contact the next level of support, if required, or continue this procedure.

Busy one of the shelves in the plane. Type

>BSY plane_no shelf_no
and press the Enter key.

where

plane_no	is the number of the plane
shelf_no	is the number of the shelf

Example of command

```
>BSY 0 0
```

CAUTION
Possible office outage
Executing the BSY can isolate the PMs or cause a network blockage.

If this warning is seen, type

>N
and press the Enter key. Then investigate and correct the reason for the warning ouput before proceeding.

If the warning is not seen, confirm the action. Type

>Y
and press the Enter key.

9 Load the shelf. Type

>LOADEN plane_no shelf_no
and press the Enter key.

where

plane_no	is the number of the plane
shelf_no	is the number of the shelf

Example of command

```
>LOADEN 0 0
```

Update the ENET (continued)

Note: The MAP display responds with a message that indicates a mismatch with a batch change supplement (BCS). Continue with this procedure.

10 Confirm the action. Type

>Y
and press the Enter key. Type

>Y
and press the Enter key.

11 Return the shelf to service. Type

>RTS plane_no shelf_no
and press the Enter key.

where

plane_no	is the number of the plane
shelf_no	is the number of the shelf

Example of command

```
>RTS 0 0
```

12 Clear the deload in the shelf. Type

>DELOAD plane_no shelf_no CLEAR
and press the Enter key.

where

plane_no	is the number of the plane
shelf_no	is the number of the shelf

Example of command

```
>DELOAD 0 0 CLEAR
```

Repeat step 4 through step 12 for each shelf on the same plane.

When all shelves and planes are updated, go to step 22.

13

ATTENTION
Do not deload and busy a shelf that is SysB, Offl, or CBsy.

Set the deload in each shelf in the plane. Type

>DELOAD plane_no shelf_no SET
and press the Enter key.

where

plane_no is the number of the plane
shelf_no is the number of the first shelf

Example of command

```
>DELOAD 0 0 SET
```

Repeat step 13 for each shelf in the plane.

14 Wait 30 minutes to avoid network integrity problems.

15 Busy all the shelves in the plane. Type

>BSY plane_no ALL
and press the Enter key.

where

plane_no is the number of the plane

Example of command

```
>BSY 0 ALL
```

16 Confirm the action. Type

>Y
and press the Enter key.

17 Load all the shelves in the plane. Type

>LOADEN plane_no ALL
and press the Enter key.

where

plane_no is the number of the plane

Example of command

```
>LOADEN 0 ALL
```

Note: This action will be performed on all shelves in ENET Plane: 0 that are Manbusy.

Update the ENET (continued)

Note: The MAP display responds with a message that indicates a mismatch with a batch change supplement (BCS). Continue with this procedure.

18 Confirm the action. Type

>Y
and press the Enter key.

Any software load in the MBSY ENETs will be destroyed.

Confirm the action. Type

>Y
and press the Enter key.

19

ATTENTION

When the plane's shelves return to service, the plane's PM links become out-of-service. Allow the switch to recover the links. If necessary, troubleshoot any links that do not return to service.

Return all the shelves in the plane to service. Type

>RTS plane_no ALL
and press the Enter key.

where

plane_no is the number of the plane

Example of command

```
>RTS 0 ALL
```

20 Clear the deload in the first shelf in the plane. Type

>DELOAD plane_no shelf_no CLEAR
and press the Enter key.

where

plane_no is the number of the plane
shelf_no is the number of the first shelf

Example of command

```
>DELOAD 0 0 CLEAR
```

21 Repeat step 20 for each shelf in the plane.

22 Confirm the PRSU status of the ENET. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT ENET plane_no shelf_no
and press the Enter key.

where

plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>DBAUDIT ENET 0 0
```

c. Display the PRSU list. Type

>REPORT DEST ENET plane_no shelf_no
and press the Enter key.

where

plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>REPORT DEST ENET 0 0
```

Update the ENET (continued)

d. Confirm all PRSUs for the new load are applied to the ENET plane.

If	Do
all PRSUs for the new load are applied to the plane	step 22g.
all PRSUs for the new load are not applied to the plane	step 22e.
PRSUs from the previous load are listed at VA status	step 22b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 22g. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN ENET plane_no shelf_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN ENET 0 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT ENET plane_no shelf_no
and press the Enter key.

where

plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>DBAUDIT ENET 0 0
```

g. Display the PRSU list. Type

>REPORT DEST ENET plane_no shelf_no
and press the Enter key.

where

plane_no	is the number of the ENET plane
shelf_no	is the number of the first shelf

Example of command

```
>REPORT DEST ENET 0 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 22g.
does not match the PRSM database	step 22e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

23 Allow the plane to soak at least four hours.

Note: Check local office policy. Some offices require a longer soak period.

24

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining ENETs. If an image is not taken, PRSUs must be applied manually each time an ENET is loaded.

ATTENTION

Do not deload and busy a shelf that is SysB, Offl, or CBsy.

Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the ENET (continued)

25 Take an image of the ENET load with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE ENET plane_no shelf_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device where the image is stored
plane_no	is the number of the plane
shelf_no	is the number of the shelf

Example of command

```
>DUMP ENC09BE S00DPMLOADS ACTIVE RETAIN NODE ENET 0 0
```

26 List the SLM volume name. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the volume

Example of command

```
>LF S00DPMLOADS
```

Note: "_ENET" appends to the file name, for example, `ENC09BE_ENET`.

27 Delete the original ENET load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file	is the name of the original ENET load file

Example of command

```
>DDF ENC09BE
```

28 Confirm the action. Type

>Y
and press the Enter key.

29 Eliminate the "_ENET" extension on the new ENET load file. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name	is the name of the current ENET load file
new_name	is the name of the current ENET load file without the "_ENET" extension

Example of command

```
>RNF ENC09BE_ENET ENC09BE
```

30 Exit the disk utility. Type

>QUIT
and press the Enter key.

31 Perform a NIL change to the load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the ENET load. Type

>POS load_name
and press the Enter key.

where

load_name	is the name of the ENET load

Example of command

```
>POS ENC09BE
```

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows the confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

Update the ENET (continued)

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

32 Determine if both ENET planes are updated.

Perform the following on all planes in all shelves in the office. Type

>DBAUDIT ENET plane_no shelf_no
and press the Enter key.

where

plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>DBAUDIT ENET 0 0
```

Display the PRSU list. Type

>REPORT DEST ENET plane_no shelf_no
and press the Enter key.

where

plane_no is the number of the ENET plane
shelf_no is the number of the first shelf

Example of command

```
>REPORT DEST ENET 0 0
```

Confirm all planes in all shelves in the office listed PRSUs are identical.

If	Do
one ENET plane is updated	Return to step 4 and update the second plane.
both ENET planes are updated	step 33

33 You have updated the ENET and completed this procedure. Review the update schedule.

If there are	Do
additional ENETs to update during this shift	Return to step 4 and continue to the end of this procedure.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

ATTENTION

The ENET load in each shelf/plane should be verified to match the desired load before completing the upgrade procedure. This can most easily be accomplished by using remlogin and manual inspection of the loadname presented after the remlogin completes. for example:

```
>remlogin enet 0 0
Remote Login complete
1976/01/01 00:00  *** ENX17BL —— SER. III LOAD ***
ENET00>
```

Update the ESA

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the emergency stand-alone (ESA).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All ESA and peripheral module (PM) logs are enabled.
- The ESA and its serving PM are in-service (InSv).
- The serving PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the ESA processor firmware (NTMX45 only) need to be updated?
- Is the ESA to be updated the first unit in the office to use the new load?
- Is the new ESA load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

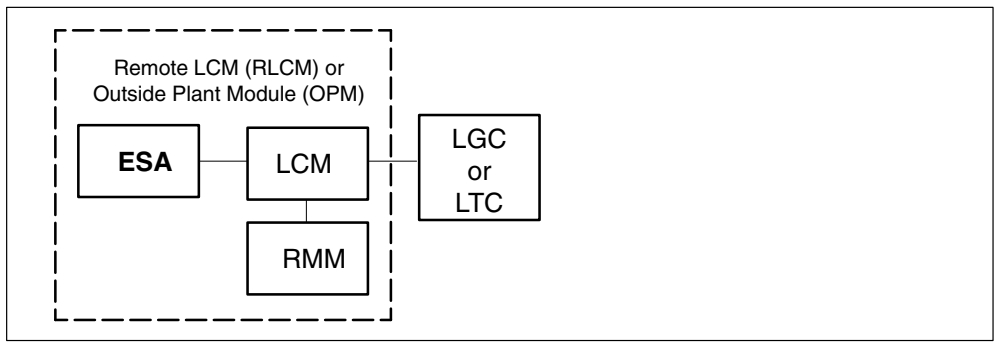
For assistance, refer to chapters “Overview of release” and “Overview of update process.”.

Update the ESA (continued)

Update sequence

The following figure illustrates a possible node configuration for the ESA when it resides in the line concentrating module (LCM). Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for ESA

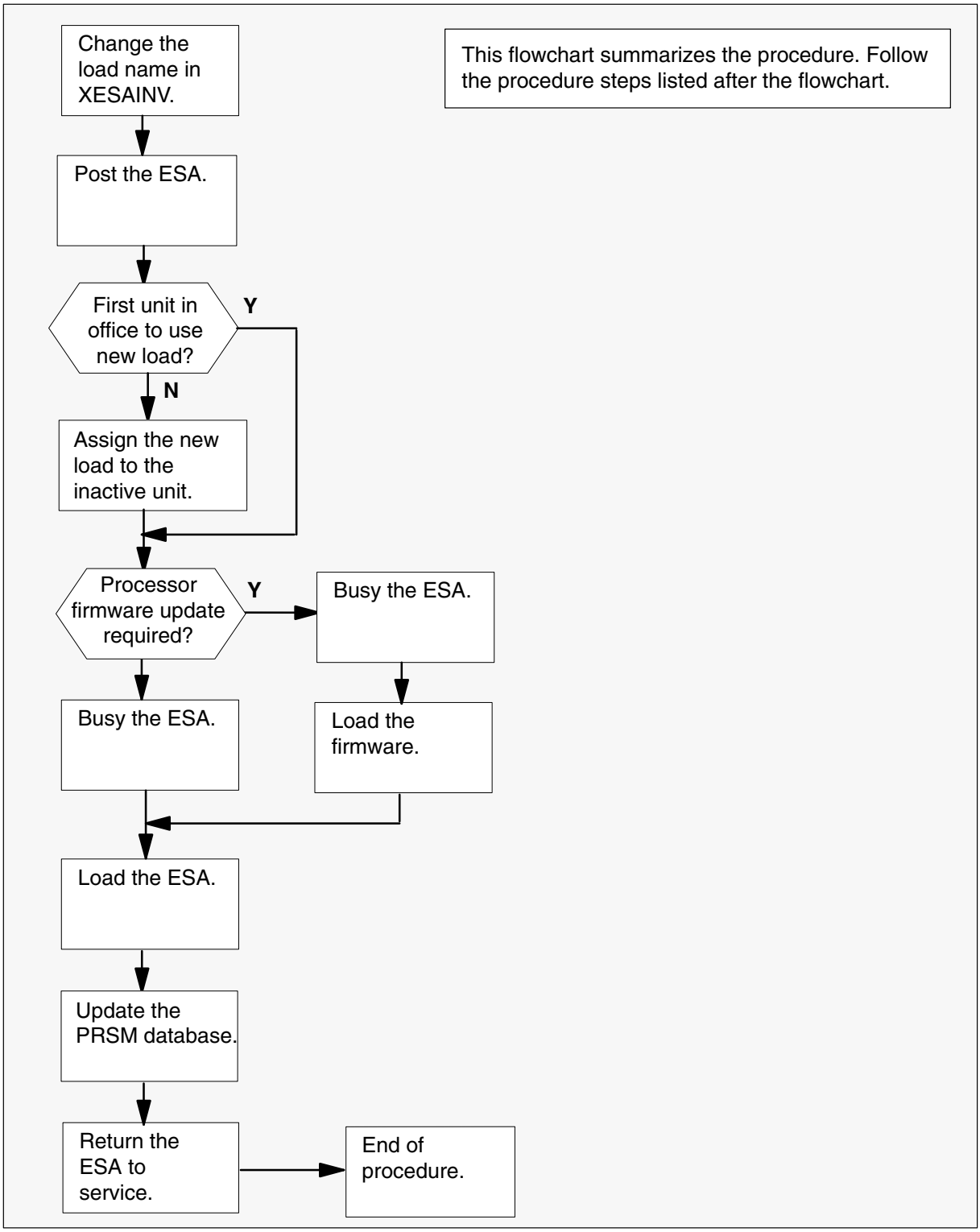


Notes

None

Summary of procedure

Update the ESA (continued)



Update the ESA (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an ESA to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the ESA inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE XESAINV
and press the Enter key.

b. Position on the datafill tuple for the ESA. Type

>POS site_name ESA esa_no
and press the Enter key.

where

site_name is the name of the site
esa_no is the number of the ESA

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ESA10AQ
```

Update the ESA (continued)

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The ESA changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the ESA processor is an	Do
NT6X45	step 5
NTMX45	step 3e.

e. Determine if the ESA processor firmware needs to be updated.

If the ESA processor firmware	Do
requires an update	step 4
does not require an update	step 5

4 Update the ESA processor firmware load name in the inventory table. Perform the following steps.

a. Change the processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNP04
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Close the table. Type

>QUIT
and press the Enter key.

6 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

7 Post the ESA. Type

>POST ESA esa_no
and press the Enter key.

where

esa_no is the number of the ESA

Example of command

```
>POST ESA 1
```

Note: The ESA changes status to ISTb. If the ESA does not change to ISTb, confirm the ESA inventory table is updated correctly and the correct ESA is posted. Do not continue this procedure until the ESA is ISTb.

8 Identify and update the inactive ESA.

9 Review the update schedule for the office. Determine if this ESA is the first ESA to use the new load.

If this ESA is	Do
the first ESA in the office to use the new load	step 11
not the first ESA in the office to use the new load	step 10

10 Assign the new load to the ESA. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Update the ESA (continued)

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the ESA. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET ESA esa_no
and press the Enter key.

where

new_load	is the name of the new load
esa_no	is the number of the ESA

Example of command

```
>ASSIGN UPGRADE_LD ESA10AQ IN DESTSET ESA 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

11 Determine if a change to the ESA processor firmware load name was performed in step 4 during this update shift.

If the ESA processor firmware	Do
was changed	step 12
was not changed	step 16

Update the ESA (continued)

12

ATTENTION

Perform steps 12, 13, and 14 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 12, 13, and 14. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

13 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

14 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

15 Go to step 17.

16 Busy the ESA. Type

>BSY
and press the Enter key.

17 Load the ESA. Type

>LOADPM
and press the Enter key.

Update the ESA (continued)

18 Confirm the PRSU status of the ESA. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT ESA esa_no
and press the Enter key.

where

esa_no is the number of the ESA

Example of command

```
>DBAUDIT ESA 0
```

c. Display the PRSU list. Type

>REPORT DEST ESA esa_no
and press the Enter key.

where

esa_no is the number of the ESA

Example of command

```
>REPORT DEST ESA 0
```

d. Compare the displayed PRSM database for the ESA with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the ESA	step 18i.
all PRSUs for the new load are not been applied to the ESA	step 18e.
PRSUs from the previous load are listed at VA status	step 18b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 18i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_name IN ESA esa_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
esa_no is the number of the ESA

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN PM ESA 0
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN ESA 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT ESA esa_no
and press the Enter key.

where

esa_no is the number of the ESA

Example of command

```
>DBAUDIT ESA 0
```

Update the ESA (end)

g. Display the PRSU list. Type

>REPORT DEST ESA esa_no
and press the Enter key.

where

esa_no is the number of the ESA

Example of command

```
>REPORT DEST ESA 0
```

h. Compare the displayed PRSM database with the PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 18i.
does not match the PRSM database	step 18e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

19 Return the ESA to service. Type

>RTS
and press the Enter key.

20 You have updated the ESA and completed this procedure. Review the update schedule.

If there are	Do
additional ESAs to update in other PMs during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the ESTU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the enhanced services test unit (ESTU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The officed recorded an office image in the last 24 hours.
- The ESTU is in-service (InSv).
- All REX tests are suspended in the office.

Required information

None

Update sequence

The following figure illustrates a possible node configuration for the ESTU. Serving PMs must be updated after the ESTU.

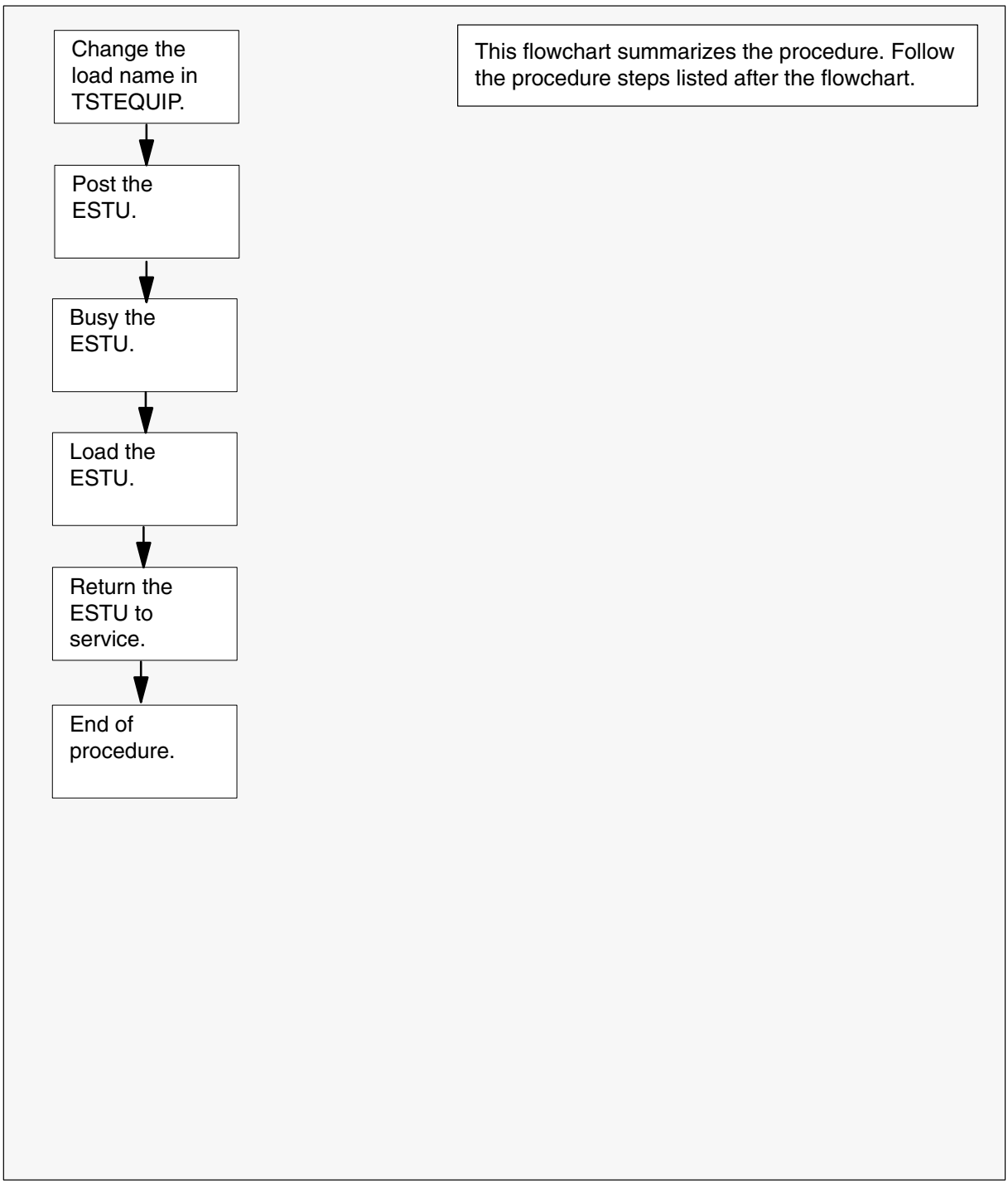
Node configuration for ESTU

Notes

None

Update the ESTU (continued)

Summary of procedure



Update the ESTU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another ESTU to update.

At the CI level of the MAP display

1 Select an ESTU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Open the ESTU inventory table. Type

>TABLE TSTEQUIP
and press the Enter key.

4 Position on the datafill tuple for the ESTU. Type

>POS ESTU estu_no
and press the Enter key.

where

estu_no is the number of the ESTU

5 Change the load name to the new load name. Type

>CHA LOADINFO
and press the Enter key.

6 Enter the new EMM load name at the prompt.

7 Enter the new ITM load name at the prompt.

8 Confirm the change. Type

>Y
and press the Enter key.

9 Exit the table. Type

>QUIT
and press the Enter key.

10 Access the ESTU level of the MAP display. Type

>MAPCI;MTC;MTCNA;TSTEQUIP;ESTU
and press the Enter key.

Update the ESTU (end)

11 Post the ESTU. Type

>POST ESTU estu_no
and press the Enter key.

where

estu_no is the number of the ESTU

12 Busy the ESTU. Type

>BSY
and press the Enter key.

13 Load the PM. Type

>LOADTE NOWAIT
and press the Enter key.

Example of MAP display

```
WARNING
Loading will take a relatively long time to finish
Do you want to proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

14 Confirm the action. Type

>Y
and press the Enter key.

15 Return the ESTU to service after loading completes. Type

>RTS
and press the Enter key.

16 You have updated the ESTU and completed this procedure. Review the update schedule.

If there are	Do
additional ESTUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure"Finish a PM update shift" in this document.

Update the FRIU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the frame relay interface unit (FRIU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The FRIU is in-service (InSv).
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this FRIU?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

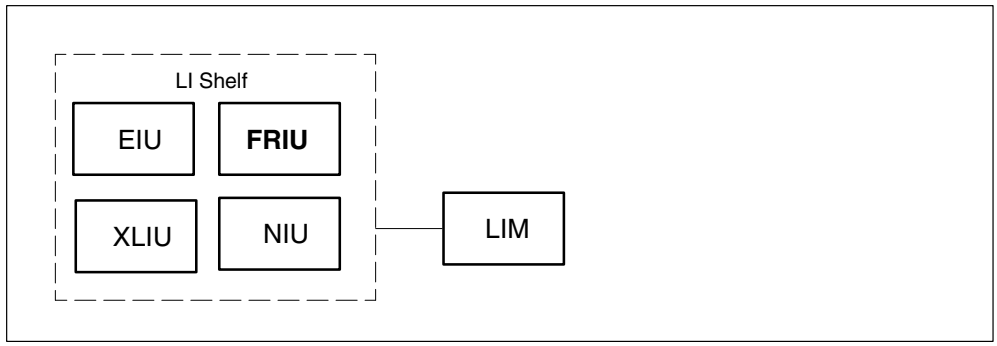
Update sequence

The following figure illustrates a possible node configuration for the FRIU. Update the PMs in the node in peripheral side (P-side) to central side

Update the FRIU (continued)

(C-side) order. Update the link interface module (LIM) as soon as possible after all its subtending PMs are updated.

Node configuration for FRIU



Notes

The following notes apply to the FRIU update procedure.

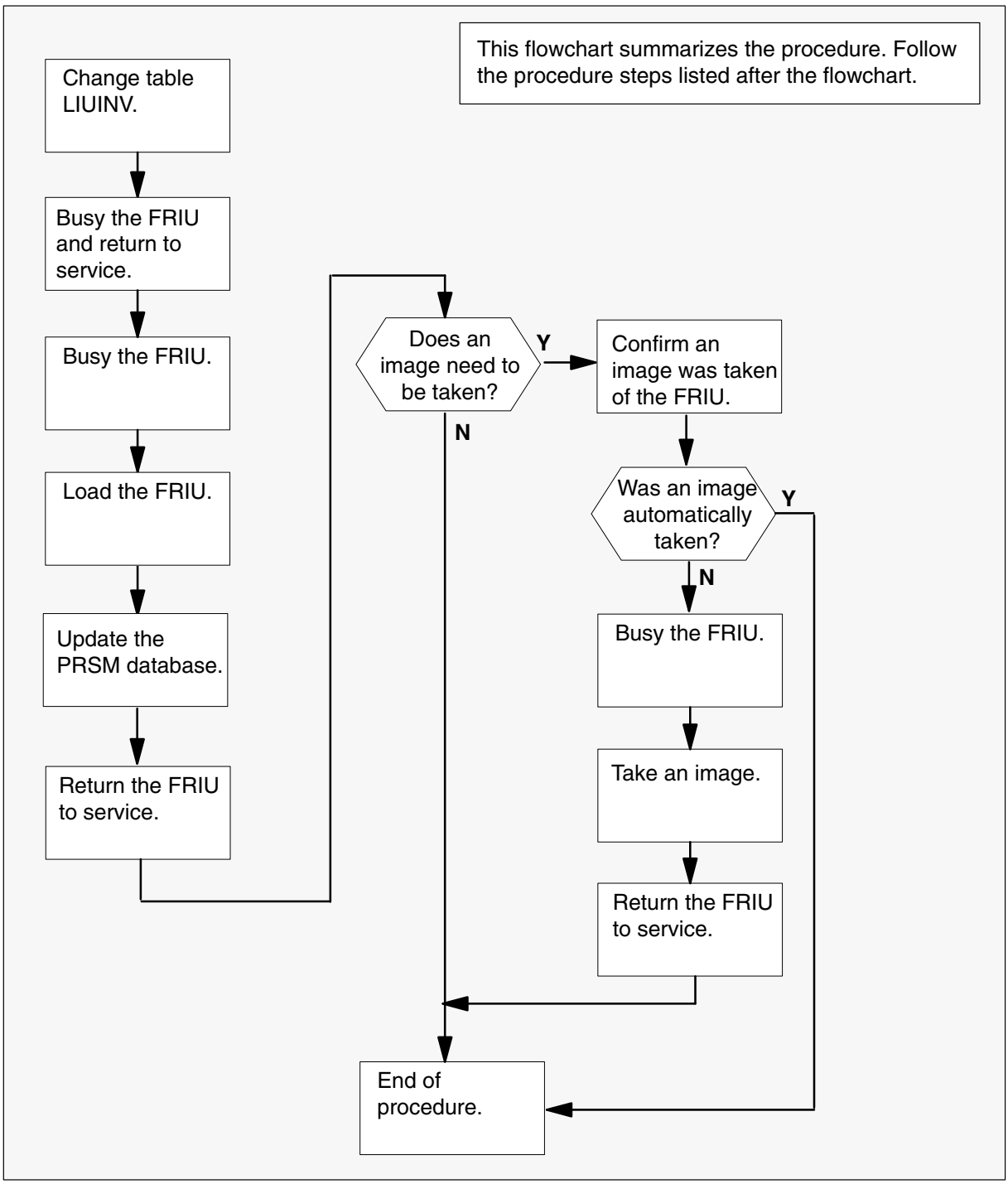
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the FRIU update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the FRIU (continued)

Summary of procedure



Update the FRIU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an FRIU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the inventory table. Perform the following steps.

a. Open the FRIU inventory table. Type

>TABLE LIUINV
and press the Enter key.

b. Position on the datafill tuple for the FRIU. Type

>POS FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>POS FRIU 1
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD F8C12BI
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The FRIU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the FRIU. Type

>POST FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>POST FRIU 1
```

Note: The FRIU changes status to ISTb. If the FRIU does not change to ISTb, confirm the FRIU inventory table is updated correctly and the correct FRIU is posted. Do not continue this procedure until the FRIU is ISTb.

6 Ensure the FRIU passes an out-of-service test and returns to service. Perform the following steps.

a. Busy the FRIU. Type

>BSY
and press the Enter key.

b. Return the FRIU to service. Type

>RTS
and press the Enter key.

7 Busy the FRIU. Type

>BSY
and press the Enter key.

8 Load the FRIU. Type

>LOADPM
and press the Enter key.

Update the FRIU (continued)

9 Confirm the PRSU status of the FRIU. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>DBAUDIT FRIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>REPORT DEST FRIU 0
```

d. Confirm all PRSUs for the new load are applied to the FRIU.

If	Do
all PRSUs for the new load are applied to the FRIU	step 9i.
all PRSUs for the new load are not applied to the FRIU	step 9e.
PRSUs from the previous load are listed at VA status	step9b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 9i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN FRIU friu_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
friu_no is the number of the FRIU

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN FRIU  0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>DBAUDIT FRIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

Update the FRIU (continued)

g. Display the PRSU list. Type

>REPORT DEST FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>REPORT DEST FRIU 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 9i.
does not match the PRSM database	step 9e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

10 Return the FRIU to service. Type

>RTS
and press the Enter key.

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this FRIU	step 11
does not need to be taken of this FRIU	step 22
Note: Take an image of the first FRIU to be updated. Office policy and the update schedule determine the need for additional images.	

11 Confirm an image was automatically taken of the FRIU. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file. Confirm an image was automatically taken of the FRIU.

If an image of the FRIU	Do
was automatically taken	step 22
was not automatically taken	step 12

Note: If an image of the FRIU was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

12

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining FRIUs. If an image is not taken, PRSUs must be applied manually each time an FRIU is loaded.

This procedure takes an image of a busied FRIU. However, an image can be taken of an in-service FRIU. Check office policy.

Busy the FRIU. Type

>BSY FRIU friu_no
and press the Enter key.

where

friu_no is the number of the FRIU

Example of command

```
>BUSY FRIU 1
```

13 Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the FRIU (continued)

14 Take an image of the FRIU with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE FRIU friu_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device to store the image
friu_no	is the number of the FRIU

Example of SLM command

```
>DUMP F8C12BI S00DPMLOADS ACTIVE RETAIN NODE FRIU 0
```

Example of XA-Core command

```
>DUMP F8C12BI F17LPMLOADS ACTIVE RETAIN NODE FRIU 0
```

15 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_FRIU" appends to the file name, for example, `F8C12BI_FRIU`.

16 Delete the original FRIU load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file	is the name of the original FRIU load file

Example of command

```
>DDF F8C12BI
```

17 Confirm the action. Type

>Y
and press the Enter key.

18 Eliminate the "_FRIU" extension on the new FRIU load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name	is the name of the current FRIU load file
new_name	is the name of the current FRIU load file without the "_FRIU" extension

Example of command

```
>RNF F8C12BI_FRIU F8C12BI
```

19 Exit the disk utility. Type

>QUIT
and press the Enter key.

20 Perform a NIL change to the FRIU load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name is the name of the FRIU load

Example of command

```
>POS F8C12BI
```

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows the confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

Update the FRIU (end)

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

21 Return the FRIU to service. Type

>RTS
and press the Enter key.

22 You have updated the FRIU and completed this procedure. Review the update schedule.

If there are	Do
additional FRIUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the HLIU/HSLR (DLIU)

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a dual-link interface unit (DLIU), which physically consists of the high-speed link interface unit (HLIU) and the high-speed link router (HSLR). Links originating on the DLIU are referred to as high-speed links (HSL).

Please refer to the *DMS SuperNode SSP High-Speed Link Cutover Guide,* 297-8991-906, for more information. Use this procedure to upgrade the following:

- the HLIU
- the HSLR

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- An office image has been taken in the last 24 hours.
- All PM logs are enabled.
- The HLIU and HSLR (DLIU) are in-service (InSv).
- The enhanced link peripheral processor (ELPP) or fiberized LPP (FLPP) with triple F-bus, passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?

Update the HLIU/HSLR (DLIU) (continued)

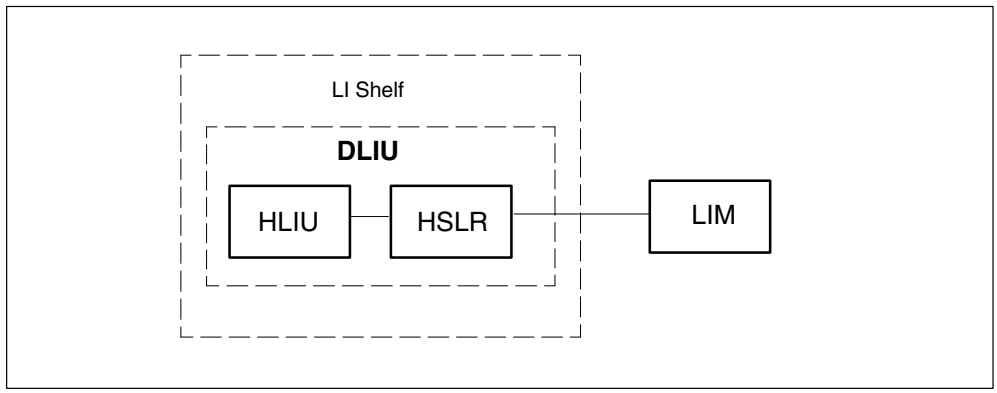
- Does an image need to be taken of this EIU?

For assistance, refer to chapters "Overview of release" and "Overview of update process."

Update sequence

The following figure illustrates a possible node configuration for the HLIU/HSLR (DLIU). Update the link interface module (LIM) as soon as possible after all its subtending PMs are updated.

Node configuration for LIM



Notes

When the DLIU is busied, its associated A link is briefly removed from service. Do not remove more than one A link from service.

SS7 node isolation

This procedure requires that links assigned to the DLIU be inhibited, busied and deactivated. All the links within the same linkset must not be busied at the same time, signaling system 7 (SS7) node isolation can result.

WARNING
Possible SS7 node isolation
Do not attempt to update the DLIU if its link cannot be inhibited. Do not busy the link if it cannot be inhibited. SS7 node isolation can result.

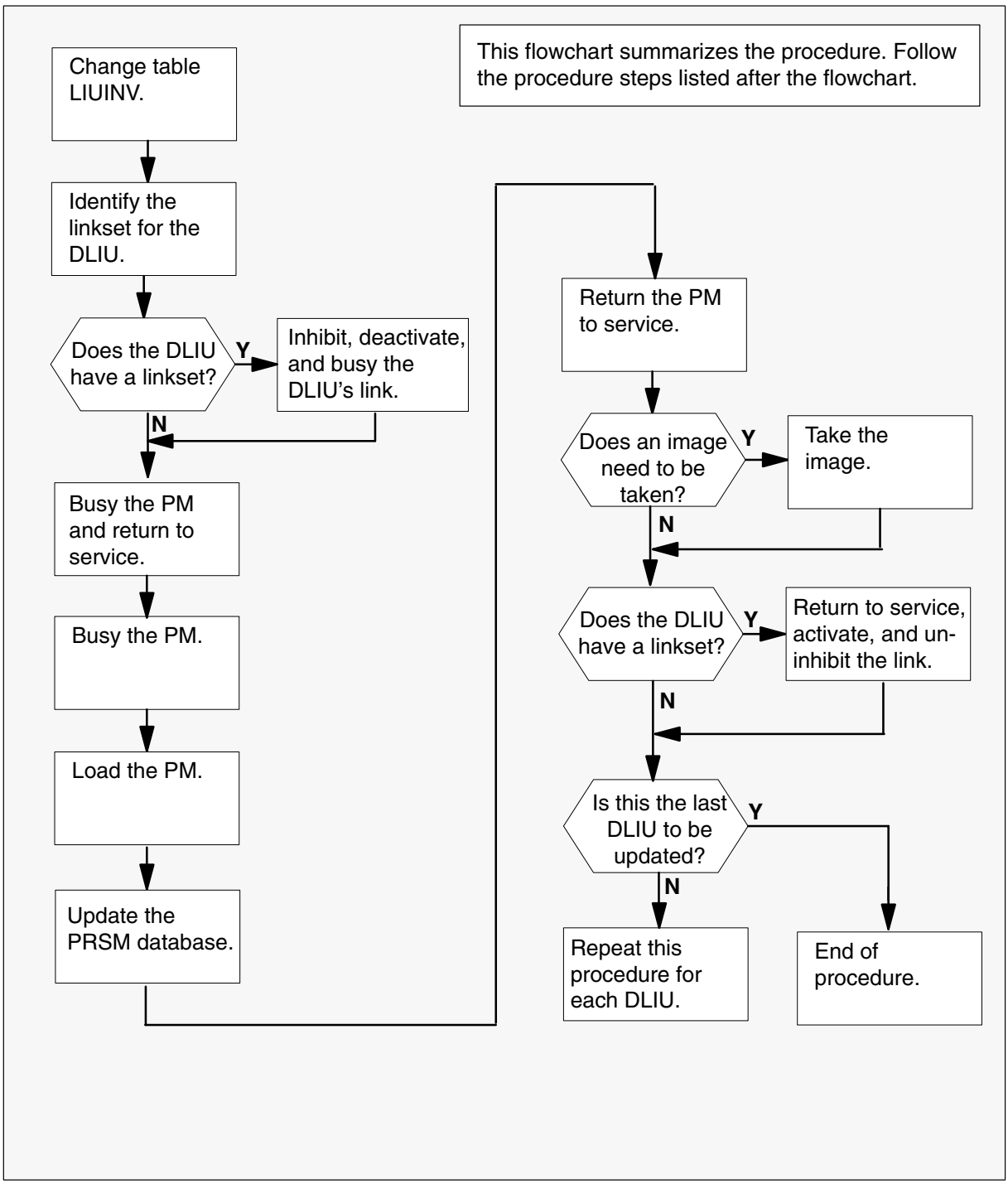
Update the HLIU/HSLR (DLIU) (continued)

Possible reasons why a link does not inhibit include the following:

- The link from the node at the other end of the link being inhibited, is out-of-service (OOS).
- Due to a translations error, there is no alternate route designated in table C7RTESET.
- The link is the last link in the linkset.

Update the HLIU/HSLR (DLIU) (continued)

Summary of procedure



Update the HLIU/HSLR (DLIU) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a DLIU to update.

2 Confirm all prerequisites for this procedure are met.

3

ATTENTION

Updating the PM inventory table unsets the current loadset from the PM. This loadset remains in the PRSM database until a DBAUDIT is performed later in this procedure.

Update the HLIU first, then update the HSLR.

Update the PM inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LIUINV
and press the Enter key.

b. Position on the datafill tuple for the PM to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

Example of command

```
>POS HLIU 0
```

Update the HLIU/HSLR (DLIU) (continued)

c.

ATTENTION

If a linkset exists for the DLIU being updated, the HLIU and HSLR must contain the same load version in order for the link to come into service.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD HCA11BG
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes state to in-service trouble (ISTb) because of the load mismatch with the inventory table.

e. Repeat steps 3a. through 3d. as required, for the HSLR that has not been updated in the inventory table.

f. Close the table. Type

>QUIT
and press the Enter key.

Update the HLIU/HSLR (DLIU) (continued)

4 Identify the linkset for the DLIU to be updated. Perform the following steps.

a.

ATTENTION
If table C7LINK was printed during a previous DLIU/LIU7 update, go to step 4f.

Send the terminal response to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD START ONTO PRNTR1
```

b. Open table C7LINK. Type

>TABLE C7LINK
and press the Enter key.

c. List the contents of the table. Type

>LIST ALL
and press the Enter key.

d. Close the table. Type

>QUIT
and press the Enter key.

e. Stop the output to the printer. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

f. Review the contents of table C7LINK to determine if a linkset exists.

Update the HLIU/HSLR (DLIU) (continued)

5 Access the MTC level of the MAP display. Type

>MAPCI;MTC
and press the Enter key.

If the DLIU	Do
has a linkset	step 6
does not have a linkset	step 8

6

WARNING
Possible SS7 node isolation
Do not attempt to update the DLIU if its link cannot be inhibited. Do not busy the link if it cannot be inhibited. SS7 node isolation can result.

ATTENTION
Check office policy to identify the number of links that can be simultaneously inhibited.

Access the C7LKSET level of the MAP display and post the linkset. Type

>CCS;CCS7;C7LKSET; POST selector linkset_name
and press the Enter key.

where

selector is C, A or S
linkset_name is the name of the linkset

Example of command

```
>CCS;CCS7;C7LKSET;POST C LKSHORE2204WLS1
```

Update the HLIU/HSLR (DLIU) (continued)

7 Inhibit, deactivate, and busy the link for the DLIU being updated. Perform the following steps.

a. Inhibit the link. Type

>INH link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>INH 0
```

Note: The link changes state from InSv to LINH.

b. Busy the link. Type

>BSY link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>BSY 0
```

8 Access the PM level of the MAP display. Type

>PM
and press the Enter key.

9

ATTENTION
Update the HLIU first, then update the HSLR.

Post the PM. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

Example of command

```
>POST HLIU 0
```

Note: The PM posts in-service trouble (ISTb) because of the load mismatch with its inventory table. If the PM does not change to ISTb, confirm the PM inventory table was correctly updated and the correct PM is posted.

Update the HLIU/HSLR (DLIU) (continued)

10 Ensure the PM passes an OOS test and returns to service (RTS). Perform the following steps.

a. Query the HLIU. Type

>QUERYPM

Note: Take note of the default load and the running load. This information may be needed in case of an abort.

and press the Enter key.

b. Busy the PM. Type

>BSY
and press the Enter key.

c. Return the PM to service. Type

>RTS
and press the Enter key.

11 Busy the PM. Type

>BSY
and press the Enter key.

12 Load the PM. Type

>LOADPM
and press the Enter key.

13 Exit the MAP display. Type

>QUIT ALL
and press the Enter key.

14 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the DLIU load update increases administrative time and could lead to service interruption.

a. Access the patch storage device to determine current PRSUs for the PM. Type

>DISKUT;LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume where patches are stored

Example of SLM command

```
>DISKUT;LF S00DPATCH
```

Example of XA-Core command

```
>DISKUT;LF F17LPATCH
```

b. Exit the utility. Type

>QUIT
and press the Enter key.

c. Access the PRSM utility. Type

>PRSM
and press the Enter key.

d. Update the PRSM database. Type

>DBAUDIT pm_type pm_no
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

Example of command

```
>DBAUDIT HLIU 0
```

e. Display the PRSU list. Type

>REPORT DEST pm_type pm_no
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

Example of command

```
>REPORT DEST HLIU 0
```

Update the HLIU/HSLR (DLIU) (continued)

f. Compare the displayed PRSM database for the PM with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the PM	step 14k.
all PRSUs for the new load are not applied to the PM	step 14g.

g. Apply the PRSUs. Type

>APPLY 'prsu_name IN pm_type pm_no
and press the Enter key.

where

prsu_name	is the name of the PRSU (repeat variable as required)
pm_type	is HLIU or HSLR
pm_no	is the number of the PM being updated

Example of command

```
>APPLY 'ABC00ITE | XWS00ITE | RMS00ITE IN HLIU 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied in a set.

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no
and press the Enter key.

where

pm_type	is HLIU or HSLR
pm_no	is the number of the PM being updated

Example of command

```
>DBAUDIT HLIU 0
```

i. Display the PRSU list. Type

>REPORT DEST pm_type pm_no
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

Example of command

```
>REPORT DEST HLIU 0
```

j. Compare the displayed PRSM database for the PM with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 14k.
does not match the PRSM database	step 14g.

k. Exit the utility. Type

>QUIT
and press the Enter key.

15 Post and return the PM to service. Type

>MAPCI;MTC;PM;POST pm_type pm_no;RTS
and press the Enter key.

where

pm_type is HLIU or HSLR
pm_no is the number of the PM being updated

16 Exit the MAP display. Type

>QUIT ALL
and press the Enter key.

If an image	Do
needs to be taken of this PM	step 17
does not need to be taken of this PM	step 19
Note: Take an image of the first PM (HLIU or HSLR) being updated. Office policy and the update schedule determine the need for additional images.	

Update the HLIU/HSLR (DLIU) (continued)

17

ATTENTION

Take an image of the load immediately after PRSU application. Use this image to load any remaining HLIUs or HSLRs. If an image is not taken, PRSUs must be applied manually each time an HLIU or HSLR is loaded.

Use the command "DUMP HCA16BL F02LISLD ACTIVE RETAIN NODE HLIU 0" from within diskut.

18 Determine if the HLIU and HSLR are updated for the DLIU.

If	Do
only the HLIU is updated	step 8
both the HLIU and HSLR are updated	step 19

19 Determine if the DLIU's link was deactivated, busied and inhibited during this procedure.

If the DLIU's link was	Do
deactivated, busied and inhibited	step 20
not deactivated, busied and inhibited	step 24

20 Access the C7LKSET level of the MAP display. Type

>MAPCI;MTC;CCS;CCS7;C7LKSET
and press the Enter key.

21 Post the linkset. Type

>POST selector linkset_name
and press the Enter key.

where

selector is C, A or S
linkset_name is the name of the linkset

Example of command

```
>POST C LKSHORE2204WLS1
```

22 Return to service, activate, and uninhibit the link for the DLIU being updated. Perform the following steps.

a. Return the link to service. Type

>RTS link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>RTS 0
```

b. Activate the link. Type

>ACT link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>ACT 0
```

c. Uninhibit the link. Type

>UINH link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>UINH 0
```

23 Exit the MAP display. Type

>QUIT ALL
and press the Enter key.

24 Review the update checklists for the office. Determine if this DLIU is the last DLIU in the office to be updated with the new load.

If this DLIU is	Do
the last DLIU in the office to be updated with the new load	step 25
not the last DLIU in the office to be updated with the new load	step 26

25 Review the update checklists for the office.

Update the HLIU/HSLR (DLIU) (end)

26 You have updated the HLIU/HSLR (DLIU) and completed this procedure. Review the update schedule.

If there are	Do
additional DLIUs to update during this shift	Return to step 3 and continue to the end of this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no additional PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the ILD

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the firmware in the ISDN line drawer (ILD) for remotes (ILDR).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- An office image has been taken in the last 24 hours.
- All PM logs are enabled.
- The ILD is in-service (InSv).

Required information

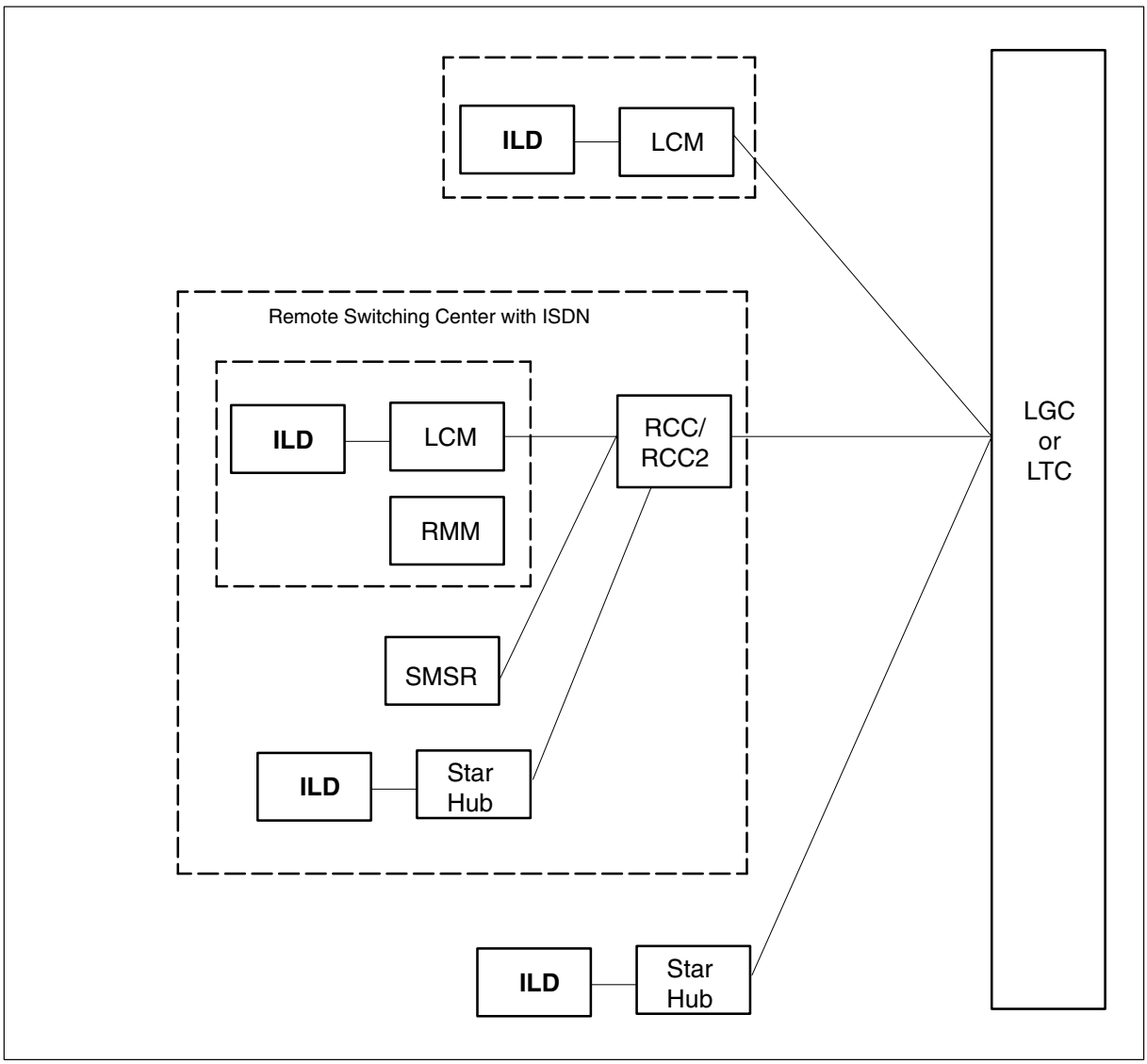
None

Update sequence

The following figure illustrates possible node configurations for the ILD. Serving PMs must be updated after the ILD.

Update the ILD (continued)

Node configuration for ILD

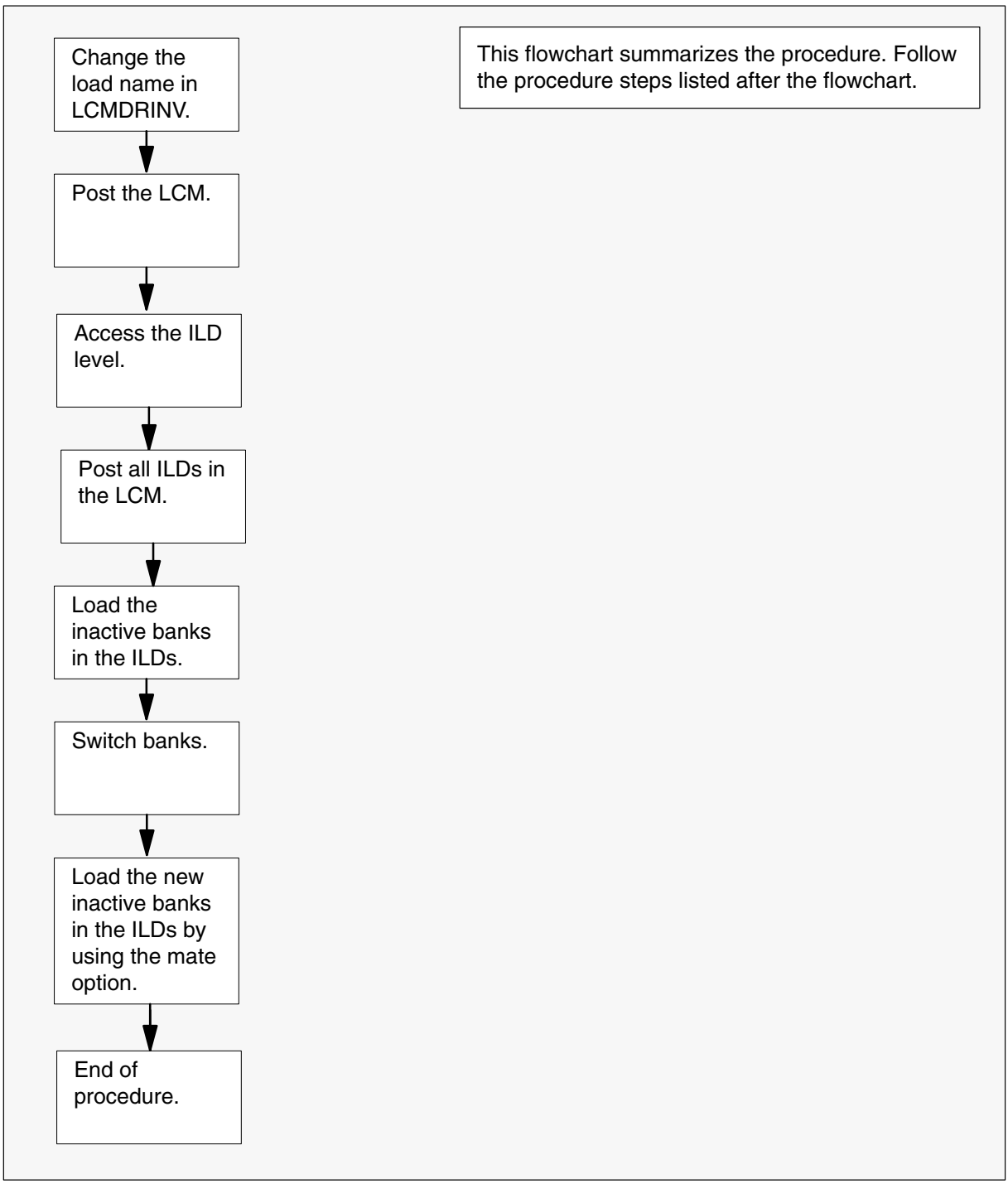


Notes

None

Update the ILD (continued)

Summary of procedure



Update the ILD (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LCM with ILDs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCM drawer inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LCMDRINV
and press the Enter key.

b. Position on the datafill tuple for the ILD to be updated. Type

>POS site_name frame_no lcm_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
lcm_no	is the number of the LCM

Example of MAP response

```
RSCA  00  0
(0  NT6X54AA  NT6X05AA )  (1  NT6X54AA  NT6X05AA)
(2  NT6X54DA  NT6X05DA  IDAA08AL)  (3 NILDRWR )  (4 NILDRWR )
(5  NT6X54AA  NT6X05AA )  (6  NT6X54AA  NT6X05AA)
(7  NT6X54DA  NT6X05DA  IDAA08AL)  (8 NILDRWR )  (9 NILDRWR )  $
```

c. Change the tuple. Type

>CHA
and press the Enter key.

d. Confirm the action. Type

>Y
and press the Enter key.

Example of MAP response

```
DRWRTAB:  0  NT6X54AA  NT6X05AA
```

e. Press the Enter key to scroll through the fields until the field with the ILD firmware load is reached.

Example of MAP response

```
DRWRTAB:  2  NT6X54DA  NT6X05DA  IDAA08AL
```

f. Enter the new load name. Type

>drwr_id idc_pec ild_pec new_load
and press the Enter key.

where

drwr_id	is the physical number of the drawer
idc_pec	is the current NT6X54 PEC
ild_pec	is the current NT6X05 PEC
new_load	is the name of the new load

Example of command

```
>2 NT6X54DA NT6X05DA IDAA09I
```

g. Press the Enter key to scroll through the remaining fields or repeat steps 3b. through 3f. to change the ILD load name in the remaining drawers.

h. Confirm the change. Type

>Y
and press the Enter key.

i. Exit the table. Type

>QUIT
and press the Enter key.

Update the ILD (continued)

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the LCM. Type

>POST LCM site_name frame_no lcm_no
and press the Enter key.

where

site_name	is the site of the LCM
frame_no	is the number of the frame
lcm_no	is the number of the LCM

6 Access the ILD level of the MAP display. Type

>ILD
and press the Enter key.

7 Post all ILDs. Type

>POST ALL
and press the Enter key.

8

ATTENTION

This command changes the maintenance state of the ILD's drawer on the LCM to in-service trouble (ISTb). This change generates log report PM181, a major alarm, and log report PM128. Continue this procedure.

The alarm clears when the ILDs complete loading. Log report PM106 indicates the alarm is cleared.

Load the inactive bank in all the ILDs. Type

>LOADPM ALL
and press the Enter key.

9 Confirm the action. Type

>Y
and press the Enter key.

Note: Wait approximately 15 minutes for the inactive bank to load.

10 Switch banks in the ILDs. Type

>SWBNK
and press the Enter key.

11

ATTENTION

The SWBNK command generates the following MAP display warning message:

```
**WARNING**  A COLD Switch Bank will be performed.
All existing calls will be dropped.

CONTINUE
Please confirm ("YES", "Y", "NO", or "N")
```

Confirm the change. Type

>Y

and press the Enter key.

12

ATTENTION

The LOADPM command changes the maintenance state of the ILD's drawer on the LCM to in-service trouble (ISTb). This change generates log report PM181, a major alarm, and log report PM128. Continue this procedure.

The alarm clears when the ILDs complete loading. Log report PM106 indicates the alarm is cleared.

Load the new inactive bank in all the ILDs. Type

>LOADPM MATE ALL

and press the Enter key.

13 Confirm the action. Type

>Y

and press the Enter key.

Note: Wait approximately one minute for the inactive bank in the ILD to load from the mate bank.

Update the ILD (end)

14 You have updated the ILD and completed this procedure. Review the update schedule.

If there are	Do
additional LCMs with ILDs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the IOM

Application

CAUTION
Possible service interruption
Follow office policy and check devices used for critical services, i.e., CDR recording (DDUs), downstream delivery of billing (MPCs), or site surveillance/ maintenance (printers/console ports), prior to an IOM update. These devices become unavailable when the IOM is set to ManB during the IOM update.

Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the input output module (IOM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The office recorded an office image in the last 24 hours.
- All IOD logs are enabled.
- The IOM is in-service (InSv).
- All REX tests are suspended in the office.
- Determine if the IOM load is a new load for this release. Refer to table PM-to-load cross-reference in chapter “Overview of release.”

  Note: If the IOM load is the same as the office’s previous release, the IOM board does not need to be reprogrammed.

- Call Nortel Networks for the password to gain TOOLSUP access to the UPGIOM command if a new IOM load for this release requires the IOM board to be reprogrammed.

Required information

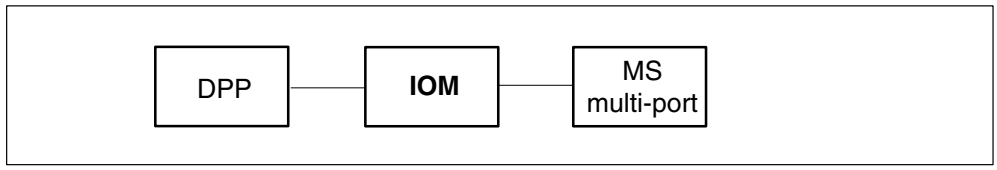
None

Update the IOM (continued)

Update sequence

The following figure illustrates a possible node configuration for the IOM. Serving PMs must be updated after the IOM.

Node configuration for IOM

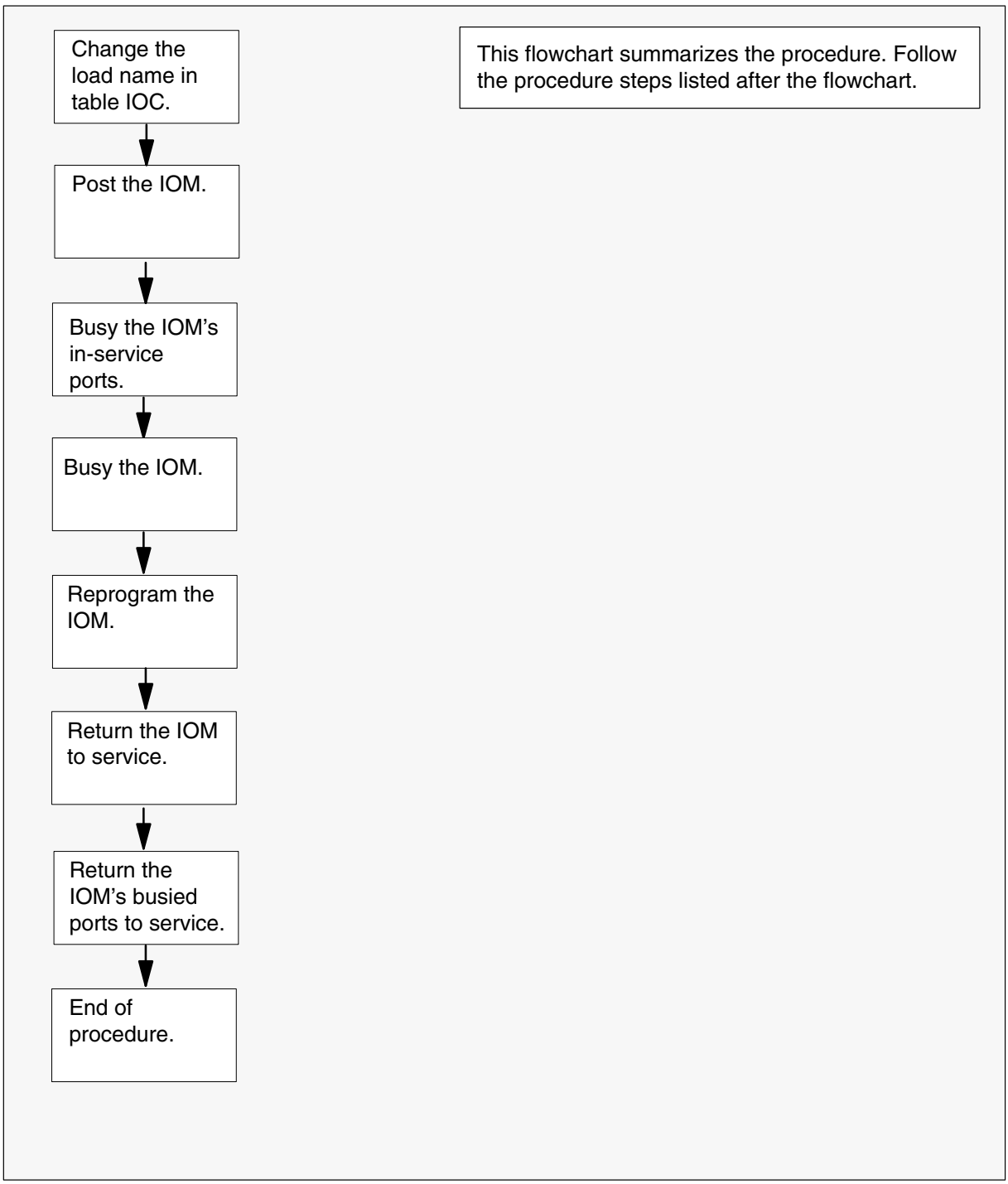


Notes

None

Update the IOM (continued)

Summary of procedure



Update the IOM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another node to update.

At the CI level of the MAP display

1 Select an IOM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the IOC inventory table. Perform the following steps.

a. Open the IOC inventory table. Type

>TABLE IOC
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the IOM. Type

>POS ioc_no
and press the Enter key.

where

ioc_no is the number of the IOM

Example of command

```
>POS 0
```

d. Determine the value entered in field PECINFO from the IOC inventory table print-out.

If the value in PECINFO is	Do
1X61 (IOC)	step 14
FX30 (IOM)	step 3e.

e. Position on field PECINFO. Type

>CHA PECINFO
and press the Enter key.

f. Press the Enter key to scroll through the fields until the MAP display prompts for the DFILE name.

g. Enter the new load name. Type

>new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>IOMRAX01
```

h. Press the Enter key to scroll through the fields until the MAP display prompts for the device name.

i. Enter the name of the device with the new load file. Type

>dev_name
and press the Enter key.

where

dev_name is the name of the device with the new load file

Example of SLM command

```
>S00DPMLOADS
```

Example of XA-Core command

```
>F17LPMLOADS
```

Update the IOM (continued)

j. Confirm the change. Type

>Y
and press the Enter key.

Note: The IOM indicates a MisM (mismatch) condition at the IOC level of the MAP display because of the load mismatch with the inventory table. The MAP display updates within a minute of this condition. Continue this procedure.

k. Close the table. Type

>QUIT
and press the Enter key.

4 Access the IOC level of the MAP display. Type

>MAPCI;MTC;IOD;IOC ioc_no
and press the Enter key.

where

ioc_no is the number of the IOM

Example of command

```
>MAPCI;MTC;IOD;IOC 4
```

5 Busy the IOM's in-service ports. Type

>PORT port_no; BSY
and press the Enter key.

where

port_no is the number of the IOM's in-service port

6 Repeat step 5 for all in-service ports.

7 Return to the IOC level. Type

>QUIT
and press the Enter key.

8 Busy the IOM. Type

>BSY IOC
and press the Enter key.

Update the IOM (continued)

9

WARNING
Possible service degradation
Only trained and qualified operating company personnel should reprogram the IOM board because of access permitted to command(s) that require skilled and knowledgeable users.

CAUTION
Reprogramming the IOM load file
The UPGIOM command downloads the complete IOM load file as specified. The UPGIOM command also provides options for reprogramming the IOM board flash memory.

ATTENTION
The IOM load file must be listed before the UPGIOM command can be used. If necessary, list the volume containing the IOM load file.

Reprogram the IOM board with the new IOM load. Perform the following steps.

a. Access the TOOLSUP utility. Type

>TOOLSUP
and press the Enter key.

b. Access the UPGIOM tool. Type

>ACCESS on UPGIOM
and press the Enter key.

Note: The command response prompts for a password to be entered.

Example of MAP response

```
Enter Password:
```

Update the IOM (continued)

c. Enter the password. Type

>pswd
and press the Enter key.

where

pswd is the password supplied by Nortel Networks

Example of MAP response

```
UPGIOM permitted.
UPGIOM access will expire 48 hours from now.
```

d. Exit the TOOLSUP utility. Type

>QUIT
and press the Enter key.

e. Reprogram the IOM board. Type

>UPGIOM new_load RPGM
and press the Enter key.

where

new_load is the name of the new IOM load

Example of command

```
>UPGIOM IOMRAX01 RPGM
```

Example of MAP response

```
This command will reprogram the IOM on board flash
memory. Proceed with caution.
This IOC is using load file: IOMRAX01
Do you want to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

f. Confirm the action. Type

>Y
and press the Enter key.

If reprogramming the IOM	Do
passes	step 10
fails	Contact the next level of support.

10 Return the IOM to service. Type

>RTS IOC
and press the Enter key.

11 Query the IOM and confirm it has the correct load. Type

>QIOM
and press the Enter key.

If the IOM	Do
has the correct load	step 12
does not have the correct load	Troubleshoot the problem or contact the next level of support.

12 Return the IOM's busied ports to service. Type

>PORT port_no; RTS
and press the Enter key.

where

port_no is the number of the IOM's busied port

13 Repeat step 12 for all IOM ports busied in step 5.

14 You have completed this procedure. Review the update schedule for the office.

If there are	Do
additional IOMs to update during this shift	Repeat this procedure for each IOM.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Update the LCM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Do not use the procedure "Use parallel loading to update LCMs or LCMEs" in this document for remote LCMs. Update each remote LCM individually.

Use this procedure to update a line concentrating module (LCM).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LCM is in-service.
- The LCM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

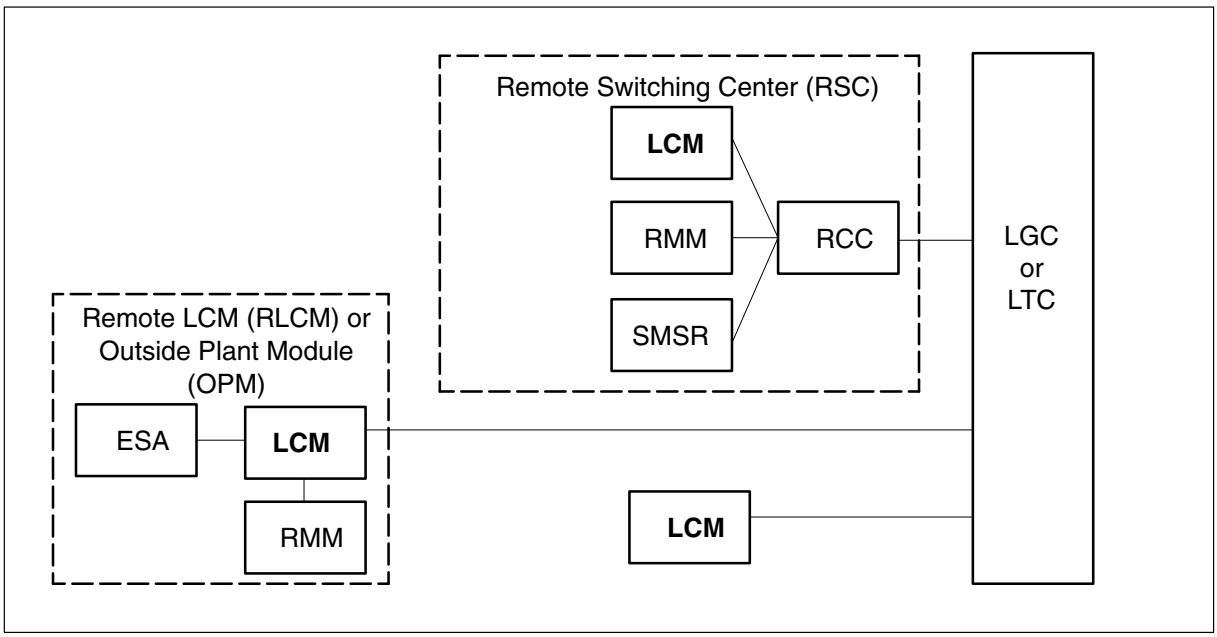
None

Update sequence

The following figure illustrates possible node configurations for the LCM. Subtending PMs must be updated prior to the LCM. Serving PMs must be updated after the LCM.

Update the LCM (continued)

Node configuration for LCM

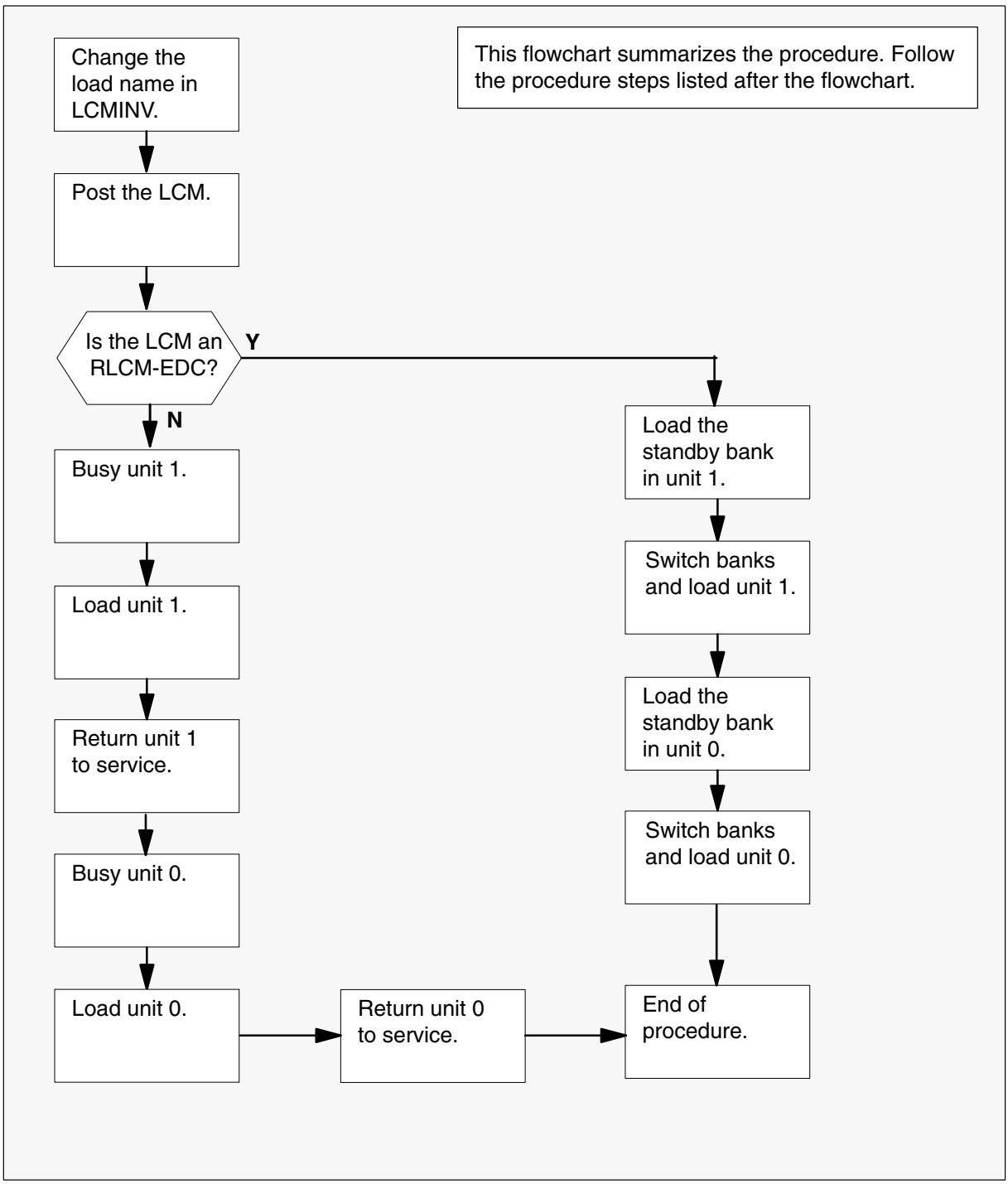


Notes

None

Update the LCM (continued)

Summary of procedure



Update the LCM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LCM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCM inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LCMINV
and press the Enter key.

b. Position on the datafill tuple for the LCM to be updated. Type

>POS site_name frame_no lcm_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
lcm_no	is the number of the PM

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load	is the name of the new load

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The LCM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Exit the table. Type

>QUIT
and press the Enter key.

Update the LCM (continued)

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the PM. Type

>POST LCM site_name frame_no lcm_no
and press the Enter key.

where

site_name	is the site of the LCM
frame_no	is the number of the frame
lcm_no	is the number of the LCM

Note 1: The field SITE_NAME is optional with a host-based LCM.

Note 2: The LCM changes status to ISTb. If the LCM does not change to ISTb, confirm the LCM inventory table is updated correctly and the correct LCM is posted. Do not continue this procedure until the LCM is ISTb.

If the PM being updated is	Do
an RLCM-EDC	step 6
not an RLCM-EDC	step 7
Note: An RLCM-EDC is equipped with an NT6X51BA processor card. Contact your next level of support if unable to determine the LCM type.	

6 Load the PM. Perform the following steps.

a. Load the standby bank in unit 1 with the new load. Type

>LOADPM UNIT 1 CC
and press the Enter key.

b. Switch banks and load the PM from the newly active bank. Type

>SWLOAD UNIT 1
and press the Enter key.

c. Load the standby bank in unit 0 with the new load. Type

>LOADPM UNIT 0 CC
and press the Enter key.

d. Switch banks and load the PM from the newly active bank. Type

>SWLOAD UNIT 0
and press the Enter key.

e. Go to step 8.

7 Load the PM with the new load. Perform the following steps.

a. Busy unit 1. Type

>BSY UNIT 1
and press the Enter key.

b. Load unit 1. Type

>LOADPM UNIT 1 CC
and press the Enter key.

c. Return unit 1 to service. Type

>RTS UNIT 1
and press the Enter key.

d. Busy unit 0. Type

>BSY UNIT 0
and press the Enter key.

e. Load unit 0. Type

>LOADPM UNIT 0 CC
and press the Enter key.

f. Return unit 1 to service. Type

>RTS UNIT 0
and press the Enter key.

8 You have updated the LCM and completed this procedure. Review the update schedule.

If there are	Do
additional LCMs to update during this shift	Repeat this procedure or follow the recommendations in “Overview of update process” and use parallel loading on the remaining LCMs.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the LCME

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Do not use the procedure "Use parallel loading to update LCMs or LCMEs" in this document for remote LCMEs. Update each remote LCME individually.

Use this procedure to update the enhanced line concentrating module with ISDN (LCME).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LCME is in-service (InSv).
- The LCME passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

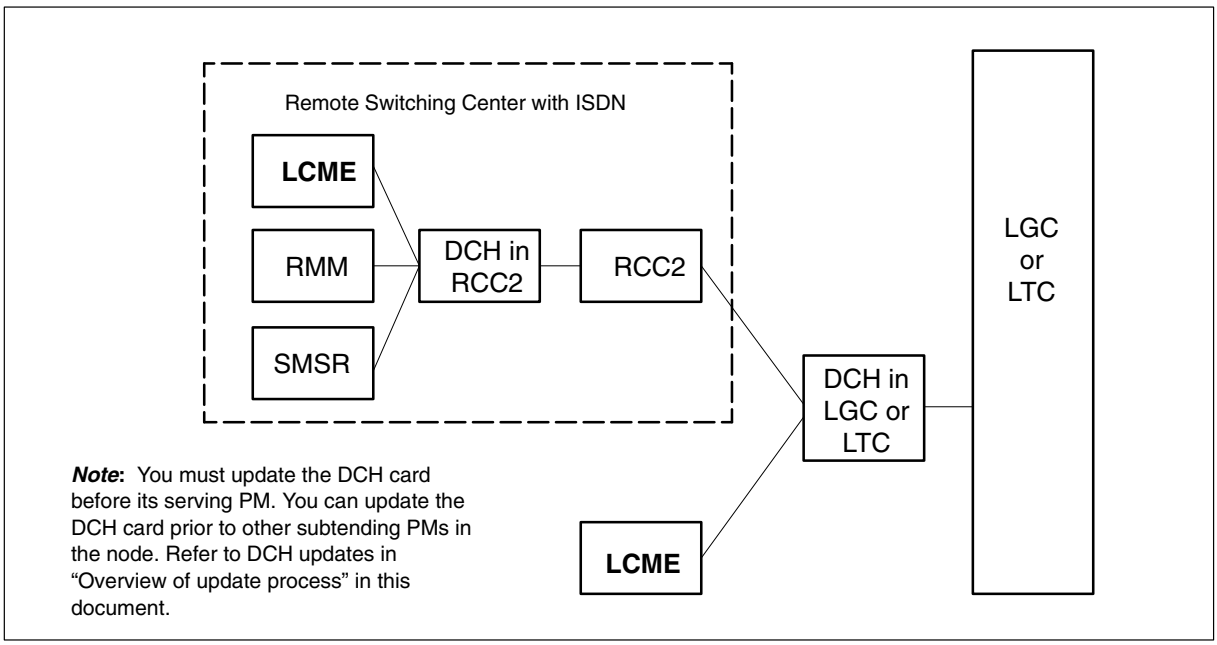
None

Update sequence

The following figure illustrates a possible node configuration for the LCME. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Update the LCME (continued)

Node configuration for LCME

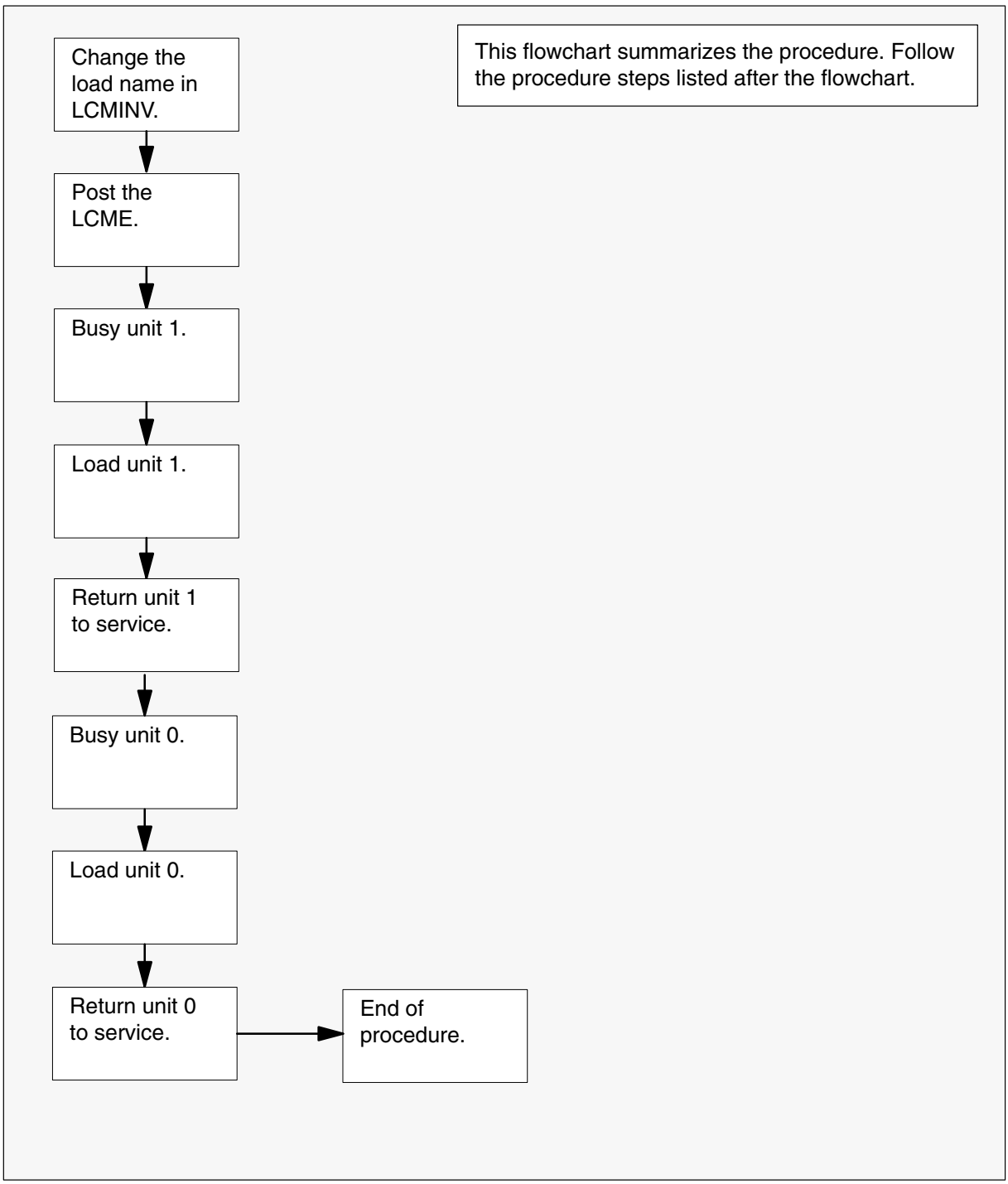


Notes

None

Update the LCME (continued)

Summary of procedure



Update the LCME (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LCME to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCME inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LCMINV
and press the Enter key.

b. Position on the datafill tuple for the LCME to be updated. Type

>POS site_name frame_no lcme_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
lcme_no	is the number of the LCME

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load	is the name of the new load

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The LCME changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

Update the LCME (continued)

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the PM. Type

>POST LCME site_name frame_no lcme_no
and press the Enter key.

where

site_name	is the site of the LCME
frame_no	is the number of the frame
lcme_no	is the number of the LCME

Note 1: The field SITE_NAME is optional with a host-based LCME.

Note 2: The LCME changes status to ISTb. If the LCME does not change to ISTb, confirm the LCME inventory table is updated correctly and the correct LCME is posted. Do not continue this procedure until the LCME is ISTb.

6 Busy unit 1. Type

>BSY UNIT 1
and press the Enter key.

7 Load unit 1. Type

>LOADPM UNIT 1 CC
and press the Enter key.

8 Return unit 1 to service. Type

>RTS UNIT 1
and press the Enter key.

9 Busy unit 0. Type

>BSY UNIT 0
and press the Enter key.

10 Load unit 0. Type

>LOADPM UNIT 0 CC
and press the Enter key.

11 Return unit 0 to service. Type

>RTS UNIT 0
and press the Enter key.

Update the LCME (end)

12 You have updated the LCME and completed this procedure. Review the update schedule.

If there are	Do
additional LCMEs to update during this shift	Repeat this procedure or follow the recommendations in “Overview of update process” and use parallel loading on the remaining LCMEs.
other PMs or hardware types to update during this shift	Go to the update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the LGC or LGCI

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this LGC or LGCI has a peripheral remote loader (PRL) circuit card, use this procedure to update the first LGC or LGCI in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining LGCs or LGCIs.

Use this procedure to update the line group controller (LGC) or LGC with ISDN (LGCI).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the LGC or LGCI are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LGC or LGCI is in-service (InSv).
- The LGC or LGCI passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?

Update the LGC or LGCI (continued)

- Is the new LGC or LGCI load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

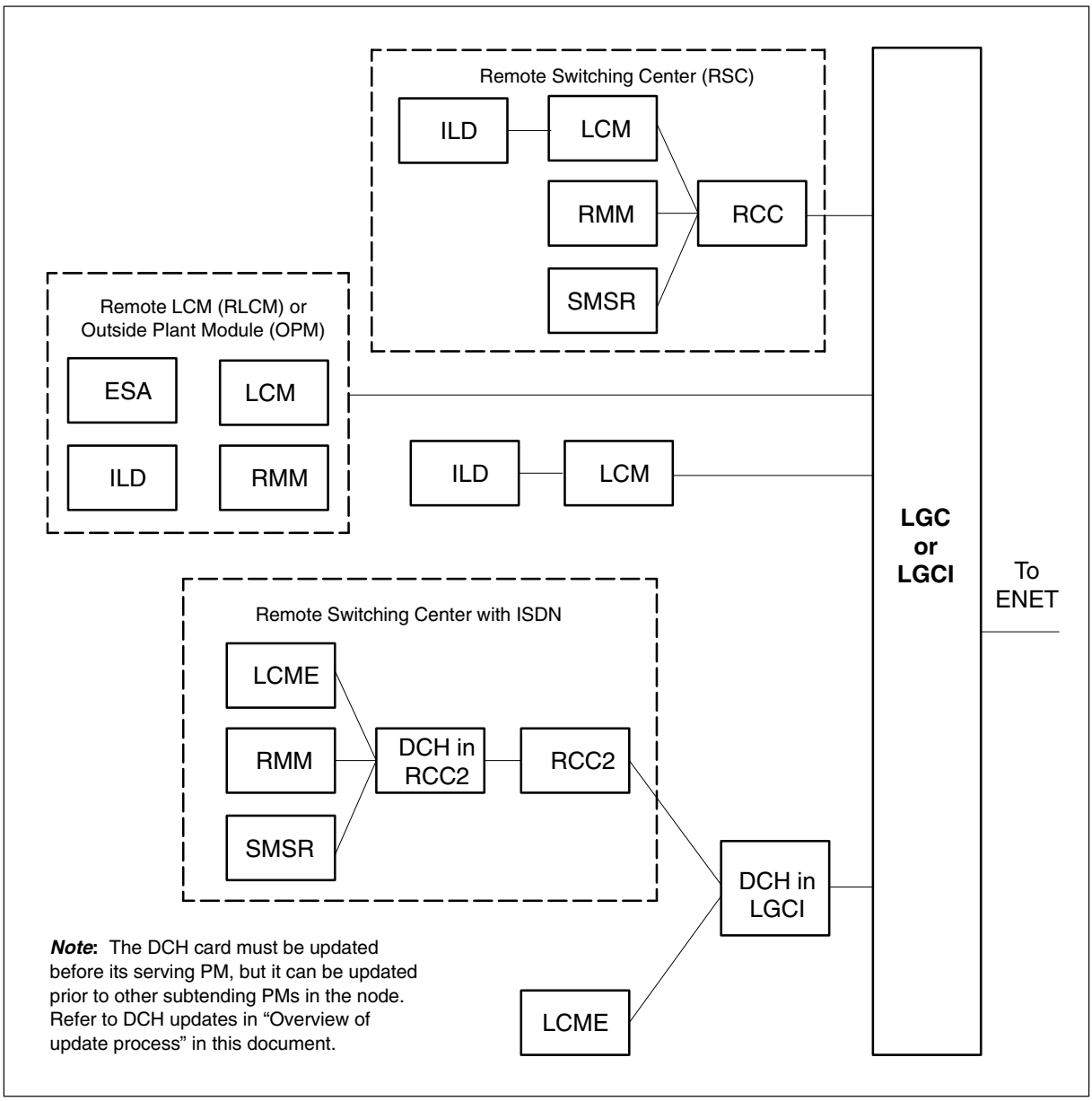
For assistance, refer to chapters “Overview of release” and “Overview of manual update process.”

Update sequence

The following figure illustrates a possible node configuration for the LGC or LGCI. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Update the LGC or LGCI (continued)

Node configuration for LGC

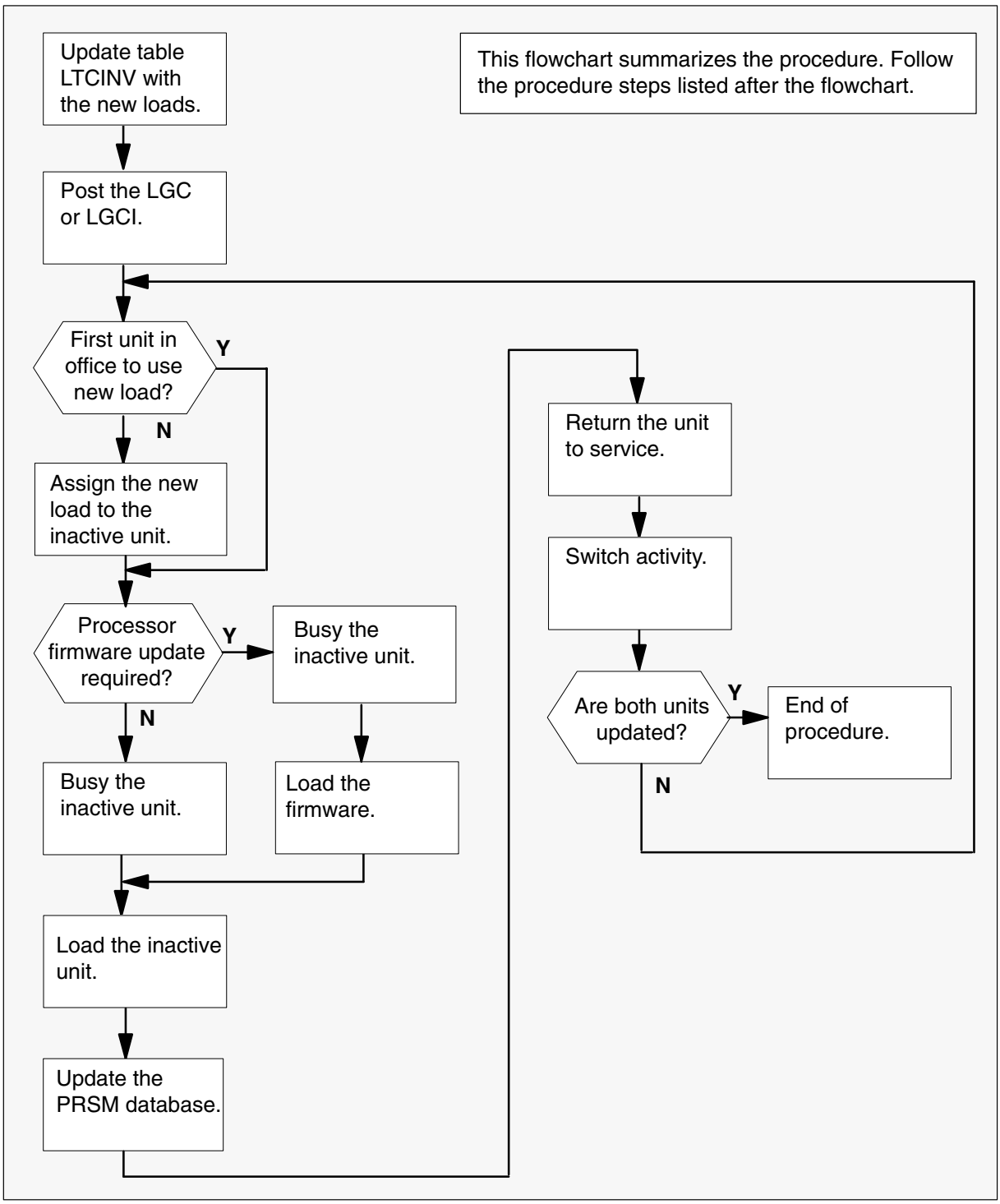


Notes

None

Update the LGC or LGCI (continued)

Summary of procedure



Update the LGC or LGCI (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LGC or LGCI to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LGC or LGCI inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the LGC or LGCI. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is LGC or LGCI
pm_no is the number of the LGC or LGCI

Example of command

```
>POS LGC 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The LGC or LGCI changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the LGC or LGCI (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the name of the new CMR load

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the LGC or LGCI. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI

Example of command

```
>POST LGC 0
```

Note: The LGC or LGCI changes status to ISTb. If the LGC or LGCI does not change to ISTb, confirm the LGC or LGCI inventory table is updated correctly and the correct LGC or LGCI is posted. Do not continue this procedure until the LGC or LGCI is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

Update the LGC or LGCI (continued)

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET LGC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

Update the LGC or LGCI (continued)

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the LGC or LGCI (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT LGC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST LGC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the LGC or LGCI (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN LGC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN LGC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT LGC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is LGC or LGCI
pm_no	is the number of the LGC or LGCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST LGC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

Update the LGC or LGCI (end)

25 Wait for the MAP display to show the unit is InSv. This ensures that superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the LGC or LGCI and completed this procedure. Review the update schedule for the office.

If there are	Do
additional LGCs or LGCIs to update during this shift	Follow the guidelines in "Overview of update process" in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining LGCs or LGCIs.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Update the LIM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the link interface module (LIM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LIM is in-service (InSv).
- The LIM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this LIM?

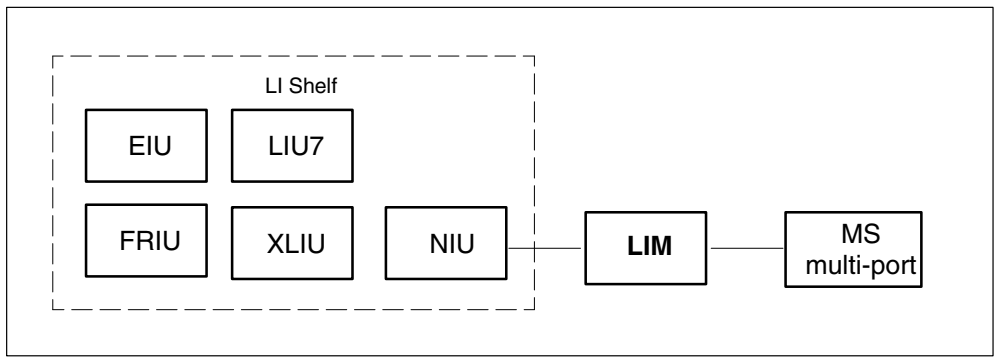
For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update the LIM (continued)

Update sequence

The following figure illustrates a possible node configuration for the LIM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for LIM



If automated directory assistance service (ADAS) PMs are updated with this office update, the LIM update must be coordinated with the ADAS PM update. Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for the correct update sequence.

Notes

The following notes apply to the LIM update procedure.

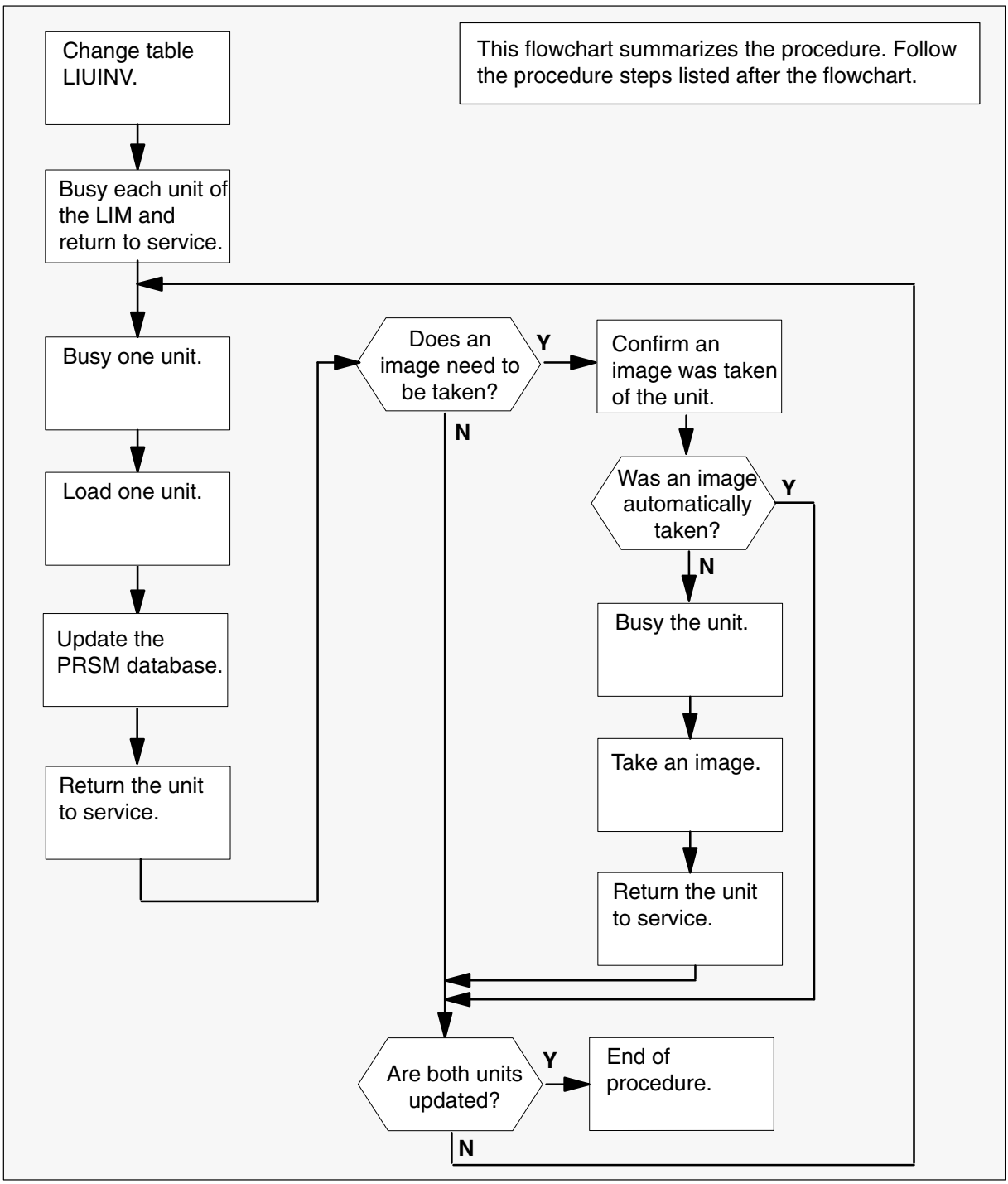
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the LIM update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the LIM (continued)

Summary of procedure



Update the LIM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LIM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LIM inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LIMINV
and press the Enter key.

b. Position on the datafill tuple for the LIM to be updated. Type

>POS lim_no
and press the Enter key.

where

lim_no is the number of the LIM

Example of command

```
>POS 5
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD LPC12BF
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The LIM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the LIM. Type

>POST LIM lim_no
and press the Enter key.

where

lim_no is the number of the LIM

Example of command

```
>POST LIM 5
```

Note: The LIM changes status to ISTb. If the LIM does not change to ISTb, confirm the LIM inventory table is updated correctly and the correct LIM is posted. Do not continue this procedure until the LIM is ISTb.

6 Ensure the LIM passes an out-of-service test and returns to service. Perform the following steps.

a. Busy unit 1. Type

>BSY UNIT 1
and press the Enter key.

b. Return unit 1 to service. Type

>RTS UNIT 1
and press the Enter key.

Note: Wait for the MAP display to show InSv for unit 1.

c. Busy unit 0. Type

>BSY UNIT 0
and press the Enter key.

d. Return unit 0 to service. Type

>RTS UNIT 0
and press the Enter key.

Update the LIM (continued)

7 Busy one LIM unit to update. Type

>BSY UNIT unit_no
and press the Enter key.

where

unit_no is the number of the LIM

Example of command

```
>BSY UNIT 1
```

8 Load the unit. Type

>LOADPM UNIT unit_no
and press the Enter key.

where

unit_no is the number of the LIM

Example of command

```
>LOADPM UNIT 1
```

9 Confirm the PRSU status of the LIM. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT LIM pm_no unit_no
and press the Enter key.

where

pm_no is the number of the LIM
unit_no is the number of the unit

Example of command

```
>DBAUDIT LIM 5 1
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST LIM pm_no unit_no
and press the Enter key.

where

pm_no	is the number of the LIM
unit_no	is the number of the unit

Example of command

```
>REPORT DEST LIM 5 1
```

d. Confirm all PRSUs for the new load are applied to the LIM.

If	Do
all PRSUs for the new load are applied	step 9i.
all PRSUs for the new load are not applied	step 9e.
PRSUs from the previous load are listed at VA status	step 9b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 9i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN LIM pm_no unit_no
and press the Enter key.

where

prsu_name	is the name of the PRSU (repeat variable as required)
pm_no	is the number of the PM
unit_no	is the number of the unit

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN LIM 5 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the LIM (continued)

f. Update the PRSM database. Type

>DBAUDIT LIM pm_no unit_no
and press the Enter key.

where

pm_no	is the number of the LIM
unit_no	is the number of the unit

Example of command

```
>DBAUDIT LIM 5 1
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

g. Display the PRSU list. Type

>REPORT DEST LIM pm_no unit_no
and press the Enter key.

where

pm_no	is the number of the LIM
unit_no	is the number of the unit

Example of command

```
>REPORT DEST LIM 5 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 9i.
does not match the PRSM database	step 9e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

10 Return the unit to service. Type

>RTS UNIT unit_no
and press the Enter key.

where

unit_no is the number of the unit

Example of command

```
>RTS UNIT 1
```

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this unit	step 11
does not need to be taken of this unit	step 20
Note: Take an image of the first LIM unit that is updated. Office policy and the update schedule determine the need for additional images.	

11 Confirm an image was automatically taken of the LIM. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file. Confirm an image was automatically taken of the LIM.

If an image	Do
was automatically taken	step 20
was not automatically taken	step 12

Note: If an image of the LIM was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

Update the LIM (continued)

12

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining LIMs. If an image is not taken, PRSUs must be applied manually each time an LIM is loaded.

Enter the disk utility. Type

>DISKUT
and press the Enter key.

13 Take an image of the LIM with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE LIM lim_no unit_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device where the image is stored
lim_no	is the number of the LIM
unit_no	is the number of the LIM unit

Example of SLM command

```
>DUMP LPC12BF S00DPMLOADS ACTIVE RETAIN NODE LIM 5 1
```

Example of XA-Core command

```
>DUMP LPC12BF S00DPMLOADS ACTIVE RETAIN NODE LIM 5 1
```

14 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_LIM" appends to the file name, for example, `LPC12BF_LIM`.

15 Delete the original LIM load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file is the name of the original load file

Example of command

```
>DDF LPC12BF
```

16 Confirm the action. Type

>Y
and press the Enter key.

17 Eliiminate the "_LIM" extension on the new LIM load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name is the name of the current LIM load file
new_name is the name of the current LIM load file without the "_LIM" extension

Example of command

```
>RNF LPC12BF_LIM LPC12BF
```

18 Exit the disk utility. Type

>QUIT
and press the Enter key.

19 Perform a NIL change to the LIM load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name is the name of the LIM load

Example of command

```
>POS LPC12BF
```

Update the LIM (end)

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows the confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

20 Determine if both LIM units are updated.

If	Do
one unit of the LIM is updated	Return to step 7 and continue to the end of this procedure.
both units of the LIM are updated	step 21

21 You have updated the LIM and completed this procedure. Review the update schedule.

If there are	Do
additional LIMs to update during this shift	Repeat this procedure for each LIM.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the LIU7

Application

Use this procedure to update a CCS7 link interface unit (LIU7).

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

CAUTION
Possible service interruption
If the LIU7 being upgraded is provisioned in an STP office, do not reload the office with an image of an LIU7 taken from another office. Only reload the office with the image of the LIU7 for that office.

ATTENTION

If your Succession network requires LIU7s configured as external routers, proceed to the CCS;CCS7:C7Router level of the MAP to busy out the LIU in preparation for the software upgrade.

Update the load change in table LIUINV.

Reload the LIU and return the PM to service (RTS).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LIU7 is in-service (InSv).
- The LIU7 passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Update the LIU7 (continued)

- At the C7 router level, make sure the external routers are in service.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

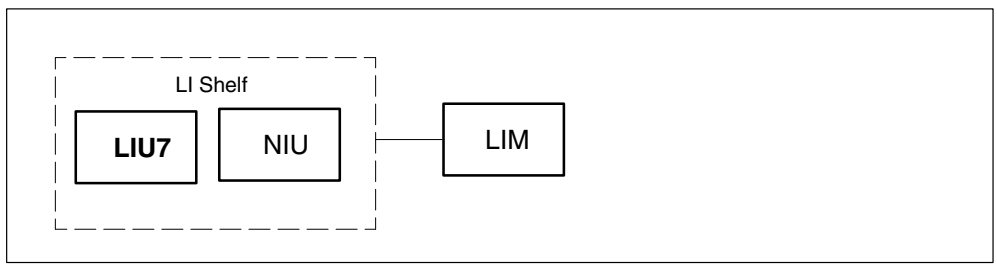
- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this PM?

For assistance, refer to chapters "Overview of release" and "Overview of update process."

Update sequence

The following figure illustrates a possible node configuration for the LIU7. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order. Update the LIM as soon as possible after all its subtending PMs, including the LIU7, are updated successfully.

Node configuration for LIU7



If automated directory assistance service (ADAS) PMs are updated with this office update, the LIU7 update must be coordinated with the ADAS PM update. Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for the correct update sequence.

If a network interface unit (NIU) provides channelized access to the LIU7, the NIU is a serving PM. Update the NIU after the LIU7.

Notes

The following notes apply to the LIU7 update procedure.

SS7 node isolation

WARNING
Possible SS7 node isolation
Do not attempt to update the LIU7 if one of its links cannot be inhibited. Do not busy the link if it cannot be inhibited. SS7 node isolation can result.

Possible reasons why a link cannot inhibit include the following:

- The link from the node at the other end of the link to be inhibited to the mate signaling transfer point (STP) is out-of-service.
- There is no alternate route through C links entered in table C7RESET, because of a translations error in the STP, the mate STP, or the LIU7.
- The C-links are out-of-service or the routeset to the mate STP is out-of-service.

A link

When the LIU7 is busied, its associated A links can be briefly removed from service. No more than one A link at a time should be removed from service.

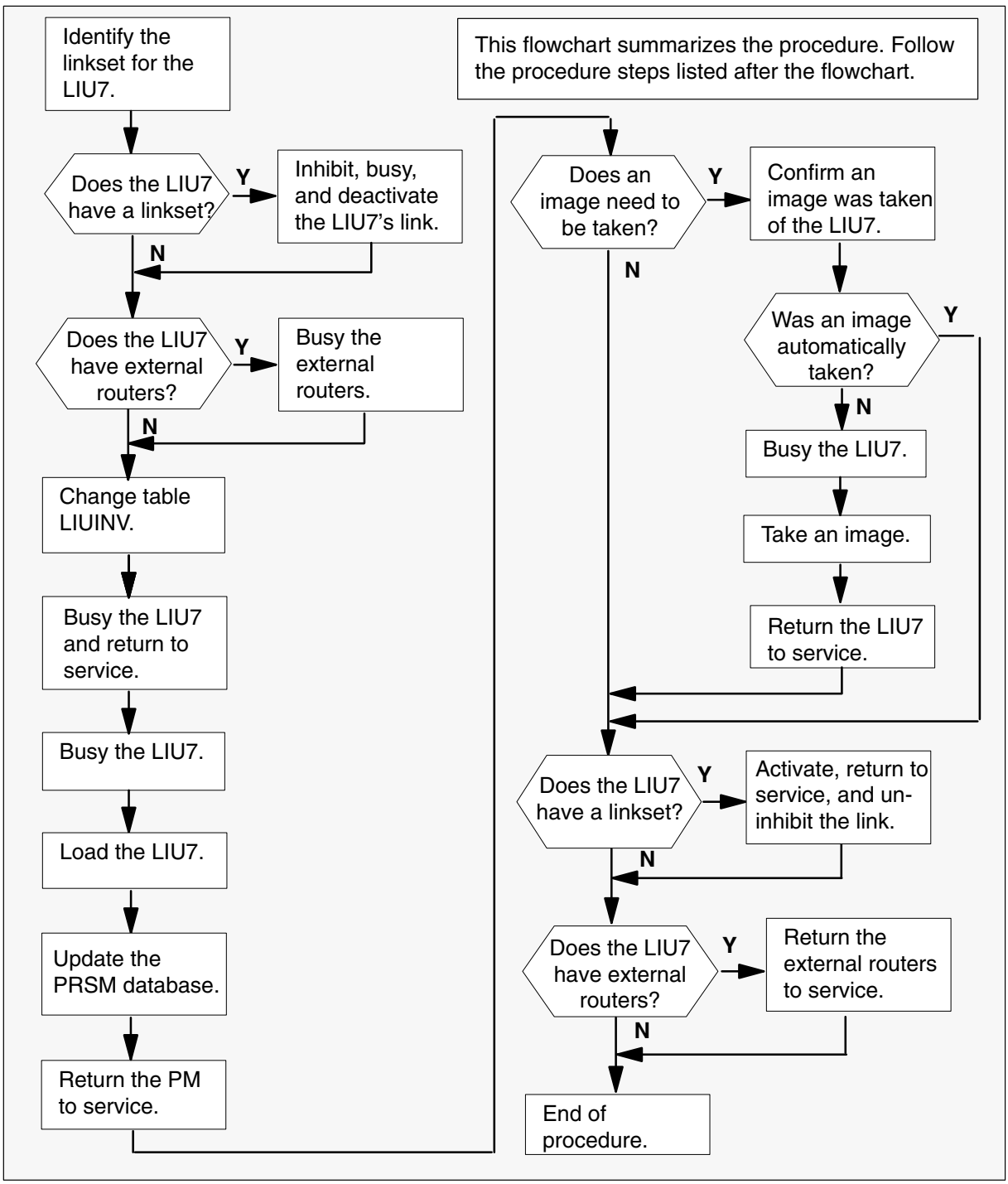
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the LIU7 update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the LIU7 (continued)

Summary of procedure



Update the LIU7 (continued)

Steps of procedure

ATTENTION
Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LIU7 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

ATTENTION
During this procedure, a new LIU7 image will be taken, and the data will be updated in table PMLOADS for each processor type (EX22BA/BB and/or EX22CA). Once the image process is complete (steps 14–23), all remaining LIU7s with the same processor type can be loaded from the new image.

WARNING
Multiple LIU7s that have links or routers associated with them should not be upgraded concurrently.

3 Identify all office LIU7s and associated linksets. Perform the following steps.

a.

ATTENTION
If table C7LINK was printed during a previous LIU7 or dual-link interface unit (DLIU) update, go to step 3f.

Send the terminal response to a printer. Type

>RECORD START ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Update the LIU7 (continued)

Example of command

```
>RECORD START ONTO PRNTR1
```

b. Open table LIUINV. Type

>TABLE LIUINV
and press the Enter key.

c. List the contents. Type

>LIST ALL
and press the Enter key.

d. Open table C7LINK. Type

>TABLE C7LINK
and press the Enter key.

e. List the contents. Type

>LIST ALL
and press the Enter key.

f. Open table C7ROUTER. Type

>TABLE C7ROUTER
and press the Enter key.

g. List the contents. Type

>LIST ALL
and press the Enter key.

h. Close all tables. Type

>QUIT ALL
and press the Enter key.

i. Stop the output to the printer. Type

>RECORD STOP ONTO prntr_name
and press the Enter key.

where

prntr_name is the name of the printer

Example of command

```
>RECORD STOP ONTO PRNTR1
```

Update the LIU7 (continued)

4 Identify and update the LIU7. Perform the following steps.

a. Open the inventory table. Type

>TABLE LIUINV
and press the Enter key.

b. Position on the datafill tuple for the LIU7 to be updated. Type

>POS LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>POS LIU7 0
```

c.

CAUTION
Possible service interruption
Review the PM-to-load cross-reference table in "Overview of release" in this document and confirm each type of LIU7 is updated with the correct load. An LIU7 updated with an incorrect load can lead to a service outage.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD LRS12BI
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The LIU7 changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

Update the LIU7 (continued)

5 Access the MTC level of the MAP display. Type

>MAPCI;MTC
and press the Enter key.

If the LIU7	Do
has a link allocated	step 6
has a router instance	step 7
does not have a link or router instance	step 8

6

WARNING
Possible SS7 node isolation
Do not attempt to update the LIU7 if one of its links cannot be inhibited. Do not busy the link if it can not be inhibited. SS7 node isolation can result.

ATTENTION
This procedure should only be performed on **one** LIU7 and its associated link at a time.

a. Access the C7LKSET level and post the linkset. Type

>CCS; CCS7; C7LKSET; POST selector linkset_name
and press the Enter key.

where

selector is C (linkset name)
A (alarm state)
or S (linkset state)
linkset_name is the name of the linkset

Example of command

```
>CCS;CCS7; C7LKSET; POST C LKSHORE2204WLS1
```

b. Inhibit, busy, and deactivate the link for the LIU7. Perform the following steps.

c. Inhibit the link. Type

>INH link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>INH 0
```

Note: The link changes state from InSv to link inhibited (LINH).

d. Repeat step 6c. for each in-service link for the LIU7.

e. Busy the link. Type

>BSY link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>BSY 0
```

f. Repeat step 6e. for each link in the linkset.

g. Deactivate the link. Type

>DEACT link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>DEACT 0
```

h. Repeat step 6g for each link in the linkset.

i. After verifying the link is deactivated, proceed to step 8.

Update the LIU7 (continued)

7

WARNING
Possible SS7 node isolation
Do not attempt to update the LIU7 if one of its links cannot be inhibited. Do not busy the link if it can not be inhibited. SS7 node isolation can result.

ATTENTION
This procedure should only be performed on **one** LIU7 and its associated link at a time.

a. Access the C7ROUTER level and post the router instance. Type

>CCS; CCS7; C7ROUTER; POST router instance
and press the Enter key.

where

router instance is the key (index) associated with the LIU7 in table C7ROUTER.

Example of command

```
>CCS;CCS7; C7ROUTER; POST 1
```

b. Busy the router instance for the LIU7. Type.

>BSY
and press the Enter key.

Note: The instance changes state from InSv to MANB.

8 Access the PM level of the MAP display. Type

>PM
and press the Enter key.

9 Post the LIU7. Type

>POST LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>POST LIU7 0
```

Note: The LIU7 changes status to ISTb. If the LIU7 does not change to ISTb, confirm the LIU7 inventory table is updated correctly and the correct LIU7 is posted. Do not continue this procedure until the LIU7 is ISTb.

10 Ensure the LIU7 passes an out-of-service test and returns to service. Perform the following steps.

WARNING
Possible SS7 node isolation
Ensure the LIU7, linkset or router instance has been placed in the appropriate state (if allocated) before proceeding.

a. Busy the LIU7. Type

>BSY
and press the Enter key.

b. Return the LIU7 to service. Type

>RTS
and press the Enter key.

11 Busy the LIU7. Type

>BSY
and press the Enter key.

12 Load the LIU7. Type

>LOADPM
and press the Enter key.

NOTE: Steps 13–23 are used to take an image of the new LIU7 load. If you have completed this procedure for another LIU7 using the same load, you may skip to step 24.

Update the LIU7 (continued)

13 Confirm the PRSU status of the LIU7. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>DBAUDIT LIU7 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>REPORT LIU7 0
```

d. Confirm all PRSUs for the new load are applied to the LIU7.

If	Do
all PRSUs for the new load are applied	step 13i.
all PRSUs for the new load are not applied	step 13e.
PRSUs from the previous load are listed at VA status	step 13b (If a DBAUDIT was performed, contact the next level of support.)
PRSUs from the previous load are listed at NV status	step 13i (The PRSM daily FILEAUDIT removes these PRSUs.)

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN LIU7 liu7_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
liu7_no is the number of the LIU7

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN LIU7 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the LIU7 (continued)

f. Update the PRSM database. Type

>DBAUDIT LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>DBAUDIT LIU7 0
```

Note: PRSUs from the previous release can remain at NV status. the daily FILEAUDIT removes these PRSUs.

g. Display the PRSU list. Type

>REPORT DEST LIU7 liu7_no
and press the Enter key.

where

liu7_no is the number of the LIU7

Example of command

```
>REPORT LIU7 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 13i.
does not match the PRSM database	step 13e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

14 Return the LIU7 to service. Type

>RTS
and press the Enter key.

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this LIU7	step 15
does not need to be taken of this LIU7	step 24
Note: Take an image of the first LIU7 to be updated. Office policy and the update schedule determine the need for additional images.	

15 Confirm an image was automatically taken of the LIU7. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file and confirm an image was automatically taken of the PM.

If an image of the PM	Do
was automatically taken	step 24
was not automatically taken	step 16

Note: If an image of the LIU7 was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

Update the LIU7 (continued)

16

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining LIU7s. If an image is not taken, PRSUs must be applied manually each time an LIU7 is loaded.

Enter the disk utility. Type

>DISKUT
and press the Enter key.

17 Take an image of the LIU7 with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE LIU7 liu7_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device where the image is stored
liu7_no	is the number of the LIU7

Example of SLM command

```
>DUMP LRS12BI S00DPMLOADS ACTIVE RETAIN NODE LIU7 0
```

Example of XA-Core command

```
>DUMP LRS12BI F17LPMLOADS ACTIVE RETAIN NODE LIU7 0
```

18 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_LIU7" appends to the file name, for example, `LRS12BI_LIU7`.

19 Delete the original LIU7 load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file is the name of the original LIU7 load file

Example of command

```
>DDF LRS12BI
```

20 Confirm the action. Type

>Y
and press the Enter key.

21 Eliminate the "_LIU7" extension on the new LIU7 load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name is the name of the current LIU7 load file
new_name is the name of the current LIU7 load file without the "_LIU7" extension

Example of command

```
>RNF LRS12BI_LIU7 LRS12BI
```

22 Exit the disk utility. Type

>QUIT
and press the Enter key.

23 Perform a NIL change to the LIU7 load file in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name is the name of the LIU7 load

Example of command

```
>POS LRS12BI
```

Update the LIU7 (continued)

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows a confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

At this point, the LIU7 image procedure is complete.

24 If you just completed step 14, the LIU7 should be in-service. Determine if the LIU7s linksets were deactivated, busied and inhibited during this procedure, or if the router instance was busied.

If this LIU	Do
is allocated to a LINKSET	step 25
is allocated as a C7ROUTER	step 28
is neither a link nor a router instance	return LIU7 to the Office Record state (INSV, MANB, OFFL)

25 Access the C7LKSET level of the MAP display. Type

>CCS; CCS7; C7LKSET
and press the Enter key.

26 Post the linkset. Type

>POST selector linkset_name
and press the Enter key.

where

selector is C (linkset name)
A (alarm state)

or S (linkset state)

linkset_name is the name of the linkset

Example of command

```
>POST C LKSHORE2204WLS1
```

If this LIU7's link is	Do
deactivated, busied, and inhibited	proceed to step 27
not deactivated, busied, and inhibited, and the link is in-service	step 32

27 Activate, return to service, and uninhibit each link. Perform the following steps.

a. Activate one of the links. Type

>ACT link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>ACT 0
```

b. Repeat step 27a. for each busied link.

c. Return one of the links to service. Type

>RTS link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>RTS 0
```

d. Repeat step 27c. for each in-service link in the linkset.

e. Uninhibit one of the links. Type

>UINH link_no
and press the Enter key.

where

link_no is the number of the link

Example of command

```
>UINH 0
```

Update the LIU7 (continued)

f. Repeat step 27e. for each link in the linkset.

g. Return to the PM level. Type

>PM
and press the Enter key.

h. Proceed to step 32.

28 Determine if the LIU7's router instance was busied during this procedure.

29 Access the C7ROUTER level of the MAP display. Type

>CCS; CCS7; C7ROUTER
and press the Enter key.

30 Post the router instance. Type

>POST router_instance
and press the Enter key.

where

router_instance is the router key (index) from table C7ROUTER allocated to the LIU7 just upgraded.

Example of command

```
>POST 1
```

If this LIU7's router instance was	Do
busied	step 31
not busied, and is in–service	step 32

31 RTS the router instance for the LIU7. Type

>RTS
and press the Enter key.

Note: The instance changes state from MANB to InSv.

32 You have updated the LIU7 and completed this procedure. Review table LIUINV, and repeat this procedure for each LIU7. After you have completed the LIU7 image for each processor type (EX22BA/BB and/or EX22CA) you will not need to repeat the image procedure to load the remaining LIU7s.

If there are	Do
additional LIU7s to update during this shift	Repeat this procedure for each LIU7. Return to step 4.
no additional LIU7s to update	Insure all LIU7s and associated linksets and router instances are ACTIVATED and INSV.

When all steps required to update the LIU7 are complete, continue as follows.

If there are	Do
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the LM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the line module (LM) or the remote line module (RLM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LM is in-service (InSv).
- All REX tests are suspended in the office.

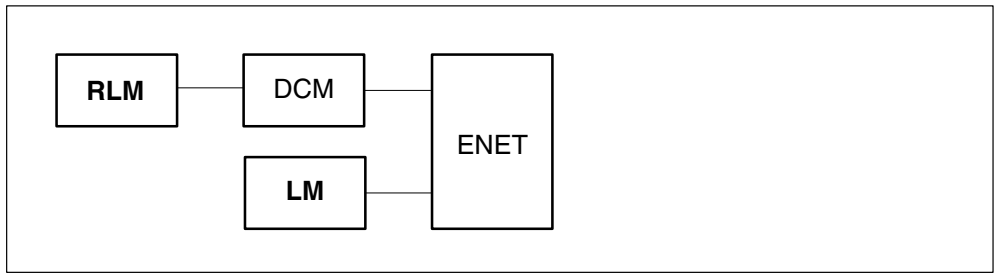
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the LM. Serving PMs must be updated after the LM or RLM.

Node configuration for LM



Note 1: Only a remote DCM can have a remote line module (RLM) as a subtending PM.

Note 2: An RLM can have an emergency stand-alone (ESA) as a subtending PM. If so, the ESA must be updated prior to the RLM.

Notes

An RLM update must be coordinated with its associated remote digital carrier module (DCM). If both PMs require an update, use the following update sequence:

1 Busy the RLM.

2 Busy the remote DCM.

3 Update the remote DCM.

4 Return the remote DCM to service.

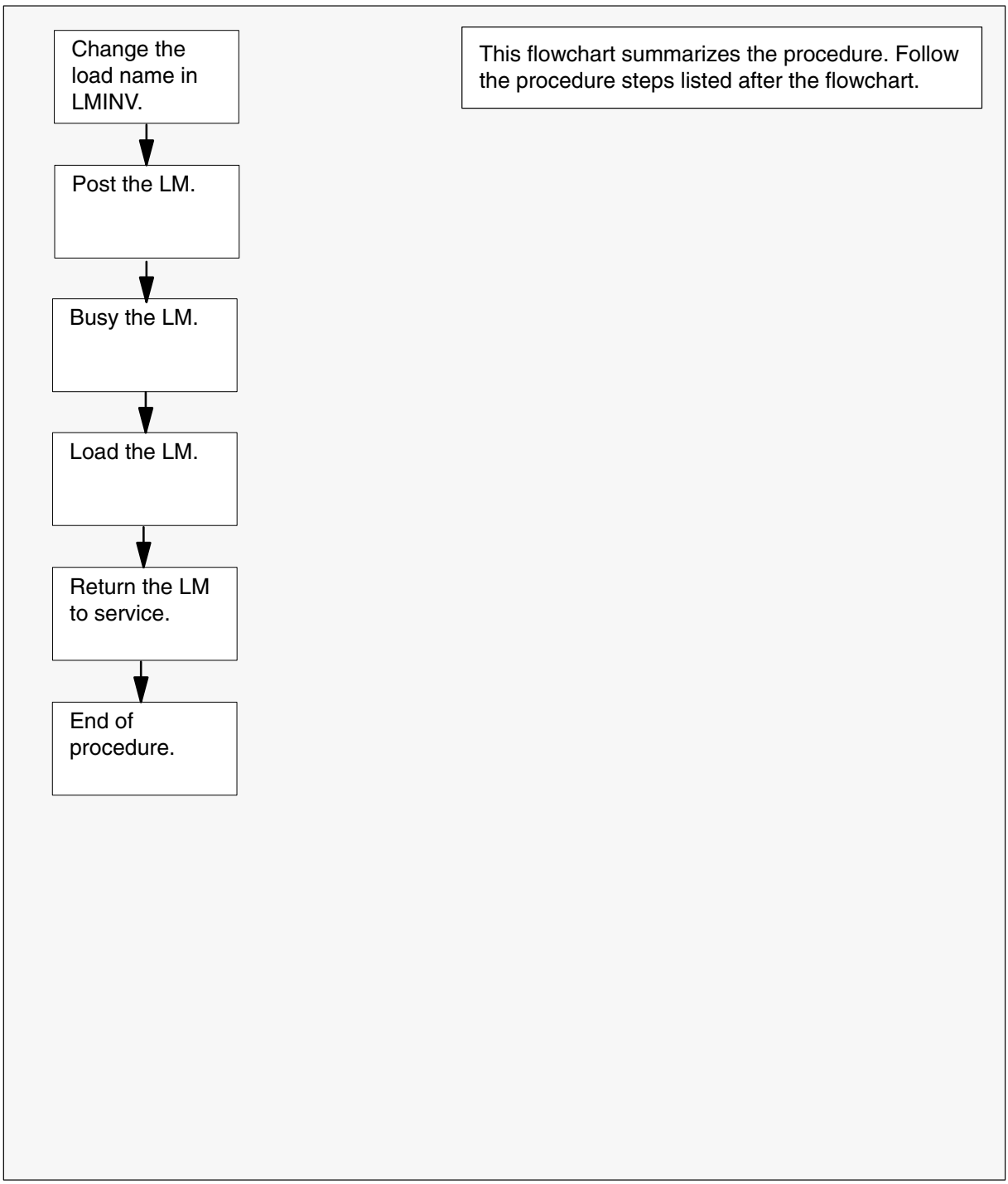
5 Update the RLM.

6 Return the RLM to service.

When an RLM has an ESA, update the even bay RLM with the ESA RLM load and the odd bay RLM with the basic RLM load.

Update the LM (continued)

Summary of procedure



Update the LM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Open the LM inventory table. Type

>TABLE LMINV
and press the Enter key.

4 Position on the datafill tuple for the LM to be updated. Type

>POS site_name LM frame_no bay_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
bay_no	is the number of the bay

5 Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load	is the name of the new load

6 Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

Update the LM (end)

9 Post the LM. Type

>POST LM site_name frame_no bay_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
bay_no	is the number of the bay

10 Busy the LM. Type

>BSY
and press the Enter key.

11 Load the LM. Type

>LOADPM
and press the Enter key.

12 Return the LM to service. Type

>RTS
and press the Enter key.

13 You have updated the LM and completed this procedure. Review the update schedule.

If there are	Do
additional LMs to update during this shift	Repeat this procedure for each LM.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the LTC or LTCI

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this LTC has a peripheral remote loader (PRL) circuit card, use this procedure to update the first LTC in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining LTCs.

Use this procedure to update the line trunk controller (LTC).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the LTC are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The LTC is in-service (InSv).
- The LTC passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new LTC load a pre-patched XPM load (PPXL)?

Update the LTC or LTCI (continued)

- Do any PRSUs need to be applied manually to the new load?

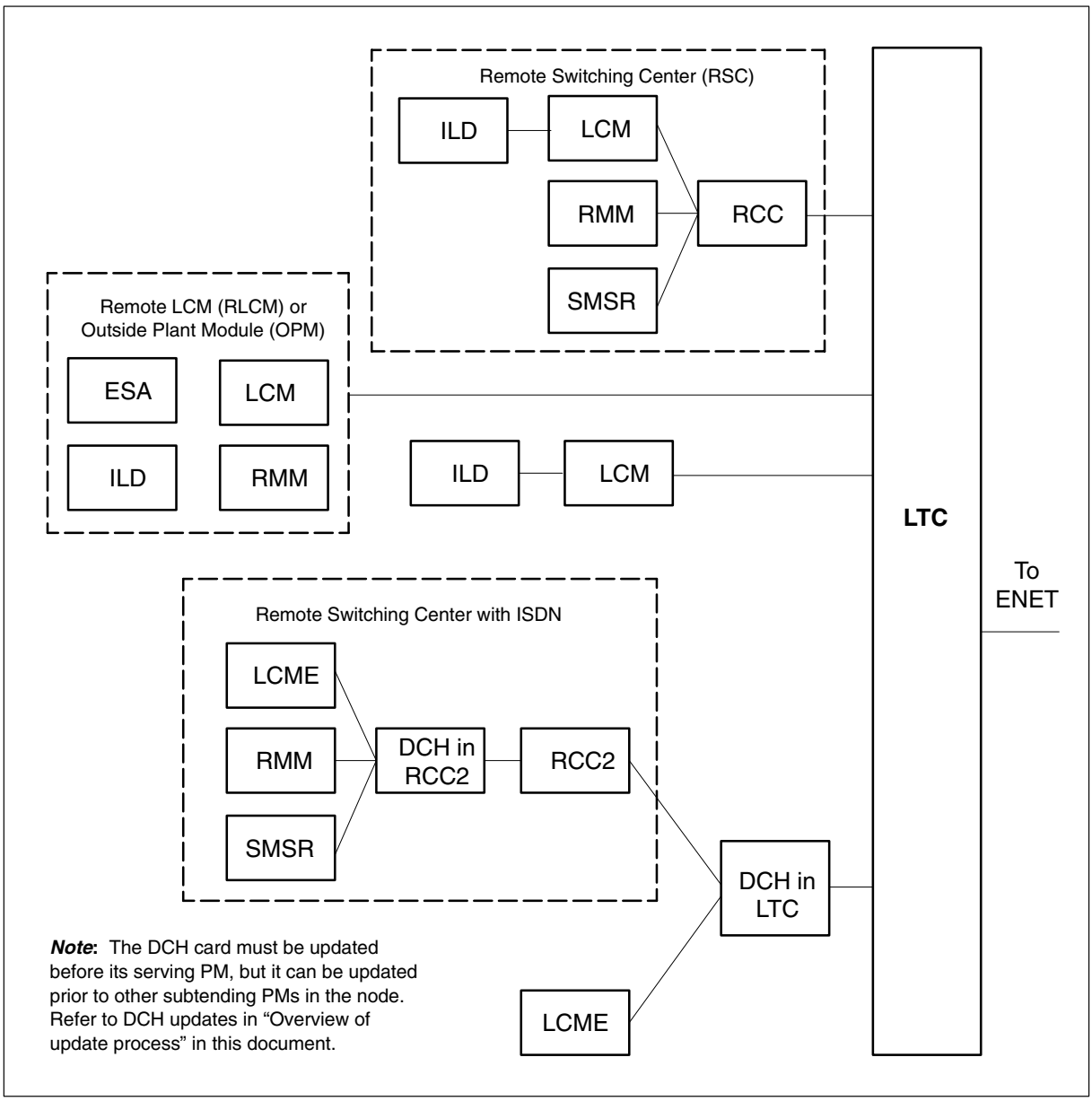
For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the LTC. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Update the LTC or LTCI (continued)

Node configuration for LTC

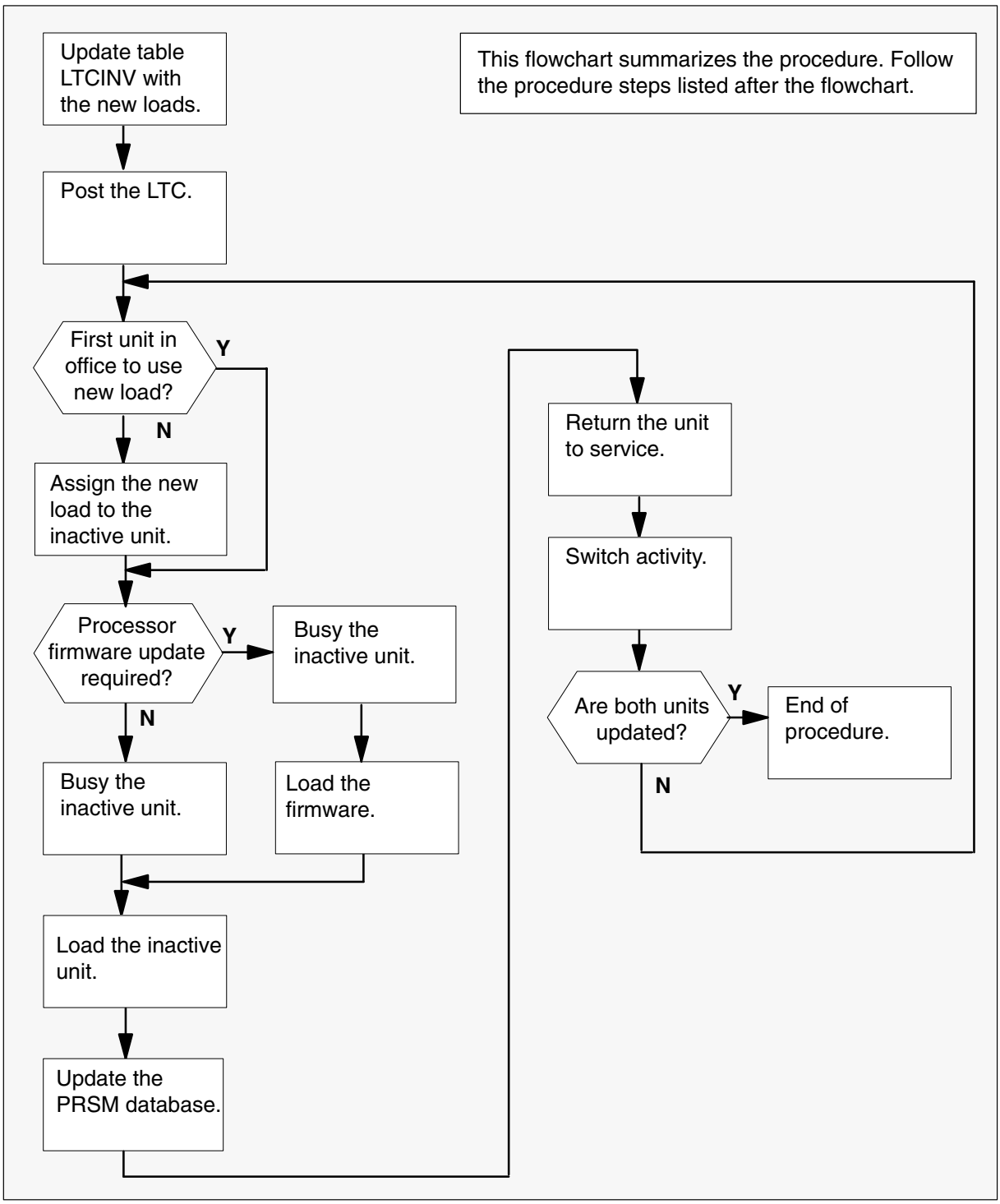


Notes

None

Update the LTC or LTCI (continued)

Summary of procedure



Update the LTC or LTCI (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an LTC to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LTC inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the LTC. Type

>POS LTC ltc_no
and press the Enter key.

where

ltc_no is the number of the LTC

Example of command

```
>POS LTC 0
```

Update the LTC or LTCI (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The LTC changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Update the LTC or LTCI (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the new CMR load name

Example of command

```
>CMR07A
```

Update the LTC or LTCI (continued)

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the LTC. Type

>POST LTC ltc_no
and press the Enter key.

where

ltc_no is the number of the LTC

Example of command

```
>POST LTC 0
```

Note: The LTC changes status to ISTb. If the LTC does not change to ISTb, confirm the LTC inventory table is updated correctly and the correct LTC is posted. Do not continue this procedure until the LTC is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET LTC ltc_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET LTC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

Update the LTC or LTCI (continued)

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the LTC or LTCI (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT LTC ltc_no unit_no
and press the Enter key.

where

ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT LTC 0 1
```

Update the LTC or LTCI (continued)

c. Display the PRSU list. Type

>REPORT DEST LTC ltc_no unit_no
and press the Enter key.

where

ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST LTC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN LTC ltc_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN LTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN LTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT LTC ltc_no unit_no
and press the Enter key.

where

ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT LTC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST LTC ltc_no unit_no
and press the Enter key.

where

ltc_no	is the number of the LTC
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST LTC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the LTC or LTCI (end)

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the LTC and completed this procedure. Review the update schedule for the office.

If there ae	Do
additional LTCs to update during this shift	Follow the guidelines in “Overview of update process” in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining LTCs.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the MPC

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a multi-protocol controller (MPC).

Prerequisites

Perform the procedures “Prepare for a manual PM update” and “Start a PM update shift” in this document to meet the following prerequisites:

- Review the IOC inventory table print-out to determine if the MPC is configured within an IOC or an IOM.
- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All MPC logs are enabled.
- The MPC is in-service (InSv).
- All REX tests are suspended in the office.

Required information

None

Update sequence

The following figure illustrates a possible node configuration for the MPC. Serving PMs must be updated after the MPC.

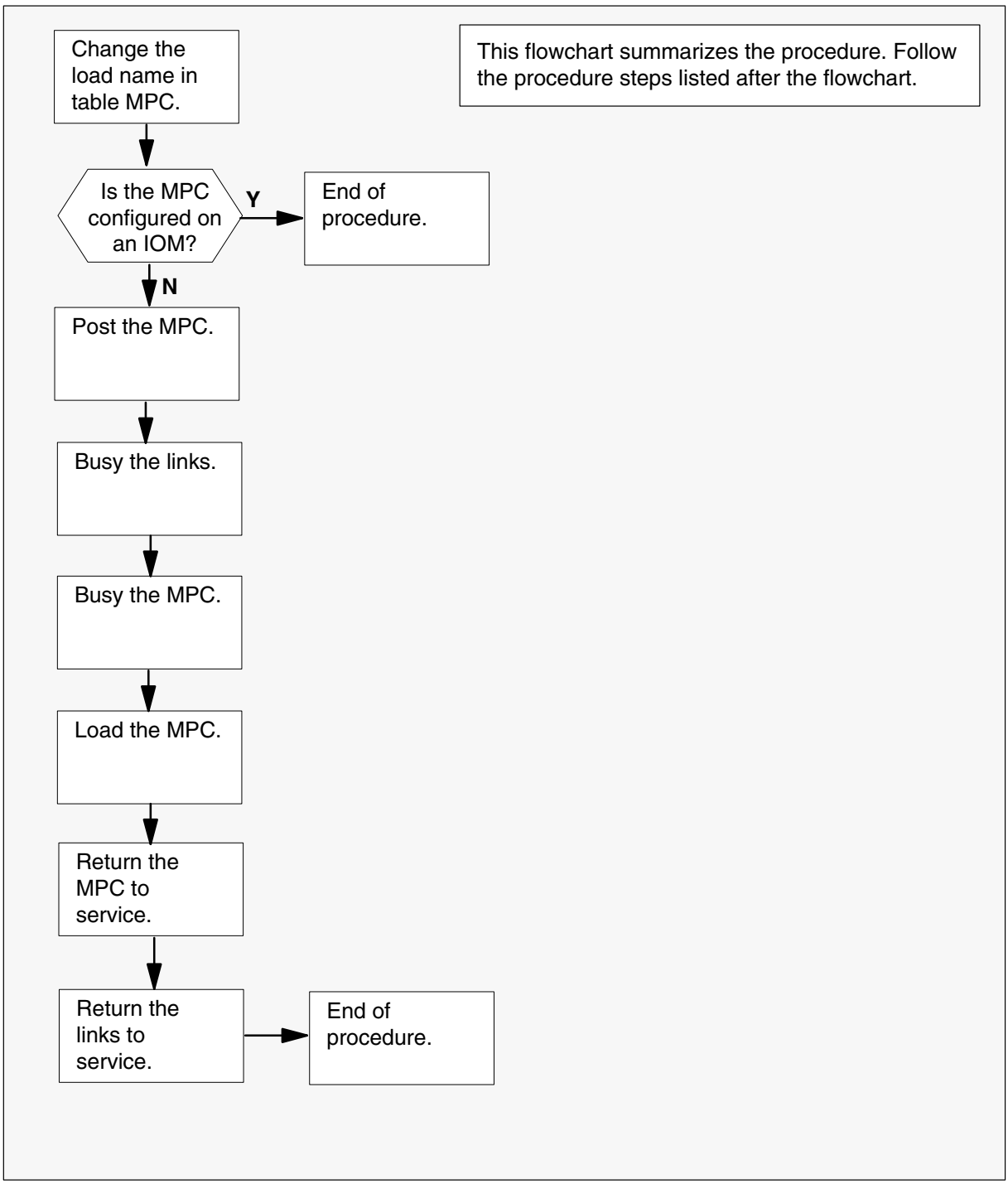
Node configuration for MPC

Notes

Determine the types of services used with the MPC. Follow the appropriate procedures to remove the service and notify appropriate customers. Services the MPC can provide include network operations protocol (NOP), simplified message desk interface (SMDI), and automatic call distribution (ACD).

Update the MPC (continued)

Summary of procedure



Update the MPC (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another MPC to update.

At the CI level of the MAP display

1 Select an MPC to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Access the MPC inventory table. Type

>TABLE MPC
and press the Enter key.

4 Position on the datafill tuple for the MPC to be updated. Type

>POS mpc_no
and press the Enter key.

where

mpc_no is the number of the MPC

5 Use the IOC inventory table print-out to determine if the MPC is configured within an IOC or an IOM.

If the IOC inventory table indicates	Do
1X61 (IOC)	step 6
FX30 (IOM)	step 7

6 Change the load name to the new load name. Type

>CHA DLDFILE new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA DLDFILE MPC003AC
```

Go to step 8.

Update the MPC (continued)

7 Change the load name to the required IOM datafill. Type

>CHA DLDFILE iom_datafill
and press the Enter key.

where

iom_datafill is IOM$LOAD

Example of command

```
>CHA DLDFILE IOM$LOAD
```

8 Confirm the change. Type

>Y
and press the Enter key.

Note: The MPC changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

9 Repeat steps 4 through 8 for each MPC to be updated.

10 Exit the table. Type

>QUIT
and press the Enter key.

If the MPC	Do
is configured within an IOC	step 11
is configured within an IOM	step 21

11 Access the IOD level of the MAP display. Type

>MAPCI;MTC;IOD
and press the Enter key.

12 Display the MPCs. Type

>LISTDEV MPC
and press the Enter key.

13 Record the IOC number and MPC number for the MPC to be updated.

14 Post the MPC. Type

>IOC ioc_no; MPC mpc_no
and press the Enter key.

where

ioc_no	is the number of the IOC
mpc_no	is the number of the MPC

Note: The MPC changes status to ISTb. If the MPC does not change to ISTb, confirm the inventory table was correctly updated and the correct MPC is posted. Do not continue this procedure until the MPC is ISTb.

15 Busy all the MPC links. Type

>BSY LINKS
and press the Enter key.

16 Busy the MPC. Type

>BSY
and press the Enter key.

17 Load the MPC. Type

>DOWNLD
and press the Enter key.

18 Return the MPC to service. Type

>RTS
and press the Enter key.

19 Wait for the ready prompt.

20 Return the busied MPC links to service. Type

>RTS LINKS
and press the Enter key.

Update the MPC (end)

21 You have updated the MPC and completed this procedure. Review the update schedule.

If there are	Do
additional MPCs to update during this shift	Return to step 11 and continue to the end of this procedure for each MPC.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the MS

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Only operating company personnel experienced with MS updating and maintenance should perform this procedure.

Use this procedure to update the message switch (MS). Perform this procedure after "Update the MS multi-port card (NT9X17)."

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- An office image has been taken in the last 24 hours.
- All MS logs are enabled.
- The MS is in-service (InSv).
- The MS passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this MS?
- Is the new MS load 4 or more CSP levels greater than the current CM load?

Update sequence

All PMs, the enhanced network (ENET), and the MS multi-port card should be updated prior to the MS.

Update the MS (continued)

Notes

Before attempting to update the MS with a load that is 4 or more CSP levels greater than the current CM load, PRSU activation in destination CM is required.

PRSU SEA87 Requirements

PRSU SEA87 activation in destination CM is required when updating the MS with a load that is 4 or more CSP levels greater than the current CM load. For example, if the current CM load is LEC00015 (CSP15) and if updating the MS to MUC00019 (CSP19), the appropriate version of PRSU SEA87 mut be applied to destination CM and activatetd before attempting this procedure.

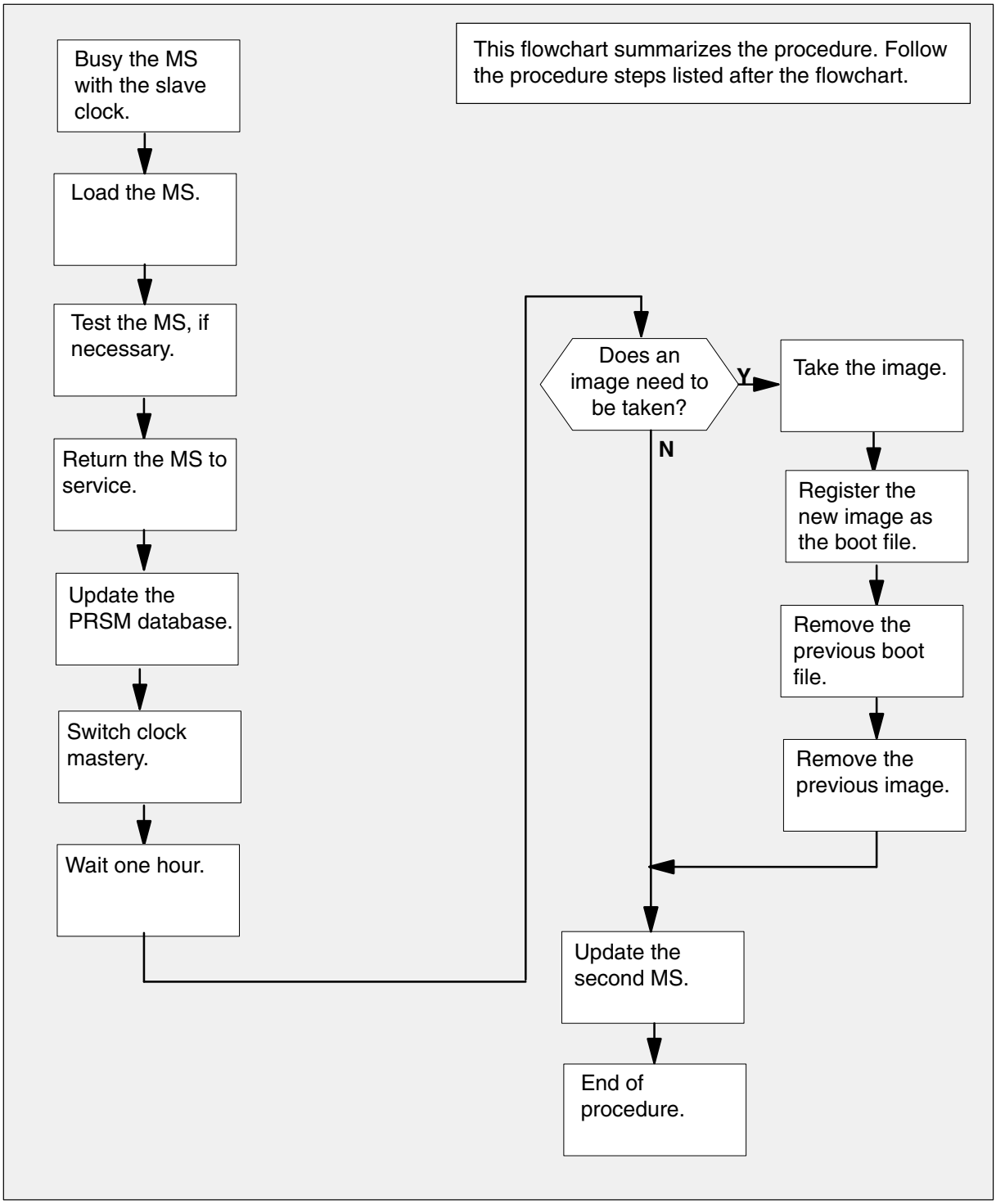
CAUTION

The MS will not Return to Service

Do not attempt to update the MS with a load that is 4 or more CSP levels greater than the current CM load unless PRSU SEA87 is applied and activated in destination CM.

Summary of procedure

Update the MS (continued)



Update the MS (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to either contact the next level of support, terminate all update activities for the shift, or troubleshoot the problem and return the MS to service.

At the CI level of the MAP display

1 Access the storage device to determine the current MS load. Type

>DISKUT;LF vol_name
and press the Enter key.

where

vol_name is the name of the volume where the MS load is stored

Example of SLM command

```
>DISKUT;LF S00DIMAGE
```

Example of XA-Core command

```
>DISKUT;LF F17LIMAGE
```

2 Exit the utility. Type

>QUIT
and press the Enter key.

3 Determine if the new MS load from step 1 is 4 or more CSP levels greater than the current CM load. Type

>IMAGENAME

Example of response

```
XANA1 BCS 50 BC built on 2001-FEB-20 at 21:06:00 using
xlecb15bh
PRODUCT:LEC0.015
LOAD:LEC00.015
LAYER:BAS.16.0.BC
LAYER:TL.15.0.BC
LAYER:SHR.15.0.AA
LAYER:CCM.15.0.BH
LAYER:CNA.15.0.BH
```

If	Do
the new MS load is 4 or more levels greater than the TL layer (TL.15.0.BC in the example)	step 4
the new MS load is equal to or up to 3 levels greater than the TL layer	step 9

4 Determine if PRSU SEA87 is applied and activated in destination CM. To enter the PRSM utility, type

>PRSM
and press the Enter key.

To display the status of the PRSU, type

>REPORT PRSU SEA87
and press the Enter key.

If the DESTID field equals CM and	Do
response indicates the ST (status) field equals A (applied) and the A (active) field equals Y (yes)	step 9
response indicates the ST (status) field equals A (applied) and the A (active) field equals N (no)	step 7
response indicates the ST (status) field is anything other than A (applied)	step 6
response indicates “no entry found”	step 5

Update the MS (continued)

5 PRSU SEA87 must be applied and activated in destination CM. Call Nortel Networks to request the appropriate version of PRSU SEA87, and once it has been obtained, begin this procedure at step 1.

For now, exit the utility. Type

>QUIT
and press the Enter key.

NOTE: Do not contiinue unless PRSU SEA87 is applied and activated in destination CM.

CAUTION
The MS will not Return to Service
Do not attempt to update the MS with a load that is 4 or more CSP levels greater than the current CM load unless PRSU SEA87 is applied and activated in destination CM.

6 Apply PRSU SEA87 in destination CM. Type

>APPLY prsu_name
and press the Enter key.

where

prsu_name is the name of the PRSU

NOTE: If PRSU fails to apply, troubleshoot the condition or contact the next level of support.

7 Activate PRSU SEA87 in destination CM. Type

>ASSIGN ACTIVE Y IN PRSUSET prsu_name
and press the Enter key.

where

prsu_name is the name of the PRSU

NOTE: Activation of this PRSU does not require a password.

8 Exit the utility. Type

>QUIT
and press the Enter key.

9 Access the MS level of the MAP display. Type

>MAPCI;MTC;MS
and press the Enter key.

10 Busy the MS with the slave clock. Type

>BSY ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>BSY 0
```

11 Load the MS. Type

>LOADMS ms_no load_name
and press the Enter key.

where

ms_no is the number of the MS
load_name is the name of the new load

Example of command

```
>LOADMS 0 MUC12BF
```

If the MAP display	Do
requests an OOS test on the MS just loaded	step 12
does not request an OOS test on the MS just loaded	step 13

12 Test the MS. Type

>TST ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>TST 0
```

13 Return the MS to service. Type

>RTS ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>RTS 0
```

Update the MS (continued)

Note: Wait for the MAP display to show the MS is InSv. Allow the MS to remain in the InSv state for five minutes.

14 Exit the MAP display. Type

>QUIT ALL
and press the Enter key.

15 Confirm the PRSU status of the MS. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT MS ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>DBAUDIT MS 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST MS ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>REPORT DEST MS 0
```

d. Compare the displayed PRSM database with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load have been applied to the MS	step 15i.
all PRSUs for the new load have not been applied to the MS	step 15e.
PRSUs from the previous load are listed at VA status	step 15b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 15i.The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN MS ms_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
ms_no is the number of the MS

Example of command

```
>APPLY 'ABC00X03 | XWS00X03 | RMS00X03 IN MS 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied in a set.

f. Update the PRSM database. Type

>DBAUDIT MS ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>DBAUDIT MS 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

Update the MS (continued)

g. Display the PRSU list. Type

>REPORT DEST MS ms_no
and press the Enter key.

where

ms_no is the number of the MS

Example of command

```
>REPORT DEST MS 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 15i.
does not match the PRSM database	step 15e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

16 Return to the MS level. Type

>MAPCI;MTC;MS
and press the Enter key.

17 Switch clock mastery to the newly loaded MS. Type

>SWMAST
and press the Enter key.

18 Soak the MS load for at least one hour.

If an image	Do
needs to be taken of this MS	step 19
does not need to be taken of this MS	step 43

19 Exit the MAP display. Type

>QUIT ALL
and press the Enter key.

20

ATTENTION

The following steps describe how to take an image of the new MS load. Office policy can require an image at a different phase of the MS update.

Access the disk utility. Type

>DISKUT
and press the Enter key.

21 Take an image of the MS load with PRSUs applied. Perform the following steps.

>DUMP file_name vol_name ACTIVE RETAIN NODE MS ms_no
and press the Enter key.

where

file_name	is the name of the image file
vol_name	is the name of the volume to store the image
ms_no	is the number of the message switch

Example of SLM command

```
>DUMP MUC12BF S00DIMAGE ACTIVE RETAIN NODE MS 0
```

Example of XA-Core command

```
>DUMP MUC12BF F17LIMAGE ACTIVE RETAIN NODE MS 0
```

Note: ITOCCI will only accept 15 entries. If ITOCCI is full, the image will only be listed in the volume that was indicated. If ITOCCI is not full, then the image will be assigned to the vacant index number.

Update the MS (continued)

22 List the files in the disk volume where the new image was saved. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the volume with the images

Example of SLM command

```
>LF S00DIMAGE
```

Example of XA-Core command

```
>LF F17LIMAGE
```

If the disk volume is	Do
SLM	step 23
XA-Core	step 34

23 Enter ITOCCI to be able to list the boot files. Type

>ITOCCI
and press the Enter key.

24 If you are not already in the disk utility, access the disk utility. Type

>diskut
and press the Enter key.

25 List out the volume where your image is stored. Type

>lf fl 7limage0
where

7limage0 is the volume where your image is stored

Example of command

```
>LF fl 7limage0
```

26 List the boot files available to boot from. Type

>LBF MS
and press the Enter key.

where

MS is the load with the boot files

27 Register a boot file in ITOCCI. Type

>SBF MS <file_name>
and press the Enter key.

where

<file_name> is the name of the boot file you wish to register

Example of command

```
>SBF MS S050103210551_MS
```

Note: The switch can only hold 15 images, so you may need to clear a file to be able to set the one that you want to set. To clear a file, perform step 28, otherwise skip to step 29.

If you need to clear a file	Do
To clear a file, do	step 28

28 This command clears a specified file. Type

>CBF MS FILE file_name
and press the Enter key.

where

file_name is the name of the file you wish to clear

Example of command

```
>CBF MS FILE S050103210551_MS
```

29 Set the new boot file to the ITOC. Type

>SA MS file_name
and press the Enter key.

where

file_name is the name of the image file

Response

```
>Set ALR success.
```

30 Delete the previous image file for the MS. Type

>DDF image_file
and press the Enter key.

where

image_file is the name of the previous MS image file

Example of command

Update the MS (continued)

```
>DDF MUC12BF
```

31 Confirm the action. Type

>Y
and press the Enter key.

32 Exit the disk utility. Type

>QUIT
and press the Enter key.

33 You have completed this procedure for SLM. Go to step 43.

34 Continue here with the procedure for XA–Core. Access the user interface for the image table of contents (ITOC). Type

>ITOCCI
and press the Enter key.

Example of response

```
ITOC User Interface is now active.
ITOCCI:
```

35 List the image files for the MS in the ITOC. Type

>LBF MS
and press the Enter key.

Example of 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 above identifies the autoload registered (ALR) image file with 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 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, XA-Core selects the next image file by sequential order by index number from the top of the table.

36 If the MS image files are full, follow this step to clear the oldest image file for the MS from the ITOC table. If the MS images are not full, skip to step 37. Type

>CBF MS FILE image_file
and press the Enter key.

where

image_file is the name of the previous MS image file

Example of command

```
>CBF MS FILE IMG0501CU_MS
```

37 Register and set the autoload for the new image file for the MS to the ITOC. Type

>SBF MS image_file index_no alr_or_notalr
and press the Enter key.

where

image_file is the name of the MS image file restored from tape
index_no is the index number assigned to the MS image file in the ITOC (range is 0–15)
alr_or_notalr indicates if the file is the autoload registered (ALR) image file or not the ALR file (NOTALR) for the MS (default is NOTALR)
file_name is the name of the image file

Example of command

```
>SBF MS IMG0517CY_MS 0 ALR
```

Note: Once this step is performed, skip the following step and continue with Step 39.

38 Register the new image file as the autoload image for the MS in ITOC. Type

>SA MS image_file
and press the Enter key.

where

image_file is the name of the MS image file restored from tape

Example of command

```
>SBF MS IMG0517CY_MS
```

Note: This will set the last image in ITOCCI as the autoload image. If you want to keep the index numbers matching between the XA and MS to avoid any confusion, execute the commands listed in Step 36 and Step 37 on the new image, and then this Step 38 is skipped.

Update the MS (end)

39 Exit the user interface for the ITOC table to return to DISKUT. Type

>QUIT
and press the Enter key.

Example of response

```
DISKUT:
```

40 Delete the old image file for the MS from the disk volume. Type

>DDF image_file
and press the Enter key.

where

image_file is the name of the previous MS image file

Example of command

```
>DDF IMG0501CU_MS
```

41 Confirm the action. Type

>Y
and press the Enter key.

42 Exit the disk utility. Type

>QUIT
and press the Enter key.

Example of response

```
CI:
```

43 You have updated the MS and completed this procedure. Review the update schedule.

If	Do
one MS has been updated	Return to step 9 and update the second MS.
both MSs have been updated	Go to the procedure “Finish a PM update shift” in this document.

Update the MS multi-port card (NT9X17)

Application

CAUTION
Possible service interruption
Only operating company personnel experienced with message switch (MS) updates should perform this procedure.

Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the firmware load in a message switch (MS) multi-port circuit card (NT9X17).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table MSFWLOAD.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The MS is in-service (InSv).
- The MS passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- All PMs and other hardware types in the office have been updated.

Required information

None

Update sequence

The following figure illustrates the node configuration for the MS multi-port circuit card. Update subtending PMs prior to the MS multi-port circuit card.

Node configuration for MS multi-port card

Update the MS multi-port card (NT9X17) (continued)

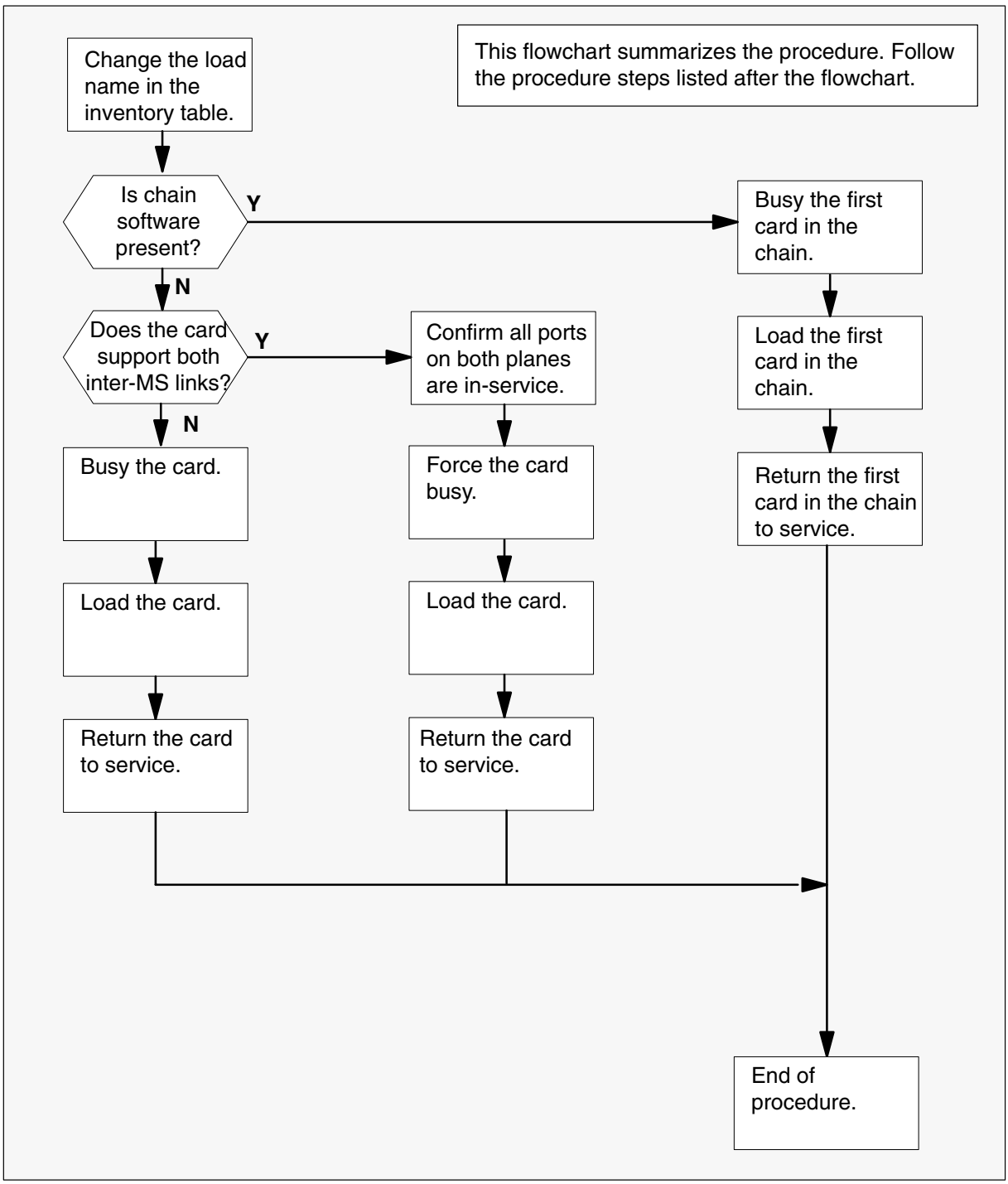
Notes

Any circuit cards on the mate MS that are not updated change status to in-service trouble (ISTb) because of the mismatch between the firmware and the load entered in table MSFWLOAD.

Do not enter the new load name in table PMLOADS. A PMLOAD alarm results.

Update the MS multi-port card (NT9X17) (continued)

Summary of procedure



Update the MS multi-port card (NT9X17) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an MS and MS multi-port card (NT9X17) to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the MS firmware inventory table. Perform the following steps.

a. Open the MS firmware inventory table. Type

>TABLE MSFWLOAD
and press the Enter key.

b. Position on the datafill tuple for the card to be updated. Type

>POS nt9x17_pec
and press the Enter key.

where

nt9X17_pec is the full product engineering code (PEC) of the card

Example of command

```
>POS NT9X17DA
```

c.

ATTENTION

If the load name has a date extension, it is a pre-patched load. Enter the load name only. Refer to chapter "Overview of release" for more information.

If the device name must be changed, use the CHA command without parameters to step through the tuple and change the necessary information.

Change the current firmware load name to the new firmware load name. Type

>CHA FILENAME 9x17_load
and press the Enter key.

where

9x17_load is the name of the new firmware load

Example of command

```
>CHA FILENAME MPF08AX
```

d. Confirm the change. Type

>Y
and press the Enter key.

If the MS shelf has	Do
additional multi-port circuit cards to be updated	step 3b.
no additional multi-port circuit cards to be updated	step 3e.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the SHELF level of the MAP display for the MS with the MS multi-port circuit card being updated. Type

>MAPCI;MTC;MS;SHELF
and press the Enter key.

Update the MS multi-port card (NT9X17) (continued)

5 Look at the CHAIN configuration line and determine if the shelf has chain software. The symbols | or <> indicate chain software is present.

If chain software is	Do
present	step 6
not present	step 7

6 All circuit cards in the chain must be busied and returned to service as a group during the update process. Perform the following steps.

a. Select a chain on the shelf.

b. Busy the first circuit card in the chain. Type

>BSY ms_no card_no CHAIN
and press the Enter key.

where

ms_no is the number of the MS
card_no is the number of the first circuit card in the chain

Note: Busying the first circuit card busies all circuit cards in the chain.

Example of command

```
>BSY 0 5 CHAIN
```

Update the MS multi-port card (NT9X17) (continued)

c.

ATTENTION

Do not use the FROM parameter to load the 9X17 circuit card from another circuit card. Use the LOADCD command as specified in this procedure to load the circuit card from the inventory table.

Load the first circuit card in the chain. Type

>LOADCD ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Note: The MAP display responds with an incompatible load message. Continue this procedure.

Example of command

```
>LOADCD 0 5
```

d. Confirm the action. Type

>Y
and press the Enter key.

Note: If the MAP display does not prompt to confirm the action, skip this step.

e. Complete steps 6c. and 6d. for each circuit card in the chain.

f. Return the circuit card in the chain to service. Type

>RTS ms_no card_no CHAIN
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the first circuit card in the chain

Example of command

```
>RTS 0 5 CHAIN
```

Note: All circuit cards in the chain return to service when the first circuit card is returned to service.

g. Repeat steps 6a. through 6f. for each chain on the shelf.

Update the MS multi-port card (NT9X17) (continued)

h. If necessary, repeat steps 6a. through 6g. for each shelf in the MS.

i. Go to step 11.

7

CAUTION
Possible service interruption
Contact the next level of support if unable to determine if the NT9X17 circuit card supports both inter-MS links. Incorrect busying and loading of the NT9X17 circuit card can cause service interruptions.

Review office records or use the TRNSL P command to determine if the NT9X17 supports both inter-MS links.

If the NT9X17	Do
supports both inter-MS links	step 8
does not support both inter-MS links	step 10

8

CAUTION
Possible service interruption
All ports on both MS planes must be in-service before updating an NT9X17 circuit card that supports both inter-MS links on the same circuit card.

Contact the next level of support if unable to determine if all ports on both MS planes are in-service.

Confirm all ports on both MS planes are in-service.

If all ports on both MS planes are	Do
in-service	step 9
not in-service	Troubleshoot the problem and return to this step. If unable to troubleshoot the problem, contact the next level of support.

Update the MS multi-port card (NT9X17) (continued)

9 Busy, load, and return to service each NT9X17 on the shelf. Perform the following steps.

a. Select a circuit card to update.

b. Busy the circuit card. Type

>BSY ms_no card_no FORCE
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Example of command

```
>BSY 0 5 FORCE
```

c.

ATTENTION

Do not use the FROM parameter to load the 9X17 circuit card from another circuit card. Use the LOADCD command as specified in this procedure to load the circuit card from the inventory table.

Load the circuit card. Type

>LOADCD ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Example of command

```
>LOADCD 0 5
```

Note: The MAP display responds with an incompatible load message. Continue this procedure.

d. Confirm the action. Type

>Y
and press the Enter key.

Update the MS multi-port card (NT9X17) (continued)

e. Return the circuit card to service. Type

>RTS ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Example of command

```
>RTS 0 5
```

f. Repeat steps 9a. through 9e. for each NT9X17 on the shelf.

g. If necessary, repeat steps 9a. through 9f. for each shelf in the MS.

h. Go to step 11.

10 Busy, load, and return to service each NT9X17 circuit card on the shelf. Perform the following steps.

a. Select a circuit card to update.

b. Busy the circuit card. Type

>BSY ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Example of command

```
>BSY 0 5
```

c.

ATTENTION

Do not use the FROM parameter to load the NT9X17 circuit card from another circuit card. Use the LOADCD command as specified in this procedure to load the circuit card from the inventory table.

Load the circuit card. Type

>LOADCD ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Note: The MAP display responds with an incompatible load message. Continue this procedure.

Example of command

```
>LOADCD 0 5
```

d. Confirm the action. Type

>Y
and press the Enter key.

e. Return the circuit card to service. Type

>RTS ms_no card_no
and press the Enter key.

where

ms_no	is the number of the MS
card_no	is the number of the circuit card

Example of command

```
>RTS 0 5
```

f. Repeat steps 10a. through 10e. for each NT9X17 circuit card on the shelf.

g. If necessary, repeat steps 10a. thorugh 10f. for each shelf in the MS.

11 You have updated the MS multi-port circuit card and completed this procedure. After a soak period of four hours, or as defined by office policy, use this procedure to update the MS multi-port circuit cards in the other MSs. If this is the end of the shift, go to the procedure “Finish a PM update shift” in this document.

Update the MTM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a maintenance trunk module (MTM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The MTM is in-service (InSv).
- All REX tests are suspended in the office.

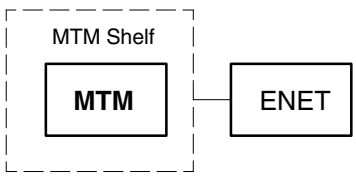
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the MTM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order. Serving PMs must be updated after the MTM.

Node configuration for MTM

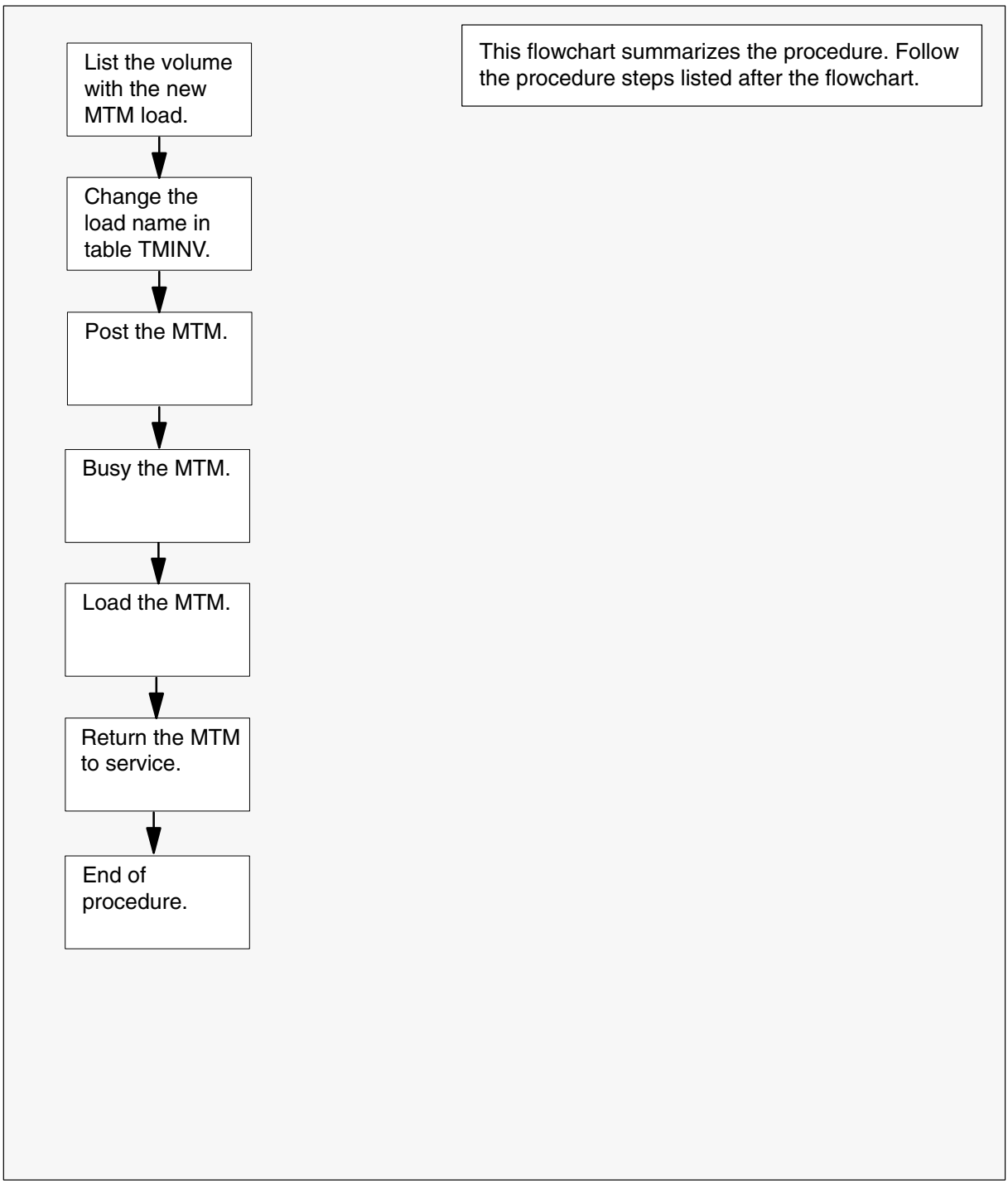


Notes

None

Update the MTM (continued)

Summary of procedure



Update the MTM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an MTM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the MTM inventory table. Perform the following steps.

a. Open the MTM inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the MTM. Type

>POS MTM mtm_no
and press the Enter key.

where

mtm_no is the number of the MTM

Example of command

```
>POS MTM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD MTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the MTM (end)

e. Close the MTM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the MTM. Type

>POST MTM mtm_no
and press the Enter key.

where

mtm_no is the number of the MTM

Example of command

```
>POST MTM 11
```

9 Busy the MTM. Type

>BSY
and press the Enter key.

10 Load the MTM. Type

>LOADPM
and press the Enter key.

11 Return the MTM to service. Type

>RTS
and press the Enter key.

12 You have updated the MTM and completed this procedure. Review the update schedule.

If there are	Do
additional MTMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the MTU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a metallic test unit (MTU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM and TRK logs are enabled.
- The MTU is in-service (InSv).
- All REX tests are suspended in the office.

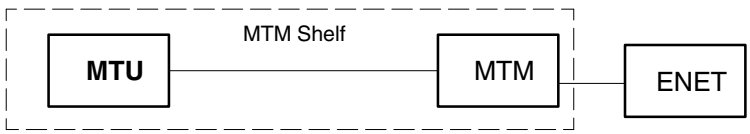
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the MTU. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for MTU



The MTU can be provisioned as a pair. Update the paired MTUs together prior to the serving maintenance trunk module (MTM).

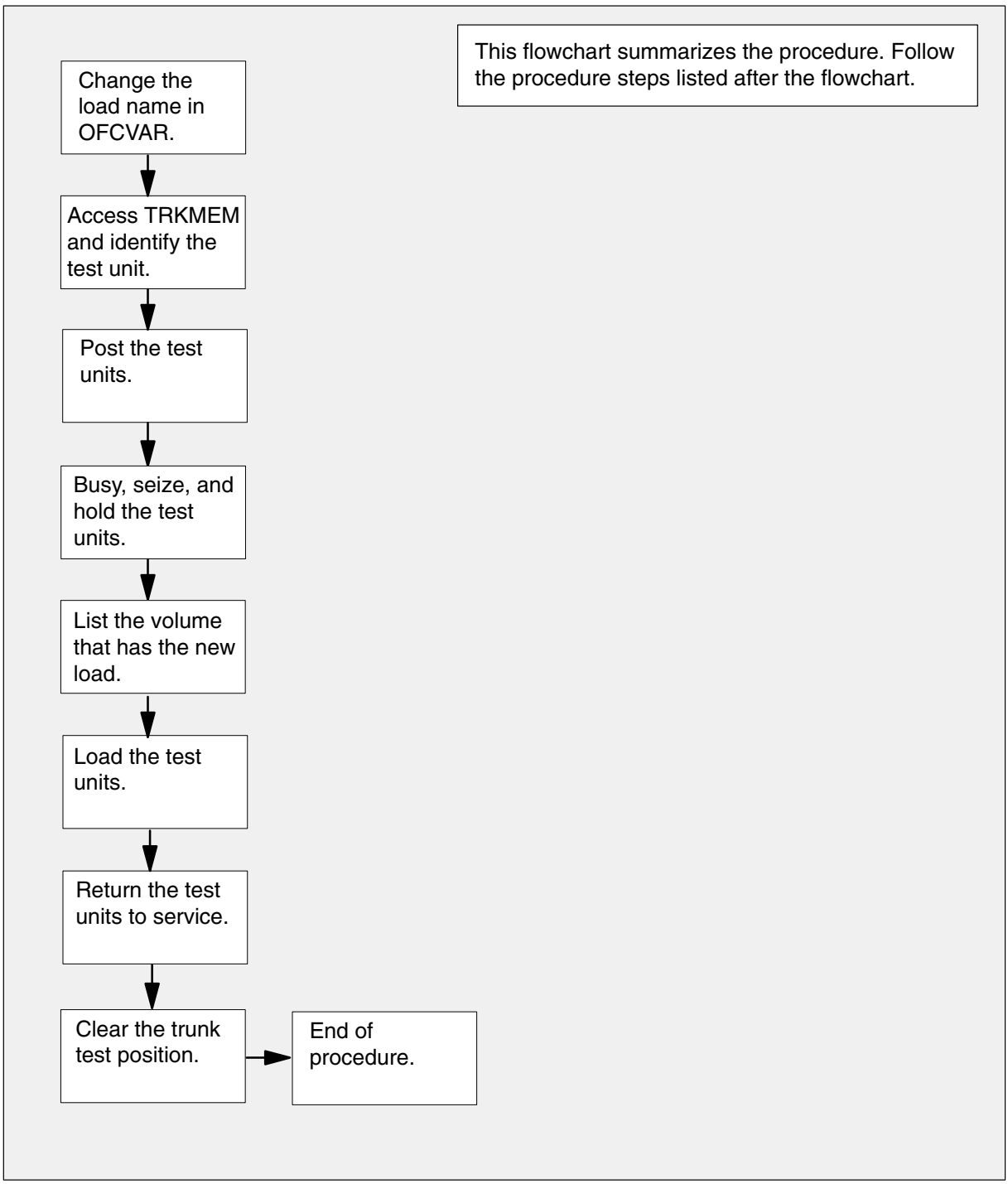
Update the MTU (continued)

Notes

None

Update the MTU (continued)

Summary of procedure



Update the MTU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another test unit to update.

At the CI level of the MAP display

1 Select an MTU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the MTU load in table office variables. Perform the following steps.

a. Open table OFCVAR. Type

>TABLE OFCVAR
and press the Enter key.

b. Position on the load tuple for the MTU. Type

>POS MTULDINFO
and press the Enter key.

c. Change the load name to the new load name. Type

>CHA PARMVAL new_load
and press the Enter key.

where

new_load is the name of the new load

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The MTU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Open table TRKMEM. Type

>TABLE TRKMEM
and press the Enter key.

5 Position on the tuple for the MTU. Type

>POS MTU mtu_no
and press the Enter key.

where

mtu_no is the number of the MTU

Example of command

```
>POS MTU 2
```

Example of MAP display

```
MTU      2    0            MTM      20   6
```

Note: The MTU changes status to ISTb. If the MTU does not change to ISTb, confirm the MTU inventory table is updated correctly and the correct MTU is posted. Do not continue this procedure until the MTU is ISTb.

6 Record the number of the MTM listed in the tuple. This MTM is the serving MTM to the test unit.

7 Use the LIS command to scroll through the tuples in table TRKMEM and identify the second MTU served by the MTM.

Example of MAP display

```
MTU      2    0            MTM      20   6
MTU      3    0            MTM      10   2
MTU      9    0            MTM      10   3
MTU      5    0            MTM      16   9
MTU      7    0            MTM      27   8
MTU      4    0            MTM      20   7
```

8 Record the number of the second MTU.

Note: In the previous example, MTU 4 is the second MTU because it shares the same MTM as MTU 2.

9 Close the table. Type

>QUIT
and press the Enter key.

10 Access the TTP level of the MAP display. Type

>MAPCI;MTC;TRKS;TTP
and press the Enter key.

Update the MTU (continued)

11 Post one test unit and all its circuits. Type

>POST G clli_name
and press the Enter key.

where

clli_name is MTU

Note: The MTU changes status to ISTb. If the MTU does not change to ISTb, confirm the MTU inventory table is updated correctly and the correct MTU is posted. Do not continue this procedure until the MTU is ISTb.

12 Busy the posted test unit. Type

>BSY
and press the Enter key.

13 Seize the busied test unit. Type

>SEIZE
and press the Enter key.

14 Hold the busied test unit. Type

>HOLD
and press the Enter key.

15 Busy the next posted test unit. Type

>BSY
and press the Enter key.

16 Seize the next posted test unit. Type

>SEIZE
and press the Enter key.

If the load files are on a	Do
DDU device	step 17
SLM or XA-Core device	step 18

17 List the volume with the new load. Perform the following steps.

a. Enter the utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 19.

18 List the volume with the new load. Perform the following steps.

a. Enter the utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where
vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

19 Exit the utility. Type

>QUIT
and press the Enter key.

Update the MTU (continued)

20

CAUTION
Possible service interruption
The download from the disk volume to the test unit can take up to 20 minutes. Confirm the recording device is not required for higher priority service before loading the MTU.

Load both test units. Type

>LOADFW CC load_name
and press the Enter key.

where

load_name is the name of the load

Note: This single command loads both test units in the pair.

21 Force the release of the posted test unit. Type

>FRLS
and press the Enter key.

22 Return the test unit to service. Type

>RTS
and press the Enter key.

23 Return the first test unit to the posted position. Type

>NEXT 1
and press the Enter key.

24 Force the release of the test unit. Type

>FRLS
and press the Enter key.

25 Return the posted test unit to service. Type

>RTS
and press the Enter key.

26 Clear the trunk test position. Type

>NEXT
and press the Enter key.

Update the MTU (end)

27 You have updated the MTU and completed this procedure. Review the update schedule.

If there are	Do
additional MTUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the NIU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the network interface unit (NIU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The NIU is in-service (InSv).
- The NIU passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the unit to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this NIU?

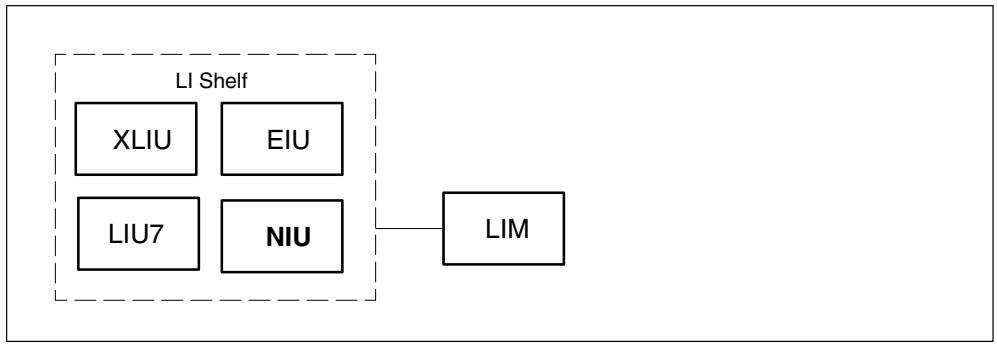
For assistance, refer tochapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the NIU. Update the PMs in the node in peripheral side (P-side) to central side

(C-side) order. Update the LIM as soon as possible after all its subtending PMs are updated.

Node configuration for NIU



If automated directory assistance service (ADAS) PMs are updated with this office update, the NIU update must be coordinated with the ADAS PM update. Refer to the *ADAS Peripheral Module Software Release Document,* 297-2211-211, for the correct update sequence.

If the NIU provides channelized access to a CCS7 link interface unit (LIU7) or an X.25/X.75 link interface unit (XLIU), the XLIU or LIU7 is a subtending PM to the NIU. Update the XLIU and the LIU7 before the NIU.

Notes

The following notes apply to the NIU update procedure.

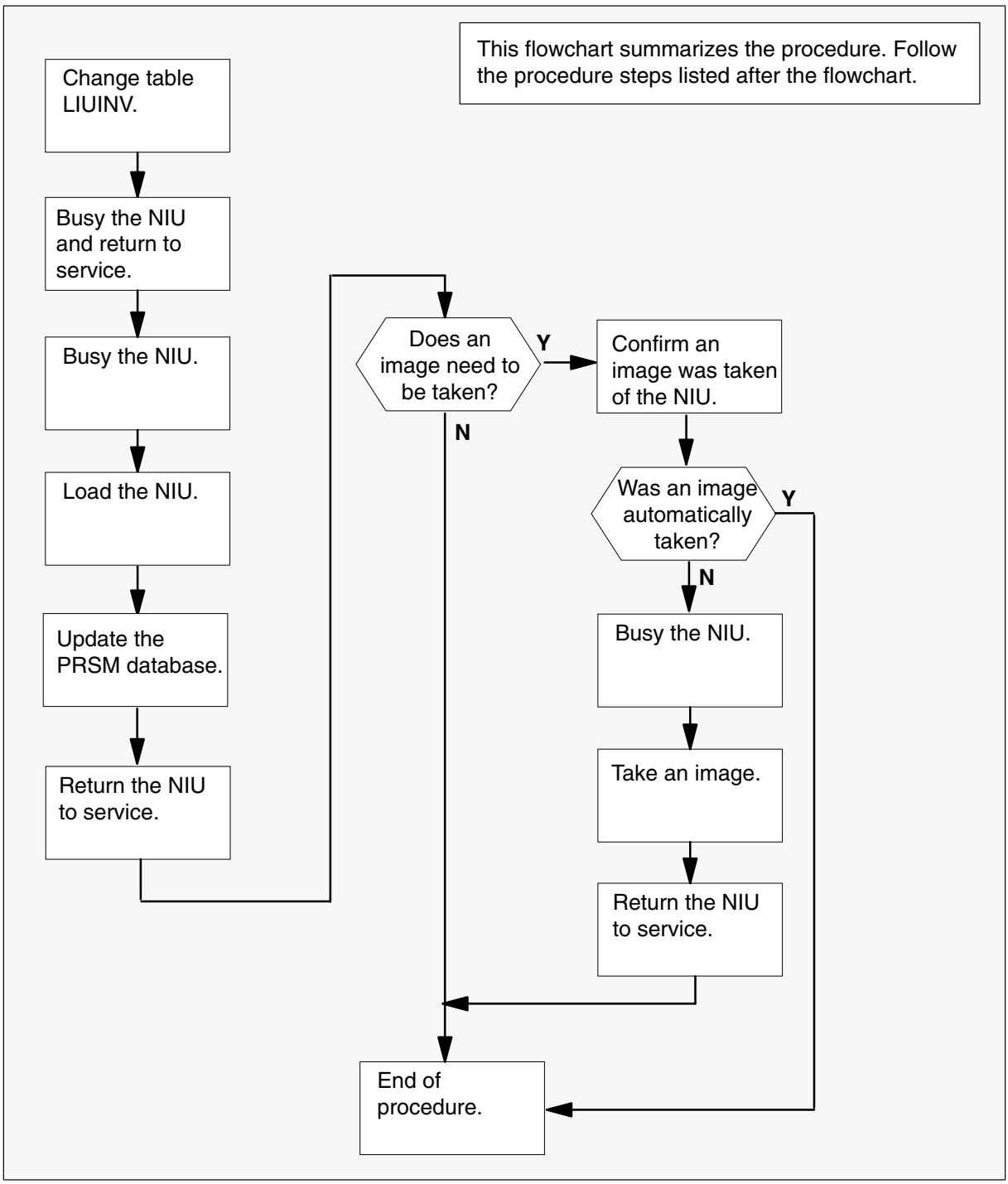
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the NIU update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the NIU (continued)

Summary of procedure



Update the NIU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an NIU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the NIU inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE NIUINV
and press the Enter key.

b. Position on the datafill tuple for the NIU to be updated. Type

>POS niu_no
and press the Enter key.

where

niu_no is the number of the NIU

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD NRS12BF
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The NIU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

Update the NIU (continued)

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the NIU. Type

>POST NIU niu_no
and press the Enter key.

where

niu_no is the number of the NIU

Example of command

```
>POST NIU 0
```

Note: The NIU changes status to ISTb. If the NIU does not change to ISTb, confirm the NIU inventory table is updated correctly and the correct NIU is posted. Do not continue this procedure until the NIU is ISTb.

6 Ensure the NIU passes an out-of-service test and returns to service. Perform the following steps.

a. Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

b. Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

c. Switch activity. Type

>SWACT
and press the Enter key.

d. Confirm the action. Type

>Y
and press the Enter key.

e. Busy the new inactive unit . Type

>BSY INACTIVE
and press the Enter key.

f. Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

7 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Note: The client PMs of the NIU unit change state to ISTb. Continue this procedure.

8 Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

9 Confirm the PRSU status of NIU. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT NIU niu_no unit_no
and press the Enter key.

where

niu_no	is the number of the NIU
unit_no	is the number of the unit

Example of command

```
>DBAUDIT NIU 0 0
```

Note: PRSUs from the previous release can remain at NV status. They are removed during the daily FILEAUDIT.

Update the NIU (continued)

c. Display the PRSU list. Type

>REPORT DEST NIU niu_no unit_no
and press the Enter key.

where

niu_no	is the number of the NIU
unit_no	is the number of the unit

Example of command

```
>REPORT DEST NIU 0 0
```

d. Compare the displayed PRSM database with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 9i.
all PRSUs for the new load are not applied to the inactive unit	step 9e.
PRSUs from the previous load are listed at VA status	step 9b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 9i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN NIU niu_no unit_no
and press the Enter key.

where

prsu_name	is the name of the PRSU (repeat variable as required)
niu_no	is the number of the PM
unit_no	is the number of the unit

Example of command

```
>APPLY 'AMP00IB9 | AMP90IT8 | RMS39IB9 IN NIU 0 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied in a set.

f. Update the PRSM database. Type

>DBAUDIT NIU niu_no unit_no
and press the Enter key.

where

niu_no	is the number of the NIU
unit_no	is the number of the unit

Example of command

```
>DBAUDIT NIU 0 0
```

Note: PRSUs from the previous release can remain at NV status. They are removed during the daily FILEAUDIT.

g. Display the PRSU list. Type

>REPORT DEST NIU niu_no unit_no
and press the Enter key.

where

niu_no	is the number of the NIU
unit_no	is the number of the unit

Example of command

```
>REPORT DEST NIU 0 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 9i.
does not match the PRSM database	step 9e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

Update the NIU (continued)

10 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this unit	step 11
does not need to be taken of this unit	step 22
Note: Take an image of the first NIU unit that is updated. Office policy and the update schedule determine the need for additional images.	

11 Confirm an image was automatically taken of the NIU. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file. Confirm an image was automatically taken of the NIU.

If an image of the PM	Do
was automatically taken	step 21
was not automatically taken	step 12

Note: If an image of the NIU was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

12

ATTENTION

Take an image immediately after PRSU application.. Use this image to load any remaining NIUs. If an image is not taken, PRSUs must be applied manually each time an NIU is loaded.

This procedure takes an image of a busied NIU unit. However, an image can be taken of an in-service NIU. Check office policy.

Busy the NIU. Type

>BSY INACTIVE
and press the Enter key.

13 Enter the disk utility. Type

>DISKUT
and press the Enter key.

14 Take an image of the NIU with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE NIU niu_no unit_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device to store the image
niu_no	is the number of the NIU
unit_no	is the number of the unit

Example of SLM command

```
>DUMP NRS12BF S00DPMLOADS ACTIVE RETAIN NODE NIU 0 0
```

Example of XA-Core command

```
>DUMP NRS12BF F17LPMLOADS ACTIVE RETAIN NODE NIU 0 0
```

Update the NIU (continued)

15 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_NIU" appends to the file name, for example, `NRS12BF_NIU`.

16 Delete the original NIU load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file is the name of the original NIU load file

Example of command

```
>DDF NRS12BF
```

17 Confirm the action. Type

>Y
and press the Enter key.

18 Eliminate the "_NIU" extension on the new NIU load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name is the name of the current NIU load file
new_name is the name of the current NIU load file without the "_NIU" extension

Example of command

```
>RNF NRS12BF_NIU NRS12BF
```

19 Exit the disk utility. Type

>QUIT
and press the Enter key.

20 Perform a NIL change to the NIU load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name is the name of the NIU load

Example of command

```
>POS NRS12BF
```

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key again to scroll through the fields until the MAP display shows a confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

21 Return the NIU to service. Type

>RTS INACTIVE
and press the Enter key.

22 Switch activity between the two units. Type

>SWACT
and press the Enter key.

If	Do
one unit of the NIU is updated	step 7
both units of the NIU are updated	step 23

Update the NIU (end)

23 You have updated the NIU and completed this procedure. Review the update schedule.

If there are	Do
additional NIUs to update during this shift	Return to step 3 and continue to the end of this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the OAMP

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the office administration and maintenance position (OAMP).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The OAMP is in-service (InSv).
- All REX tests are suspended in the office.

Required information

None

Update sequence

The following figure illustrates a possible node configuration for the OAMP. Serving PMs must be updated after the OAMP.

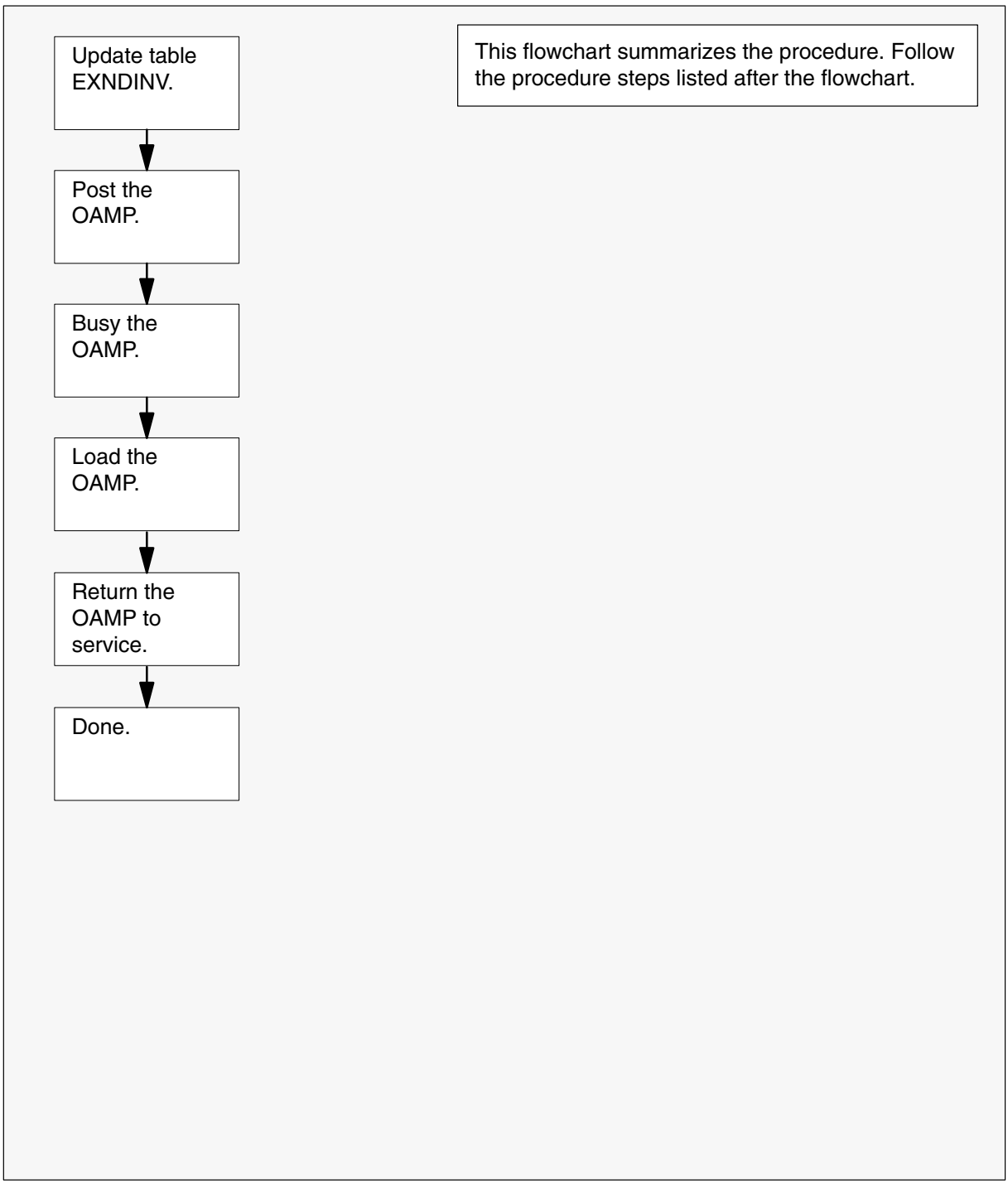
Node configuration for OAMP

Notes

None

Update the OAMP (continued)

Summary of procedure



Update the OAMP (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an OAMP to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Access the external node inventory table. Type

>TABLE EXNDINV
and press the Enter key.

4 Position on the datafill tuple for the OAMP to be updated. Type

>POS EXND exnd_no
and press the Enter key.

where

exnd_no is the external node number of the OAMP

5 Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

6 Confirm the change. Type

>Y
and press the Enter key.

Note: The OAMP changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

Update the OAMP (end)

8 Post the OAMP. Type

>POST EXND exnd_no
and press the Enter key.

where

exnd_no is the external node number of the OAMP

Note: The OAMP changes status to ISTb. If the OAMP does not change to ISTb, confirm the OAMP inventory table is updated correctly and the correct OAMP is posted. Do not continue this procedure until the OAMP is ISTb.

9 Busy the OAMP. Type

>BSY
and press the Enter key.

10 Load the OAMP. Type

>LOADPM
and press the Enter key.

11 Return the OAMP to service. Type

>RTS
and press the Enter key.

12 You have updated the OAMP and completed this procedure. Review the update schedule.

If there are	Do
additional OAMPs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the OAU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the office alarm unit (OAU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The OAU is in-service (InSv).
- All REX tests are suspended in the office.

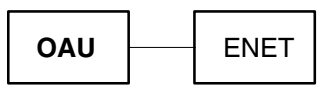
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the OAU. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for OAU

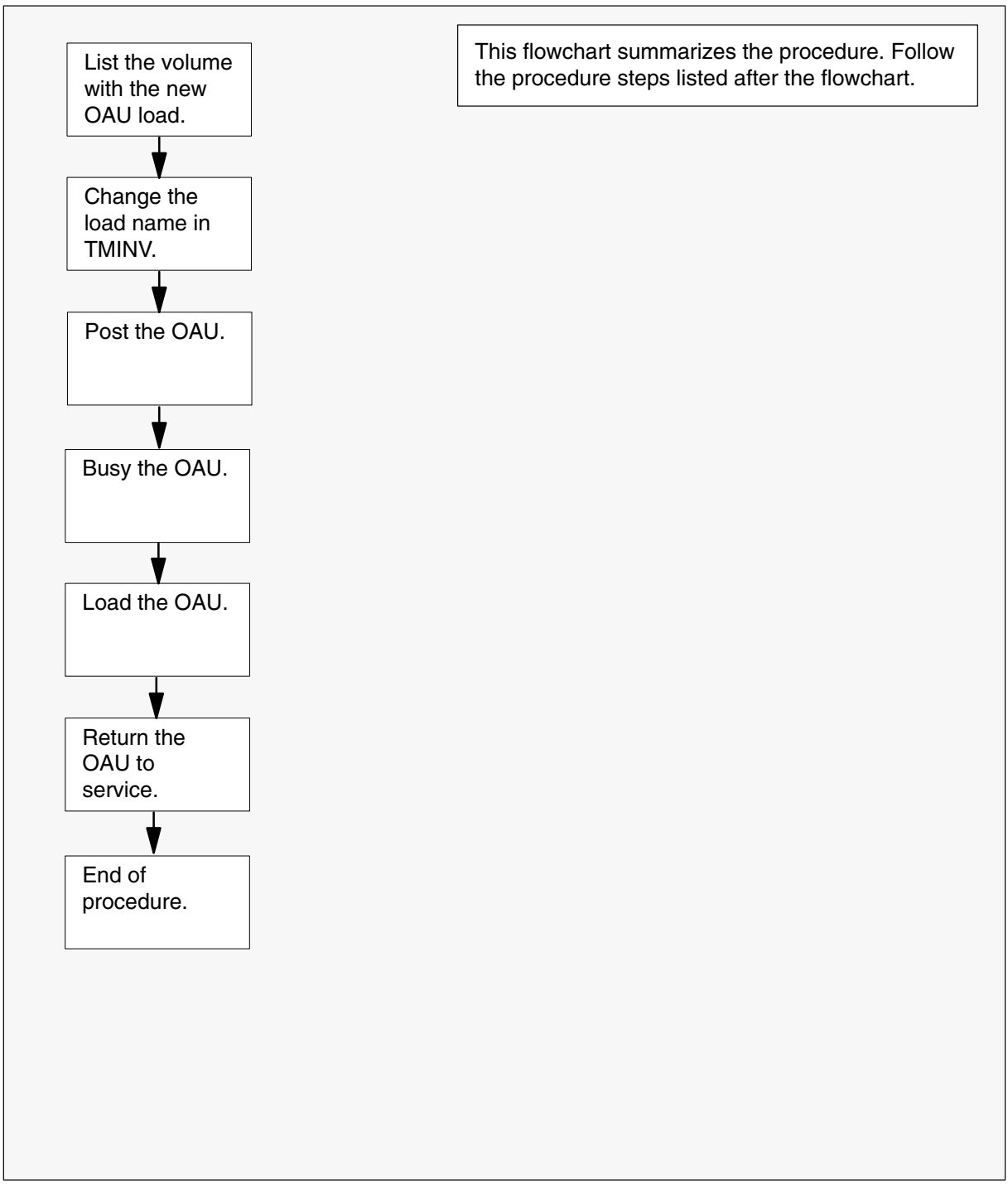


Notes

None

Update the OAU (continued)

Summary of procedure



Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an OAU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the OAU (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the OAU inventory table. Perform the following steps.

a. Open the OAU inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the tuple for the OAU. Type

>POS OAU oau_no
and press the Enter key.

where

oau_no is the number of the OAU

Example of command

```
>POS OAU 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD MTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the PM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the OAU. Type

>POST OAU oau_no
and press the Enter key.

where

oau_no is the number of the OAU

Example of command

```
>POST OAU 11
```

9 Busy the OAU. Type

>BSY
and press the Enter key.

10 Load the OAU. Type

>LOADPM
and press the Enter key.

11 Return the OAU to service. Type

>RTS
and press the Enter key.

12 You have updated the OAU and completed this procedure. Review the update schedule.

If there are	Do
additional OAUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the PDTC or PDTCI

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this PDTC or PDTCI has a peripheral remote loader (PRL) circuit card, use this procedure to update the first PDTC or PDTCI in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining PDTCs or PDTCIs.

Use this procedure to update the PCM30 digital trunk controller (PDTC) or PDTC with ISDN (PDTCI).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new loads for the PDTC or PDTCI are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The PDTC or PDTCI is in-service (InSv).
- The PDTC or PDTCI passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new PDTC or PDTCI load a pre-patched XPM load (PPXL)?

Update the PDTC or PDTCI (continued)

- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the PDTC or PDTCI. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

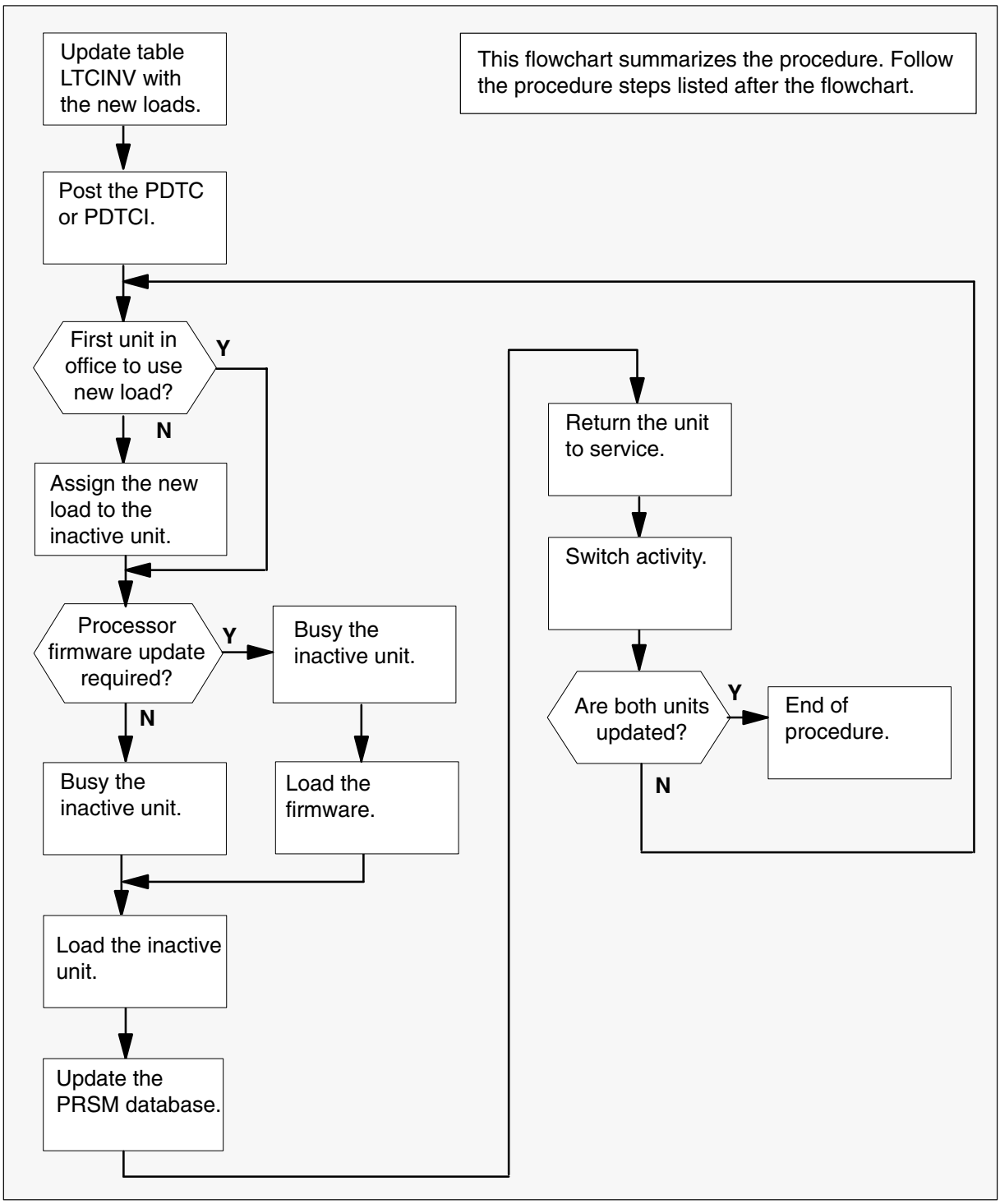
Node configuration for PDTC or PDTCI

Notes

None

Update the PDTC or PDTCI (continued)

Summary of procedure



Update the PDTC or PDTCI (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a PDTC or PDTCI to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PDTC or PDTCI inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the PDTC or PDTCI. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is PDTC or PDTCI
pm_no is the number of the PDTC or PDTCI

Example of command

```
>POS PDTC 0
```

Update the PDTC or PDTCI (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ODT81BI
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PDTC or PDTCI changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the PDTC or PDTCI (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Close the table. Type

>QUIT
and press the Enter key.

6 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

7 Post the PDTC or PDTCI. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is PDTC or PDTCI
pm_no is the number of the PDTC or PDTCI

Example of command

```
>POST PDTC 0
```

Note: The PDTC or PDTCI changes status to ISTb. If the PDTC or PDTCI does not change to ISTb, confirm the PDTC or PDTCI inventory table is updated correctly and the correct PDTC or PDTCI is posted. Do not continue this procedure until the PDTC or PDTCI is ISTb.

8 Identify and update the inactive unit.

Update the PDTC or PDTCI (continued)

9 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 11
not the first unit in the office to use the new load	step 10

10 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION
Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of command

```
>ASSIGN UPGRADE_LD ODT81BI IN DESTSET PDTC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Update the PDTC or PDTCI (continued)

11 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 12
was not changed	step 16

12

ATTENTION

Perform steps 12, 13, and 14 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 12, 13, and 14. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

13 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

14 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

15 Go to step 17.

16 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the PDTC or PDTCI (continued)

17

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

18 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT PDTC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST PDTC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 18i.
all PRSUs for the new load are not applied to the inactive unit	step 18e.
PRSUs from the previous load are listed at VA status	step 18b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 18i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the PDTC or PDTCI (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN PDTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN PDTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT PDTC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is PDTC or PDTCI
pm_no	is the number of the PDTC or PDTCI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST PDTC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 18i.
does not match the PRSM database	step 18e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

19 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

20 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

21 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

22 Confirm the switch of activity. Type

>Y
and press the Enter key.

Update the PDTC or PDTCI (end)

23 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 10
both units are updated	step 24
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

24 You have updated the PDTC or PDTCI and completed this procedure. Review the update schedule for the office.

If there are	Do
additional PDTCs of PDTCIs to update during this shift	Follow the guidelines in "Overview of update process" in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining PDTCs or PDTCIs.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Update the PLGC

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this PLGC has a peripheral remote loader (PRL) circuit card, use this procedure to update the first PLGC in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining PLGCs.

Use this procedure to update the PCM30 line group controller (PLGC).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the PLGC are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The PLGC is in-service (InSv).
- The PLGC passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new PLGC load a pre-patched XPM load (PPXL)?

Update the PLGC (continued)

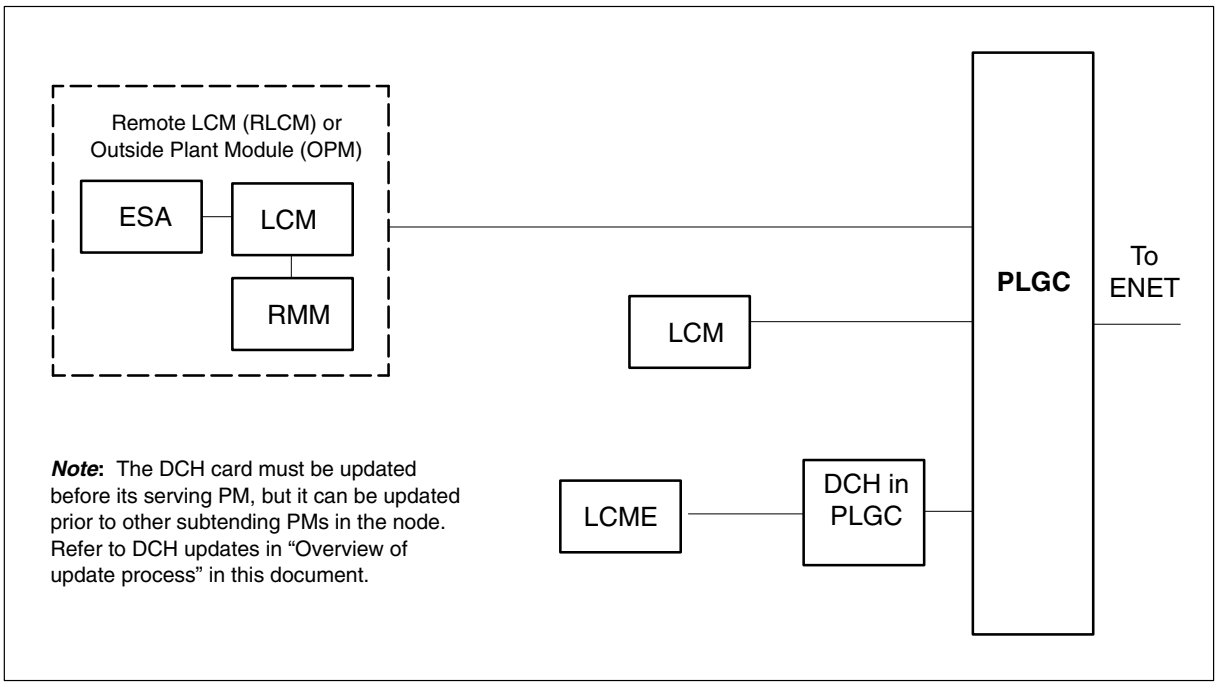
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters "Overview of release" and "Overview of manual update process."

Update sequence

The following figure illustrates a possible node configuration for the PLGC. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for PLGC

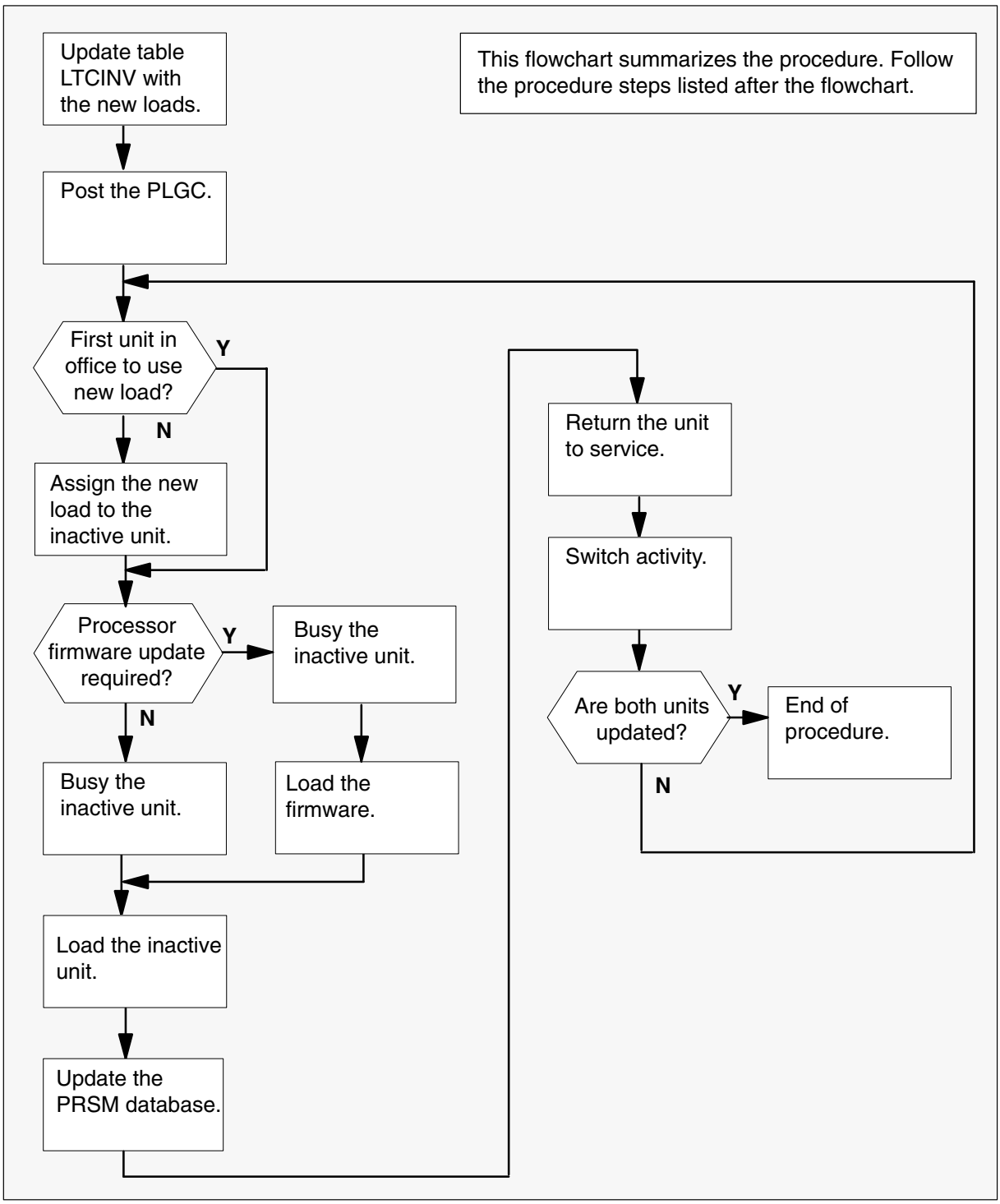


Notes

None

Update the PLGC (continued)

Summary of procedure



Update the PLGC (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an PLGC to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PLGC inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the PLGC. Type

>POS PLGC plgc_no
and press the Enter key.

where

plgc_no is the number of the PLGC

Example of command

```
>POS PLGC 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD OGI81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PLGC changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the PLGC (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the name of the new CMR load

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the PLGC. Type

>POST PLGC plgc_no
and press the Enter key.

where

plgc_no is the number of the PLGC

Example of command

```
>POST PLGC 0
```

Note: The PLGC changes status to ISTb. If the PLGC does not change to ISTb, confirm the PLGC inventory table is updated correctly and the correct PLGC is posted. Do not continue this procedure until the PLGC is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

Update the PLGC (continued)

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET PLGC plgc_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
plgc_no	is the number of the PLGC
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD OGI81AZ IN DESTSET PLGC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the PLGC (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT PLGC plgc_no unit_no
and press the Enter key.

where

plgc_no	is the number of the PLGC
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT PLGC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST PLGC plgc_no unit_no
and press the Enter key.

where

plgc_no	is the number of the PLGC
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST PLGC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN PLGC plgc_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
plgc_no	is the number of the PLGC
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN PLGC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN PLGC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the PLGC (continued)

f. Update the PRSM database. Type

>DBAUDIT PLGC plgc_no unit_no
and press the Enter key.

where

plgc_no is the number of the PLGC
unit_no is the number of the inactive unit

Example of command

```
>DBAUDIT PLGC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST PLGC plgc_no unit_no
and press the Enter key.

where

plgc_no is the number of the PLGC
unit_no is the number of the inactive unit

Example of command

```
>REPORT DEST PLGC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures that superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the PLGC and completed this procedure. Review the update schedule for the office.

If there are	Do
additional PLGCs to update during this shift	Follow the guidelines in “Overview of update process” in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining PLGCs.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the RCC

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use this procedure if the RCC is in a dual configuration. Use the procedure "Update the dual RCC or RCC2" in this document.

If this RCC has a peripheral remote loader (PRL) circuit card, use this procedure to update the first RCC in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining RCCs.

Use this procedure to update the remote cluster controller (RCC).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the RCC are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The RCC is in-service (InSv).
- The RCC passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?

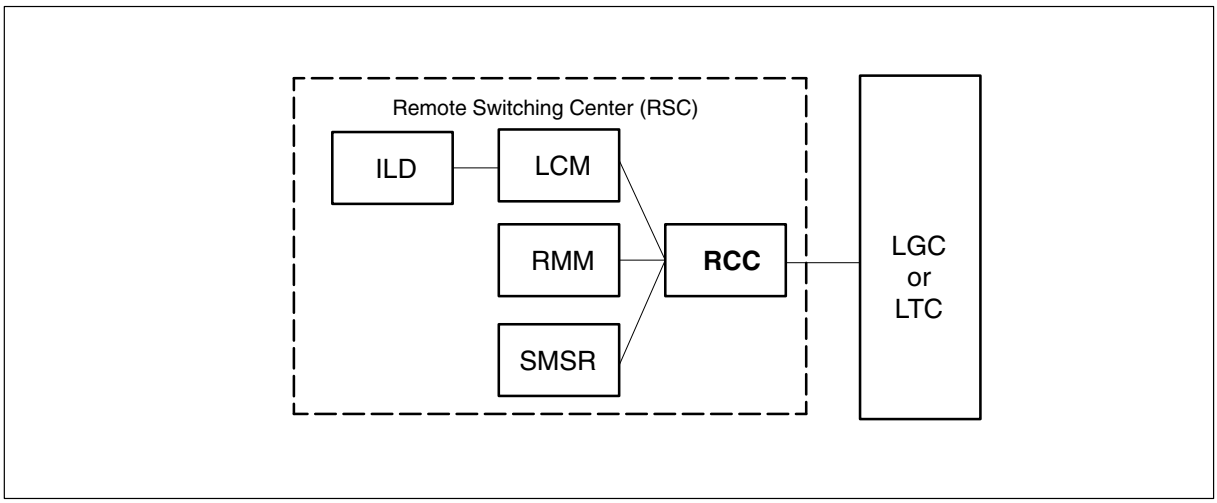
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new RCC load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the RCC. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for RCC

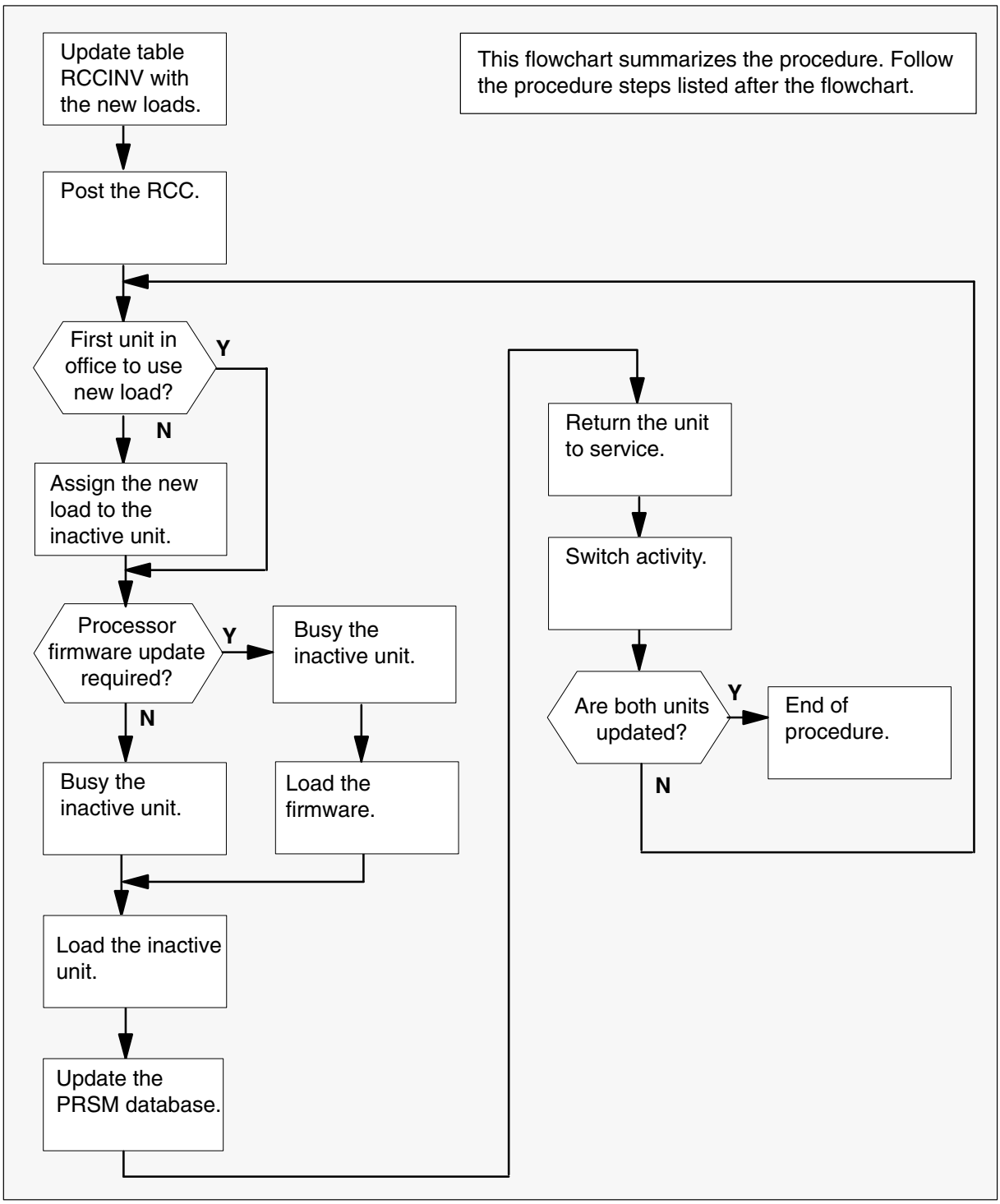


Notes

None

Update the RCC (continued)

Summary of procedure



Update the RCC (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an RCC to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the RCC inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE RCCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the RCC. Type

>POS site_name RCC rcc_no
and press the Enter key.

where

site_name is the name of the site with the RCC
rcc_no is the number of the RCC

Example of command

```
>POS REM1 RCC 0
```

Update the RCC (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ESR81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The RCC changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the name of the new CMR load

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

Update the RCC (continued)

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the RCC. Type

>POST RCC rcc_no
and press the Enter key.

where

rcc_no is the number of the RCC

Example of command

```
>POST RCC 0
```

Note: The RCC changes status to ISTb. If the RCC does not change to ISTb, confirm the RCC inventory table is updated correctly and the correct RCC is posted. Do not continue this procedure until the RCC is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET RCC rcc_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ESR81AZ IN DESTSET RCC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

Update the RCC (continued)

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT RCC rcc_no unit_no
and press the Enter key.

where

rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT RCC 0 1
```

Update the RCC (continued)

c. Display the PRSU list. Type

>REPORT DEST RCC rcc_no unit_no
and press the Enter key.

where

rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST RCC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN RCC rcc_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT RCC rcc_no unit_no
and press the Enter key.

where

rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT RCC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST RCC rcc_no unit_no
and press the Enter key.

where

rcc_no	is the number of the RCC
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST RCC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the RCC (end)

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the RCC and completed this procedure. Review the update schedule for the office.

If there are	Do
additional RCCs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the RCC2

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use this procedure if the RCC2 is in a dual configuration. Use the procedure "Update the dual RCC or RCC2" in this document.

If this RCC2 has a peripheral remote loader (PRL) circuit card, use this procedure to update the first RCC2 in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining RCC2s.

Use this procedure to update the remote cluster controller 2 (RCC2).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the RCC2 are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The RCC2 is in-service (InSv).
- The RCC2 passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?

Update the RCC2 (continued)

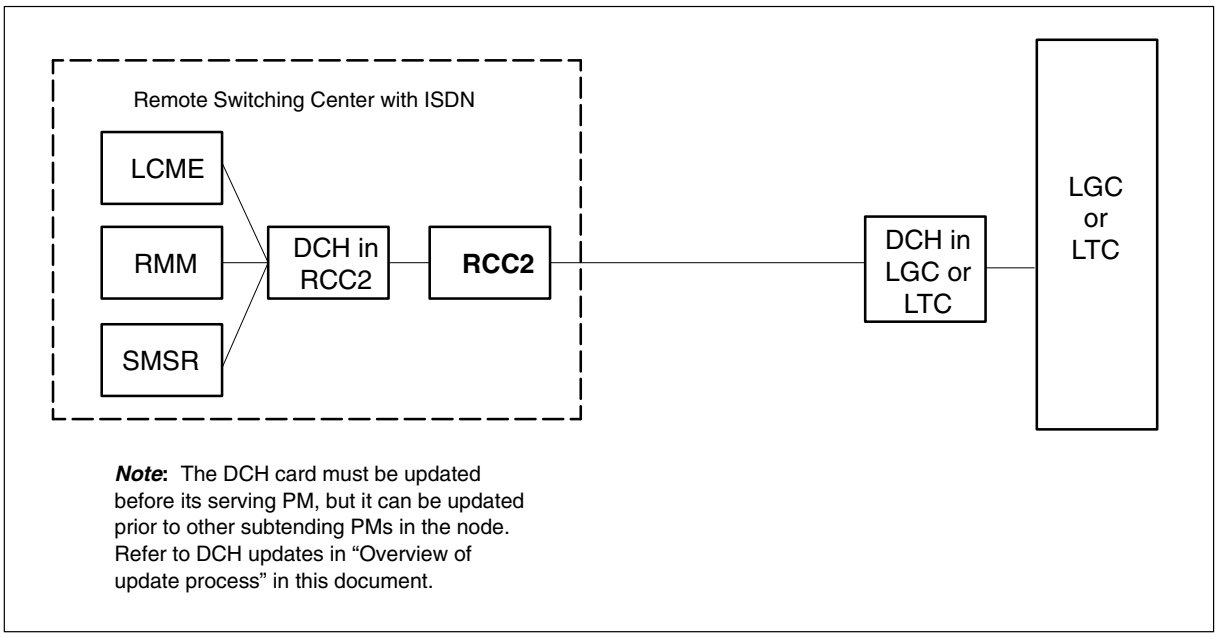
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new RCC2 load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters "Overview of release" and "Overview of update process."

Update sequence

The following figure illustrates a possible node configuration for the RCC2. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for RCC2

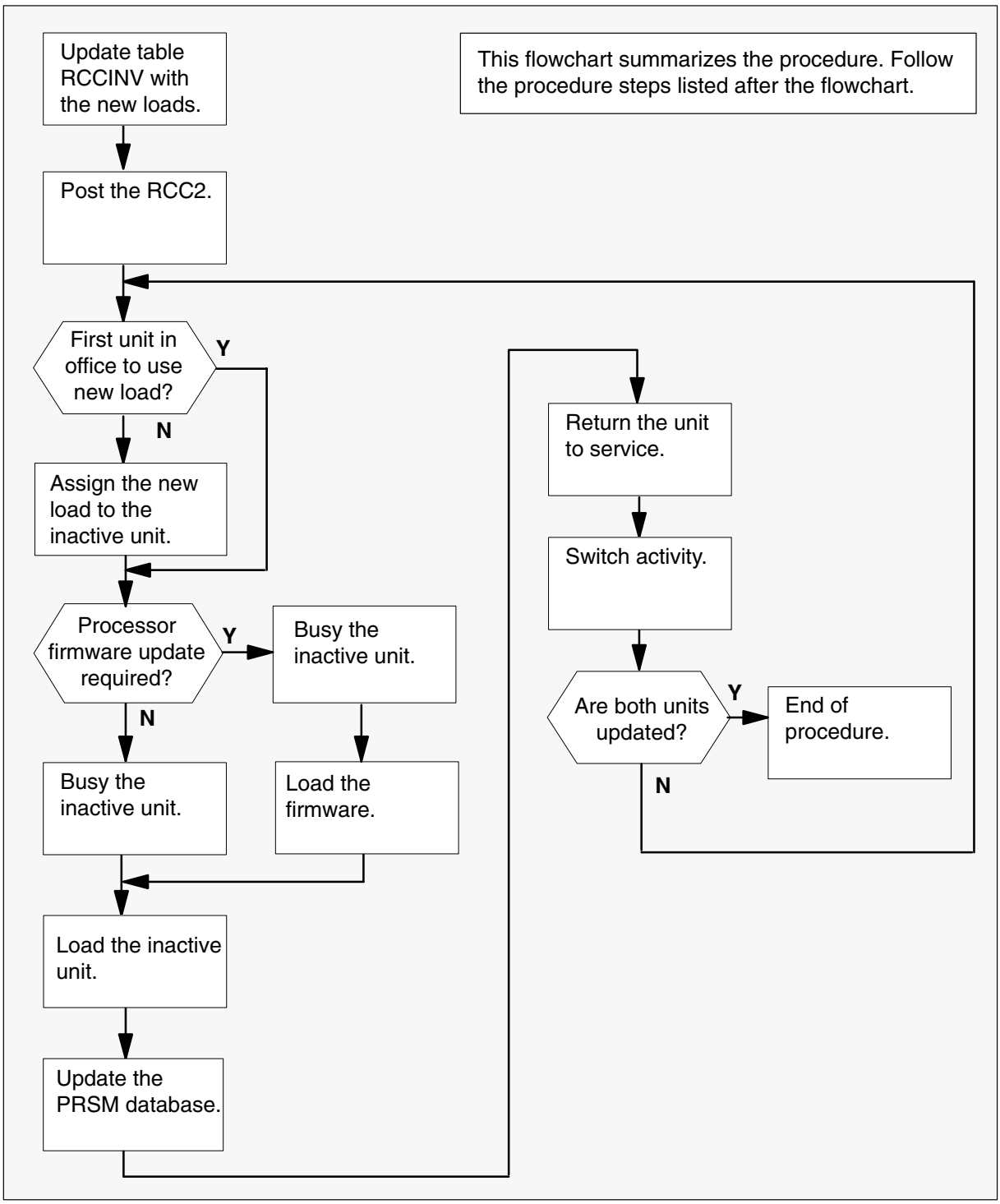


Notes

None

Update the RCC2 (continued)

Summary of procedure



Update the RCC2 (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an RCC2 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the RCC2 inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE RCCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the RCC2. Type

>POS site_name RCC2 rcc2_no
and press the Enter key.

where

site_name is the name of the site with the RCC2
rcc2_no is the number of the RCC2

Example of command

```
>POS REM1 RCC2 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD XRI81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The RCC2 changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
requires an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Update the RCC2 (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the name of the new CMR load

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the RCC2. Type

>POST RCC2 rcc2_no
and press the Enter key.

where

rcc2_no is the number of the RCC2

Example of command

```
>POST RCC2 0
```

Note: The RCC2 changes status to ISTb. If the RCC2 does not change to ISTb, confirm the RCC2 inventory table is updated correctly and the correct RCC2 is posted. Do not continue this procedure until the RCC2 is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedules for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

Update the RCC2 (continued)

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET RCC2 rcc2_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD XRI81AZ IN DESTSET RCC2 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the RCC2 (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT RCC2 rcc2_no unit_no
and press the Enter key.

where

rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT RCC2 0 1
```

c. Display the PRSU list. Type

>REPORT DEST RCC2 rcc2_no unit_no
and press the Enter key.

where

rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST RCC2 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN RCC2 rcc2_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC2 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC2 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the RCC2 (continued)

f. Update the PRSM database. Type

>DBAUDIT RCC2 rcc2_no unit_no
and press the Enter key.

where

rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT RCC2 0 1
```

g. Display the PRSU list. Type

>REPORT DEST RCC2 rcc2_no unit_no
and press the Enter key.

where

rcc2_no	is the number of the RCC2
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST RCC2 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the RCC2 and completed this procedure. Review the update schedule for the office.

If there are	Do
additional RCC2s to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the dual RCC or RCC2

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this dual RCC or RCC2 has a peripheral/remote loader (PRL) circuit card, use this procedure to update the first dual RCC or RCC2 in the office to use the new load. Refer to the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining dual RCCs or RCC2s.

Use this procedure to update a remote cluster controller (RCC) or a remote cluster controller 2 (RCC2) in a dual configuration.

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the PM are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The dual RCC or RCC2 is in-service (InSv).
- The dual RCC or RCC2 passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?

Update the dual RCC or RCC2 (continued)

- Is the unit to be updated the first unit in the office to use the new load?
- Is the new RCC or RCC2 load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

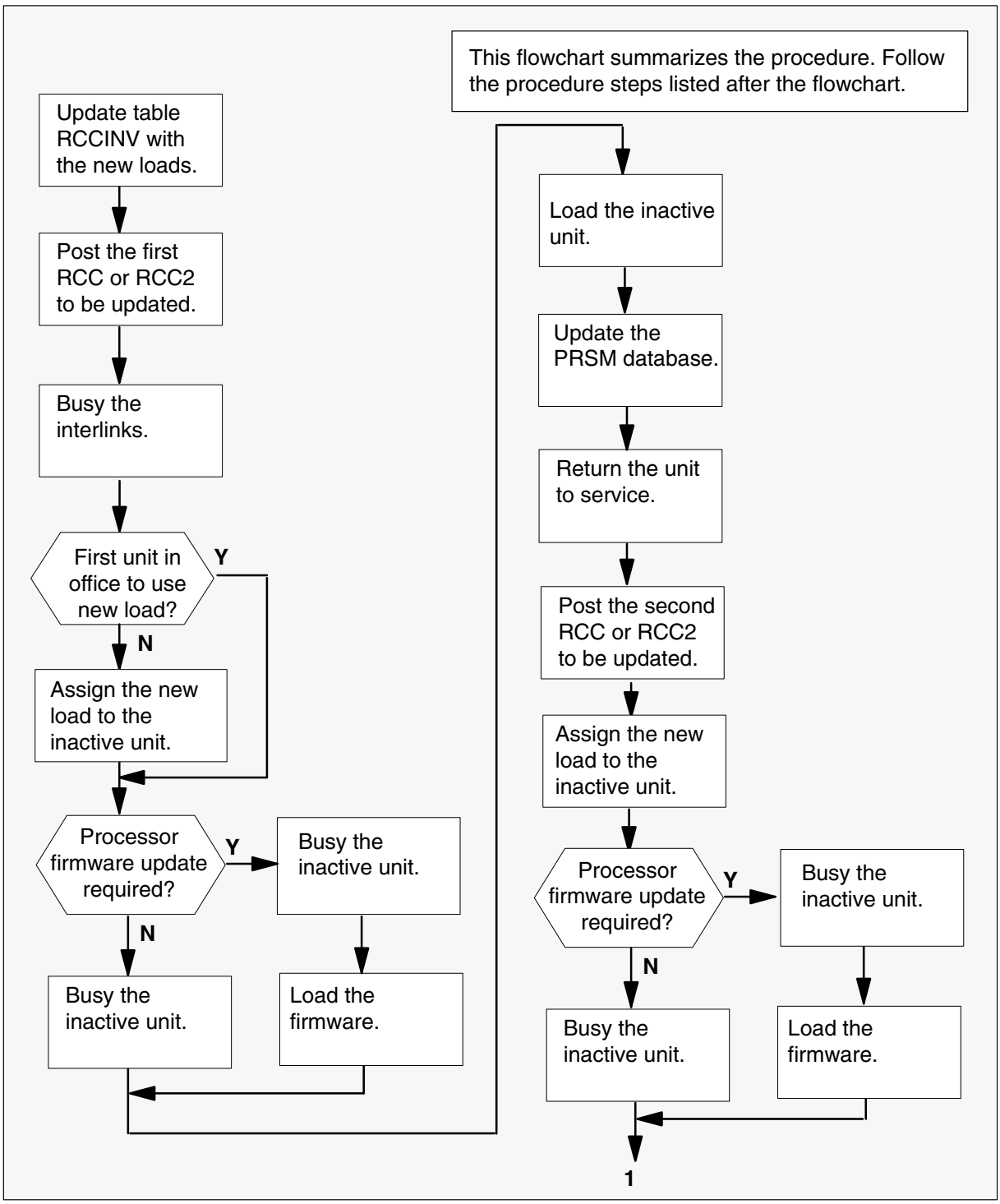
Refer to either “Update the RCC” or “Update the RCC2” in this document for update sequence information.

Notes

None

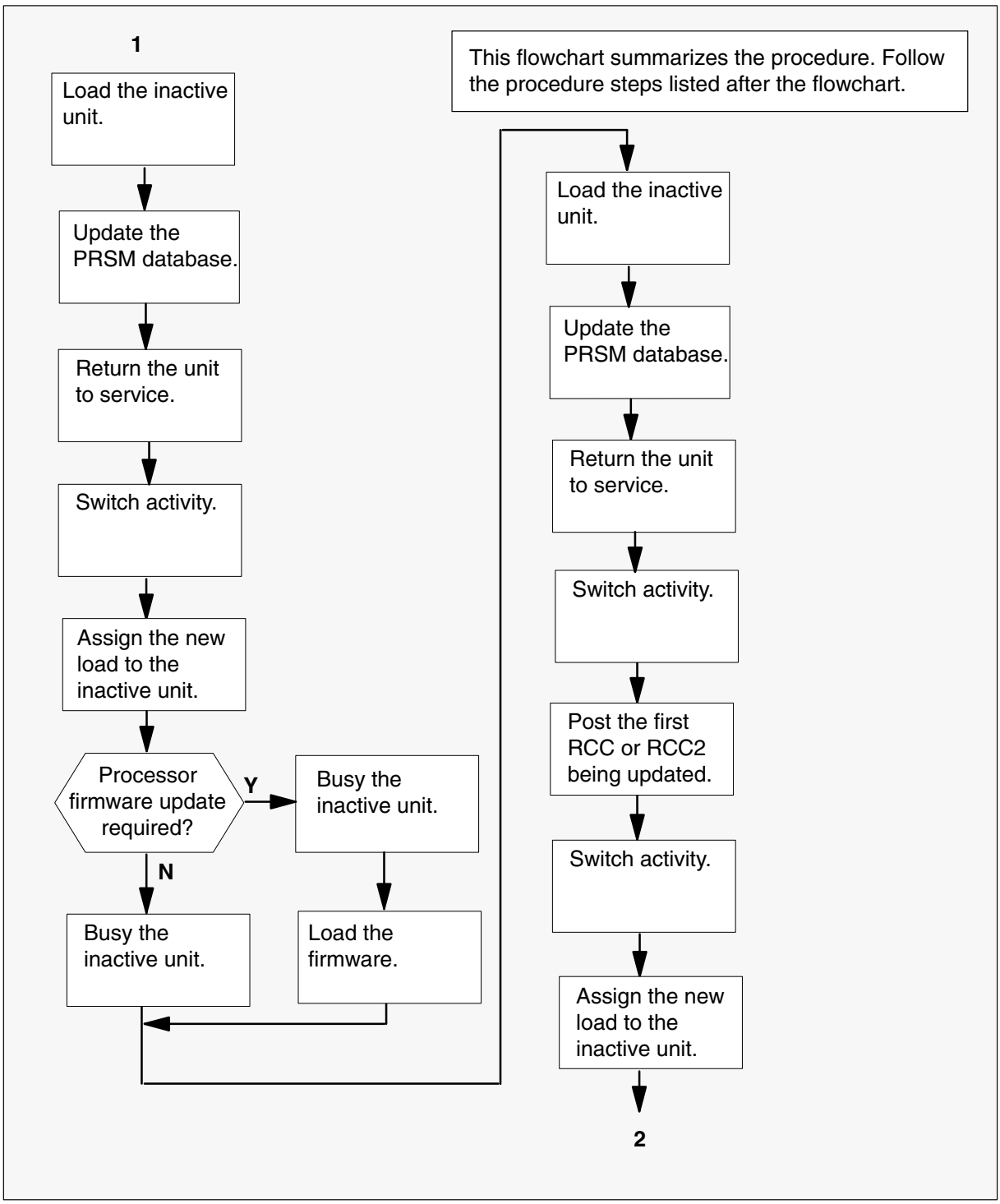
Update the dual RCC or RCC2 (continued)

Summary of procedure



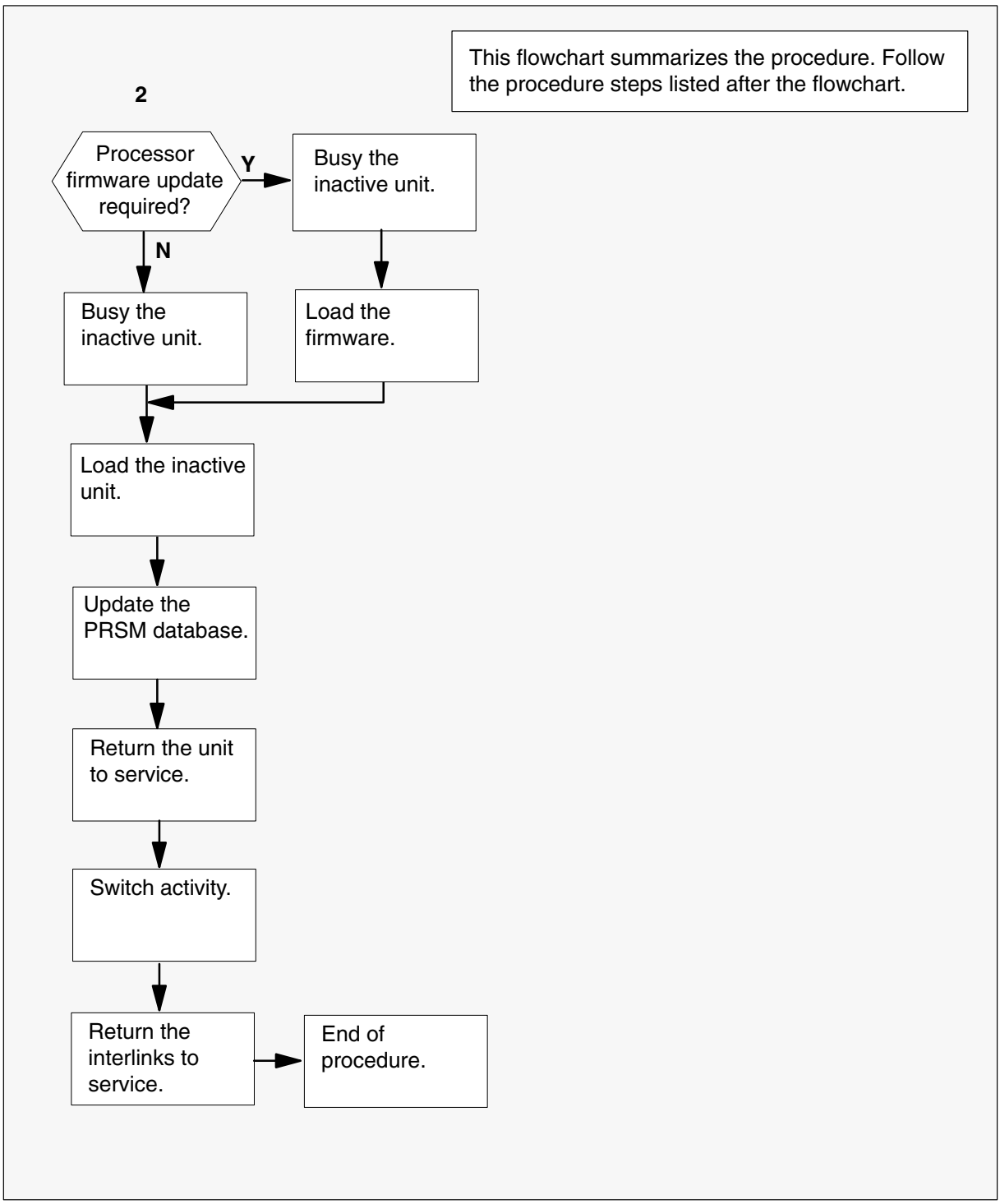
Update the dual RCC or RCC2 (continued)

Summary of procedure (continued)



Update the dual RCC or RCC2 (continued)

Summary of procedure (continued)



Update the dual RCC or RCC2 (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a dual RCC or RCC2 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the dual RCC or RCC2 inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE RCCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the PM. Type

>POS site_name pm_type pm_no
and press the Enter key.

where

site_name is the name of the site of the RCC or RCC2
pm_type is RCC or RCC2
pm_no is the number of the RCC or RCC2

Example of command

```
>POS REM0 RCC 0
```

Update the dual RCC or RCC2 (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD XRI81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The RCC or RCC2 changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the dual RCC or RCC2 (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the name of the new CMR load

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

Update the dual RCC or RCC2 (continued)

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Determine if table RCCINV has been updated for both PMs.

If table RCCINV has been updated	Do
for one RCC or RCC2	step 3c.
for both RCCs or RCC2s	step 8

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10 Post the first RCC or RCC2. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is the first RCC or RCC2
pm_no is the number of the RCC or RCC2

Example of command

```
>POST RCC 0
```

Note: The RCC or RCC2 changes status to ISTb. If the RCC or RCC2 does not change to ISTb, confirm the RCC or RCC2 inventory table is updated correctly and the correct RCC or RCC2 is posted. Do not continue this procedure until the RCC or RCC2 is ISTb.

11 Identify and update the inactive unit.

12 Busy the interlinks. Perform the following steps.

a. Access the IRLINK level of the MAP display. Type

>IRLINK
and press the Enter key.

b. Display the interlinks. Type

>QUERYIR
and press the Enter key.

c. Disable interswitching. Type

>INTERSW DISABLE
and press the Enter key.

d. Select and busy an interlink. Type

>BSY link_no
and press the Enter key.

where

link_no is the number of the interlink

Example of command

```
>BSY 1
```

e. Confirm the action. Type

>Y
and press the Enter key.

f. Repeat steps 12d. and 12e. for each interlink.

g. Exit the IRLINK level. Type

>QUIT
and press the Enter key.

13 Review the update schedules for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 15
not the first unit in the office to use the new load	step 14

Update the dual RCC or RCC2 (continued)

14 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>ASSIGN UPGRADE_LD XRI81AZ IN DESTSET RCC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

15 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 16
was not changed	step 20

Update the dual RCC or RCC2 (continued)

16

ATTENTION

Perform steps 16, 17, and 18 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 16, 17, and 18. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

17 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

18 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

19 Go to step 21.

20 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the dual RCC or RCC2 (continued)

21

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when you update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

22 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>DBAUDIT RCC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>REPORT DEST RCC 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 22i.
all PRSUs for the new load are not applied to the inactive unit	step 22e.
PRSUs from the previous load are listed at VA status	step 22b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 22i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the dual RCC or RCC2 (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2,
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>DBAUDIT RCC 0 1
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>REPORT DEST RCC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 22i.
does not match the PRSM database	step 22e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

23 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

24 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

25 Post the second RCC or RCC2. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is the second RCC or RCC2
pm_no is the number of the RCC or RCC2

Example of command

```
>POST RCC 1
```

Note: The RCC or RCC2 changes status to ISTb. If the RCC or RCC2 does not change to ISTb, confirm the RCC or RCC2 inventory table is updated correctly and the correct RCC or RCC2 is posted. Do not continue this procedure until the RCC or RCC2 is ISTb.

Update the dual RCC or RCC2 (continued)

26 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC RCC2, or RCC2

Example of command

```
>ASSIGN UPGRADE_LD XRI81AZ IN DESTSET RCC 1 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

27 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 28
was not changed	step 32

Update the dual RCC or RCC2 (continued)

28

ATTENTION

Perform steps 28, 29, and 30 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 28, 29, and 30. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

29 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

30 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

31 Go to step 33.

32 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the dual RCC or RCC2 (continued)

33

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when updating a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

34 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>DBAUDIT RCC 1 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>REPORT DEST RCC 1 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 34i.
all PRSUs for the new load are not applied to the inactive unit	step 34e.
PRSUs from the previous load are listed at VA status	step 34b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 34i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the dual RCC or RCC2 (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2,
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>DBAUDIT RCC 1 1
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>REPORT DEST RCC 1 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 34i.
does not match the PRSM database	step 34e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

35 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

36 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

37 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

38 Confirm the switch of activity. Type

>Y
and press the Enter key.

39 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

40 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Update the dual RCC or RCC2 (continued)

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>ASSIGN UPGRADE_LD XRI81AZ IN DESTSET RCC 1 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

41 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 42
was not changed	step 46

Update the dual RCC or RCC2 (continued)

42

ATTENTION

Perform steps 42, 43, and 44 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 42, 43, and 44. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

43 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

44 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

45 Go to step 47.

46 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the dual RCC or RCC2 (continued)

47

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when updating a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

48 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>DBAUDIT RCC 1 0
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>REPORT DEST RCC 1 0
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 48i.
all PRSUs for the new load are not applied to the inactive unit	step 48e.
PRSUs from the previous load are listed at VA status	step 48b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 48i. The PRSM daily FILEAUDIT removes these PRSUs.

Update the dual RCC or RCC2 (continued)

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2,
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>DBAUDIT RCC 1 0
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>REPORT DEST RCC 1 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 48i.
does not match the PRSM database	step 48e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

49 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

50 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

51 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

52 Confirm the switch of activity. Type

>Y
and press the Enter key.

53 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the dual RCC or RCC2 (continued)

54 Post the first RCC or RCC2. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type	is the first RCC or RCC2
pm_no	is the number of the RCC or RCC2

Example of command

```
>POST RCC 0
```

55 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

56 Confirm the switch of activity. Type

>Y
and press the Enter key.

57 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

58 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>ASSIGN UPGRADE_LD XRI81AZ IN DESTSET RCC 0 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

59 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 60
was not changed	step 64

Update the dual RCC or RCC2 (continued)

60

ATTENTION

Perform steps 60, 61, and 62 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 60, 61, and 62. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

61 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

62 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

63 Go to step 65.

64 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

65

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when updating a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

66 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>DBAUDIT RCC 0 0
```

Update the dual RCC or RCC2 (continued)

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>REPORT DEST RCC 0 0
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 66i.
all PRSUs for the new load are not applied to the inactive unit	step 66e.
PRSUs from the previous load are listed at VA status	step 66b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 66i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2,
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN RCC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN RCC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the second RCC or RCC2

Example of command

```
>DBAUDIT RCC 1 0
```

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is RCC or RCC2
pm_no	is the number of the RCC or RCC2
unit_no	is the number of the inactive unit in the first RCC or RCC2

Example of command

```
>REPORT DEST RCC 0 0
```

Update the dual RCC or RCC2 (continued)

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 66i.
does not match the PRSM database	step 66e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

67 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

68 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

69 Switch activity between the units and return to their original service states. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

70 Confirm the switch of activity. Type

>Y
and press the Enter key.

71 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

72 Return the interlinks to service. Perform the following steps.

a. Access the IRLINK level of the MAP display. Type

>IRLINK
and press the Enter key.

b. Display the interlinks. Type

>QUERYIR
and press the Enter key.

c. Return an interlink to service. Type

>RTS link_no
and press the Enter key.

where

link_no is the number of the interlink

Example of command

```
>RTS 1
```

d. Repeat step 72c. for each busied interlink.

e. Enable interswitching. Type

>INTERSW ENABLE
and press the Enter key.

f. Exit the IRLINK level. Type

>QUIT
and press the Enter key.

73 You have updated the dual RCC-or RCC2 and completed this procedure. Review the update schedule for the office.

If there are	Do
additional dual RCCs or RCC2s-to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the RLD

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the software in the remote line drawer (RLD).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The RLD is in-service (InSv).

Required information

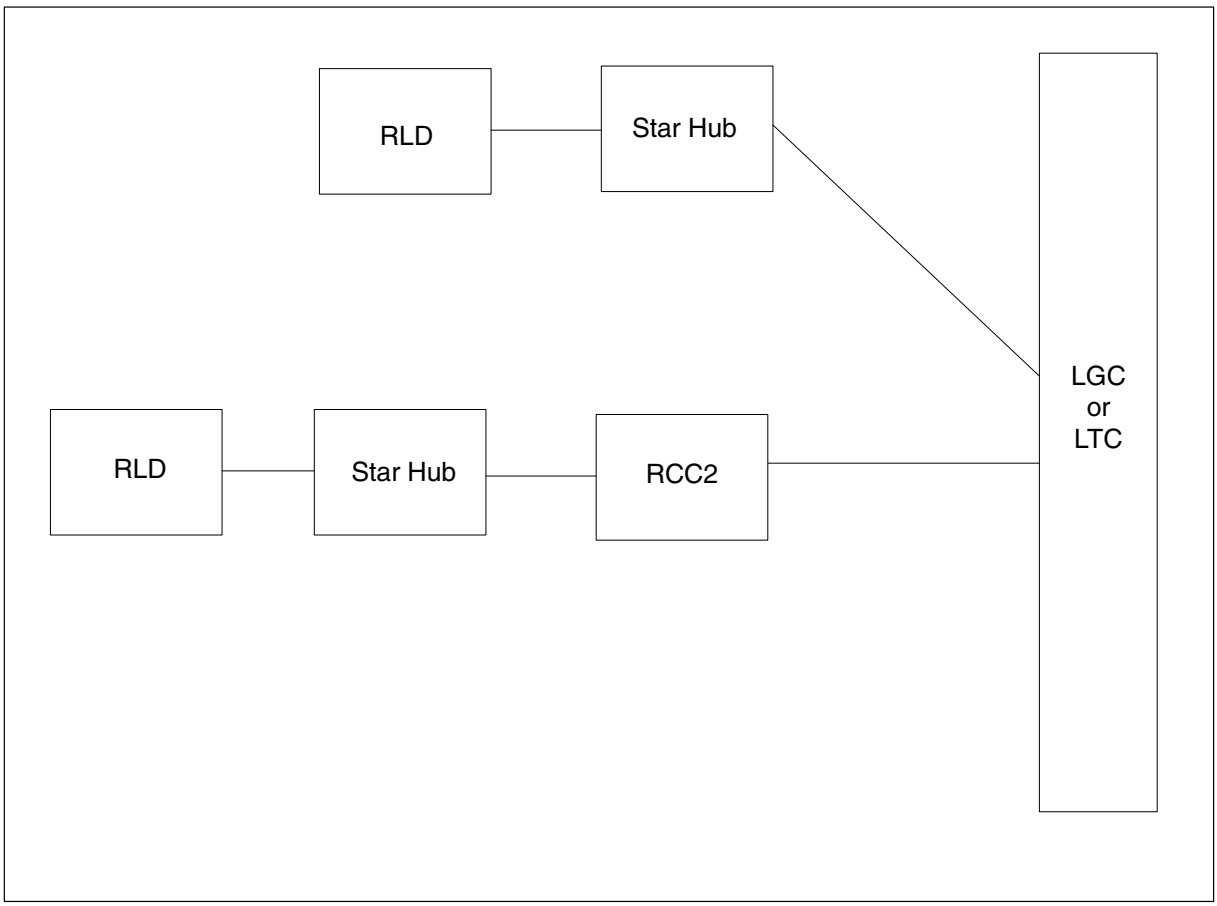
None

Update sequence

The following figure illustrates possible node configurations for the RLD. Serving PMs must be updated after the RLD.

Update the RLD (continued)

Node configuration for RLD

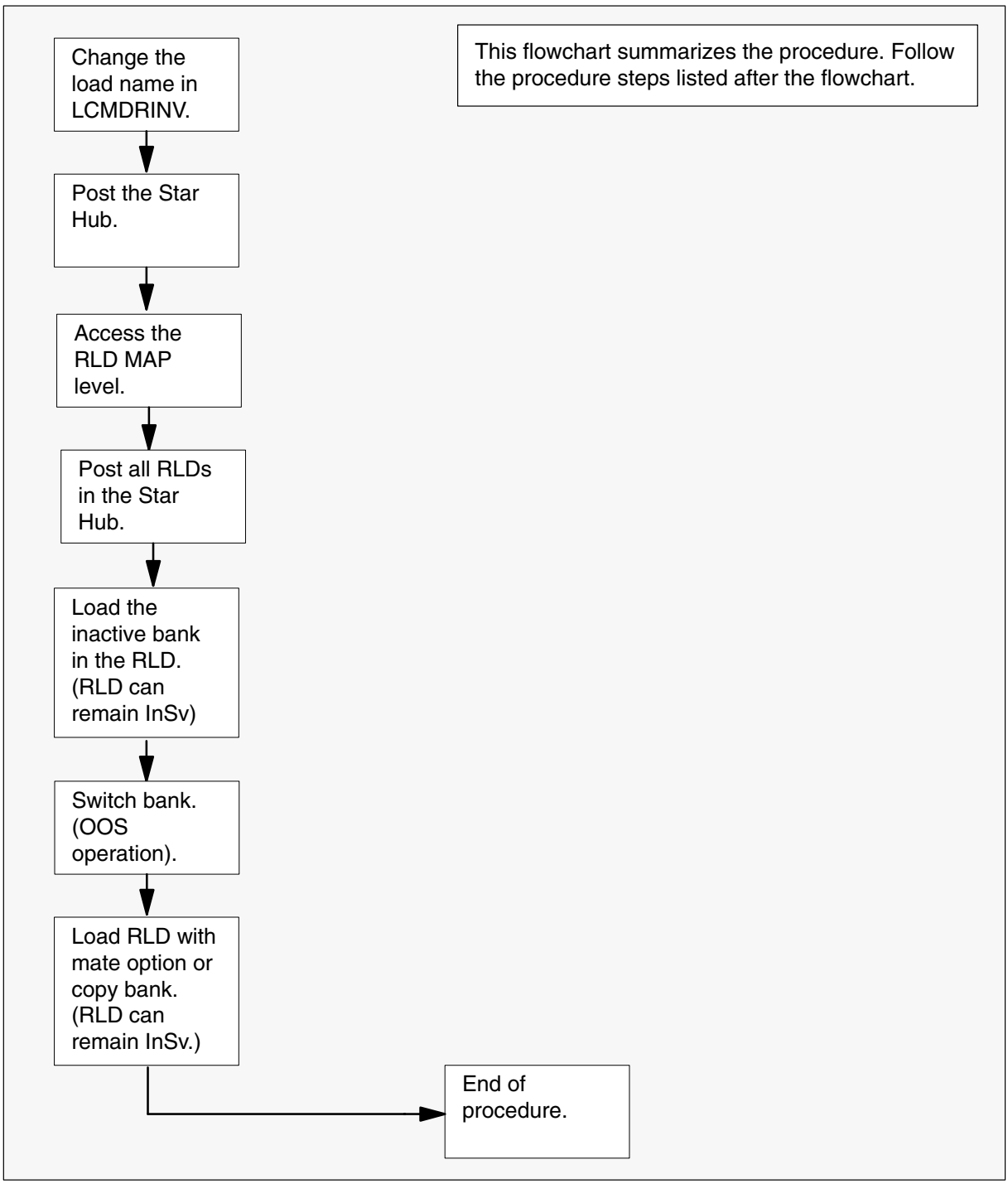


Notes

None

Update the RLD (continued)

Summary of procedure



Update the RLD (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a Star Hub with RLDs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCM drawer inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LCMDRINV
and press the Enter key.

b. Position on the datafill tuple for the Star Hub to be updated. Type

>POS site_name frame_no 0
and press the Enter key.

where

site_name is the name of the site
frame_no is the number of the frame

Example of MAP response

```
RSCA 00 0
(0 NT6X454AA NT6X05AA) (1 NT6X54AA NT6X05AA)
(2 NTTR70AA NTTR45AA 0 RLD11DK 2 DEFAULT 20 SITE1)
(3 NT6X54AA NT6X05AA) (4 NT6X54AA NT6X05AA)
(5 NT6X54AA NT6X05AA) (6 NT6X54AA NT6X05AA)
(7 NILDRWR) (8 NILDRWR) (9 NILDRWR) (10 NILDRWR)
(11 NILDRWR) (12 NILDRWR) (13 NILDRWR) (14 NILDRWR)
(15 NILDRWR) (16 NILDRWR) (17 NILDRWR) (18 NILDRWR)$
```

c. Change the tuple. Type

>CHA
and press the Enter key.

Update the RLD (continued)

d. Confirm the change. Type

>Y
and press the Enter key.

Example of MAP response

```
DRWRTAB:  0  NT6X54AA  NT6X05AA
```

e. Press the Enter key to scroll through the fields until the field with the RLD software load is reached.

Example of MAP response

```
DRWRTAB:  2  NTTR70AA NTTR45AA 0 RLD11DK 2 DEFAULT 20 SITE1
```

f. Enter the new load name. Type

>drwr_id rldc_pec drwr_pec rld_no new_load links_no carr_idx ringer_no rld_site
and press the Enter key.

where

drwr_id	is the physical number of the drawer
rldc_pec	is the remote line drawer control card PEC
drwr_pec	is the physical remote line drawer control card PEC
rld_no	is the remote line drawer internal number
lnew_load	is the name of the new load
links_no	is the number of DS-1 links that connect the Star Module to the Star Hub
carr_idx	is the tuple name of the DS-1 links between the Star Hub and the Star Module in table CARRMTC
ringer_no	is the value of the Star Module's coded ringer
rld_site	is the remote line drawer site name location

Example of command

```
>2  NTTR70AA NTTR45AA 0 RLD11DL 2 DEFAULT 20 SITE1
```

Note: In this example, the load name is changed from RLD11DK to RLD11DL.

g. Press the Enter key to scroll through the remaining fields or repeat steps 3b. through 3f. to change the RLD load name in the remaining drawers.

h. Confirm the change. Type

>Y
and press the Enter key.

Note: The RLD drawer for the Star Hub changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

i. Exit the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the Star Hub. Type

>POST STAR site_name frame_no 0
and press the Enter key.

where

site_name	is the site of the Star Hub
frame_no	is the number of the frame

6 Access the RLD level of the MAP display. Type

>RLD
and press the Enter key.

7 Post the RLD. Type

>POST DRWR rld_no
and press the Enter key.

where

rld_no	is any of two RLD logical sub-drawers

Note: The RLD drawer for the Star Hub changes status to ISTb. If the RLD drawer does not change to ISTb, confirm table LCMDRINV is updated correctly and the correct RLD drawer is posted. Do not continue this procedure until the RLD drawer is ISTb. The ISTb status clears when the RLD update completes.

8 Load the inactive bank in the RLD. Type

>LOADRLD
and press the Enter key.

Note: Wait approximately 15 minutes for the inactive bank of the RLD to load with this command.

Update the RLD (end)

9 Switch banks in the RLD. Type

>SwBnk
and press the Enter key.

10

ATTENTION

The SwBnk command generates the following MAP display warning message:

```
**WARNING**  A COLD Switch Bank will be performed.
All existing calls will be dropped.

CONTINUE
Please confirm ("YES", "Y", "NO", or "N")
```

Confirm the change. Type

>Y
and press the Enter key.

Note: Wait 15 minutes to ensure the RLD is functioning without any problems.

11 Load the new inactive bank in the RLD. Type

>LOADRLD MATE
and press the Enter key.

Note: Wait approximately two minutes for the inactive bank in the RLD to load from the mate bank with this command.

12 Repeat steps 7 through 9 for all RLDs for this Star Hub.

13 You have updated the RLD and completed this procedure. Review the update schedule.

If there are	Do
additional Star Hubs with RLDs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no additional PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Update the RMM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the remote maintenance module (RMM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The RMM is in-service (InSv).
- All REX tests are suspended in the office.

Required information

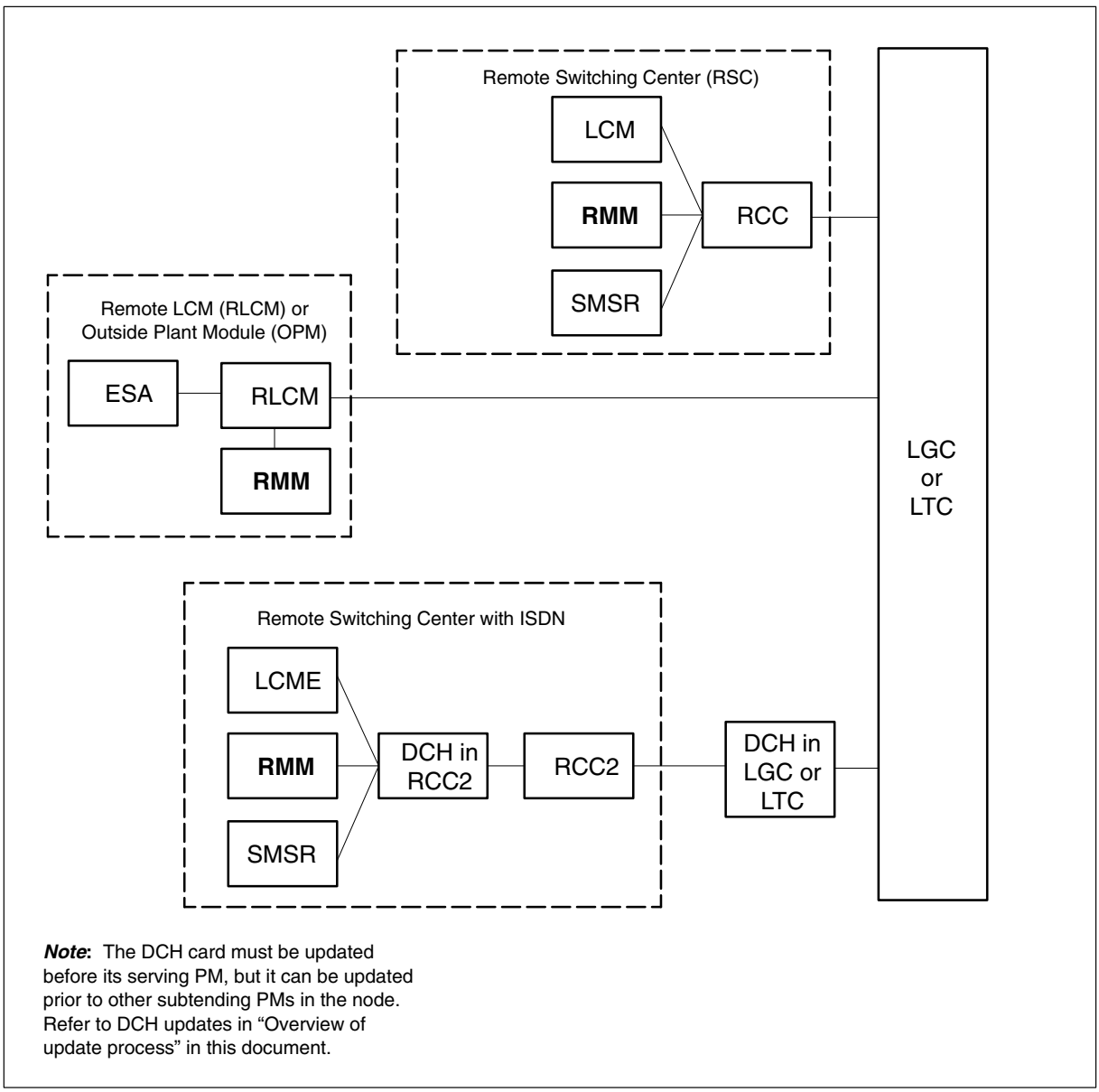
None

Update the RMM (continued)

Update sequence

The following figure illustrates a possible node configuration for the RMM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for RMM



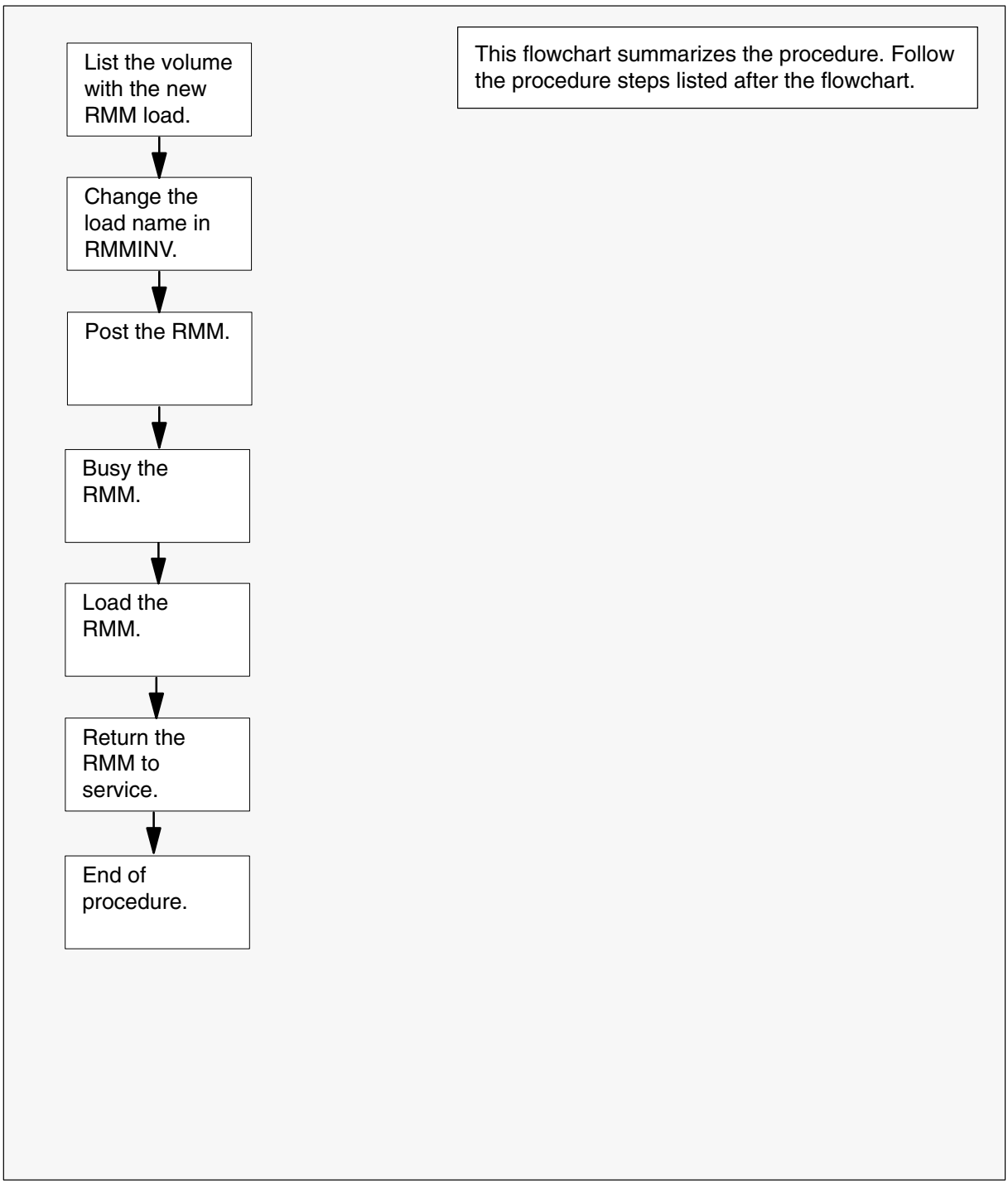
***Note*:** The DCH card must be updated before its serving PM, but it can be updated prior to other subtending PMs in the node. Refer to DCH updates in "Overview of update process" in this document.

Notes

None

Update the RMM (continued)

Summary of procedure



Update the RMM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an RMM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the RMM inventory table. Perform the following steps.

a. Open the RMM inventory table. Type

>TABLE RMMINV
and press the Enter key.

b. Position on the datafill tuple for the RMM. Type

>POS RMM rmm_no
and press the Enter key.

where

rmm_no is the number of the RMM

Example of command

```
>POS RMM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD RMM05A
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the RMM (end)

e. Close the PM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the RMM. Type

>POST RMM rmm_no
and press the Enter key.

where

rmm_no is the number of the RMM

Example of command

```
>POST RMM 11
```

9 Busy the RMM. Type

>BSY
and press the Enter key.

10 Load the RMM. Type

>LOADPM
and press the Enter key.

11 Return the RMM to service. Type

>RTS
and press the Enter key.

12 You have updated the RMM and completed this procedure. Review the update schedule.

If there are	Do
additional RMMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the SMA

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this SMA has a peripheral remote loader (PRL) circuit card, use this procedure to update the first SMA in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining SMAs.

Use this procedure to update the subscriber carrier module-100 access (SMA).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the SMA are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The SMA is in-service (InSv).
- The SMA passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?

Update the SMA (continued)

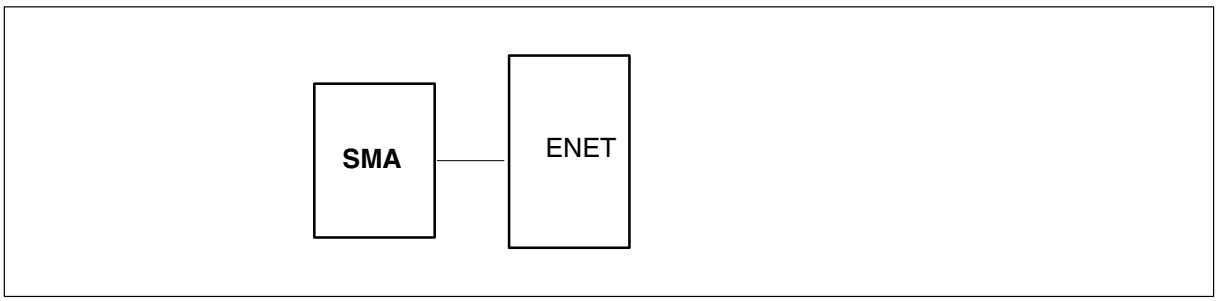
- Is the new SMA load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the SMA. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for SMA

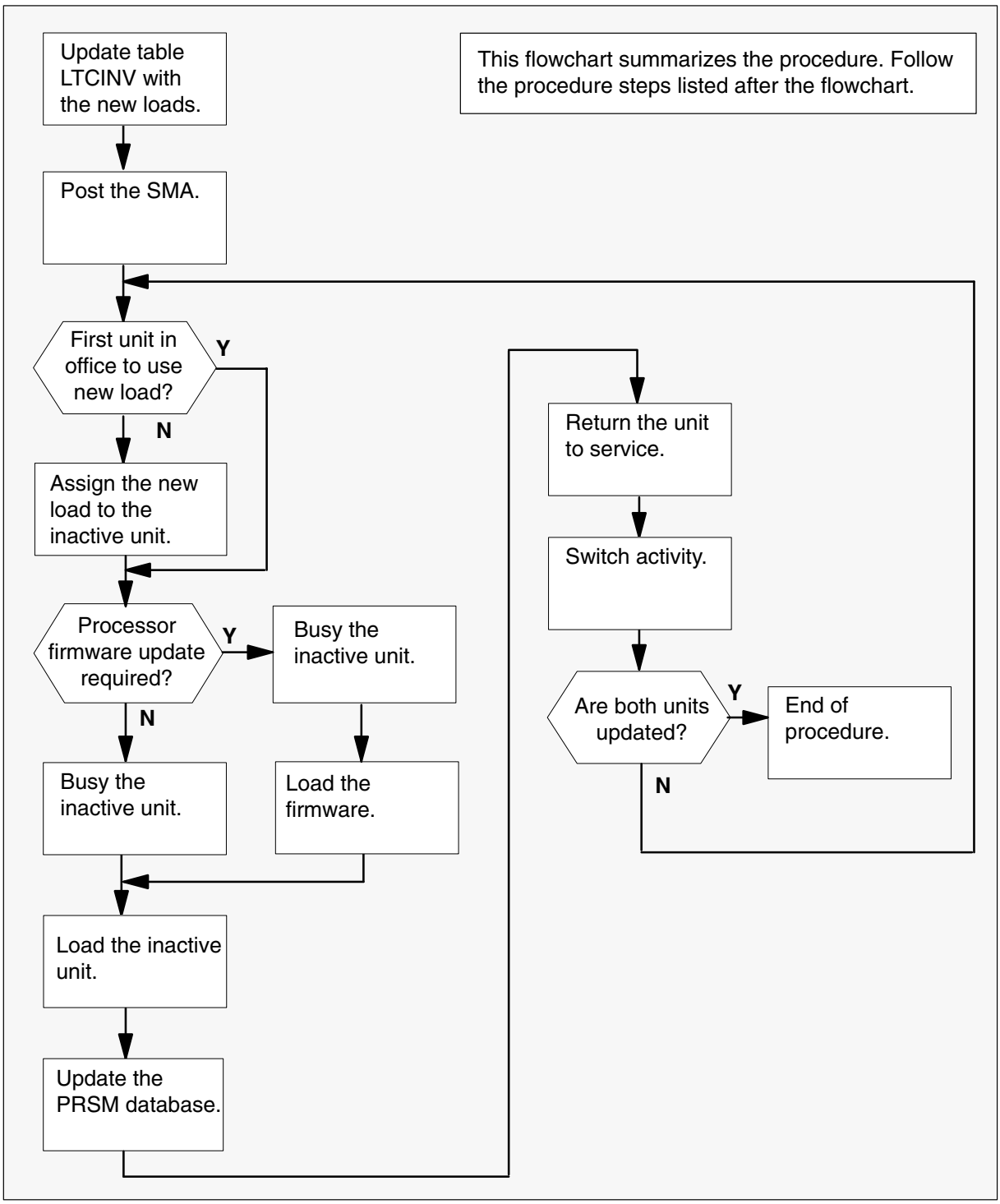


Notes

None

Update the SMA (continued)

Summary of procedure



Update the SMA (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an SMA to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the SMA inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the SMA. Type

>POS SMA sma_no
and press the Enter key.

where

sma_no is the number of the SMA

Example of command

```
>POS SMA 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD XSC81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The SMA changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

Update the SMA (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the new CMR load name

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the SMA. Type

>POST SMA sma_no
and press the Enter key.

where

sma_no is the number of the SMA

Example of command

```
>POST SMA 0
```

Note: The SMA changes status to ISTb. If the SMA does not change to ISTb, confirm the SMA inventory table is updated correctly and the correct SMA is posted. Do not continue this procedure until the SMA is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

Update the SMA (continued)

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET SMA sma_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD XSC81AZ IN DESTSET SMA 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the SMA (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT SMA sma_no unit_no
and press the Enter key.

where

sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMA 0 1
```

c. Display the PRSU list. Type

>REPORT DEST SMA sma_no unit_no
and press the Enter key.

where

sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMA 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN SMA sma_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN SMA 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN SMA 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the SMA (continued)

f. Update the PRSM database. Type

>DBAUDIT SMA sma_no unit_no
and press the Enter key.

where

sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMA 0 1
```

g. Display the PRSU. Type

>REPORT DEST SMA sma_no unit_no
and press the Enter key.

where

sma_no	is the number of the SMA
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMA 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the SMA (end)

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the SMA and completed this procedure. Review the update schedule for the office.

If there are	Do
additional SMAs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the SMA2

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this SMA2 has a peripheral remote loader (PRL) circuit card, use this procedure to update the first SMA2 in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining SMA2s.

Use this procedure to update the subscriber carrier module-100 access 2 (SMA2).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the SMA2 are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The SMA2 is in-service (InSv).
- The SMA2 passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?

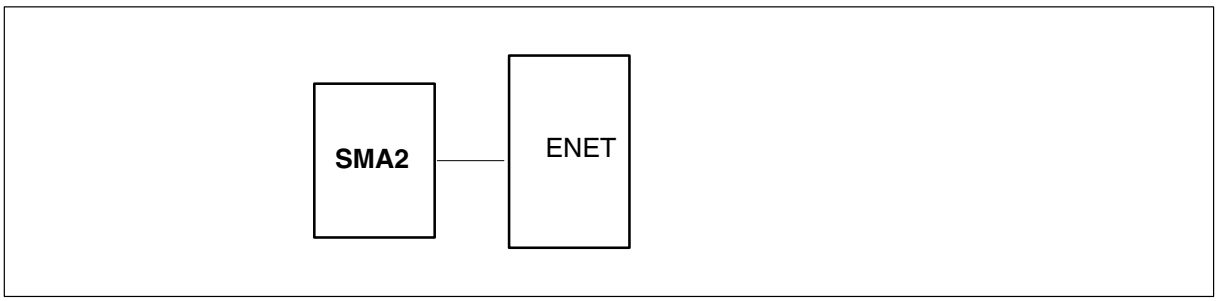
- Is the new SMA2 load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the SMA2. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for SMA2

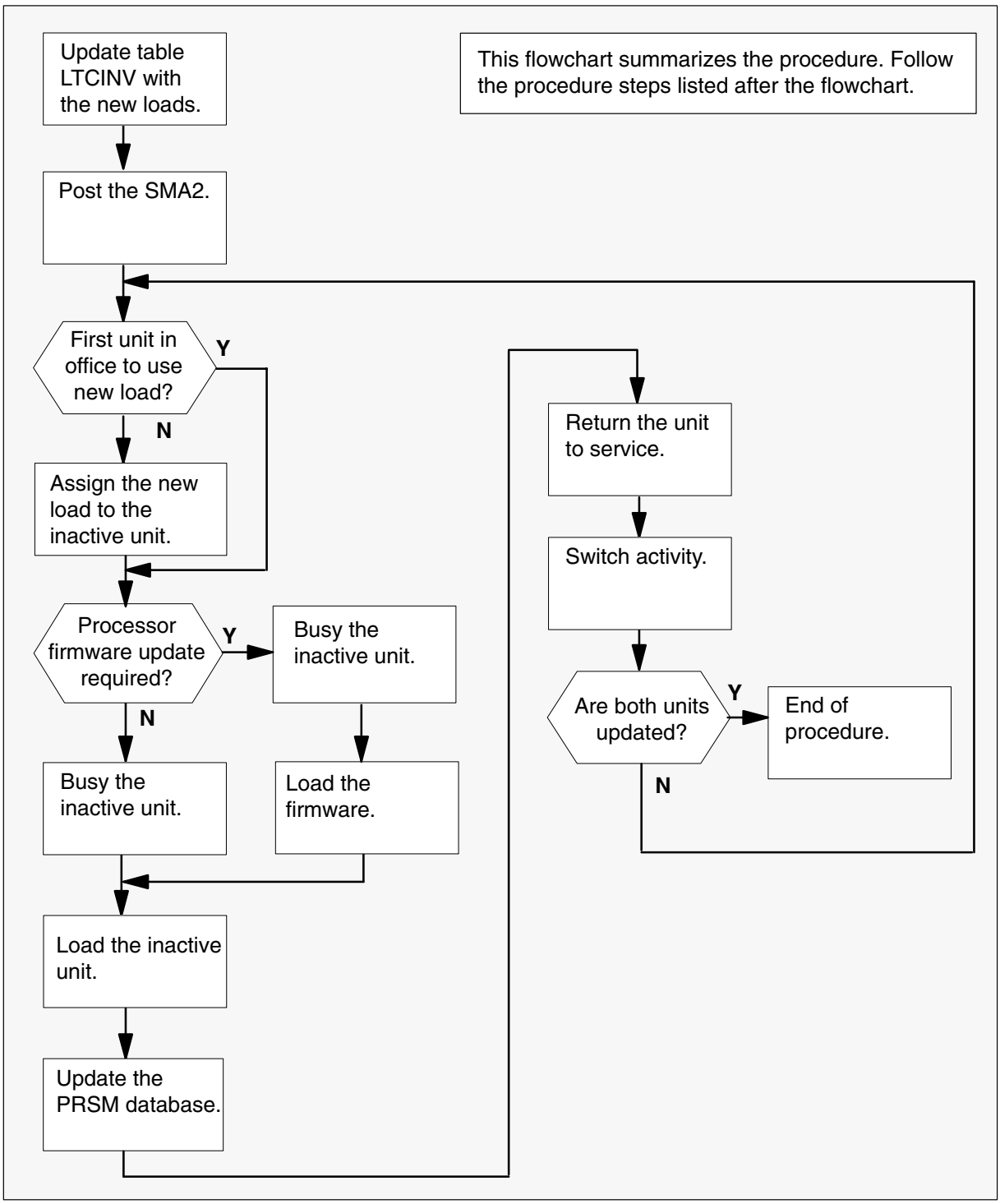


Notes

None

Update the SMA2 (continued)

Summary of procedure



Update the SMA2 (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an SMA2 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the SMA2 inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the SMA2. Type

>POS SMA2 sma2_no
and press the Enter key.

where

sma2_no is the number of the SMA2

Example of command

```
>POS SMA2 0
```

Update the SMA2 (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD XM281AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The SMA2 changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the new CMR load name

Example of command

```
>CMR07A
```

Update the SMA2 (continued)

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the SMA2. Type

>POST SMA2 sma2_no
and press the Enter key.

where

sma2_no is the number of the SMA2

Example of command

```
>POST SMA2 0
```

Note: The SMA2 changes status to ISTb. If the SMA2 does not change to ISTb, confirm the SMA2 inventory table is updated correctly and the correct SMA2 is posted. Do not continue this procedure until the SMA2 is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedules for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET SMA2 sma2_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD XM281AZ IN DESTSET SMA2 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

Update the SMA2 (continued)

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT SMA2 sma2_no unit_no
and press the Enter key.

where

sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMA2 0 1
```

Update the SMA2 (continued)

c. Display the PRSU list. Type

>REPORT DEST SMA2 sma2_no unit_no
and press the Enter key.

where

sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMA2 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN SMA2 sma2_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN SMA2 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN SMA2 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT SMA2 sma2_no unit_no
and press the Enter key.

where

sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMA2 0 1
```

g. Display the PRSU. Type

>REPORT DEST SMA2 sma2_no unit_no
and press the Enter key.

where

sma2_no	is the number of the SMA2
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMA2 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the SMA2 (end)

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the SMA2 and completed this procedure. Review the update schedule for the office.

If there are	Do
additional SMA2s to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the SMS

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this SMS has a peripheral remote loader (PRL) circuit card, use this procedure to update the first SMS in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining SMSs.

Use this procedure to update the subscriber carrier module-100S (SMS).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the SMS are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The SMS is in-service (InSv).
- The SMS passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new SMS load a pre-patched XPM load (PPXL)?

Update the SMS (continued)

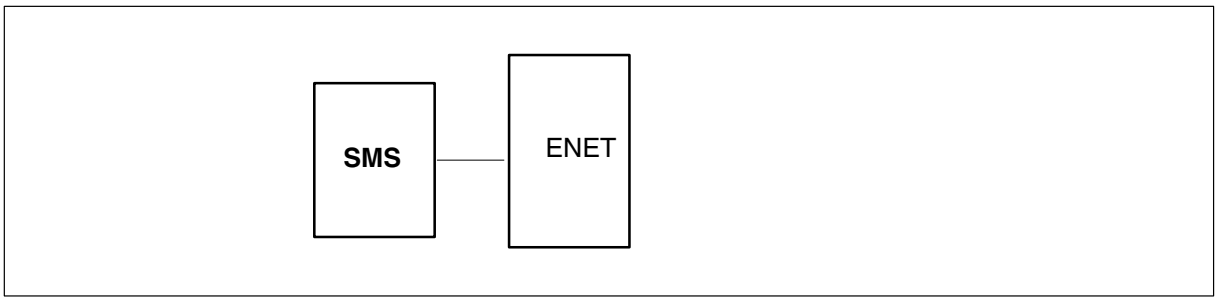
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the SMS. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for SMS

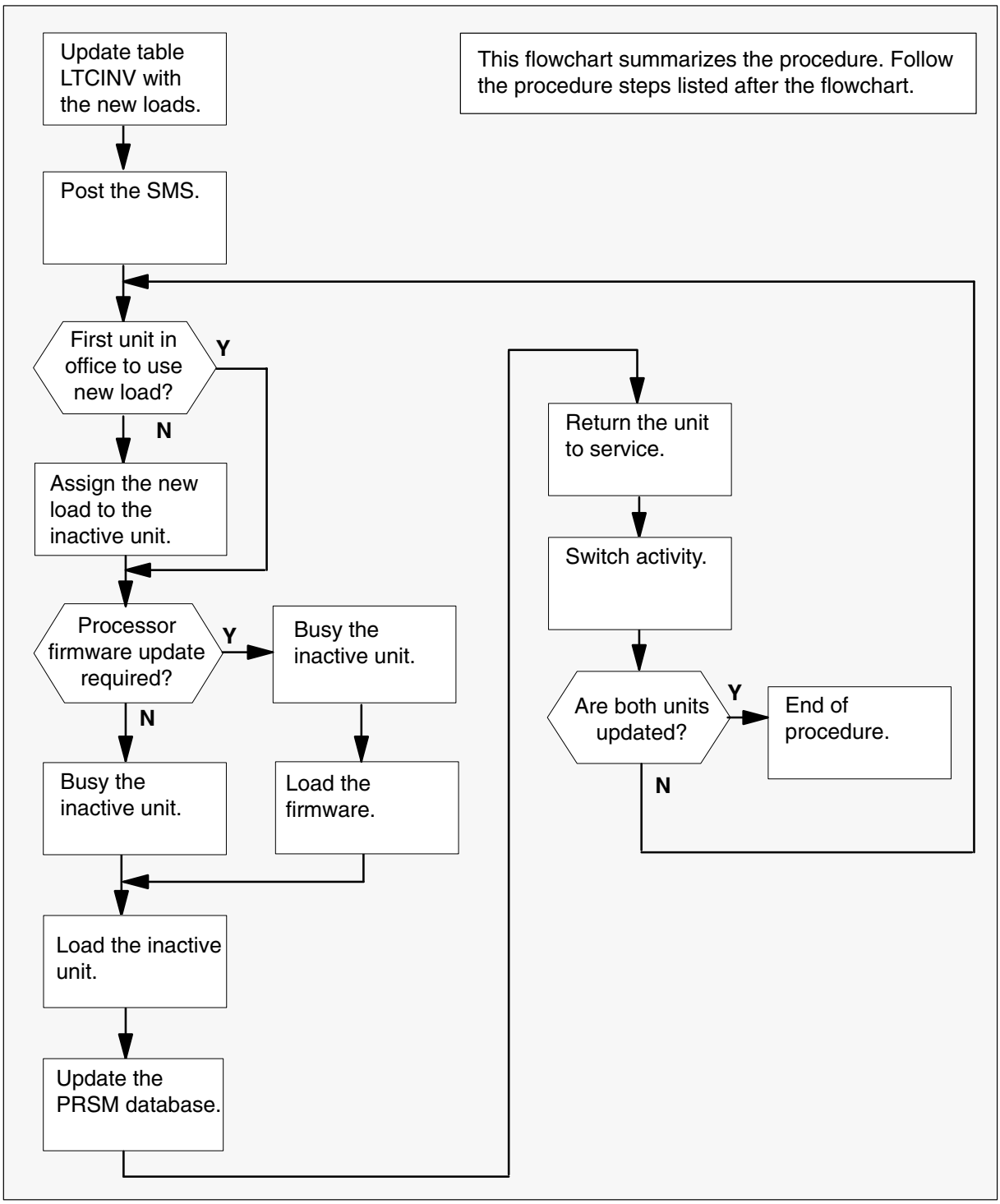


Notes

None

Update the SMS (continued)

Summary of procedure



Update the SMS (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an SMS to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the SMS inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the SMS. Type

>POS SMS sms_no
and press the Enter key.

where

sms_no is the number of the SMS

Example of command

```
>POS SMS 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ESS81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The SMS changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
needs to be updated	step 4
does not need to be updated	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Update the SMS (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Determine if the SMS has a CMR load to be updated.

If the CMR load	Do
needs to be updated	step 6
does not need to be updated	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the new CMR load name

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the SMS. Type

>POST SMS sms_no
and press the Enter key.

where

sms_no is the number of the SMS

Example of command

```
>POST SMS 0
```

Note: The SMS changes status to ISTb. If the SMS does not change to ISTb, confirm the SMS inventory table is updated correctly and the correct SMS is posted. Do not continue this procedure until the SMS is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

Update the SMS (continued)

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET SMS sms_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ESS81AZ IN DESTSET SMS 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the SMS (continued)

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT SMS sms_no unit_no
and press the Enter key.

where

sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMS 0 1
```

c. Display the PRSU list. Type

>REPORT DEST SMS sms_no unit_no
and press the Enter key.

where

sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMS 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN SMS sms_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN SMS 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN SMS 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the SMS (continued)

f. Update the PRSM database. Type

>DBAUDIT SMS sms_no unit_no
and press the Enter key.

where

sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMS 0 1
```

g. Display the PRSU. Type

>REPORT DEST SMS sms_no unit_no
and press the Enter key.

where

sms_no	is the number of the SMS
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMS 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the SMS and completed this procedure. Review the update schedule for the office.

If there are	Do
additional SMSs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the SMSR

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this SMSR has a peripheral remote loader (PRL) circuit card, use this procedure to update the first SMSR in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining SMSRs.

Use this procedure to update the subscriber carrier module-100S remote access (SMSR).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the SMSR are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The SMSR is in-service (InSv).
- The SMSR passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new SMSR load a pre-patched XPM load (PPXL)?

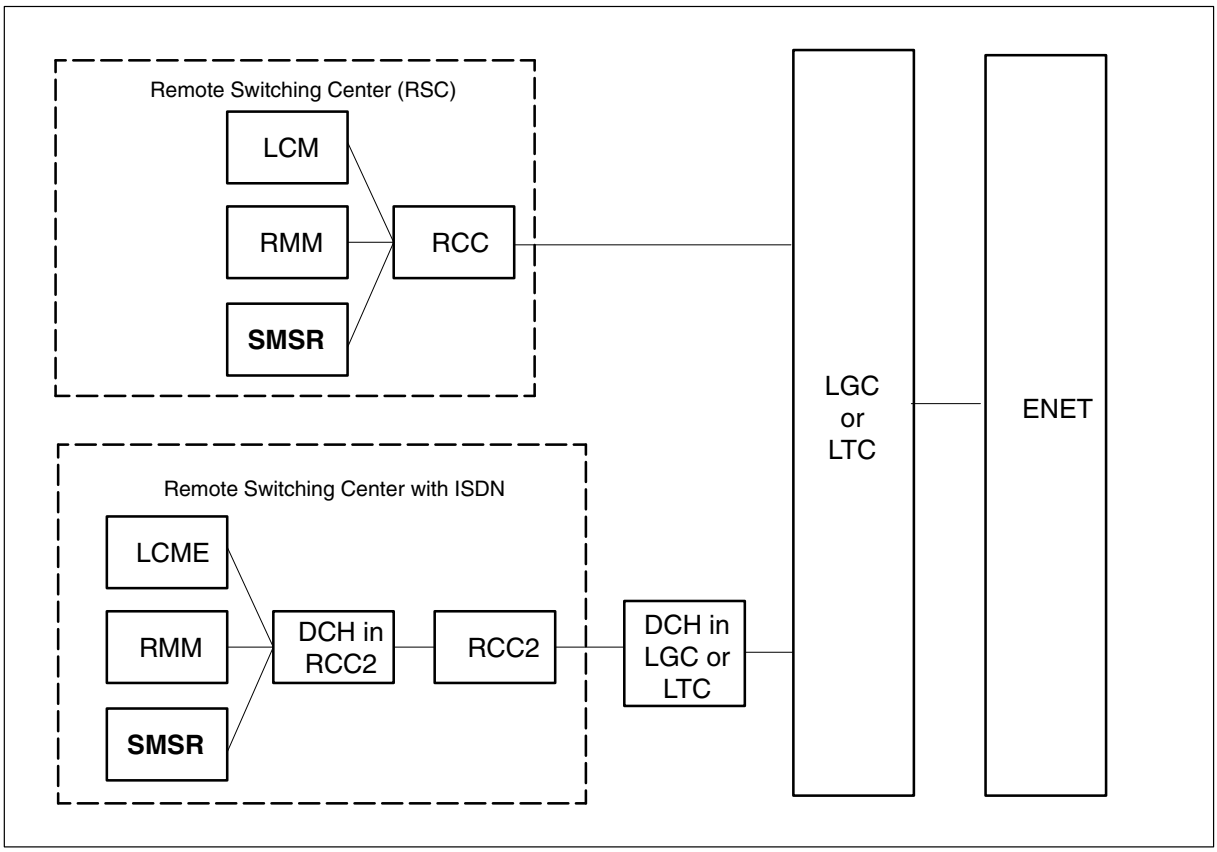
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the SMSR. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for SMSR

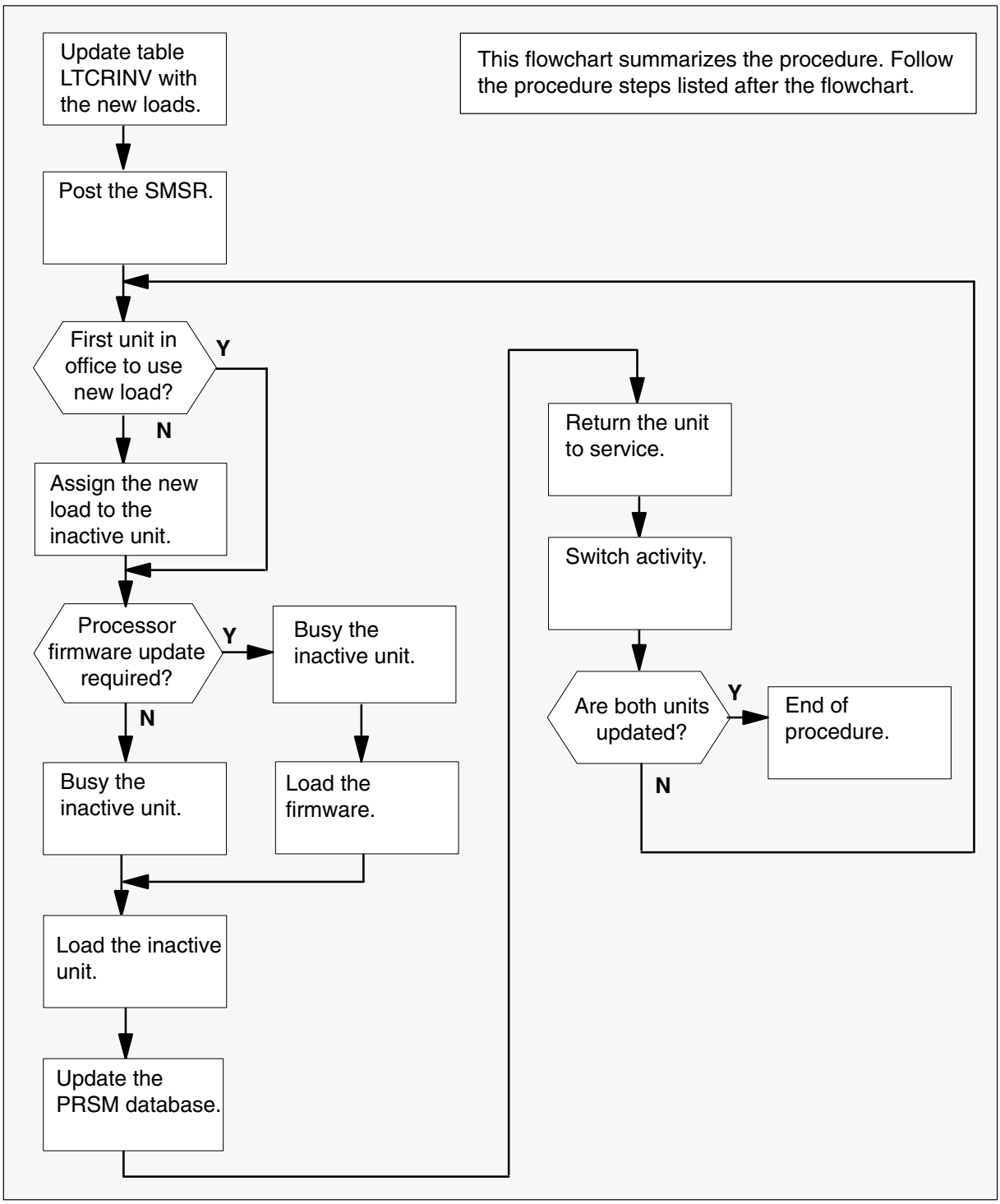


Notes

None

Update the SMSR (continued)

Summary of procedure



Update the SMSR (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an SMSR to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the SMSR inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCRINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the SMSR. Type

>POS SMSR smsr_no
and press the Enter key.

where

smsr_no is the number of the SMSR

Example of command

```
>POS SMSR 0
```

Update the SMSR (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECR81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The SMSR changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Close the table. Type

>QUIT
and press the Enter key.

6 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

7 Post the SMSR. Type

>POST SMSR smsr_no
and press the Enter key.

where

smsr_no is the number of the SMSR

Example of command

```
>POST SMSR 0
```

Note: The SMSR changes status to ISTb. If the SMSR does not change to ISTb, confirm the SMSR inventory table is updated correctly and the correct SMSR is posted. Do not continue this procedure until the SMSR is ISTb.

8 Identify and update the inactive unit.

Update the SMSR (continued)

9 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 11
not the first unit in the office to use the new load	step 10

10 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION
Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET SMSR smsr_no unit_no
and press the Enter key.

where

new_load is the name of the new load
smsr_no is the number of the SMSR
unit_no is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ECR81AZ IN DESTSET SMSR 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

11 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 12
was not changed	step 16

12

ATTENTION

Perform steps 12, 13, and 14 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 12, 13, and 14. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

13 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

14 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

15 Go to step 17.

16 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the SMSR (continued)

17

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

18 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT SMSR smsr_no unit_no
and press the Enter key.

where

smsr_no	is the number of the SMSR
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMSR 0 1
```

c. Display the PRSU list. Type

>REPORT DEST SMSR smsr_no unit_no
and press the Enter key.

where

smsr_no	is the number of the SMSR
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMSR 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 18i.
all PRSUs for the new load are not applied to the inactive unit	step 18e.
PRSUs from the previous load are listed at VA status	step 18b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 18i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN SMSR smsr_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
smsr_no	is the number of the SMSR
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN SMSR 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN SMSR 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the SMSR (continued)

f. Update the PRSM database. Type

>DBAUDIT SMSR smsr_no unit_no
and press the Enter key.

where

smsr_no	is the number of the SMSR
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMSR 0 1
```

g. Display the PRSU. Type

>REPORT DEST SMSR smsr_no unit_no
and press the Enter key.

where

smsr_no	is the number of the SMSR
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMSR 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 18i.
does not match the PRSM database	step 18e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

19 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

20 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

21 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

22 Confirm the switch of activity. Type

>Y
and press the Enter key.

23 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 10
both units are updated	step 24
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

24 You have updated the SMSR and completed this procedure. Review the update schedule for the office.

If there are	Do
additional SMSRs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the SMU or SMUI

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this SMU or SMUI has a peripheral remote loader (PRL) circuit card, use this procedure to update the first SMU or SMUI in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining SMUs or SMUIs.

Use this procedure to update the subscriber carrier module-100 urban (SMU) or SMU with ISDN (SMUI).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the SMU or SMUI are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The SMU or SMUI is in-service (InSv).
- The SMU or SMUI passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the CLASS modem resource (CMR) load require an update?
- Does the XPM processor firmware require an update?

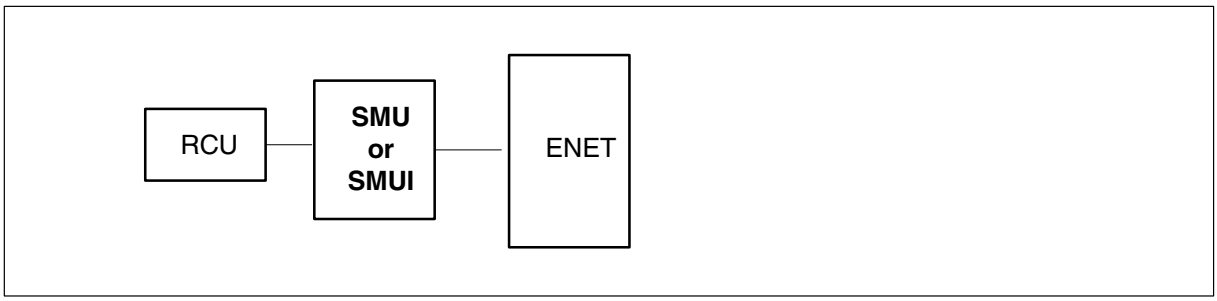
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new SMU or SMUI load a pre-patched XPM load (PPXL)?
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters "Overview of release" and "Overview of update process."

Update sequence

The following figure illustrates a possible node configuration for the SMU or SMUI. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for SMU or SMUI

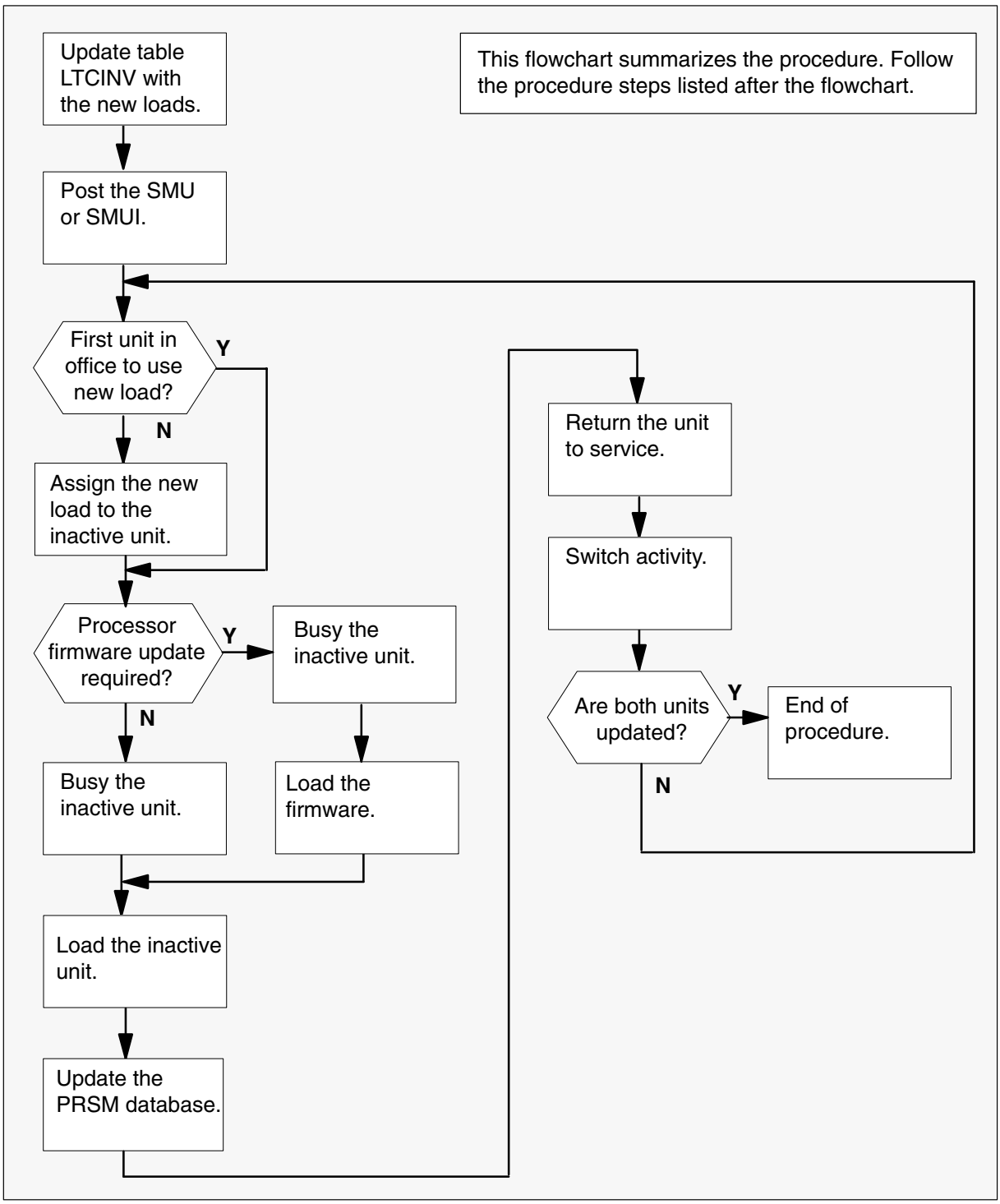


Notes

None

Update the SMU or SMUI (continued)

Summary of procedure



Update the SMU or SMUI (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an SMU or SMUI to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the SMU or SMUI inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the SMU or SMUI. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is SMU or SMUI
pm_no is the number of the SMU or SMUI

Example of command

```
>POS SMU 0
```

Update the SMU or SMUI (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ESU81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The SMU or SMUI changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5

Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the CMR load requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Update the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the new CMR load name

Example of command

```
>CMR07A
```

Update the SMU or SMUI (continued)

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Close the table. Type

>QUIT
and press the Enter key.

8 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

9 Post the SMU or SMUI. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI

Example of command

```
>POST SMU 0
```

Note: The SMU or SMUI changes status to ISTb. If the SMU or SMUI does not change to ISTb, confirm the SMU or SMUI inventory table is updated correctly and the correct SMU or SMUI is posted. Do not continue this procedure until the SMU or SMUI is ISTb.

10 Identify and update the inactive unit.

11 Review the update schedules for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 13
not the first unit in the office to use the new load	step 12

12 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

> **ATTENTION**
> Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ESU81AZ IN DESTSET SMU 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 18

Update the SMU or SMUI (continued)

14

ATTENTION

Perform steps 14, 15, and 16 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, and 16. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

16 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

17 Go to step 19.

18 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

19

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

20 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMU 0 1
```

Update the SMU or SMUI (continued)

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMU 0 1
```

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 20i.
all PRSUs for the new load are not applied to the inactive unit	step 20e.
PRSUs from the previous load are listed at VA status	step 20b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 20i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN SMU 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN SMU 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT SMU 0 1
```

g. Display the PRSU. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is SMU or SMUI
pm_no	is the number of the SMU or SMUI
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST SMU 0 1
```

Update the SMU or SMUI (continued)

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 20i.
does not match the PRSM database	step 20e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

23 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y
and press the Enter key.

Update the SMU or SMUI (end)

25 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 12
both units are updated	step 26
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

26 You have updated the SMU or SMUI and completed this procedure. Review the update schedule for the office.

If there are	Do
additional SMUs or SMUIs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the Star Hub

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Update each Star Hub individually.

Use this procedure to update the Star Hub remote line concentration module supporting remote drawers.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The Star Hub is in-service (InSv).
- The Star Hub passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

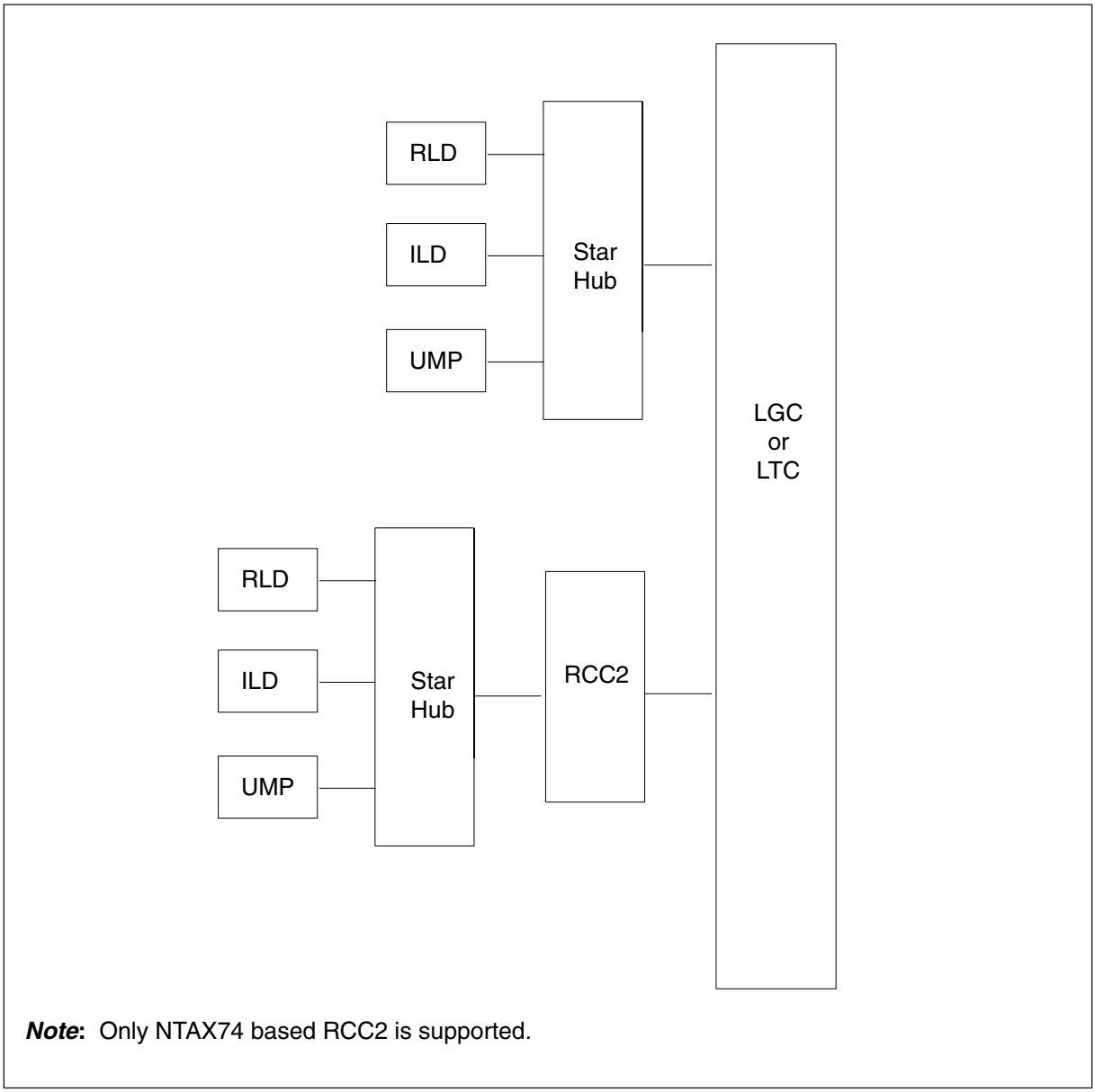
None

Update sequence

The following figure illustrates possible node configurations for the Star Hub. Subtending PMs must be updated prior to the Star Hub. Serving PMs must be updated after the Star Hub.

Update the Star Hub (continued)

Node configuration Star Hub



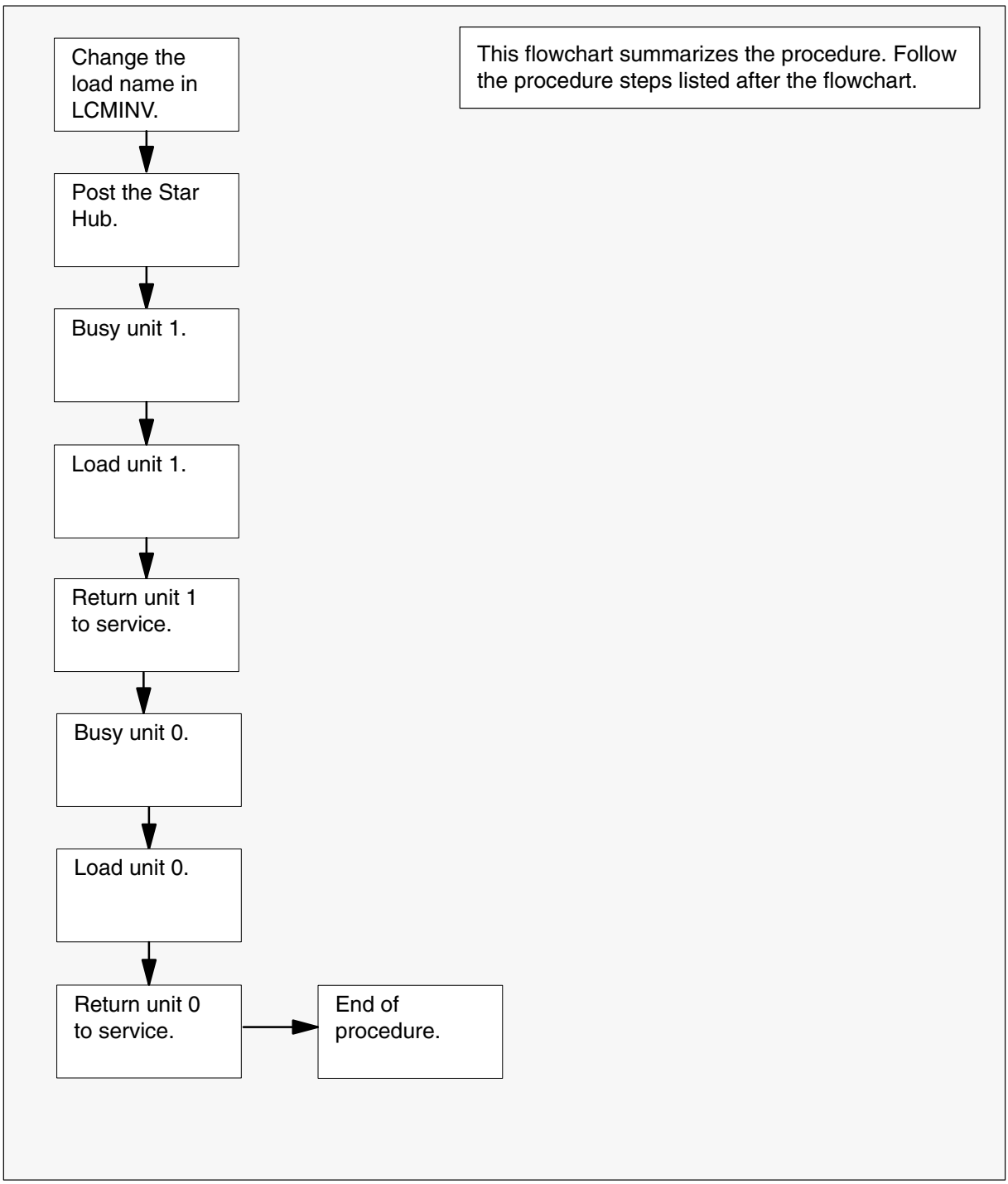
***Note*:** Only NTAX74 based RCC2 is supported.

Notes

None

Update the Star Hub (continued)

Summary of procedure



Update the Star Hub (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a Star Hub to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCM inventory table. Perform the following steps.

a. Open the LCM inventory table. Type

>TABLE LCMINV
and press the Enter key.

b. Position on the datafill tuple for the Star Hub to be updated. Type

>POS site_name frame_no STAR_no
and press the Enter key.

where

site_name	is the name of the site
frame_no	is the number of the frame
STAR_no	is the number of the Star Hub

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load	is the name of the new load

Example of command

```
>CHA LOAD HUB10BQ
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The Star Hub changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

Update the Star Hub (continued)

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the Star Hub. Type

>POST lcm_type site_name frame_no STAR_no
and press the Enter key.

where

lcm_type	is STAR
site_name	is the site of the STAR Hub
frame_no	is the number of the frame
STAR_no	is the number of the Star Hub

Note 1: The field SITE_NAME is optional with host-based Star Hubs.

Note 2: The Star Hub changes status to ISTb. If the Star Hub does not change to ISTb, confirm the Star Hub inventory table is updated correctly and the correct Star Hub is posted. Do not continue this procedure until the Star Hub is ISTb.

6 Busy unit 1. Type

>BSY UNIT 1
and press the Enter key.

7 Load unit 1. Type

>LOADPM UNIT 1 CC
and press the Enter key.

8 Return unit 1 to service. Type

>RTS UNIT 1
and press the Enter key.

9 Busy unit 0. Type

>BSY UNIT 0
and press the Enter key.

10 Load unit 0. Type

>LOADPM UNIT 0 CC
and press the Enter key.

Update the Star Hub (end)

11 Return unit 0 to service. Type

>RTS UNIT 0
and press the Enter key.

12 You have updated the Star Hub and completed this procedure. Review the update schedule.

If there are	Do
additional Star Hubs to update during this shift	Repeat this procedure or follow the recommendations in “Overview of update process” and use parallel loading on the remaining Star Hubs.
other PMs or hardware types to update during this shift	Go to the appropriate procedure in this document.
no additional PMs or hardware types to update during this shift	Go to “Finish a PM update shift” in this document.
Note: Update each remote Star Hub individually.	

Update the STM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update a service trunk module (STM).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The STM is in-service (InSv).
- All REX tests are suspended in the office.

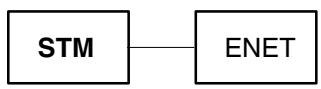
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the STM. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for STM

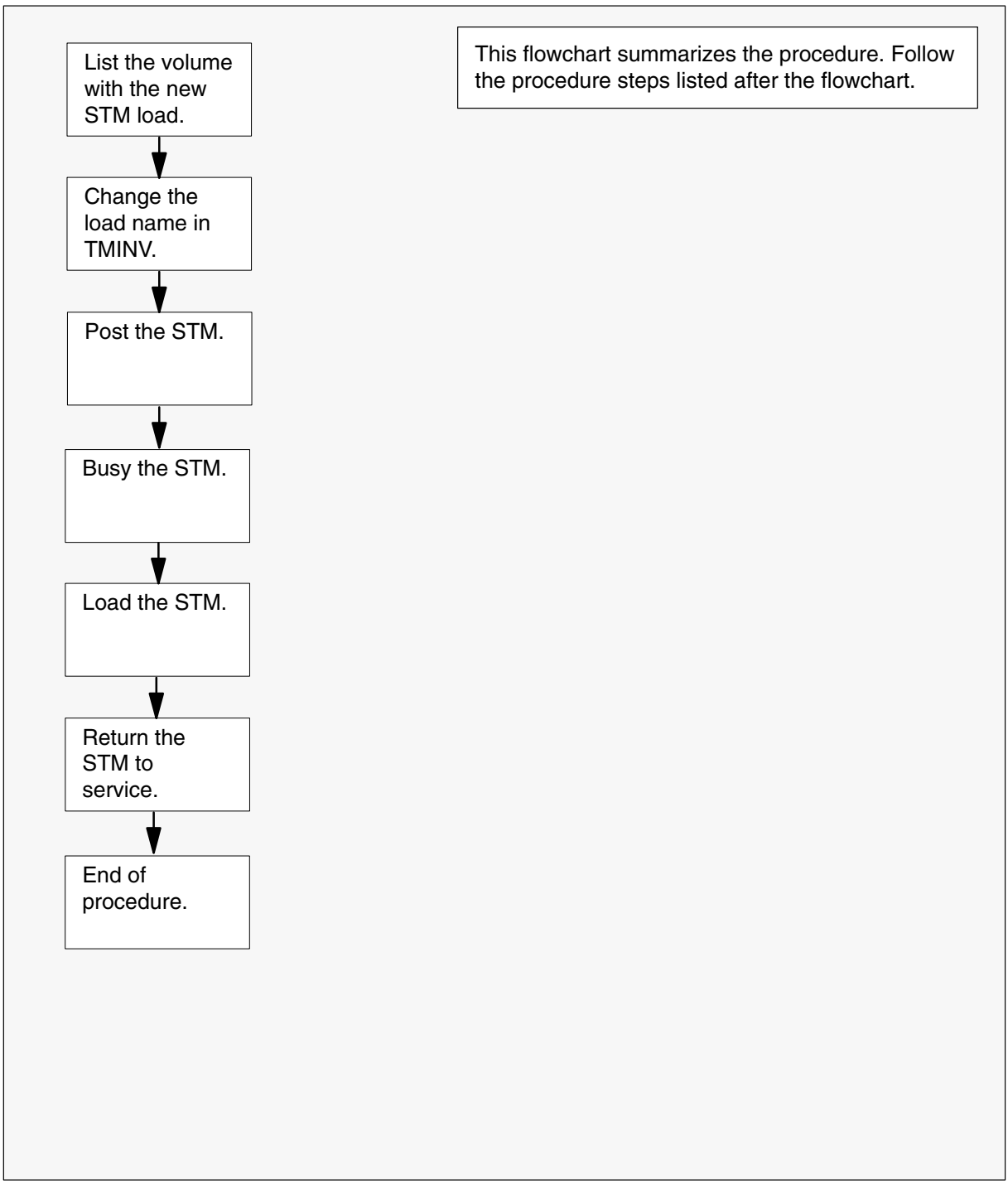


Notes

None

Update the STM (continued)

Summary of procedure



Update the STM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an STM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the STM inventory table. Perform the following steps.

a. Open the STM inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the tuple for the STM. Type

>POS STM stm_no
and press the Enter key.

where

stm_no is the number of the STM

Example of command

```
>POS STM 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD MTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the STM (end)

e. Close the STM inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the STM. Type

>POST STM stm_no
and press the Enter key.

where

stm_no is the number of the STM

Example of command

```
>POST STM 11
```

9 Busy the STM. Type

>BSY
and press the Enter key.

10 Load the STM. Type

>LOADPM
and press the Enter key.

11 Return the STM to service. Type

>RTS
and press the Enter key.

12 You have updated the STM and completed this procedure. Review the update schedule.

If there are	Do
additional STMs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the T8A

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the trunk module with eight wire circuits and metallic test access bus (T8A).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The T8A is in-service (InSv).
- All REX tests are suspended in the office.

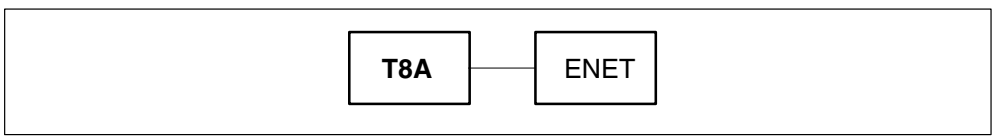
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the T8A. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for T8A

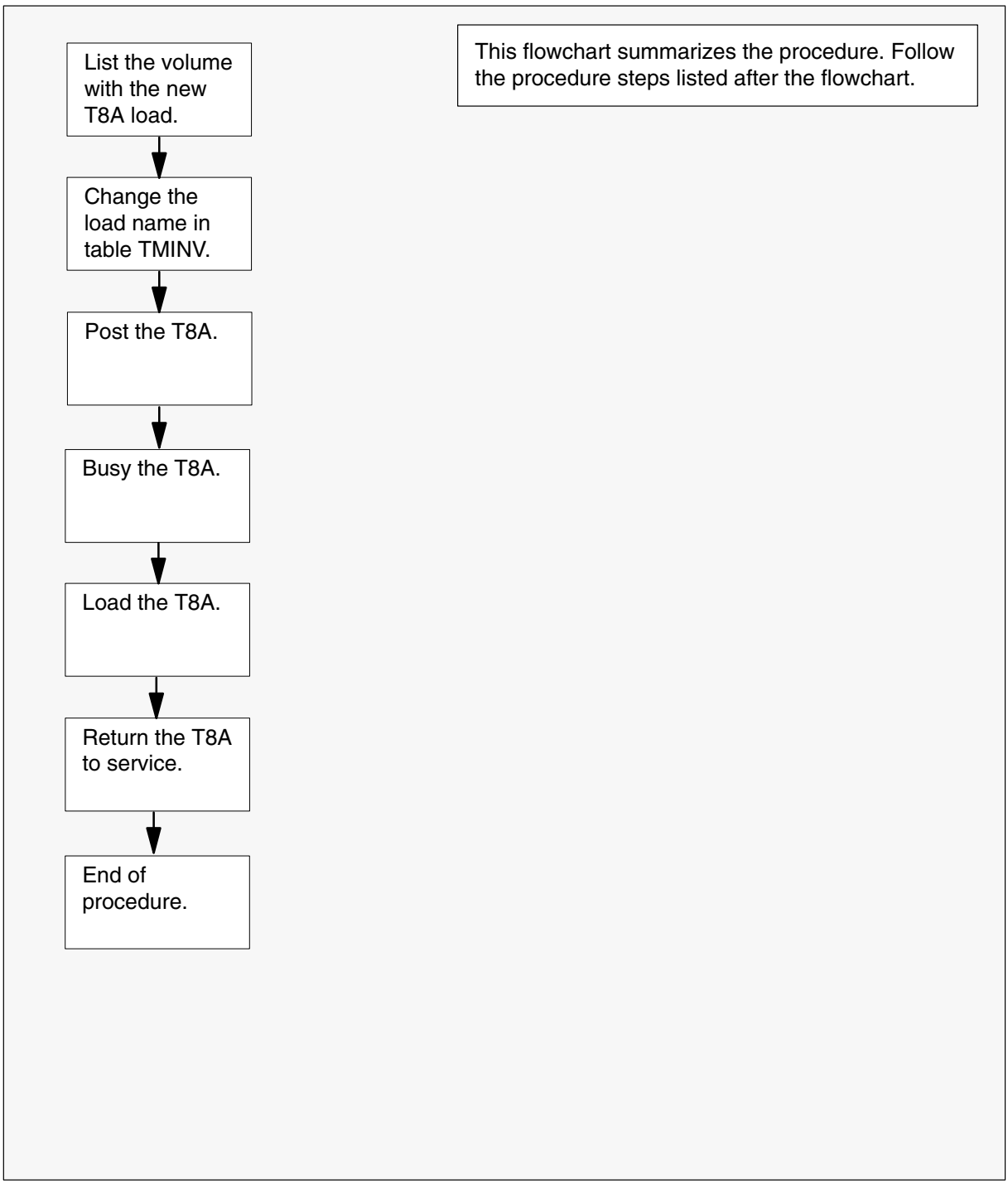


Notes

None

Update the T8A (continued)

Summary of procedure



Update the T8A (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a T8A to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the T8A (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the T8A inventory table. Perform the following steps.

a. Open the T8A inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the T8A. Type

>POS T8A t8a_no
and press the Enter key.

where

t8a_no is the number of the T8A

Example of command

```
>POS T8A 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD TTMNA01
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the T8A inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the T8A. Type

>POST T8A t8a_no
and press the Enter key.

where

t8a_no is the number of the T8A

Example of command

```
>POST T8A 11
```

9 Busy the T8A. Type

>BSY
and press the Enter key.

10 Load the T8A. Type

>LOADPM
and press the Enter key.

11 Return the T8A to service. Type

>RTS
and press the Enter key.

12 You have updated the T8A and completed this procedure. Review the update schedule.

If there are	Do
additional T8As to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the TAN

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the test access network (TAN).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The TAN is in-service (InSv).
- All REX tests are suspended in the office.

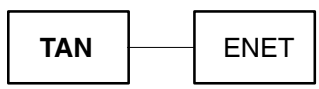
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the TAN. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for TAN

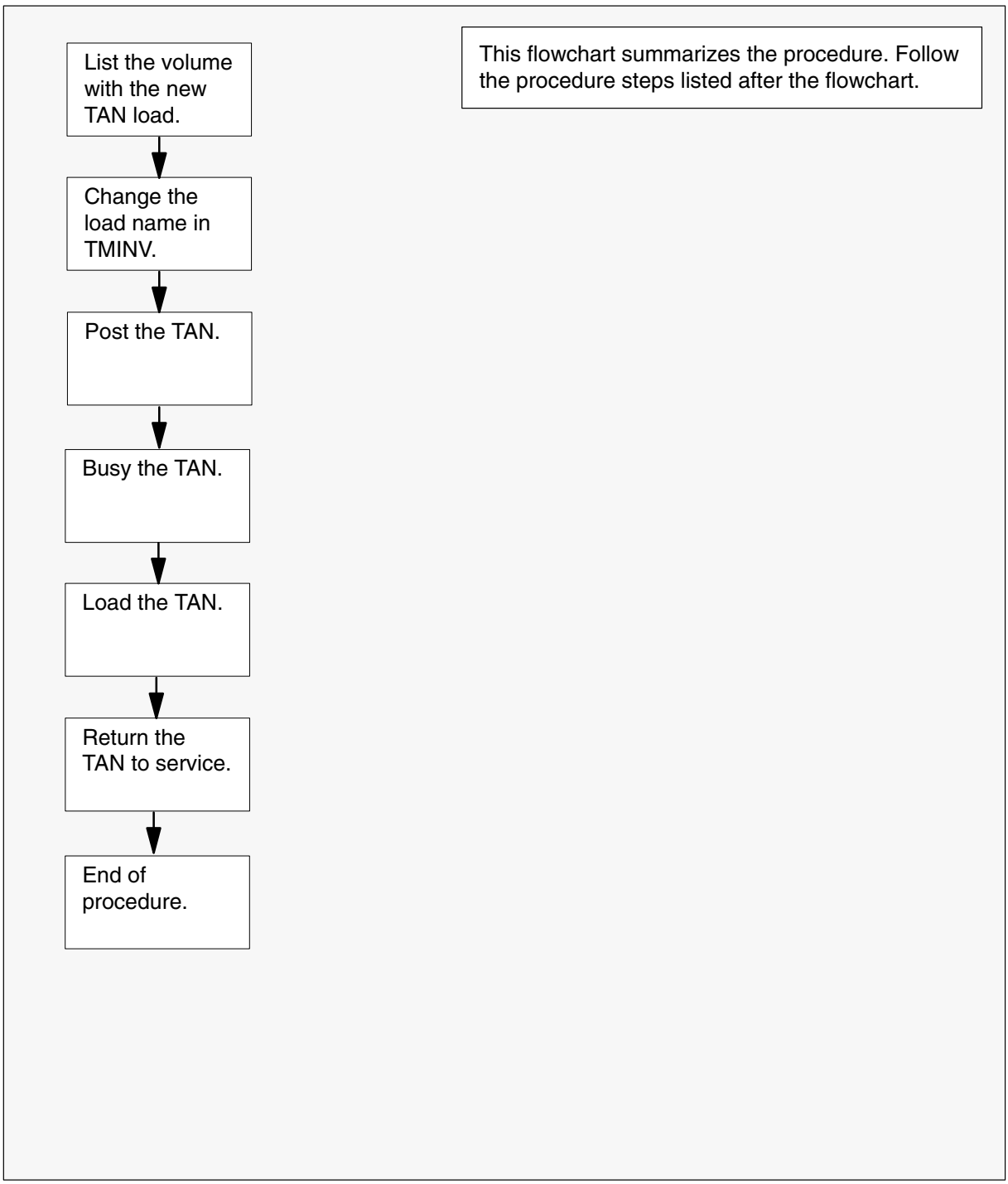


Notes

None

Update the TAN (continued)

Summary of procedure



Update the TAN (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a TAN to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps,

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the TAN inventory table. Perform the following steps.

a. Open the TAN inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the tuple for the TAN. Type

>POS TAN tan_no
and press the Enter key.

where

tan_no is the number of the TAN

Example of command

```
>POS TAN 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD MTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the TAN (end)

e. Close the TAN inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the TAN. Type

>POST TAN tan_no
and press the Enter key.

where

tan_no is the number of the TAN

Example of command

```
>POST TAN 11
```

9 Busy the TAN. Type

>BSY
and press the Enter key.

10 Load the TAN. Type

>LOADPM
and press the Enter key.

11 Return the TAN to service. Type

>RTS
and press the Enter key.

12 You have updated the TAN and completed this procedure. Review the update schedule.

If there are	Do
additional TANs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the TM2

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the trunk module with two wire circuits (TM2).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The TM2 is in-service (InSv).
- All REX tests are suspended in the office.

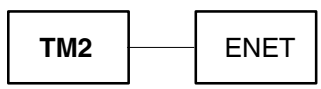
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the TM2. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for TM2

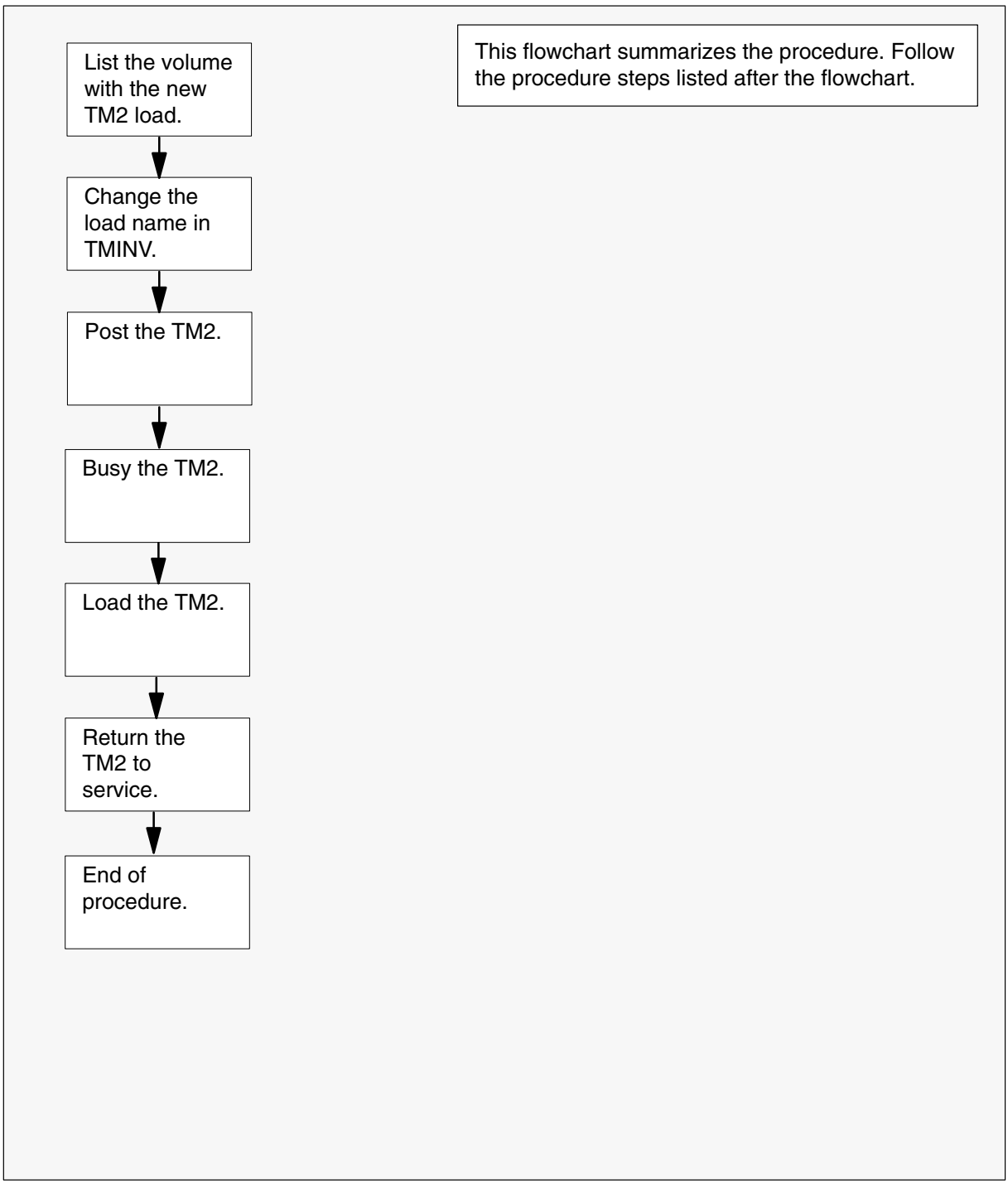


Notes

None

Update the TM2 (continued)

Summary of procedure



Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a TM2 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the TM2 (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the TM2 inventory table. Perform the following steps.

a. Open the TM2 inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the TM2. Type

>POS TM2 tm2_no
and press the Enter key.

where

tm2_no is the number of the TM2

Example of command

```
>POS TM2 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD BTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the TM2 inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the TM2. Type

>POST TM2 tm2_no
and press the Enter key.

where

tm2_no is the number of the TM2

Example of command

```
>POST TM2 11
```

9 Busy the TM2. Type

>BSY
and press the Enter key.

10 Load the TM2. Type

>LOADPM
and press the Enter key.

11 Return the TM2 to service. Type

>RTS
and press the Enter key.

12 You have updated the TM2 and completed this procedure. Review the update schedule.

If there are	Do
additional TM2s to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the TM4

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the trunk module with four wire circuits (TM4).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The TM4 is in-service (InSv).
- All REX tests are suspended in the office.

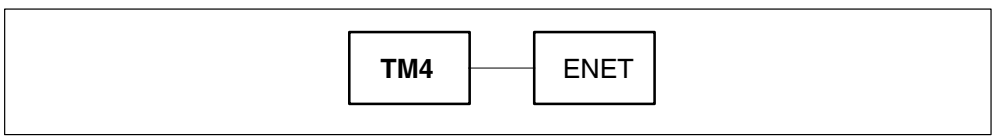
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the TM4. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for TM4

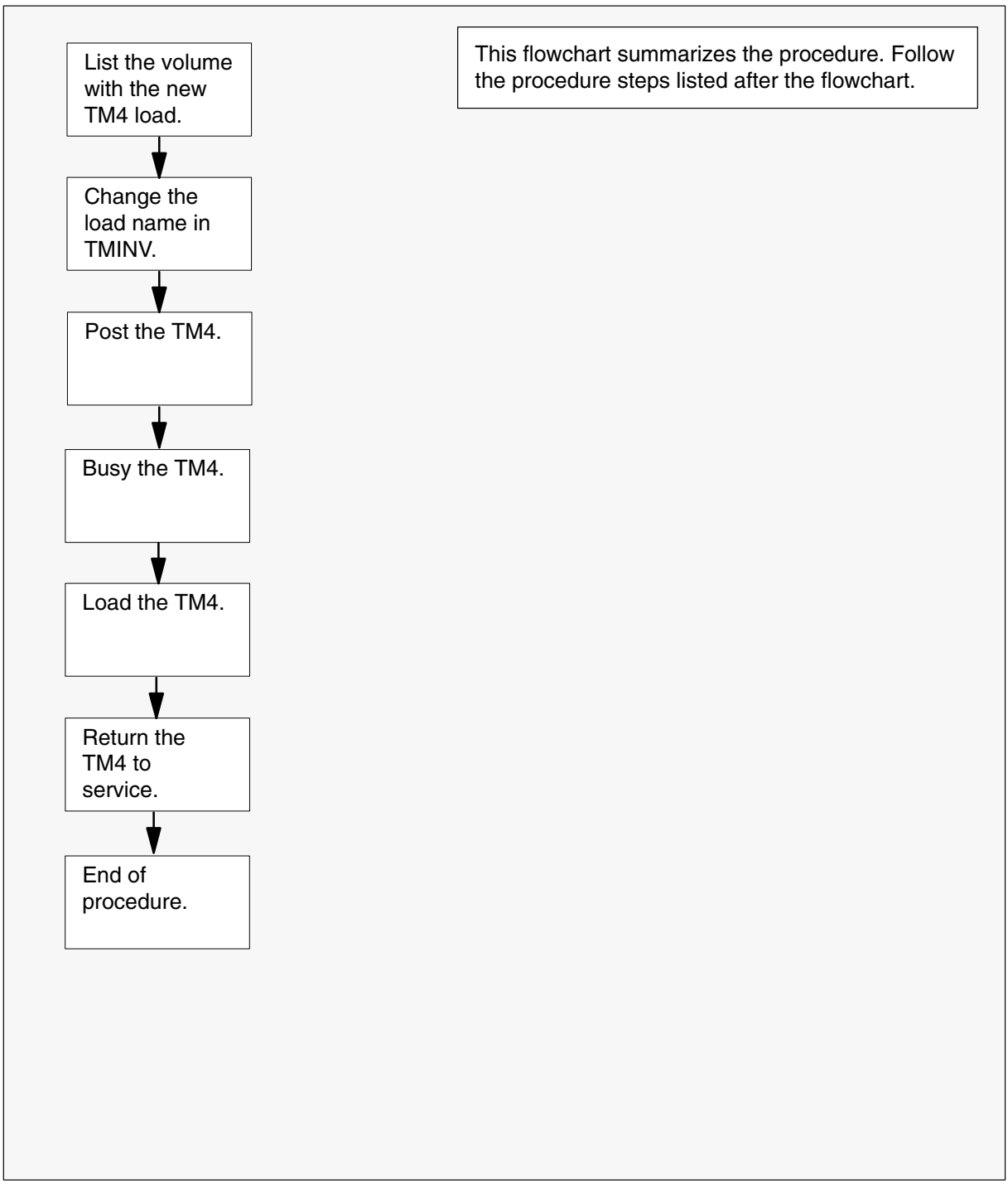


Notes

None

Update the TM4 (continued)

Summary of procedure



Update the TM4 (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a TM4 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the TM4 inventory table. Perform the following steps.

a. Open the TM4 inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the TM4. Type

>POS TM4 tm4_no
and press the Enter key.

where

tm4_no is the number of the TM4

Example of command

```
>POS TM4 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD BTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

Update the TM4 (end)

e. Close the TM4 inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the TM4. Type

>POST TM4 tm4_no
and press the Enter key.

where

tm4_no is the number of the TM4

Example of command

```
>POST TM4 11
```

9 Busy the TM4. Type

>BSY
and press the Enter key.

10 Load the TM4. Type

>LOADPM
and press the Enter key.

11 Return the TM4 to service. Type

>RTS
and press the Enter key.

12 You have updated the TM4 and completed this procedure. Review the update schedule.

If there are	Do
additional TM4s to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the TM8

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the trunk module with eight wire circuits (TM8).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The TM8 is in-service (InSv).
- All REX tests are suspended in the office.

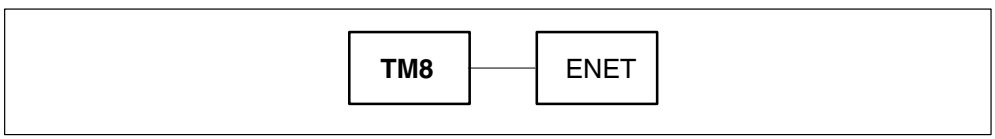
Required information

None

Update sequence

The following figure illustrates a possible node configuration for the TM8. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for TM8

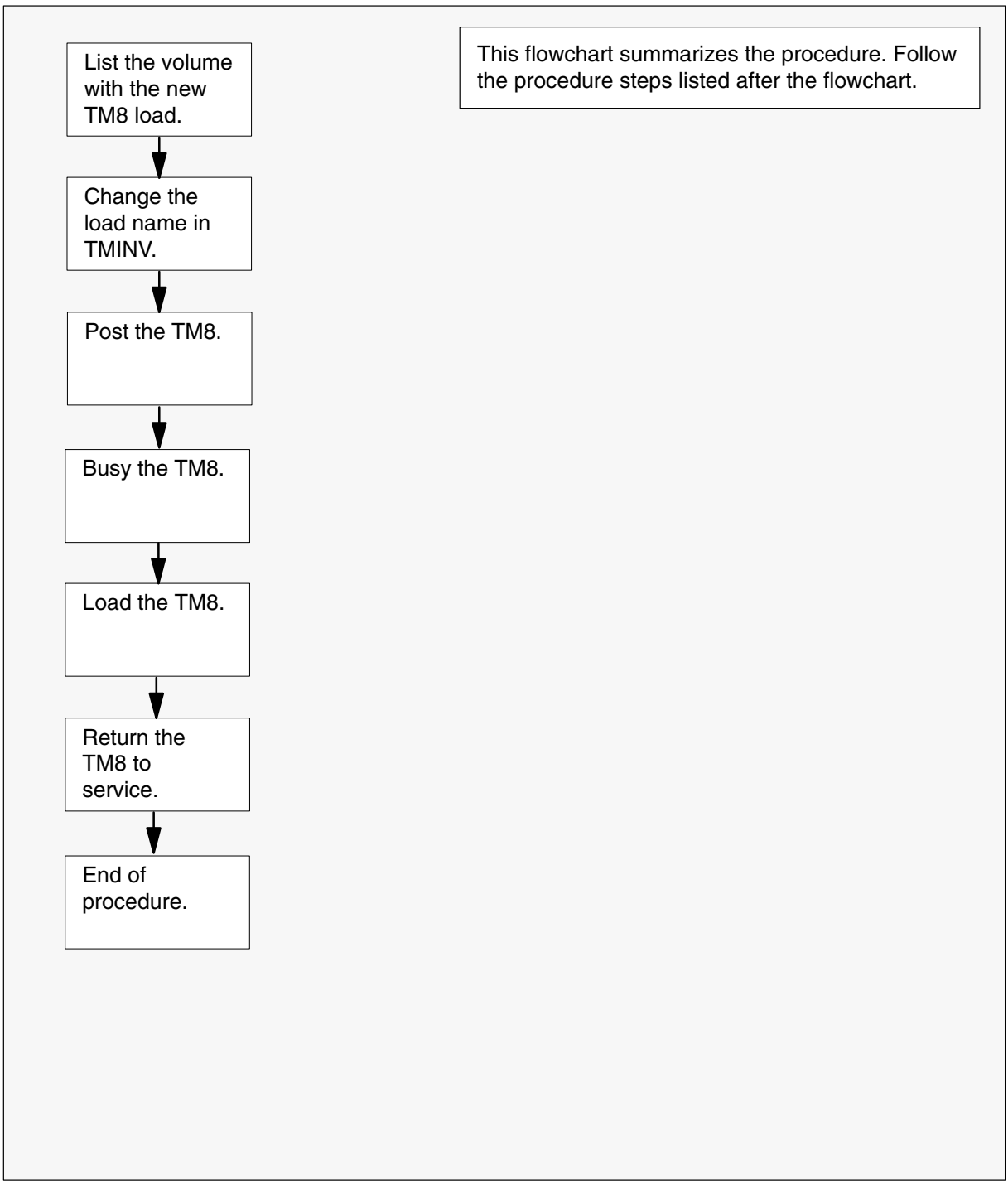


Notes

None

Update the TM8 (continued)

Summary of procedure



Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a TM8 to update.

2 Review and confirm the completion of all prerequisites for this procedure.

If the load files are stored on a	Do
DDU device	step 3
SLM or XA-Core device	step 4

3 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DSKUT
and press the Enter key.

b. List the disk volume. Type

>LISTVOL vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of command

```
>LISTVOL D000DPMLOADS
```

c. Go to step 5.

4 List the volume with the new load. Perform the following steps.

a. Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the TM8 (continued)

b. List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name is the name of the disk volume

Example of SLM command

```
>LF S01DPMLOADS
```

Example of XA-Core command

```
>LF F02LPMLOADS
```

5 Exit the disk utility. Type

>QUIT
and press the Enter key.

6 Update the TM8 inventory table. Perform the following steps.

a. Open the TM8 inventory table. Type

>TABLE TMINV
and press the Enter key.

b. Position on the datafill tuple for the TM8. Type

>POS TM8 tm8_no
and press the Enter key.

where

tm8_no is the number of the TM8

Example of command

```
>POS TM8 11
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD BTMKA02
```

d. Confirm the change. Type

>Y
and press the Enter key.

e. Close the TM8 inventory table. Type

>QUIT
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Post the TM8. Type

>POST TM8 tm8_no
and press the Enter key.

where

tm8_no is the number of the TM8

Example of command

```
>POST TM8 11
```

9 Busy the TM8. Type

>BSY
and press the Enter key.

10 Load the TM8. Type

>LOADPM
and press the Enter key.

11 Return the TM8 to service. Type

>RTS
and press the Enter key.

12 You have updated the TM8 and completed this procedure. Review the update schedule.

If there are	Do
additional TM8s to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the update procedure in this document.
no other PMs or hardware types to update during this shift	Go to “Finish a PM update shift” in this document.

Update the TMS

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
If this TMS has a peripheral remote loader (PRL) circuit card, use this procedure to update the first TMS or in the office to use the new load. Use the procedure "Use the PRL circuit card to update an XPM" in this document to update the remaining TMSs.

Use this procedure to update the Traffic Operator Position System (TOPS) message switch (TMS).

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the PM are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The TMS is in-service (InSv).
- The TMS passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the XPM processor firmware require an update?
- Is the unit to be updated the first unit in the office to use the new load?
- Is the new TMS load a pre-patched XPM load (PPXL)?

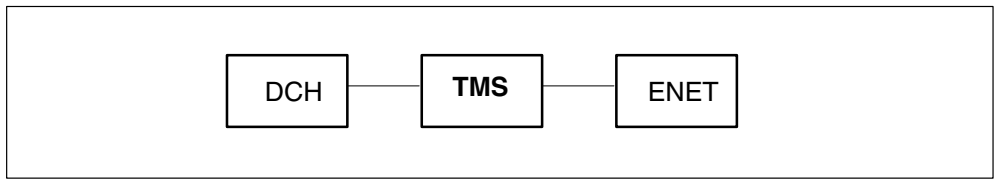
- Do any PRSUs need to be applied manually to the new load?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

The following figure illustrates a possible node configuration for the TMS. Update the PMs in the node in peripheral side (P-side) to central side (C-side) order.

Node configuration for TMS

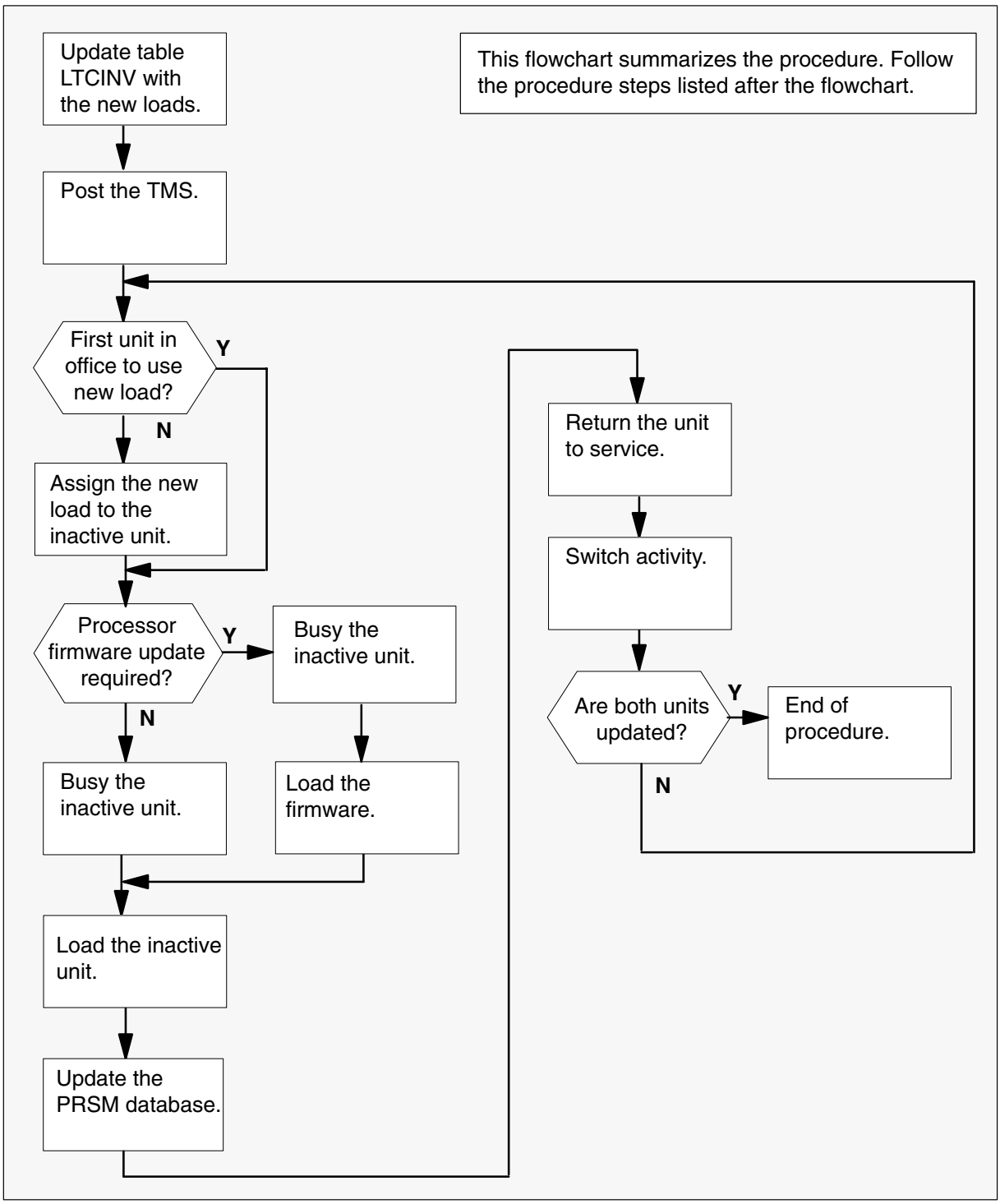


Notes

This procedure does not include the steps to update a TOPS position controller (TPC). Refer to the *TPC Release Notes* delivered with the TPC load for the procedures to update a TPC.

Update the TMS (continued)

Summary of procedure



Update the TMS (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a TMS to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the TMS inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LTCINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
normal or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for the TMS. Type

>POS TMS tms_no
and press the Enter key.

where

tms_no is the number of the TMS

Example of command

```
>POS TMS 0
```

Update the TMS (continued)

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ETM81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The TMS changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Close the table. Type

>QUIT
and press the Enter key.

6 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

7 Post the TMS. Type

>POST TMS tms_no
and press the Enter key.

where

tms_no is the number of the TMS

Example of command

```
>POST TMS 0
```

Note: The TMS changes status to ISTb. If the TMS does not change to ISTb, confirm the TMS inventory table is updated correctly and the correct TMS is posted. Do not continue this procedure until the TMS is ISTb.

8 Identify and update the inactive unit.

Update the TMS (continued)

9 Review the update schedule for the office. Determine if the inactive unit is the first unit in the office to use the new load.

If the inactive unit is	Do
the first unit in the office to use the new load	step 11
not the first unit in the office to use the new load	step 10

10 Assign the new load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION
Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive unit. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET TMS tms_no unit_no
and press the Enter key.

where

new_load is the name of the new load
tms_no is the number of the TMS
unit_no is the number of the inactive unit

Example of commands

```
>ASSIGN UPGRADE_LD ETM81AZ IN DESTSET TMS 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

11 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 12
was not changed	step 16

12

ATTENTION

Perform steps 12, 13, and 14 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 12, 13, and 14. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

13 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

14 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

15 Go to step 17.

16 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Update the TMS (continued)

17

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE
and press the Enter key.

18 Confirm the PRSU status of the inactive unit. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT TMS tms_no unit_no
and press the Enter key.

where

tms_no	is the number of the TMS
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT TMS 0 1
```

c. Display the PRSU list. Type

>REPORT DEST TMS tms_no unit_no
and press the Enter key.

where

tms_no	is the number of the TMS
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST TMS 0 1
```

d. Confirm all PRSUs for the new load are applied to the inactive unit.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 18i.
all PRSUs for the new load are not applied to the inactive unit	step 18e.
PRSUs from the previous load are listed at VA status	step 18b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 18i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply any PRSUs that need to be applied manually. Type

>APPLY 'prsu_id IN TMS tms_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
tms_no	is the number of the TMS
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN TMS 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN TMS 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

Update the TMS (continued)

f. Update the PRSM database. Type

>DBAUDIT TMS tms_no unit_no
and press the Enter key.

where

tms_no	is the number of the TMS
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT TMS 0 1
```

g. Display the PRSU list. Type

>REPORT DEST TMS tms_no unit_no
and press the Enter key.

where

tms_no	is the number of the TMS
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST TMS 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 18i.
does not match the PRSM database	step 18e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

19 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

20 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

21 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

22 Confirm the switch of activity. Type

>Y
and press the Enter key.

23 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 10
both units are updated	step 24
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

24 You have updated the TMS and completed this procedure. Review the update schedule for the office.

If there are	Do
additional TMSs to update during this shift	Follow the guidelines in “Overview of update process” in this document. Repeat this procedure, use broadcast mate loading, or use parallel loading on the remaining TMSs.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the UMP card (NTTR73)

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the universal maintenance pack (UMP) card (NTTR73).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The serving PM is in-service (InSv).
- The serving PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

None

Update sequence

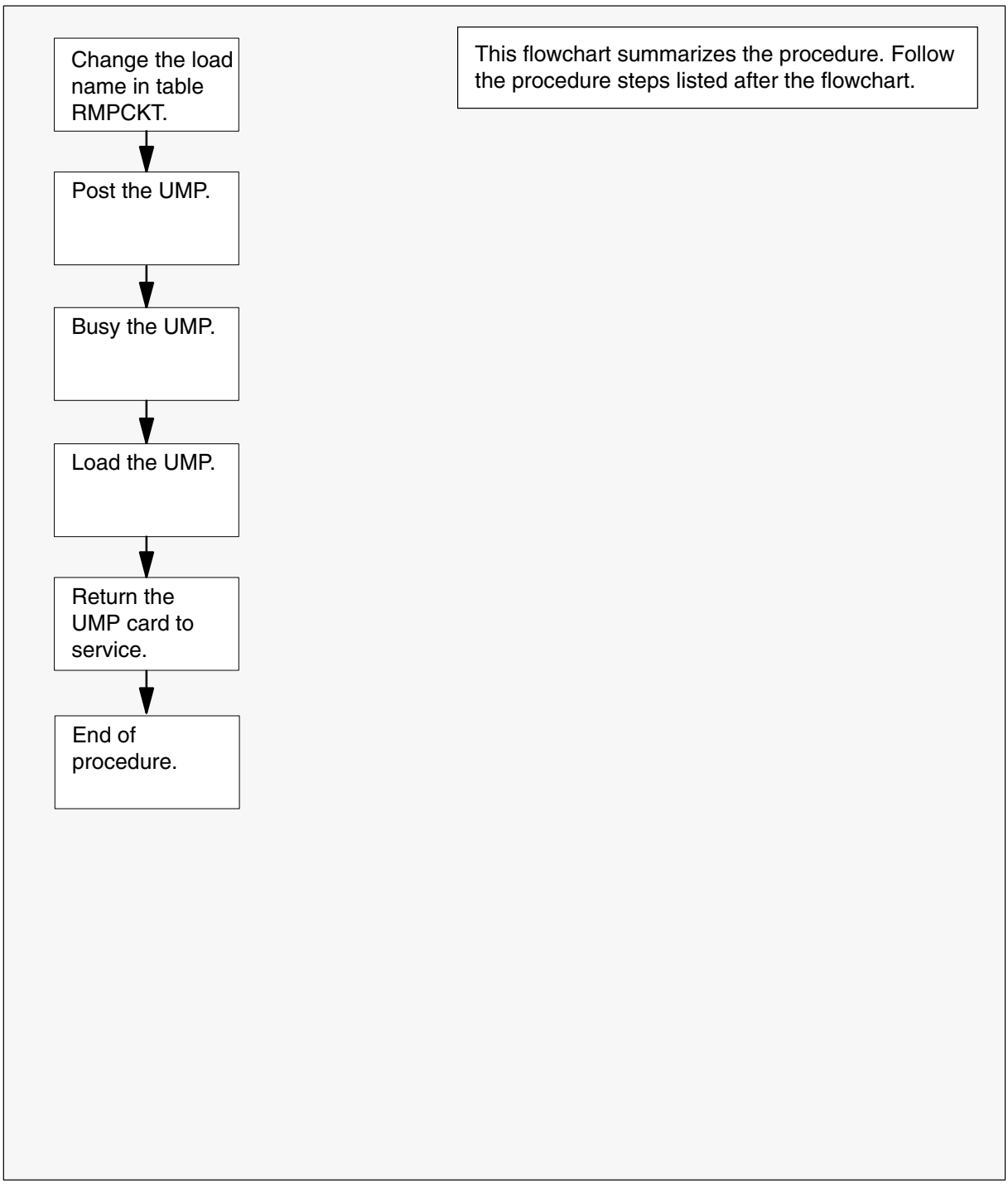
Not applicable

Notes

None

Update the UMP card (NTTR73) (continued)

Summary of procedure



Update the UMP card (NTTR73) (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a UMP card to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update table remote maintenance pack circuit (RMPCKT). Perform the following steps.

a. Open the table. Type

>TABLE RMPCKT
and press the Enter key.

b. List the contents of table RMPCKT. Type

>LIST
and press the Enter key.

c. Position on the UMP to update. Type

>POS UMP ump_no
and press the Enter key.

where

ump_no is the number of the UMP

d. Begin the load name change. Type

>CHA
and press the Enter key.

e. Press the Enter key to scroll through the fields until the MAP display prompts for the UMP load name.

f. Enter the new UMP load name. Type

>ump_load
and press the Enter key.

where

ump_load is the name of the new UMP load

Example of command

```
>DUMPAQ07
```

g. Press the Enter key to scroll through the fields until the MAP display prompts for confirmation of the load name change.

h. Confirm the change. Type

>Y
and press the Enter key.

4 Close the table. Type

>QUIT
and press the Enter key.

5 Access the test equipment (TSTEQUIP) level of the MAP display. Type

>MAPCI;MTC;MTCNA;TSTEQUIP
and press the Enter key.

6 Post the UMP. Type

>POST UMP ump_no
and press the Enter key.

where

ump_no is the number of the UMP

7 Busy the UMP card. Type

>BSY
and press the Enter key.

8 Load the UMP card. Type

>LOADTE
and press the Enter key.

9 Return the UMP card to service. Type

>RTS
and press the Enter key.

Update the UMP card (NTTR73) (end)

10 You have updated the UMP card and completed this procedure. Review the update schedule.

If there are	Do
additional UMP cards to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the XLIU

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to update the X.25/X.75 link interface unit (XLIU).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- The XLIU is in-service (InSv).
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Is the XLIU to be updated the first unit in the office to use the new load?
- Do any PRSUs need to be applied to the new load?
- Does an image need to be taken of this XLIU?

For assistance, refer to chapters “Overview of release” and “Overview of update process” in this document.

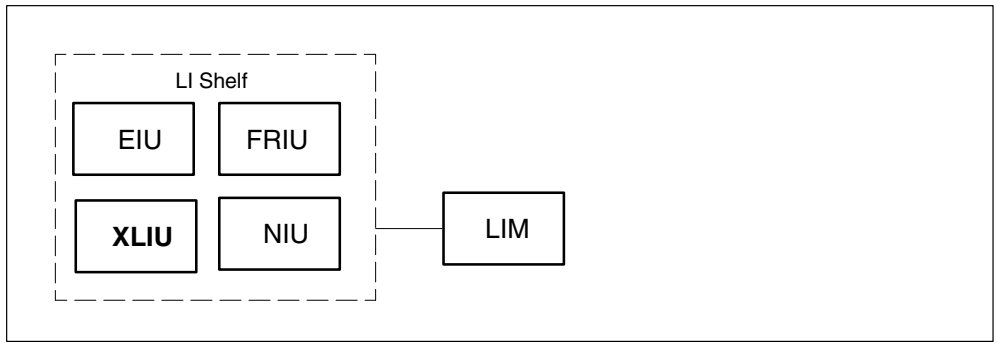
Update sequence

The following figure illustrates a possible node configuration for the XLIU. Update the PMs in the node in peripheral side (P-side) to central side

Update the XLIU (continued)

(C-side) order. Update the link interface module (LIM) as soon as possible after all its subtending PMs are updated.

Node configuration for XLIU



If a network interface unit (NIU) is providing channelized access to an X.25/X.75 link interface unit (XLIU), the XLIU is a subtending PM to the NIU. Update the XLIU before the NIU.

Notes

The following notes apply to the XLIU update procedure.

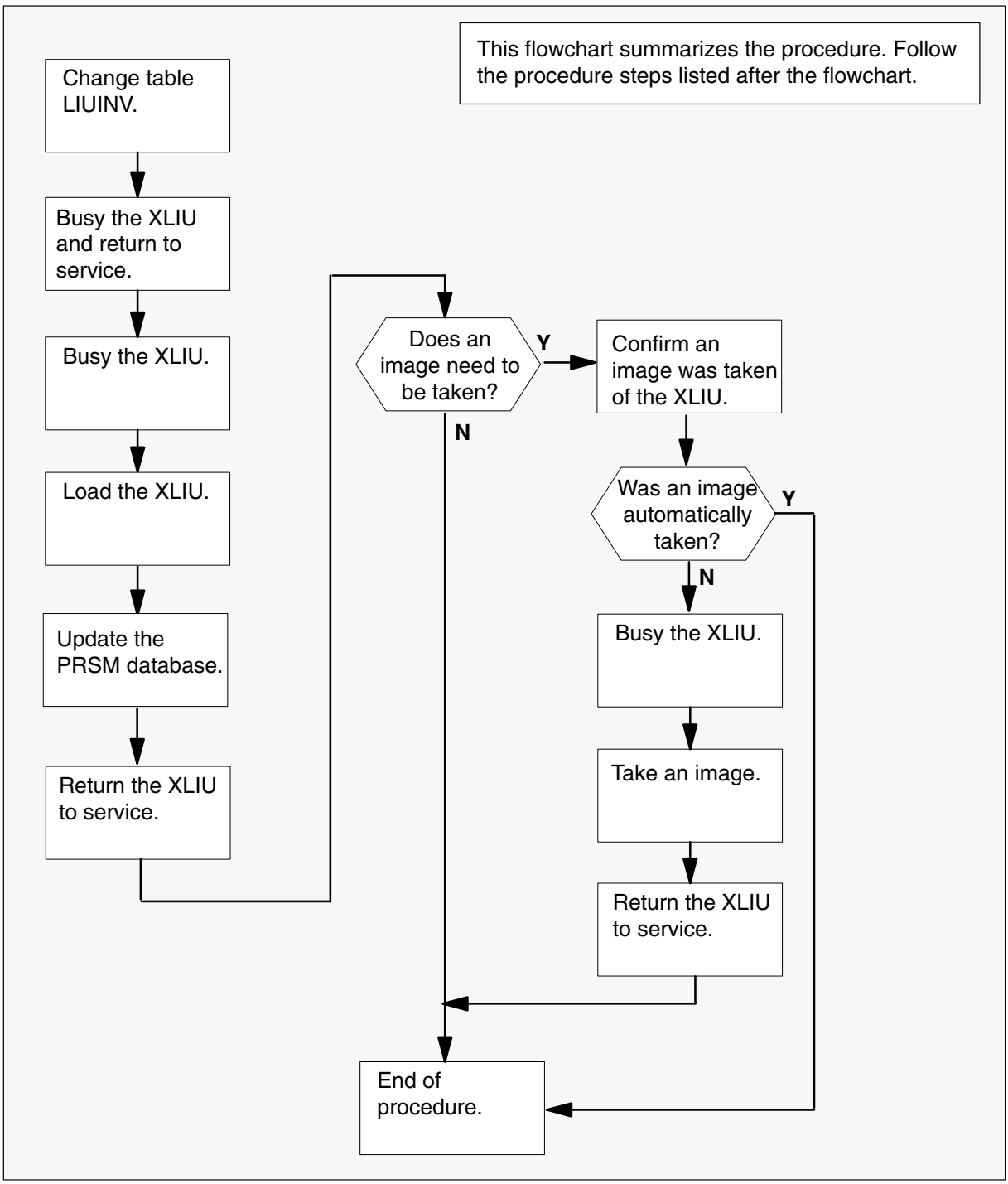
Integrated services node auto imaging

For integrated services node (ISN) auto imaging (IAI) to take an image during the XLIU update for offices at BASE09 or a higher PCL, perform the following requirements:

- Enter appropriate datafill in table IMGSCHED.
- Enter appropriate datafill in table IMAGEDEV.
- Ensure AUTODUMP is ON.

Update the XLIU (continued)

Summary of procedure



Update the XLIU (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an XLIU to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the XLIU inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE LIUINV
and press the Enter key.

b. Position on the datafill tuple for the XLIU. Type

>POS XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>POS XLIU 1
```

c. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD XRC12BI
```

d. Confirm the change. Type

>Y
and press the Enter key.

Note: The XLIU changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the XLIU. Type

>POST XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>POST XLIU 1
```

Note: The XLIU changes status to ISTb. If the XLIU does not change to ISTb, confirm the XLIU inventory table is updated correctly and the correct XLIU is posted. Do not continue this procedure until the XLIU is ISTb.

6 Ensure the XLIU passes an out-of-service test and returns to service. Perform the following steps.

a. Busy the XLIU. Type

>BSY
and press the Enter key.

b. Return the XLIU to service. Type

>RTS
and press the Enter key.

7 Busy the XLIU. Type

>BSY
and press the Enter key.

8 Load the XLIU. Type

>LOADPM
and press the Enter key.

Update the XLIU (continued)

9 Confirm the PRSU status of the XLIU. Perform the following steps.

CAUTION
Possible service interruption
Failure to apply PRSUs immediately after the PM load update can increase administrative time and lead to service interruption.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>DBAUDIT XLIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

c. Display the PRSU list. Type

>REPORT DEST XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>REPORT DEST XLIU 0
```

d. Confirm all PRSUs for the new load are applied to the XLIU.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 9i.
all PRSUs for the new load are not applied to the inactive unit	step 9e.
PRSUs from the previous load are listed at VA status	step 9b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 9i. The PRSM daily FILEAUDIT removes these PRSUs.

e. Apply the PRSUs. Type

>APPLY 'prsu_name IN XLIU xliu_no
and press the Enter key.

where

prsu_name is the name of the PRSU (repeat variable as required)
xliu_no is the number of the XLIU

Example of command

```
>APPLY 'AMP00ib9 | AMP90IT8 | RMS39IB9 IN XLIU 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>DBAUDIT XLIU 0
```

Note: PRSUs from the previous release can remain at NV status. The daily FILEAUDIT removes these PRSUs.

Update the XLIU (continued)

g. Display the PRSU list. Type

>REPORT DEST XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>REPORT DEST XLIU 0
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 9i.
does not match the PRSM database	step 9e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

10 Return the XLIU to service. Type

>RTS
and press the Enter key.

Note: Wait for the MAP display to show the unit is InSv. The unit can take two to three minutes to display InSv.

If an image	Do
needs to be taken of this XLIU	step 11
does not need to be taken of this XLIU	step 22
Note: Take an image of the first XLIU being update. Office policy and the update schedule determines the need for additional images.	

11 Confirm an image was automatically taken of the XLIU. Perform the following steps.

a. Open the AUTODUMP history file for ISN PMs. Type

>AUTODUMP HISTORY ISN
and press the Enter key.

b. Review the contents of the file and confirm an image was automatically taken of the XLIU.

If an image of the XLIU	Do
was automatically taken	step 22
was not automatically taken	step 12

Note: If an image of the XLIU was not automatically taken, confirm AUTODUMP is ON and check the datafill in tables IMGSCHED and IMAGEDEV. Take a manual image if auto imaging failed to execute.

12

ATTENTION

Take an image immediately after PRSU application. Use this image to load any remaining XLIUs. If an image is not taken, PRSUs must be applied manually each time an XLIU is loaded.

This procedure takes an image of a busied XLIU. However, an image can be taken of an in-service XLIU. Check office policy.

Busy the XLIU. Type

>BSY XLIU xliu_no
and press the Enter key.

where

xliu_no is the number of the XLIU

Example of command

```
>BUSY XLIU 1
```

13 Enter the disk utility. Type

>DISKUT
and press the Enter key.

Update the XLIU (continued)

14 Take an image of the XLIU with PRSUs applied. Type

>DUMP file_name dev_name ACTIVE RETAIN NODE XLIU xliu_no
and press the Enter key.

where

file_name	is the name of the image file
dev_name	is the name of the device to store the image
xliu_no	is the number of the XLIU

Example of SLM command

```
>DUMP XRC12BI S00DPMLOADS ACTIVE RETAIN NODE XLIU 0
```

Example of XA-Core command

```
>DUMP XRC12BI F17LPMLOADS ACTIVE RETAIN NODE XLIU 0
```

15 List the disk volume. Type

>LF vol_name
and press the Enter key.

where

vol_name	is the name of the disk volume

Example of SLM command

```
>LF S00DPMLOADS
```

Example of XA-Core command

```
>LF F17LPMLOADS
```

Note: "_XLIU" appends to the file name, for example, `XRC12BI_XLIU`.

16 Delete the original XLIU load file entered in PMLOADS. Type

>DDF original_file
and press the Enter key.

where

original_file	is the name of the original XLIU load file

Example of command

```
>DDF XRC12BI
```

17 Confirm the action. Type

>Y
and press the Enter key.

Update the XLIU (continued)

18 Eliminate the "_XLIU" extension on the new XLIU load file name. Type

>RNF cur_name new_name
and press the Enter key.

where

cur_name	is the name of the current XLIU load file
new_name	is the name of the current XLIU load file without the "_XLIU" extension

Example of command

```
>RNF XRC12BI_XLIU XRC12BI
```

19 Exit the disk utility. Type

>QUIT
and press the Enter key.

20 Perform a NIL change to the XLIU load name in table PMLOADS. Perform the following steps.

a. Open table PMLOADS. Type

>TABLE PMLOADS
and press the Enter key.

b. Position on the datafill tuple for the load. Type

>POS load_name
and press the Enter key.

where

load_name is the name of the XLIU load

Example of command

```
>POS XRC12BI
```

c. Begin the process of a NIL change. Type

>CHA
and press the Enter key.

d. Press the Enter key to scroll through the fields until the MAP display shows the confirmation prompt.

e. Confirm the unchanged tuple. Type

>Y
and press the Enter key.

Update the XLIU (end)

f. Close table PMLOADS. Type

>QUIT
and press the Enter key.

21 Return the XLIU to service. Type

>RTS
and press the Enter key.

22 You have updated the XLIU and completed this procedure. Review the update schedule.

If there are	Do
additional XLIUs to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Update the XPM processor circuit card firmware

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

CAUTION
Loss of service

To perform XPM processor firmware installations or planned protocol changes, refer to the appropriate installation method (IM) described in the following paragraphs.

Use IM 65-0260, *NTSX05AA/CA Processor Upgrade,* to upgrade from NTMX77AA or NTAX74AA to NTSX05AA or NTSX05CA peripheral processors and optional NTSX06BA or NTSX06CA peripheral remote loader (PRL) for host-ISDN or host non-ISDN peripherals.

Use IM 65-6364, *LGC/LTC, RCC2 Remote Firmware Upgrade,* to upgrade processor firmware for host-ISDN or host non-ISDN peripherals provisioned with NTMX76 supporting HDLC protocol.

Failure to follow these installation methods results in an interruption of service.

Use this procedure to update the firmware on the XPM processor circuit card (NTAX74, NTMX77 or NTSX05) when the serving peripheral module (PM) is not updated. Do not use this procedure when the serving PM is being updated. The firmware load is updated when the serving PM is updated.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.

Update the XPM processor circuit card firmware (continued)

- The PM is in-service (InSv).
- The PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

None

Update sequence

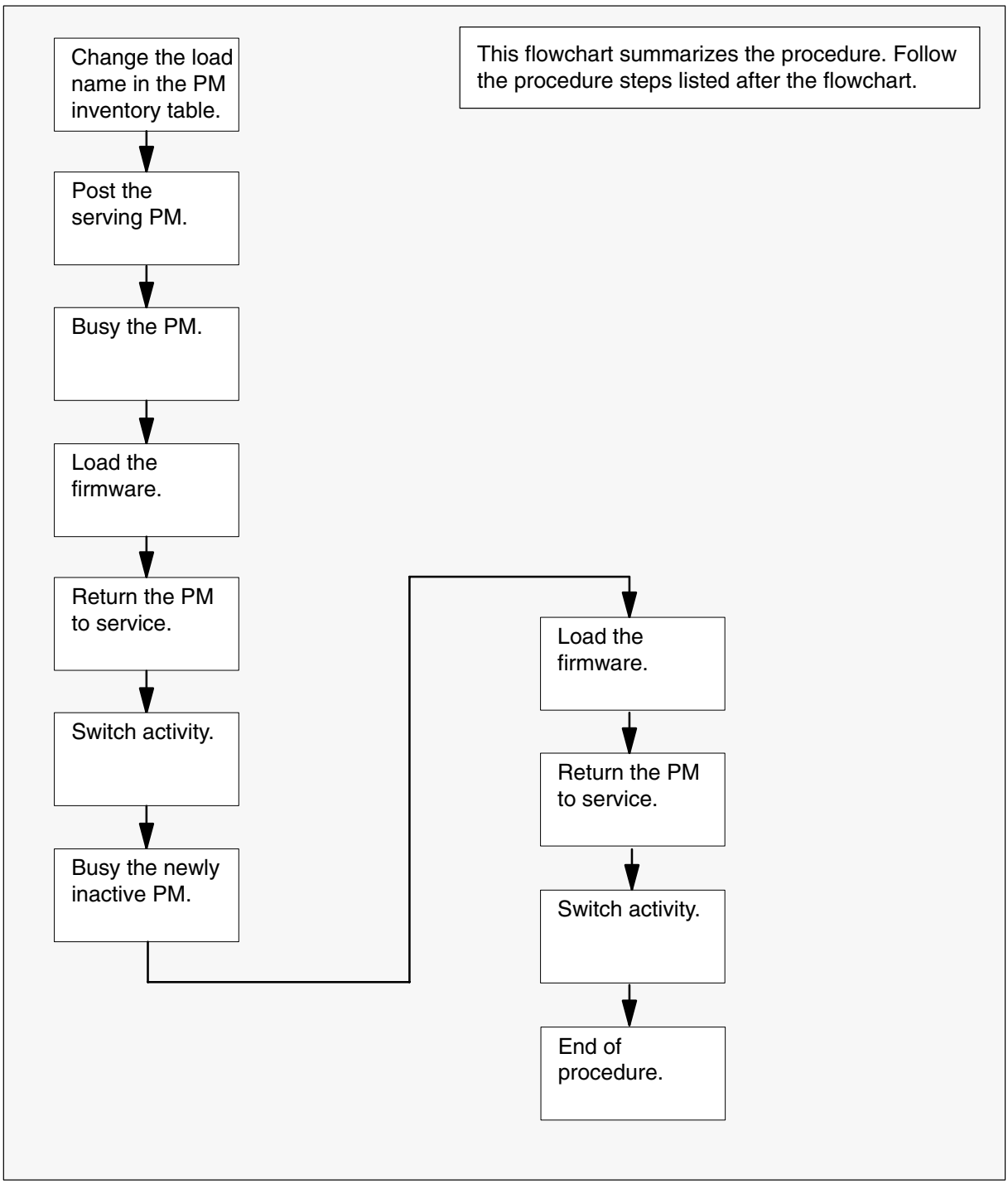
Not applicable

Notes

None

Update the XPM processor circuit card firmware (continued)

Summary of procedure



Update the XPM processor circuit card firmware (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select a PM with XPM processor firmware to update.

2 Review and confirm the completion of all the prerequisites for this procedure.

3 Open the PM inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the inventory table for the PM

If the serving PM	Do
is an RCC or RCC2	step 5
is not an RCC or RCC2	step 4

4 Position on the datafill tuple for the PM. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Go to step 6.

5 Position on the datafill tuple for the PM. Type

>POS site_name pm_type pm_no
and press the Enter key.

where

site_name is the name of the PM's site
pm_type is RCC or RCC2
pm_no is the number of the PM

Update the XPM processor circuit card firmware (continued)

6 Change the current firmware load name to the new load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new firmware load name

7 Confirm the change. Type

>Y
and press the Enter key.

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10 Post the PM. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Note: The PM changes status to in-service trouble (ISTb). If the PM does not change to ISTb, confirm the PM inventory table is updated correctly and the correct PM is posted. Do not continue this procedure until the PM is ISTb.

Update the XPM processor circuit card firmware (continued)

11

ATTENTION

Perform steps 11, 12, and 13 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 11, 12, and 13. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

12 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

13 Activate the firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

14 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

15 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit may take two to three minutes to display InSv.

16 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch cannot perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

Update the XPM processor circuit card firmware (continued)

17 Confirm the switch of activity. Type

>Y
and press the Enter key.

18

ATTENTION

Perform steps 18, 19, and 20 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 18, 19, and 20. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

19 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

20 Activate the firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

21 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

22 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

Update the XPM processor circuit card firmware (end)

23 Switch activity between the units and return the units to the original service states. Type

>SWACT

and press the Enter key.

Note: If the DMS switch cannot perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

24 Confirm the switch of activity. Type

>Y

and press the Enter key.

25 You have updated the XPM processor card and completed this procedure. Review the update schedule.

If there are	Do
additional XPM processor cards to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Use an exec to post a large set of XPMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

Use this procedure to use an exec to post a large set of XPMs.

Prerequisites

None

Required information

None

Update sequence

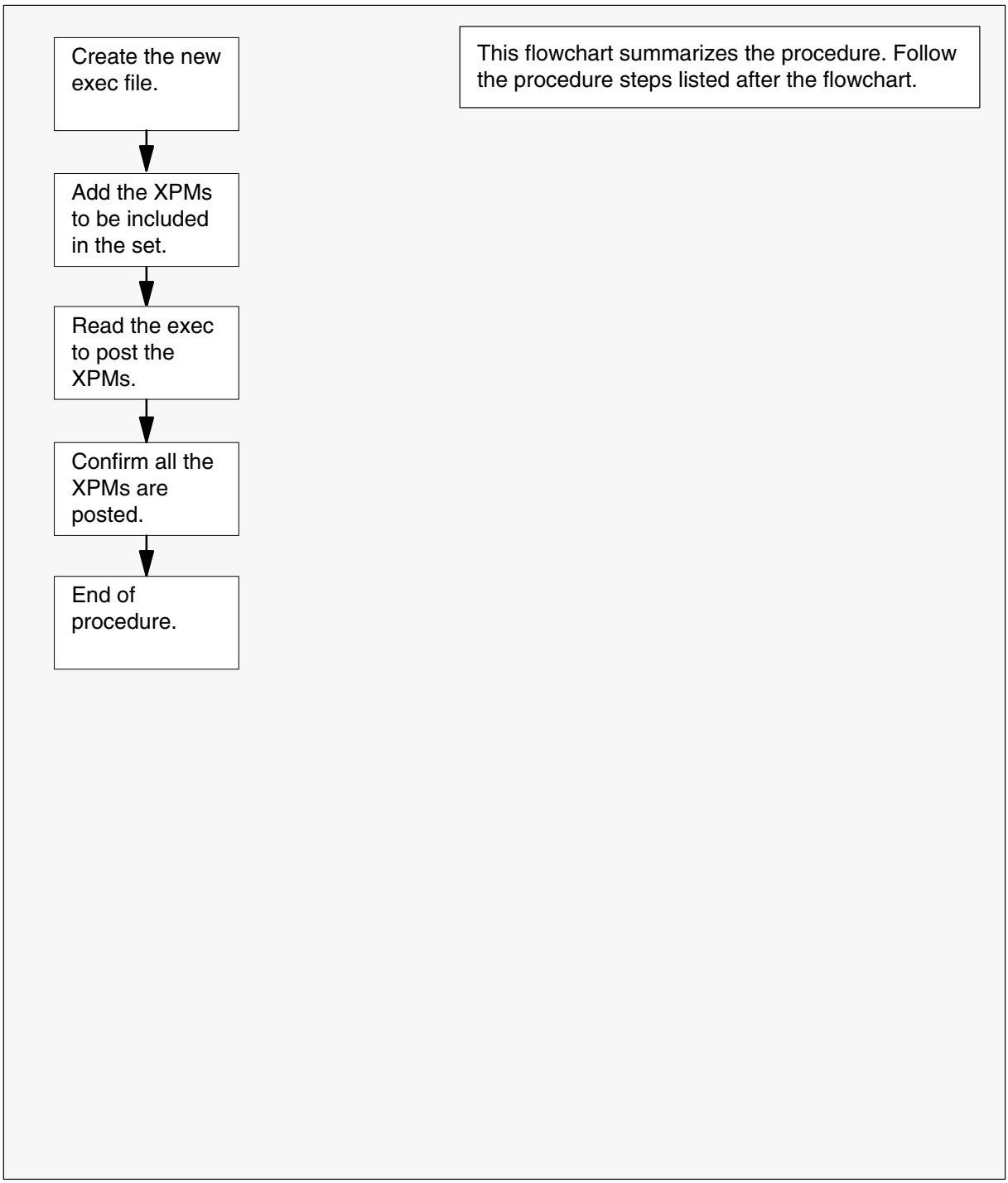
Not applicable

Notes

None

Use an exec to post a large set of XPMs (continued)

Summary of procedure



Use an exec to post a large set of XPMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select the XPMs to update.

2 Create the new exec file. Type

>EDIT exec_name
and press the Enter key.

where

exec_name is the name of the exec

Example of command

```
>EDIT DTC35
```

Example of MAP response

```
NEW FILE
EDIT:
```

3 Enter the input mode. Type

>INPUT
and press the Enter key.

Example of MAP response

```
INPUT:
```

Use an exec to post a large set of XPMs (continued)

4 Enter the file input. Type

>POST pm_type pm_no pm_no pm_no pm_no +
pm_no pm_no pm_no pm_no pm_no pm_no
and press the Enter key twice.

where

pm_type is the type of PM
pm_no is the number of the PMs (repeat variable as required)

Example of command

```
>POST DTC 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 +
>18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
>
```

Example of MAP response

```
EDIT
```

5 File the exec to the store file device. Type

>FILE SFDEV
and press the Enter key.

6

ATTENTION
Use the command LISTSF ALL if the MAP terminal used at this step is different from the terminal used to create the exec.

Add the exec to the user directory. Type

>LISTSF
and press the Enter key.

7 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

8 Use the exec to post the set of XPMs. Type

>READ exec_name
and press the Enter key.

where

exec_name is the name of the exec

Example of command

```
>READ DTC35
```

Use an exec to post a large set of XPMs (end)

9 Display the list of posted XPMs. Type

>LISTSET
and press the Enter key.

10 Review the list of posted XPMs and confirm all XPMs in the set are posted.

11 You have used an exec to post a large set of XPMs. Go to the appropriate broadcast mate loading or parallel loading procedure in this document.

Use parallel loading to update LCMs or LCMEs PMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use this procedure to update remote LCMs or LCMEs. Update each remote LCM or LCME individually.

Use this procedure to update a set of up to 50 line concentrating modules (LCM) or enhanced line concentrating modules with ISDN (LCME).

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- The new load name is entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM is in-service (InSv).
- Each PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.

Required information

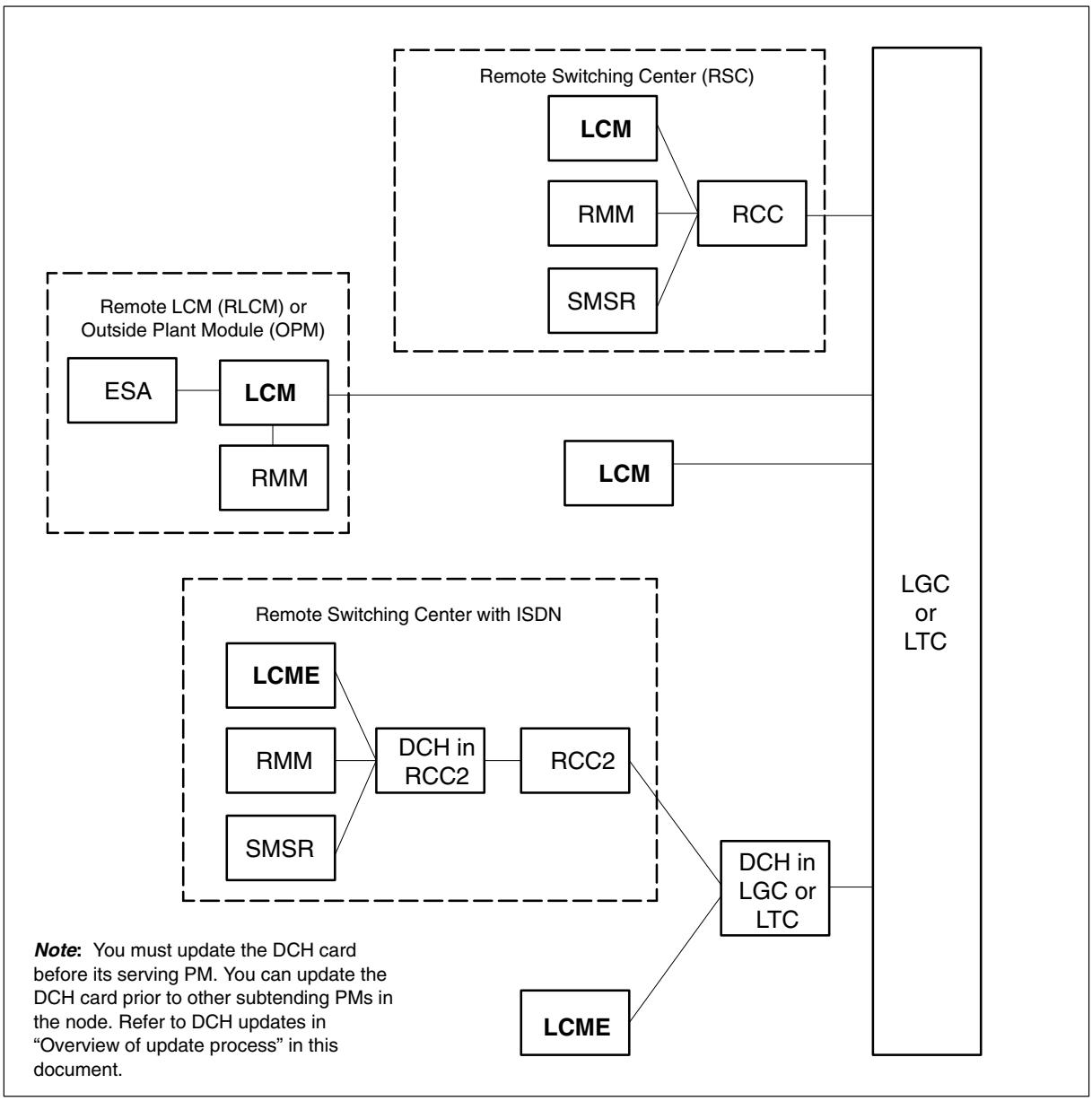
None

Update sequence

The following figure illustrates possible node configurations for the LCM or LCME. Subtending PMs must be updated prior to the LCM or LCME. Serving PMs must be updated after the LCM or LCME.

Use parallel loading to update LCMs or LCMEs PMs (continued)

Node configuration for LCM or LCME

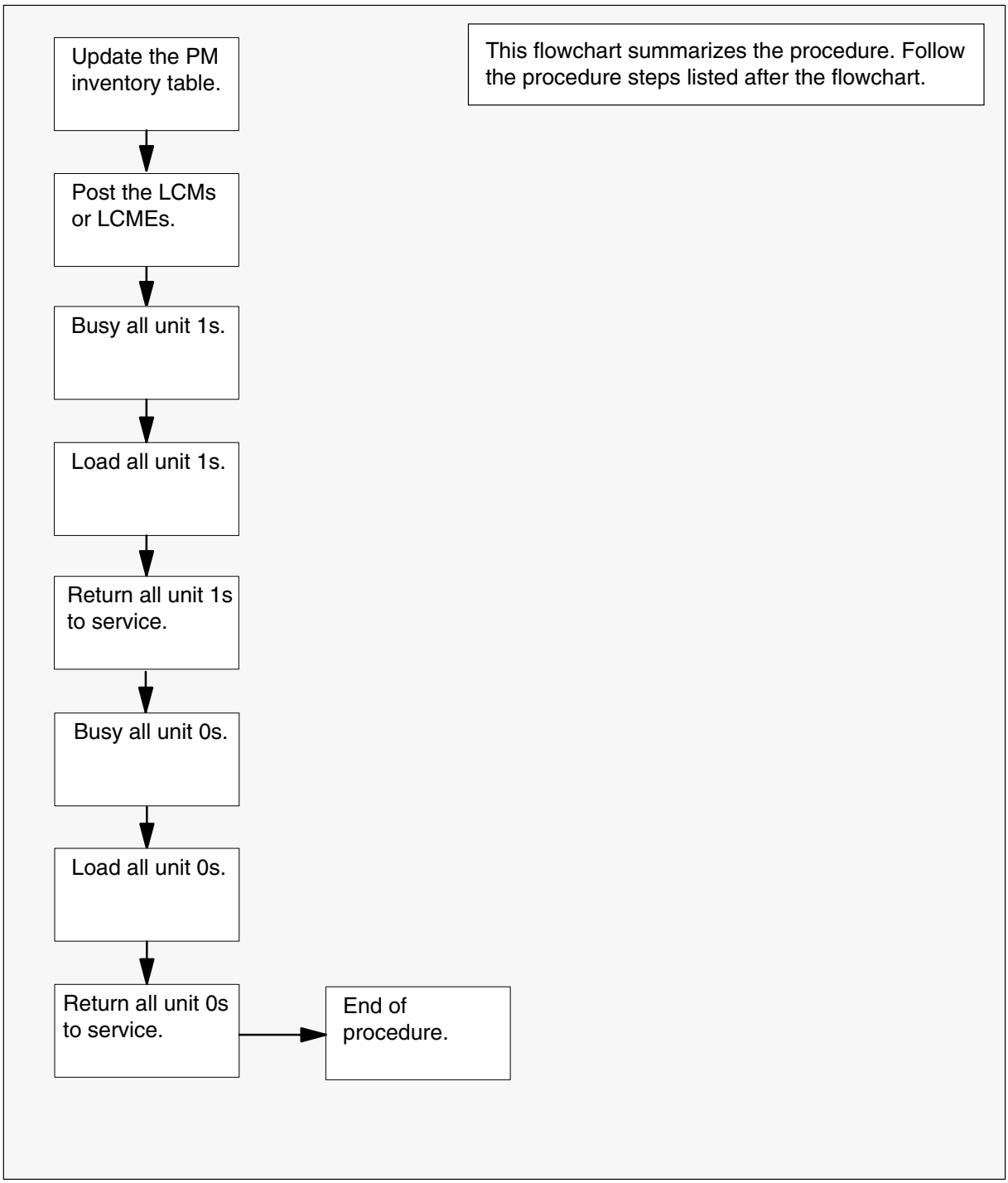


Notes

None

Use parallel loading to update LCMs or LCMEs PMs (continued)

Summary of procedure



Use parallel loading to update LCMs or LCMEs PMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to either contact the next level of support, terminate all update activities for the shift, troubleshoot the problem and return the PM to service, or select another PM to update. Office policy can vary by PM type.

At the MAP display

1 Select the LCMs or LCMEs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the LCM or LCME inventory table. Perform the following steps.

a. Open the PM inventory table. Type

>TABLE LCMINV
and press the Enter key.

To view the tuples in a	Do
packed format	step 3b.
regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for one of the PMs to be updated. Type

>POS site_name frame_no lcm_no
and press the Enter key.

where

site_name is the name of the site
frame_no is the number of the frame
lcm_no is the number of the LCM or LCME

Use parallel loading to update LCMs or LCMEs PMs (continued)

d. Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The LCM or LCME changes status to in-service trouble (ISTb) because of the load mismatch between the inventory table and the PM. Continue this procedure.

f. Repeat steps 3c. through 3e. for each LCM or LCME to be updated this shift.

g. Close the table. Type

>QUIT
and press the Enter key.

4 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

5 Post the PMs. Type

>POST lcm_type site_name frame_no lcm_no
and press the Enter key.

where

lcm_type	is LCM or LCME
site_name	is the site of the LCM or LCME
frame_no	is the number of the frame
lcm_no	is the number of the LCM or LCME

Note 1: The field SITE_NAME is optional with host-based LCMs.

Note 2: The LCM or LCME changes status to ISTb. If the LCM or LCME does not change to ISTb, confirm the LCM or LCME inventory table is updated correctly and the correct LCM or LCME is posted. Do not continue this procedure until the LCM or LCME is ISTb.

Example of command

```
>POST LCM REM1 9 0 REM1 9 1 REM1 10 0
```

Use parallel loading to update LCMs or LCMEs PMs (continued)

6 Busy all units 1. Type

>BSY UNIT 1 ALL
and press the Enter key.

Note: If a maintenance audit is running, the PM does not respond to this command. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

7 Confirm the command. Type

>Y
and press the Enter key.

8 Load all unit 1s. Type

>LOADPM UNIT 1 CC ALL
and press the Enter key.

9 Confirm the command. Type

>Y
and press the Enter key.

10 Return all unit 1s to service. Type

>RTS UNIT 1 FORCE ALL
and press the Enter key.

11 Confirm the action. Type

>Y
and press the Enter key.

12 Confirm the number of LCMs or LCMEs. Type

>Y
and press the Enter key.

13 Test all unit 1s. Type

>TST UNIT 1 ALL
and press the Enter key.

14 Confirm the command. Type

>Y
and press the Enter key.

Use parallel loading to update LCMs or LCMEs PMs (continued)

15 Busy all unit 0s. Type

>BSY UNIT 0 ALL
and press the Enter key.

Note: If a maintenance audit is running, the PM does not respond to this command. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

16 Confirm the command. Type

>Y
and press the Enter key.

17 Load all units 0. Type

>LOADPM UNIT 0 CC ALL
and press the Enter key.

18 Confirm the command. Type

>Y
and press the Enter key.

19 Return all unit 0s to service. Type

>RTS UNIT 0 FORCE ALL
and press the Enter key.

20 Confirm the action. Type

>Y
and press the Enter key.

21 Confirm the number of LCMs or LCMEs. Type

>Y
and press the Enter key.

22 Test all unit 0s. Type

>TST UNIT 0 ALL
and press the Enter key.

23 Confirm the command. Type

>Y
and press the Enter key.

Use parallel loading to update LCMs or LCMEs PMs (end)

24 You have updated the set of LCM-type PMs and completed this procedure. Review the update schedule.

If there are	Do
additional LCM-type PMs to update during this shift	Follow the recommendations in "Overview of update process" in this document. Use the procedure in this document to update each PM, or repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Use broadcast mate loading to update XPMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION

Do not use broadcast mate loading to update remote PMs.

Refer to the appropriate update procedure in this document to update the first unit in the office to use the new load. Use this procedure to update the remaining XPMs.

If the PM has a peripheral remote loader (PRL) circuit card, refer to the procedure "Use the PRL circuit card to broadcast mate load XPMs" in this document.

Use this procedure to update a set of 11 to 35 XPMs. Broadcast mate loading allows operating company personnel to load the inactive units of a set of like PMs. Unlike parallel loading, broadcast mate loading requires only one loader resource for a set of like peripherals. An exception to this is when the posted set consists of more than one load type.

All inactive units of a set of XPMs can be updated using XPM broadcast mate loading. The computing module (CM) sends a message to the active unit of the first XPM in the set. The active unit forwards the message to its inactive unit and the active unit of the second XPM in the set. The active unit in the second XPM forwards the message to its inactive unit and the third XPM in the set. This sequence continues until all XPMs in the set receive the message.

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the PM are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.

- Each PM is in-service (InSv).
- Each PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

  Note: Depending on the size of the set, an exec can be created to post the set of XPMs. Refer to the procedure "Use an exec to post a large set of XPMs" in this document.

In addition to the prerequisites listed above, perform the following activities to reduce potential broadcast mate loading failures:

- Access MAPCI;MTC;PM;POST**<xpm_name>**;QUERYPM DIAGHIST and address any pending maintenance activities.
- Access MAPCI;MTC;ACTIVITY to monitor current call processing traffic levels in the office.
  - — Ensure CpOcc is less than 25%.
  - — Ensure Call Attempts per Hour is less than 200K.

Required information

Refer to the appropriate PM update procedure in this document.

Update sequence

Refer to the appropriate PM update procedure in this document.

Notes

Broadcast mate loading can only be used on XPMs with one unit in-service and one unit manually busy.

This procedure assumes that all post-release software updates (PRSUs) for the load are applied. If all PRSUs are not applied, update one unit and apply any PRSUs. The unit can be one of the XPMs in the set to be updated.

Do not use XPM broadcast mate loading to update remote XPMs such as the remote cluster controller (RCC). Update each remote PM individually.

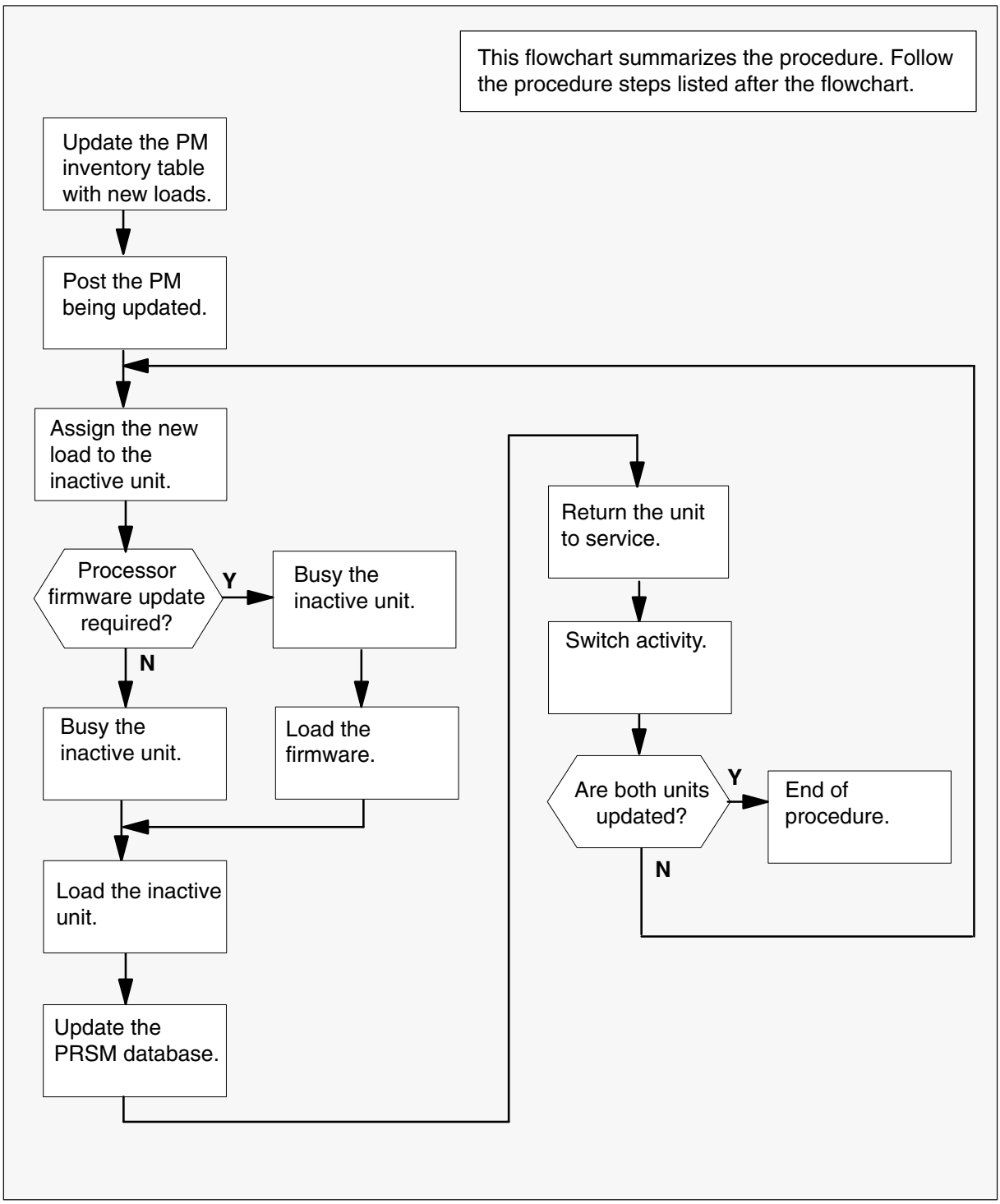
Do not use XPM broadcast mate loading to update DTCs with timing links. To identify the timing source, type the command MAPCI;MTC;MS;CLOCK from the CI level of the MAP display. Offices can use the DTC with timing links as the first DTC in the office to be updated with the new load.

Use broadcast mate loading to update XPMs (continued)

Parallel loading can be used to update the XPM processor firmware in a set of up to four XPM units. The set can include up to ten XPMs, but a maximum of four XPM units per set is recommended for optimum performance. Office parameter MAX_FIRMWARE_LOAD_MAIN_TASK in table OFCOPT determines the maximum number of XPMs in the set. The default value is 10. The range is 1 to 128.

Use broadcast mate loading to update XPMs (continued)

Summary of procedure



Use broadcast mate loading to update XPMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select the PMs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PM inventory table. Perform the following steps.

a. Open the PM inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the name of the inventory table

Example of command

```
>TABLE LTCINV
```

To view the tuples in a	Do
a packed format	step 3b.
a regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

Use broadcast mate loading to update XPMs (continued)

c. Position on the datafill tuple for one of the PMs to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>POS DTC 0
```

d.

ATTENTION
If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Use broadcast mate loading to update XPMs (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the PM has a CMR load that requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Change the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the CMR load name

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Repeat steps 3c. through 6f. for each PM to be updated in the selected set.

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10

ATTENTION

If parallel firmware loading is used to update the XPM processor firmware, post four or less XPMs at this step.

Post the PMs. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type	is the type of PM
pm_set	is the set of PMs

Example of command

```
>POST DTC 0 1 2 3 4 5 6 7 8 9 10 11 12
```

Note: The PMs change status to ISTb. If the PMs do not change to ISTb, confirm the PM inventory table is updated correctly and the correct PMs are posted. Do not continue this procedure until the PMs are ISTb.

11 Identify the inactive unit in each PM in the set.

Use broadcast mate loading to update XPMs (continued)

12

ATTENTION

Office policy can support the use of destination sets to simplify the broadcast mate loading of XPMs.

Assign the load to the inactive units. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive units. Type.

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the PM unit

Example of command

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1 | +
>'DTC 1 0 | DTC 2 0 | DTC 3 1 | DTC 4 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Use broadcast mate loading to update XPMs (continued)

13 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 14
was not changed	step 21

14

ATTENTION

Perform steps 14, 15, 16, 17, 18, and 19 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 14, 15, 16, 17, 18, and 19. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive units. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

15 Confirm the command. Type

>Y
and press the Enter key.

16 Busy all the inactive units. Type

>BSY INACTIVE ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

Use broadcast mate loading to update XPMs (continued)

17 Confirm the command. Type

>Y
and press the Enter key.

18 Activate the XPM processor firmware in all the inactive units. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

19 Confirm the command. Type

>Y
and press the Enter key.

20 Go to step 23.

21 Busy all the inactive units. Type

>BSY INACTIVE ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

22 Confirm the command. Type

>Y
and press the Enter key.

Use broadcast mate loading to update XPMs (continued)

23

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

ATTENTION

If the LOADPM INACTIVE ALL command fails immediately, refer to section Prerequisites in this procedure. Identify and eliminate any XPMs with pending maintenance activities from the set and try the procedure again.

If the LOADPM INACTIVE ALL command fails while loading, refer to section Prerequisites in this procedure. Determine the current call processing traffic levels in the office. When call processing traffic levels are less than 25% for CpOcc and less than 200K for Call Attempts per Hour, issue the command again since a traffic spike in one or more XPMs can cause the failure.

If the LOADPM INACTIVE ALL command fails while loading and call processing traffic levels are greater than 25% for CpOcc and/or greater than 200K for Call Attempts per Hour, wait for a period of low traffic or identify a smaller set of XPMs to broadcast mate load.

Load all the inactive units. Type

>LOADPM INACTIVE ALL
and press the Enter key.

24 Confirm the command. Type

>Y
and press the Enter key.

25 Confirm the PRSU status of each inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use broadcast mate loading to update XPMs (continued)

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 1 | DTC 4 0
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

d. Repeat step 25c. for each updated inactive unit.

e. Compare the displayed PRSM database for each inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each inactive unit	step 25l.
all PRSUs for the new load are not applied to each inactive unit	step 25f.
PRSUs from the previous load are listed at VA status	step 25b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 25l. The PRSM daily FILEAUDIT removes these PRSUs.

Use broadcast mate loading to update XPMs (continued)

f. Apply the PRSUs to the applicable inactive unit. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 25f. as required for each inactive unit.

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 1 | DTC 4 0
```

i. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0
```

j. Repeat step 25i. for each updated inactive unit.

Use broadcast mate loading to update XPMs (continued)

k. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 25l.
does not match the PRSM database	step 25f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

26 Return all the inactive units to service. Type

>RTS INACTIVE ALL
and press the Enter key.

27 Confirm the command. Type

>Y
and press the Enter key.

28 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

29 Switch activity between the units. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

30 Confirm the switch of activity. Type

>Y
and press the Enter key.

Use broadcast mate loading to update XPMs (end)

31 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

If	Do
one unit in the set of PMs is updated	step 12
both units in the set of PMs are updated	step 32

32 You have used broadcast mate loading to update the set of XPMs and have completed this procedure. Review the update schedule.

If there are	Do
additional XPMs to update during this shift	Follow the recommendations in "Overview of update process" in this document. Repeat this procedure or go to the appropriate procedure in this document.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Use parallel loading to update XPMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION

Do not use parallel loading to update remote PMs.

Refer to the appropriate update procedure in this document to update the first unit in the office to use the new load. Use this procedure to update the remaining XPMs.

If the PM has a peripheral remote loader (PRL) circuit card, refer to the procedure "Use the PRL circuit card to parallel load XPMs" in this document.

Use this procedure to update a set of two to ten XPMs. All units of the same number (0 or 1) can be updated with XPM parallel loading. Only inactive units can be updated; therefore, activity can be switched in some XPMs to align all units in the set. During XPM parallel loading, the computing module (CM) sends messages directly to each inactive unit.

Prerequisites

Perform the procedures "Prepare for a manual PM update" or "Prepare for an automated PM update using PMUPGRADE" and "Start a PM update shift" in this document to meet the following prerequisites:

- All new load names for the PMs are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM is in-service (InSv).
- Each PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Use parallel loading to update XPMs (continued)

Required information

Refer to the appropriate PM update procedure in this document.

Update sequence

Refer to the appropriate PM update procedure in this document.

Notes

This procedure assumes that all post-release software updates (PRSUs) for the load are applied. If all PRSUs are not applied, update one unit and apply any PRSUs. The unit can be one of the XPMs in the set to be updated.

Do not use XPM parallel loading to update remote XPMs such as the remote cluster controller (RCC). Update each remote PM individually.

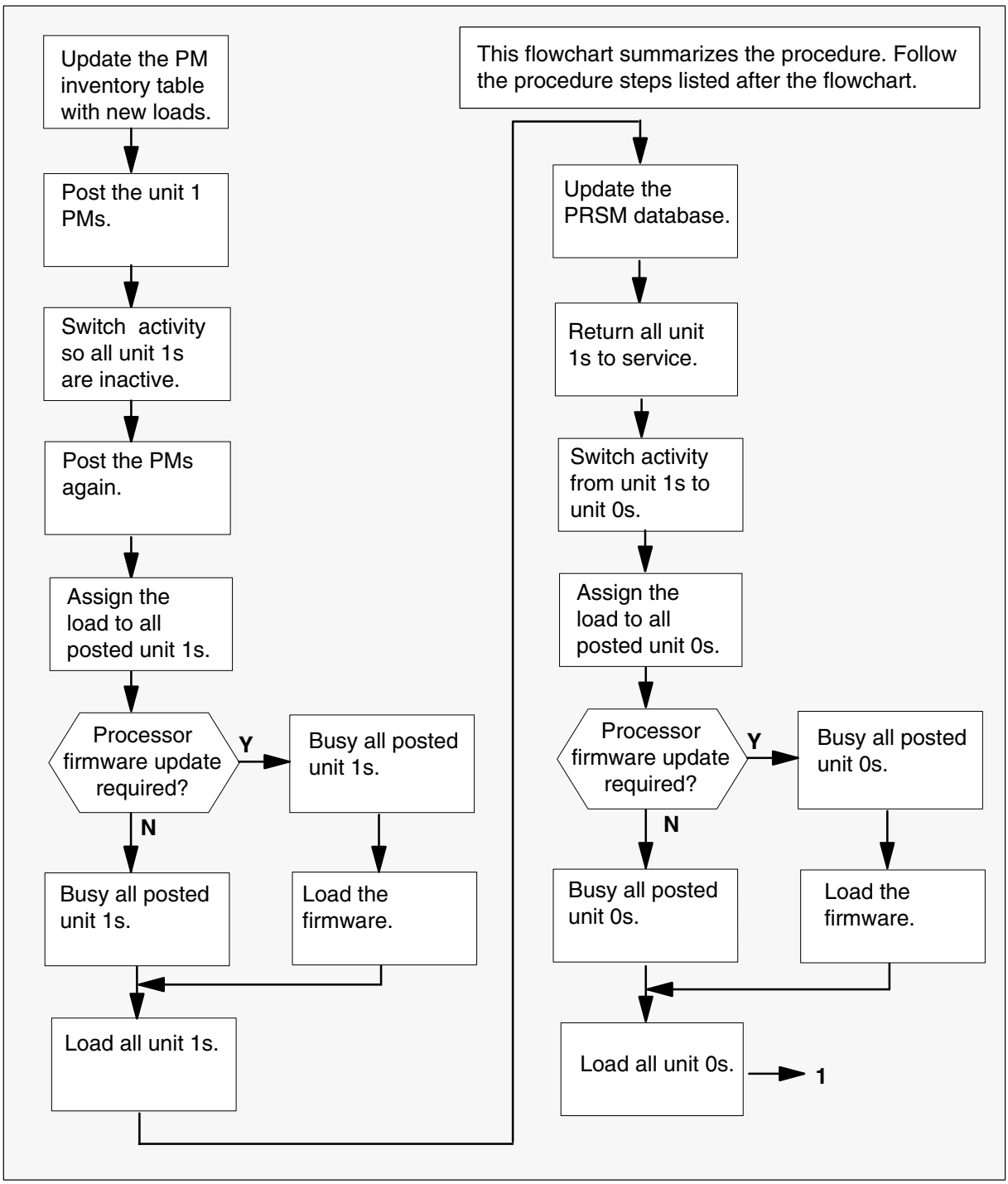
Do not use XPM parallel loading to update DTCs with timing links. To identify the timing source, type the command MAPCI;MTC;MS;CLOCK from the CI level of the MAP display. Offices can use the DTC with timing links as the first DTC in the office to be updated with the new load.

Parallel loading can be used to update the XPM processor firmware in a set of up to four XPM units. The set can include up to ten XPMs, but a maximum of four XPM units per set is recommended for optimum performance. Office parameter MAX_FIRMWARE_LOAD_MAIN_TASK in table OFCOPT determines the maximum number of XPMs in the set. The default value is 10. The range is 1 to 128.

Note: With the BASE10 software release, office parameter MAX_FIRMWARE_LOAD_MAIN_TASKS in table OFCOPT is deleted.

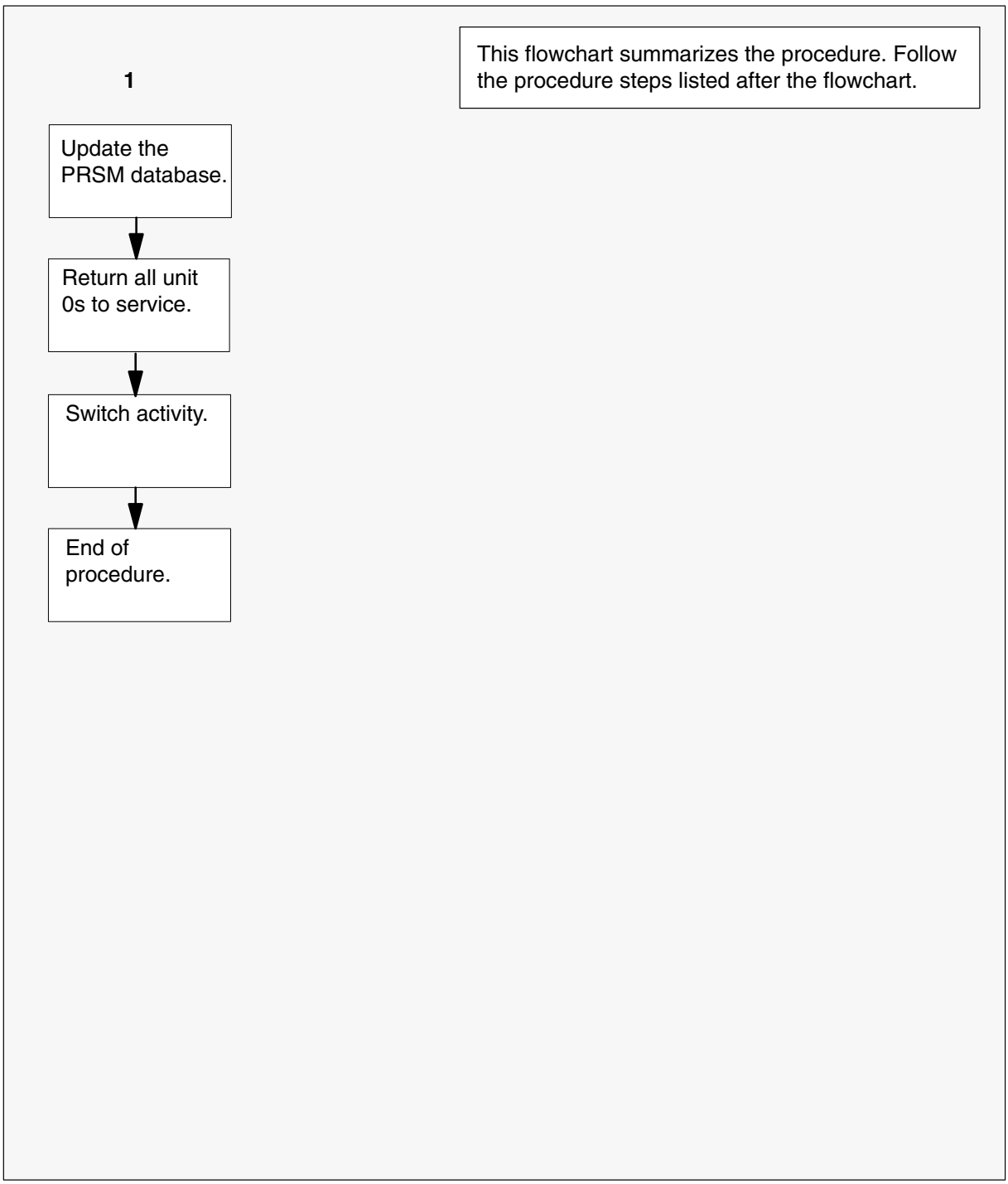
Use parallel loading to update XPMs (continued)

Summary of procedure



Use parallel loading to update XPMs (continued)

Summary of procedure (continued)



Use parallel loading to update XPMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select the PMs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PM inventory table. Perform the following steps.

a. Open the inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the name of the inventory table

Example of command

```
>TABLE LTCINV
```

To view the tuples in	Do
a packed format	step 3b.
a regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

c. Position on the datafill tuple for one of the PMs to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>POS DTC 0
```

d.

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Use parallel loading to update XPMs (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the PM has a CMR load that requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Change the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the CMR load name

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Repeat steps 3c. through 6f. for each PM to be updated in the selected set.

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10

ATTENTION

If parallel firmware loading is used to update the XPM processor firmware, post four or less XPMs at this step.

Post the PMs. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type	is the type of PM
pm_set	is the set of PMs

Example of command

```
POST DTC 0 1 2 3 4 5
```

Note: The PMs change status to ISTb. If the PMs do not change to ISTb, confirm the PM inventory table is updated correctly and the correct PMs are posted. Do not continue this procedure until the PMs are ISTb.

11 Use the NEXT command to scroll through the posted set and identify any active unit 1s.

Use parallel loading to update XPMs (continued)

12 Post all the PMs with an active unit 1. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the number of the PM with an active unit 1

Example of command

```
POST DTC 0 2 3 5
```

13 Switch activity in the PMs. Type

>SWACT ALL
and press the Enter key.

14 Post the entire PM set again. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the set of PMs

Example of command

```
POST DTC 0 1 2 3 4 5
```

15

ATTENTION
Office policy can support the use of destination sets to simplify the parallel loading of XPMs.

Assign the load to all unit 1s in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to all unit 1s in the posted set. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no 1
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>ASSIGN 'UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1 | +
>'DTC 1 1 | DTC 2 1 | DTC 3 1 | DTC 4 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

16 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 17
was not changed	step 24

Use parallel loading to update XPMs (continued)

17

ATTENTION

Perform steps 17, 18, 19, 20, 21, and 22 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 17, 18, 19, 20, 21, and 22. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in all unit 1s in the posted set. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

18 Confirm the command. Type

>Y
and press the Enter key.

19 Busy all unit 1s. Type

>BSY UNIT 1 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

20 Confirm the command. Type

>Y
and press the Enter key.

21 Activate the XPM processor firmware in all unit 1s. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

22 Confirm the command. Type

>Y
and press the Enter key.

23 Go to step 26.

24 Busy all unit 1s. Type

>BSY UNIT 1 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

25 Confirm the command. Type

>Y
and press the Enter key.

26

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load all unit 1s in the posted set. Type

>LOADPM UNIT 1 ALL
and press the Enter key.

27 Confirm the command. Type

>Y
and press the Enter key.

28 Confirm the PRSU status of each unit 1 in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use parallel loading to update XPMs (continued)

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 1 | DTC 2 1 | +
>'DTC 3 1 | DTC 4 1
```

c. Display the PRSU list for one unit 1. Type

>REPORT DEST pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 1
```

d. Repeat step 28c. for each updated unit 1.

e. Compare the displayed PRSM database for each unit 1 with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each unit 1.	step 28l.
all PRSUs for the new load are not applied to each unit 1	step 28f.
any PRSUs from the previous load are listed at VA status	step 28b. If a DBAUDIT was performed, contact the next level of support.
any PRSUs from the previous load are listed at NV status	step 28l. The PRSM daily FILEAUDIT removes these PRSUs.

f. Apply the PRSUs to any applicable unit 1. Type

>APPLY 'prsu_id IN pm_type pm_no 1
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is the type of PM
pm_no	is the number of the PM

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 28f. as required for each updated unit 1.

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 1
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 1 | DTC 2 1 | +
>'DTC 3 1 | DTC 4 1
```

i. Display the PRSU list for one unit 1. Type

>REPORT DEST pm_type pm_no 1
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>REPORT DEST DTC 0 1
```

j. Repeat step 28i. for each updated unit 1.

Use parallel loading to update XPMs (continued)

k. Compare the displayed PRSM database with the PRSU list for the new load.

If the PRSU list	Do
matches the PRSM database	step 28l.
does not match the PRSM database	step 28f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

29 Return all unit 1s in the posted set to service. Type

>RTS UNIT 1 ALL
and press the Enter key.

30 Confirm the command. Type

>Y
and press the Enter key.

31 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

32 Switch activity from the unit 1s to the unit 0s. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

33 Confirm the switch of activity. Type

>Y
and press the Enter key.

Use parallel loading to update XPMs (continued)

34

ATTENTION

Office policy can support the use of destination sets to simplify the parallel loading of XPMs.

Assign the load to all unit 0s in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to all unit 0s in the posted set. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no 0
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>ASSIGN 'UPGRADE_LD ECL81AZ IN DESTSET DTC 0 0 | +
>'DTC 1 0 | DTC 2 0 | DTC 3 0 | DTC 4 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Use parallel loading to update XPMs (continued)

35 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 36
was not changed	step 43

36

ATTENTION

Perform steps 36, 37, 38, 39, 40, and 41 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 36, 37, 38, 39, 40, and 41. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in all unit 0s in the posted set. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

37 Confirm the command. Type

>Y
and press the Enter key.

38 Busy all unit 0s. Type

>BSY UNIT 0 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

39 Confirm the command. Type

>Y
and press the Enter key.

40 Activate the XPM processor firmware in all unit 0s in the posted set. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

41 Confirm the command. Type

>Y
and press the Enter key.

42 Go to step 45.

43 Busy all unit 0s. Type

>BSY UNIT 0 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

44 Confirm the command. Type

>Y
and press the Enter key.

45

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when you update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load all unit 0s in the posted set. Type

>LOADPM UNIT 0 ALL
and press the Enter key.

46 Confirm the command. Type

>Y
and press the Enter key.

Use parallel loading to update XPMs (continued)

47 Confirm the PRSU status for each unit 0 in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 0 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 0 | DTC 4 0
```

c. Display the PRSU list for one unit 0. Type

>REPORT DEST pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 0
```

d. Repeat step 47c. for each updated unit 0.

e. Compare the displayed PRSM database for each unit 0 with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each unit 0.	step 47l.
all PRSUs for the new load are not applied to each unit 0	step 47f.
any PRSUs from the previous load are listed at VA status	step 47b. If a DBAUDIT was performed, contact the next level of support.
any PRSUs from the previous load are listed at NV status	step 47l. The PRSM daily FILEAUDIT removes these PRSUs.

f. Apply the PRSUs to any applicable unit 0. Type

>APPLY 'prsu_id IN pm_type pm_no 0
and press the Enter key.

where

prsu_id is the name of the PRSU (repeat variable as required)
pm_type is the type of PM
pm_no is the number of the PM

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 0
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 47f. as required for each updated unit 0.

Use parallel loading to update XPMs (continued)

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 0 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 0 | DTC 4 0
```

i. Display the PRSU list for one unit 0. Type

>REPORT DEST pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 0
```

j. Repeat step 47i. for each updated unit 0.

k. Compare the displayed PRSM database with the PRSU list for the new load.

If the PRSU list	Do
matches the PRSM database	step 47l.
does not match the PRSM database	step 47f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

48 Return all unit 0s in the posted set to service. Type

>RTS UNIT 0 ALL
and press the Enter key.

49 Confirm the command. Type

>Y
and press the Enter key.

Use parallel loading to update XPMs (end)

50 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

51 Switch activity between the units. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

52 Confirm the switch of activity. Type

>Y
and press the Enter key.

53 You have used parallel loading to update the set of XPMs and have completed this procedure. Review the update schedule.

If there are	Do
additional XPMs to update during this shift	Follow the recommendations in "Overview of update process" in this document and repeat this procedure or go to the appropriate update procedure in this document.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Use the PRL circuit card to update an XPM

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Refer to the appropriate update procedure in this document to update the first unit in the office to use the new load. Use this procedure to update the remaining XPMs.

Use this procedure to use the peripheral remote loader (PRL) circuit card to update the following XPM types equipped with a PRL circuit card:

- DTC
- DTCI
- LGC
- LGCI
- LTC
- LTCI
- RCC
- RCC2
- SMS
- SMSR
- SMU
- SMUI
- TMS

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- All new load names for the PM are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.

Use the PRL circuit card to update an XPM (continued)

- All PM logs are enabled.
- The XPM is in-service (InSv).
- The XPM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- The post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Review the update checklists and schedules to answer the following questions. This information is required to complete this procedure.

- Does the PM have a CLASS modem resource (CMR) load that requires an update?
- Does the XPM processor firmware require an update?
- Do any PRSUs need to be applied manually?
- Is the PM part of a dual RCC or RCC2 configuration?

For assistance, refer to chapters “Overview of release” and “Overview of update process.”

Update sequence

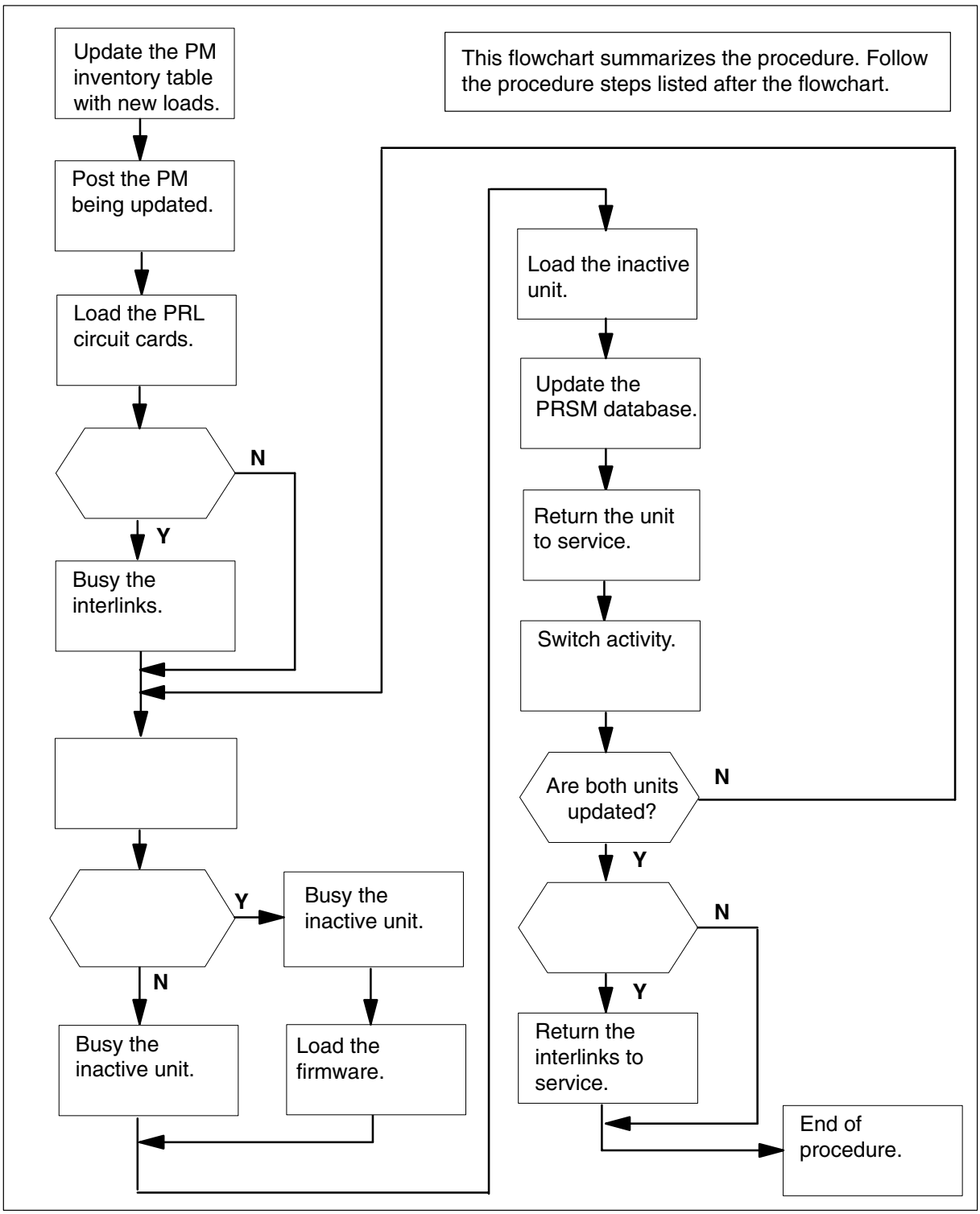
Refer to the PM-specific update procedures in this document for the update sequence of XPMs supported by the PRL circuit card.

Notes

Since loading the PRL circuit card is a background task, offices can load the PRL circuit cards with XPMSTOR during business hours with periods of low traffic. The NOWAIT parameter can be used to load a single PRL circuit card.

Use the PRL circuit card to update an XPM (continued)

Summary of procedure



Use the PRL circuit card to update an XPM (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select an XPM to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Open the PM inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is LTCINV (for a DTC, DTCI, LGC LGCI, LTC, LTCI, SMS, SMU, SMUI, or TMS)
is LTCRINV (for an SMSR)
is RCCINV (for an RCC or RCC2)

Example of command

```
>TABLE LTCINV
```

4 Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

If the PM is	Do
an RCC or RCC2	step 5
not an RCC or RCC2	step 6

Use the PRL circuit card to update an XPM (continued)

5 Position on the datafill tuple for the RCC or RCC2 to be updated. Type

>POS site_name pm_type pm_no

where

site_name is the name of the site with the RCC or RCC2
pm_type is the type of PM
pm_no is the number of the PM being updated

Example of command

```
>POS REM0 RCC 1
```

Go to step 7.

6 Position on the datafill tuple for the PM to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM being updated

Example of command

```
>POS DTC 0
```

7

ATTENTION

If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

Use the PRL circuit card to update an XPM (continued)

8 Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 9
does not require an update	step 10
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

9 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

10 Review the PM update schedule and checklist. Determine if the PM has a CMR load that requires an update.

If the CMR load	Do
requires an update	step 11
does not require an update	step 12

Use the PRL circuit card to update an XPM (continued)

11 Change the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until prompted for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the CMR load name

Example of command

```
>CMR07A
```

d. Press the Enter key to scroll through the fields until the blank OPTCARD prompt appears.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

12 Close the table. Type

>QUIT
and press the Enter key.

13 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

Use the PRL circuit card to update an XPM (continued)

14 Post the PM. Type

>POST pm_type pm_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM being updated

Example of command

```
>POST DTC 0
```

Note: The PM changes status to ISTb. If the PM does not change to ISTb, confirm the PM inventory table is updated correctly and the correct PM is posted. Do not continue this procedure until the PM is ISTb.

15

ATTENTION
This step loads both PRL circuit cards. This reduces loading time but can increase risks for ISDN XPMs if a recovery is required.

Load the PRL circuit cards. Type

>XPMSTOR PM
and press the Enter key.

Note: The PM remains ISTb because of the load mismatch with the PRL circuit cards and the PM. The PM remains ISTb until the PMs are updated with the new PM load. Continue this procedure.

16 Determine if the PM is an RCC or RCC2.

If the PM is	Do
an RCC or RCC2	step 17
not an RCC or RCC2	step 20

17 Determine if the RCC or RCC2 is part of a dual configuration.

If the RCC or RCC2 is	Do
part of a dual RCC configuration	step 18
not part of a dual RCC configuration	step 19

Use the PRL circuit card to update an XPM (continued)

18 Busy the interlinks. Perform the following steps.

a. Access the IRLINK level of the MAP display. Type

>IRLINK
and press the Enter key.

b. Display the interlinks. Type

>QUERYIR
and press the Enter key.

c. Disable interswitching. Type

>INTERSWITCH DISABLE

d. Select and busy an interlink. Type

>BSY link_no
and press the Enter key.

where

link_no is the number of the interlink

Example of command

```
>BSY 1
```

e. Repeat step 18d. for each interlink.

f. Exit the IRLINK level. Type

>QUIT
and press the Enter key.

19 Assign the load to the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM being updated
unit_no	is the number of the inactive unit

Example of command

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

20 Determine if a change to the XPM processor firmware load name was performed in step 9 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 21
was not changed	step 25

Use the PRL circuit card to update an XPM (continued)

21

ATTENTION

Perform steps 21, 22, and 23 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 21, 22, and 23. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

22 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

23 Activate the XPM processor firmware in the inactive unit. Type

>LOADFW INACTIVE UPGRADE
and press the Enter key.

24 Go to step 26.

25 Busy the inactive unit. Type

>BSY INACTIVE
and press the Enter key.

Use the PRL circuit card to update an XPM (continued)

26

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load the inactive unit. Type

>LOADPM INACTIVE LOCAL LOADFILE
and press the Enter key.

27 Confirm the PRSU status of the inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is type of PM
pm_no	is the number of the PM being updated
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT DTC 0 1
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM being updated
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

Use the PRL circuit card to update an XPM (continued)

d. Compare the displayed PRSM database for the inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to the inactive unit	step 27i.
all PRSUs for the new load are not applied to the inactive unit	step 27e.

e. Apply the PRSUs to the inactive unit. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

f. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is type of PM
pm_no	is the number of the PM being updated
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT DTC 0 1
```

Use the PRL circuit card to update an XPM (continued)

g. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM being updated
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

h. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 27i.
does not match the PRSM database	step 27e.

i. Exit the utility. Type

>QUIT
and press the Enter key.

28 Return the inactive unit to service. Type

>RTS INACTIVE
and press the Enter key.

Note: A non-ISDN XPM can change status to ISTb after it returns to service while a new image is taken. Wait for the image to be taken. Then, continue this procedure.

29 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

30 Switch activity between the units. Type

>SWACT
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

Use the PRL circuit card to update an XPM (continued)

31 Confirm the switch of activity. Type

>Y
and press the Enter key.

32 Wait for the MAP display to show the unit is InSv. This ensures superframe sync and data sync are achieved. The unit can take two to three minutes to display InSv.

If	Do
one unit is updated	step 19
both units are updated	step 33
Note: If one unit is updated, the inactive unit is ISTb because of the load mismatch with the inventory table. The node remains ISTb until both units are updated with the new load.	

33 Determine if the PM is an RCC or an RCC2.

If the PM is	Do
an RCC or RCC2	step 34
not an RCC or RCC2	step 36

34 Determine if the RCC or RCC2 is part of a dual configuration.

If the RCC or RCC2 is	Do
part of a dual RCC configuration	step 35
not part of a dual RCC configuration	step 36

35 Return the interlinks to service. Perform the following steps.

a. Access the IRLINK level of the MAP display. Type

>IRLINK
and press the Enter key.

b. Display the interlinks. Type

>QUERYIR
and press the Enter key.

c. Return an interlink to service. Type

>RTS link_no
and press the Enter key.

where

link_no is the number of the interlink

Example of command

```
>RTS 1
```

d. Repeat step 35c. for each interlink.

e. Enable interswitching. Type

>INTERSWITCH ENABLE

f. Exit the IRLINK level. Type

>QUIT
and press the Enter key.

36 You have used the PRL circuit card to update an XPM and have completed this procedure. Review the update schedule for the office.

If there are	Do
additional XPMs with PRL circuit cards to update during this shift	Repeat this procedure.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure “Finish a PM update shift” in this document.

Use the PRL circuit card to broadcast mate load XPMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use broadcast mate loading to update remote PMs.

Refer to the appropriate update procedure in this document to update the first unit in the office to use the new load. Use this procedure to update the remaining XPMs.

Use this procedure to use the peripheral remote loader (PRL) circuit card to broadcast mate load a set of 11 to 35 XPMs. Broadcast mate loading allows operating company personnel to load the inactive units of a set of like PMs. Unlike parallel loading, broadcast mate loading requires only one loader resource for a set of like peripherals. An exception to this requirement is when the posted set consists of more than one load type.

All inactive units of a set of XPMs can be updated using XPM broadcast mate loading. The computing module (CM) sends a message to the active unit of the first XPM in the set. The active unit forwards the message to its inactive unit and the active unit of the second XPM in the set. The active unit in the second XPM forwards the message to its inactive unit and the third XPM in the set. This sequence continues until all XPMs in the set receive the message.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- All new load names for the PM are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM is in-service (InSv).
- Each PM passed its last REX test within the last two weeks.

Use the PRL circuit card to broadcast mate load XPMs (continued)

- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Note: Depending on the size of the set, an exec can be created to post the set of XPMs. Refer to the procedure "Use an exec to post a large set of XPMs" in this document.

Required information

Refer to the appropriate PM update procedure in this document.

Update sequence

Refer to the appropriate PM update procedure in this document.

Notes

Broadcast mate loading can only be used on XPMs with one unit in-service and one unit manually busy.

This procedure assumes that all post-release software updates (PRSUs) for the load are applied. If all PRSUs are not applied, update one unit and apply any PRSUs. The unit can be one of the XPMs in the set to be updated.

Do not use XPM broadcast mate loading to update remote XPMs such as the remote cluster controller (RCC). Update each remote PM individually.

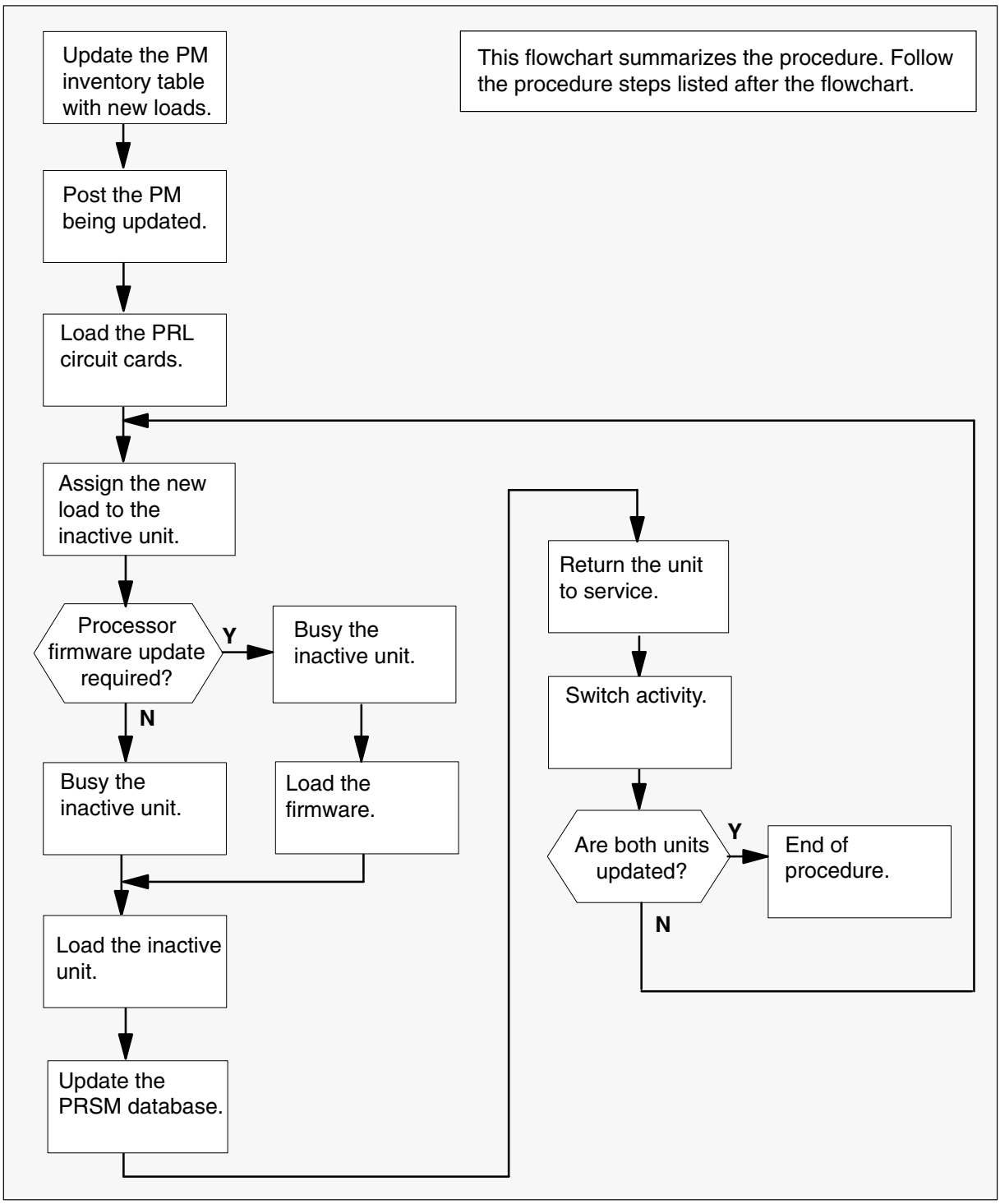
Do not use XPM broadcast mate loading to update DTCs with timing links. To identify the timing source, type the command MAPCI;MTC;MS;CLOCK from the CI level of the MAP display. Offices can use the DTC with timing links as the first DTC in the office to be updated with the new load.

Parallel loading can be used to update the XPM processor firmware in a set of up to four XPM units. The set can include up to ten XPMs, but a maximum of four XPM units per set is recommended for optimum performance. Office parameter MAX_FIRMWARE_LOAD_MAIN_TASK in table OFCOPT determines the maximum number of XPMs in the set. The default value is 10. The range is 1 to 128.

Note: With the BASE10 software release, office parameter MAX_FIRMWARE_LOAD_MAIN_TASKS in table OFCOPT is deleted.

Use the PRL circuit card to broadcast mate load XPMs (continued)

Summary of procedure



Use the PRL circuit card to broadcast mate load XPMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select the PMs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PM inventory table. Perform the following steps.

a. Open the PM inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the name of the inventory table

Example of command

```
>TABLE LTCINV
```

To view the tuples in a	Do
a packed format	step 3b.
a regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

Use the PRL circuit card to broadcast mate load XPMs (continued)

c. Position on the datafill tuple for one of the PMs to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>POS DTC 0
```

d.

ATTENTION
If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Use the PRL circuit card to broadcast mate load XPMs (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the PM has a CMR load that requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Change the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the CMR load name

Example of command

```
>CMR07A
```

Use the PRL circuit card to broadcast mate load XPMs (continued)

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Repeat steps 3c. through 6f. for each PM to be updated in the selected set.

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI;MTC;PM
and press the Enter key.

10

ATTENTION

If parallel firmware loading is used to update the XPM processor firmware, post four or less XPMs at this step.

Post the PMs. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the set of PMs

Example of command

```
>POST DTC 0 1 2 3 4 5 6 7 8 9 10 11 12
```

Note: The PMs change status to ISTb. If the PMs do not change to ISTb, confirm the PM inventory table is updated correctly and the correct PMs are posted. Do not continue this procedure until the PMs are ISTb.

11 Identify the inactive unit in each PM in the set.

Use the PRL circuit card to broadcast mate load XPMs (continued)

12

ATTENTION

This step loads both PRL circuit cards. This reduces loading time but can increase risks for ISDN XPMs if a recovery is required.

Load the PRL circuit cards. Type

>XPMSTOR PM ALL
and press the Enter key.

Note: The PMs remain ISTb because of the load mismatch with the PRL circuit cards and the PMs. The PMs remain ISTb until the PMs are updated with the new PM load. Continue this procedure.

13

ATTENTION

Office policy can support the use of destination sets to simplify the broadcast mate loading of XPMs.

Assign the load to the inactive units. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use the PRL circuit card to broadcast mate load XPMs (continued)

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to the inactive units. Type.

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no unit_no
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the PM unit

Example of command

```
>ASSIGN UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1 | +
>'DTC 1 0 | DTC 2 0 | DTC 3 1 | DTC 4 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

14 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 15
was not changed	step 22

Use the PRL circuit card to broadcast mate load XPMs (continued)

15

ATTENTION

Perform steps 15, 16, 17, 18, 19, and 20 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 15, 16, 17, 18, 19, and 20. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in the inactive units. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

16 Confirm the command. Type

>Y
and press the Enter key.

17 Busy all the inactive units. Type

>BSY INACTIVE ALL
and press the Enter key.

18 Confirm the command. Type

>Y
and press the Enter key.

19 Activate the XPM processor firmware in all the inactive units. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

20 Confirm the command. Type

>Y
and press the Enter key.

21 Go to step 24.

Use the PRL circuit card to broadcast mate load XPMs (continued)

22 Busy all the inactive units. Type

>BSY INACTIVE ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

23 Confirm the command. Type

>Y
and press the Enter key.

24

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load all the inactive units. Type

>LOADPM INACTIVE ALL
and press the Enter key.

25 Confirm the command. Type

>Y
and press the Enter key.

26 Confirm the PRSU status of each inactive unit. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use the PRL circuit card to broadcast mate load XPMs (continued)

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 1 | DTC 4 0
```

c. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0 1
```

d. Repeat step 26c. for each updated inactive unit.

e. Compare the displayed PRSM database for each inactive unit with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each inactive unit	step 26l.
all PRSUs for the new load are not applied to each inactive unit	step 26f.
PRSUs from the previous load are listed at VA status	step 26b. If a DBAUDIT was performed, contact the next level of support.
PRSUs from the previous load are listed at NV status	step 26l. The PRSM daily FILEAUDIT removes these PRSUs.

Use the PRL circuit card to broadcast mate load XPMs (continued)

f. Apply the PRSUs to the applicable inactive unit. Type

>APPLY 'prsu_id IN pm_type pm_no unit_no
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 26f. as required for each inactive unit.

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 1 | DTC 4 0
```

i. Display the PRSU list. Type

>REPORT DEST pm_type pm_no unit_no
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM
unit_no	is the number of the inactive unit

Example of command

```
>REPORT DEST DTC 0
```

j. Repeat step 26i. for each updated inactive unit.

Use the PRL circuit card to broadcast mate load XPMs (continued)

k. Compare the displayed PRSM database with the list of PRSUs for the new load.

If the PRSU list	Do
matches the PRSM database	step 26l.
does not match the PRSM database	step 26f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

27 Return all the inactive units to service. Type

>RTS INACTIVE ALL
and press the Enter key.

28 Confirm the command. Type

>Y
and press the Enter key.

29 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

30 Switch activity between the units. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

31 Confirm the switch of activity. Type

>Y
and press the Enter key.

Use the PRL circuit card to broadcast mate load XPMs (end)

32 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

If	Do
one unit in the set of PMs is updated	step 13
both units in the set of PMs are updated	step 33

33 You have used the PRL circuit card to broadcast mate load the set of XPMs and have completed this procedure. Review the update schedule.

If there are	Do
additional XPMs to update during this shift	Follow the recommendations in "Overview of update process" in this document. Repeat this procedure or go to the appropriate procedure in this document.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Use the PRL circuit card to parallel load XPMs

Application

CAUTION
Possible service interruption
Perform this procedure during a maintenance window or a period of low traffic.

ATTENTION
Do not use parallel loading to update remote XPMs.

Refer to the appropriate update procedure in this document to update the first unit in the office to use the new load. Use this procedure to update the remaining XPMs.

Use this procedure to use the peripheral remote loader (PRL) circuit card to parallel load a set of two to ten XPMs. All units of the same number (0 or 1) can be updated with XPM parallel loading. Only inactive units can be updated; therefore, activity can be switched in some XPMs to align all the units in the set. During XPM parallel loading, the computing module (CM) sends messages directly to each inactive unit.

Prerequisites

Perform the procedures “Prepare for a manual PM update” or “Prepare for an automated PM update using PMUPGRADE” and “Start a PM update shift” in this document to meet the following prerequisites:

- All new load names for the PMs are entered in table PMLOADS.
- The office recorded an office image in the last 24 hours.
- All PM logs are enabled.
- Each PM is in-service (InSv).
- Each PM passed its last REX test within the last two weeks.
- All REX tests are suspended in the office.
- Post-release software manager (PRSM) automated processes do not start during the PM update shift.

Required information

Refer to the appropriate PM update procedure in this document.

Use the PRL circuit card to parallel load XPMs (continued)

Update sequence

Refer to the appropriate PM update procedure in this document.

Notes

This procedure assumes that all post-release software updates (PRSUs) for the load are applied. If all PRSUs are not applied, update one unit and apply any PRSUs. The unit can be one of the XPMs in the set to be updated.

Do not use XPM parallel loading to update remote XPMs such as the remote cluster controller (RCC). Update each remote PM individually.

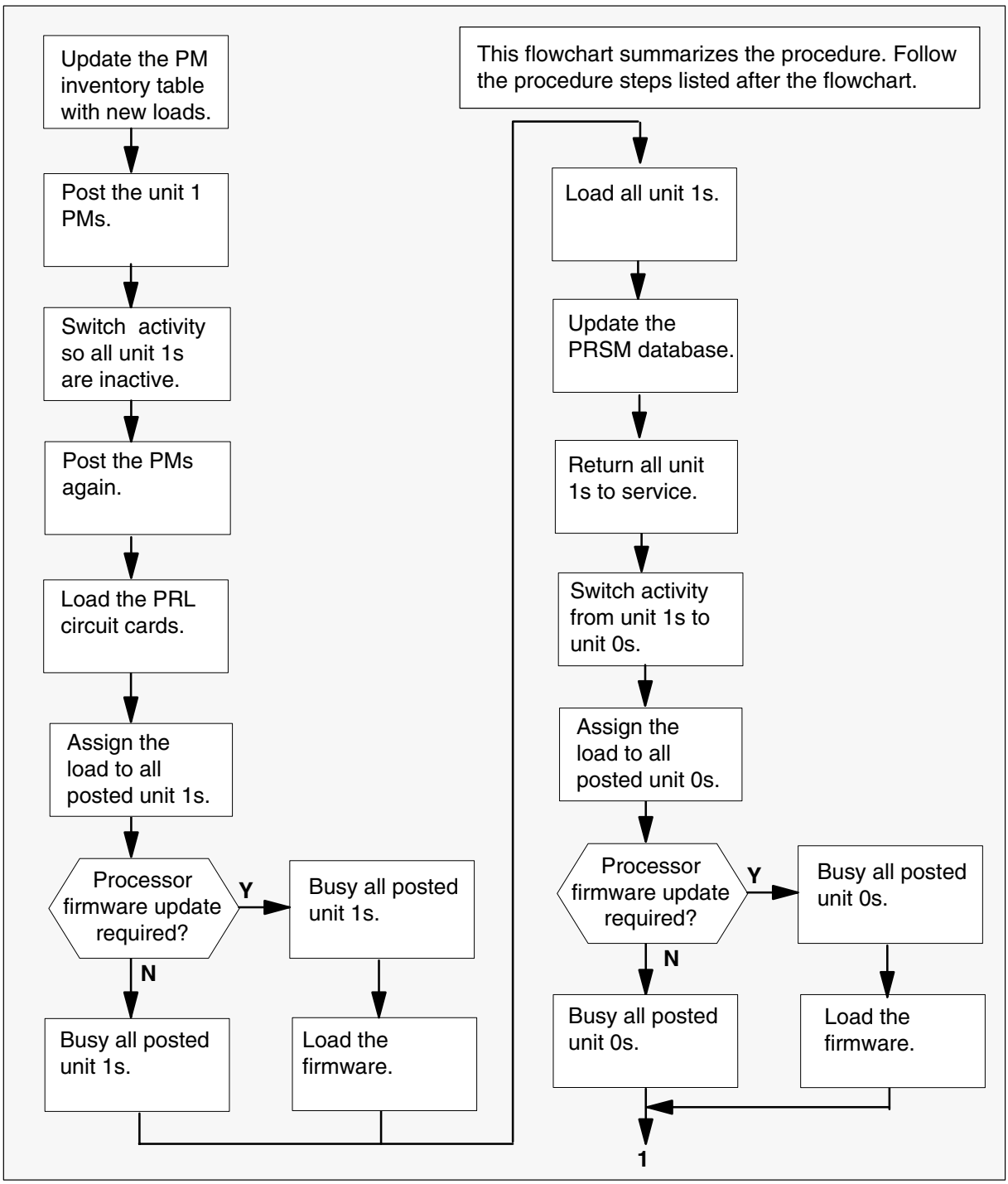
Do not use XPM parallel loading to update DTCs with timing links. To identify the timing source, type the command MAPCI;MTC;MS;CLOCK from the CI level of the MAP display. Offices can use the DTC with timing links as the first DTC in the office to be updated with the new load.

Parallel loading can be used to update the XPM processor firmware in a set of up to four XPM units. The set can include up to ten XPMs, but a maximum of four XPM units per set is recommended for optimum performance. Office parameter MAX_FIRMWARE_LOAD_MAIN_TASK in table OFCOPT determines the maximum number of XPMs in the set. The default value is 10. The range is 1 to 128.

Note: With the BASE10 software release, office parameter MAX_FIRMWARE_LOAD_MAIN_TASKS in table OFCOPT is deleted.

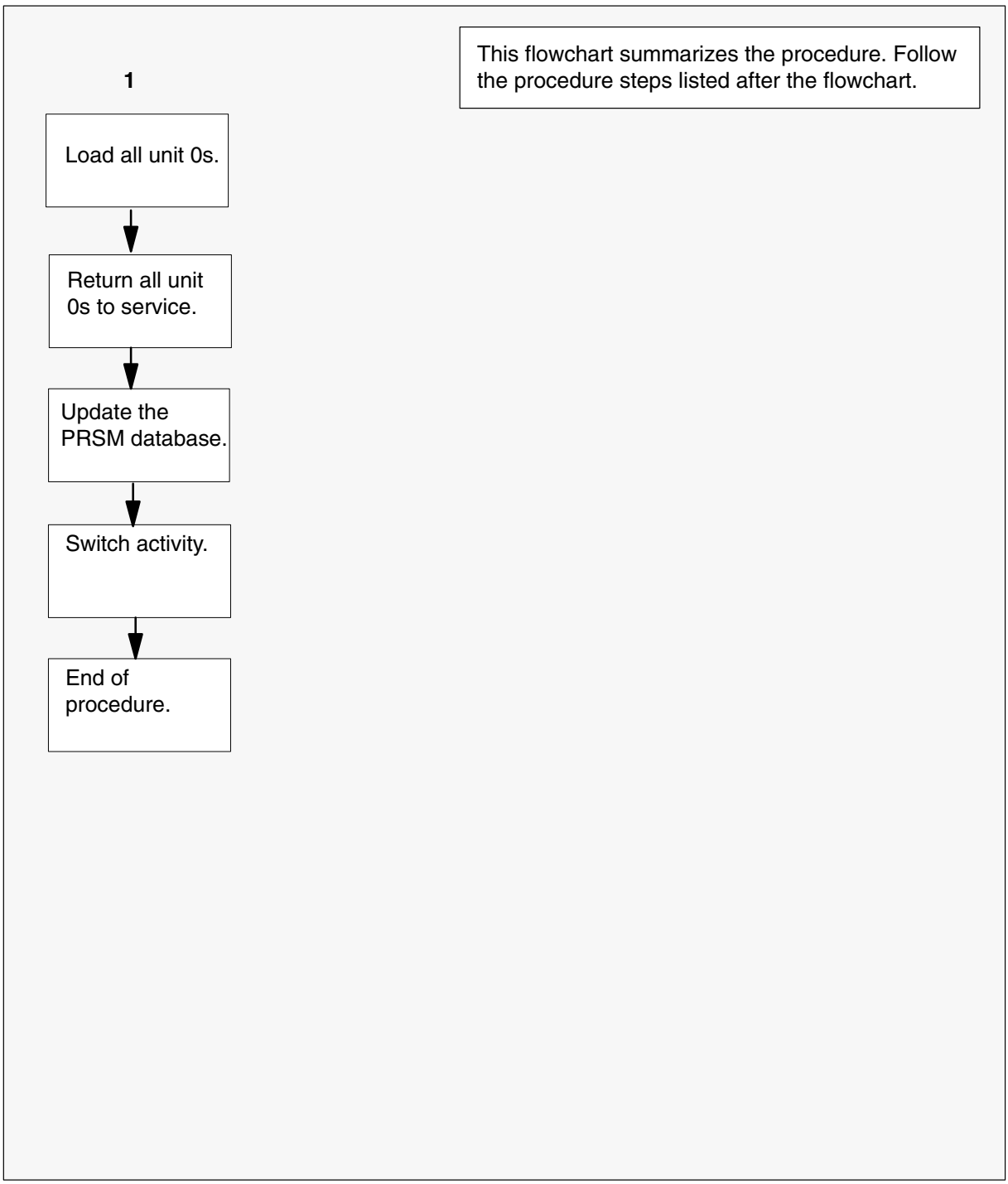
Use the PRL circuit card to parallel load XPMs (continued)

Summary of procedure



Use the PRL circuit card to parallel load XPMs (continued)

Summary of procedure (continued)



Use the PRL circuit card to parallel load XPMs (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Select the PMs to update.

2 Review and confirm the completion of all prerequisites for this procedure.

3 Update the PM inventory table. Perform the following steps.

a. Open the PM inventory table. Type

>TABLE pm_inv
and press the Enter key.

where

pm_inv is the name of the inventory table

Example of command

```
>TABLE LTCINV
```

To view the tuples in	Do
a packed format	step 3b.
a regular or expanded format	step 3c.

b. Change the format of the display to a packed format. Type

>FORMAT PACK
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

c. Position on the datafill tuple for one of the PMs to be updated. Type

>POS pm_type pm_no
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>POS DTC 0
```

d.

ATTENTION
If the load name has a date extension, the load is a pre-patched XPM load (PPXL). Enter the load name only. Refer to chapter "Overview of release" for more information on PPXLs.

Change the load name to the new load name. Type

>CHA LOAD new_load
and press the Enter key.

where

new_load is the name of the new load

Example of command

```
>CHA LOAD ECL81AZ
```

e. Confirm the change. Type

>Y
and press the Enter key.

Note: The PM changes status to in-service trouble (ISTb) because of the load mismatch with the inventory table. Continue this procedure.

If the XPM processor firmware	Do
requires an update	step 4
does not require an update	step 5
Note: Refer to section "Peripheral module to XPM processor firmware cross-reference" in chapter "Overview of release" to determine if the processor firmware needs an update. Review the PM update schedule and checklist.	

Use the PRL circuit card to parallel load XPMs (continued)

4 Update the XPM processor firmware load name in the inventory table. Perform the following steps.

a. Change the XPM processor firmware load name to the new firmware load name. Type

>CHA E2LOAD fw_load
and press the Enter key.

where

fw_load is the new XPM processor firmware load name

Example of command

```
>CHA E2LOAD UPFWNK01
```

b. Confirm the change. Type

>Y
and press the Enter key.

5 Review the PM update schedule and checklist. Determine if the PM has a CMR load that requires an update.

If the CMR load	Do
requires an update	step 6
does not require an update	step 7

6 Change the CMR load name in the inventory table. Perform the following steps.

a. Access the OPTCARD field. Type

>CHA OPTCARD
and press the Enter key.

b. Press the Enter key to scroll through the fields until the MAP display prompts for the CMR load name.

c. Enter the new CMR load name. Type

>cmr_load
and press the Enter key.

where

cmr_load is the CMR load name

Example of command

```
>CMR07A
```

Use the PRL circuit card to parallel load XPMs (continued)

d. Press the Enter key to scroll through the fields until the MAP display shows the blank OPTCARD prompt.

e. Exit the OPTCARD field. Type

>$
and press the Enter key.

f. Confirm the change. Type

>Y
and press the Enter key.

7 Repeat steps 3c. through 6f. for each PM to be updated in the selected set.

8 Close the table. Type

>QUIT
and press the Enter key.

9 Access the PM level of the MAP display. Type

>MAPCI; MTC; PM
and press the Enter key.

10

ATTENTION

If parallel firmware loading is used to update the XPM processor firmware, post four or less XPMs at this step.

Post the PMs. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the set of PMs

Example of command

```
POST DTC 0 1 2 3 4 5
```

Note: The PMs change status to ISTb. If the PMs do not change to ISTb, confirm the PM inventory table is updated correctly and the correct PMs are posted. Do not continue this procedure until the PMs are ISTb.

11 Use the NEXT command to scroll through the posted set and identify any active unit 1s.

Use the PRL circuit card to parallel load XPMs (continued)

12 Post all the PMs with an active unit 1. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the number of the PM with an active unit 1

Example of command

```
POST DTC 0 2 3 5
```

13 Switch activity in the PMs. Type

>SWACT ALL
and press the Enter key.

14 Post the entire PM set again. Type

>POST pm_type pm_set
and press the Enter key.

where

pm_type is the type of PM
pm_set is the set of PMs

Example of command

```
POST DTC 0 1 2 3 4 5
```

15

ATTENTION
This step loads both PRL circuit cards. This reduces loading time but can increase risks for ISDN XPMs if a recovery is required.

Load the PRL circuit cards. Type

>XPMSTOR PM ALL
and press the Enter key.

Note: The PMs remain ISTb because of the load mismatch with the PRL circuit cards and the PMs. The PMs remain ISTb until the PMs are updated with the new PM load. Continue this procedure.

Use the PRL circuit card to parallel load XPMs (continued)

16

ATTENTION

Office policy can support the use of destination sets to simplify the parallel loading of XPMs.

Assign the load to all unit 1s in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to all unit 1s in the posted set. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no 1
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>ASSIGN 'UPGRADE_LD ECL81AZ IN DESTSET DTC 0 1 | +
>'DTC 1 1 | DTC 2 1 | DTC 3 1 | DTC 4 1
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

17 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 18
was not changed	step 25

18

ATTENTION

Perform steps 18, 19, 20, 21, 22, and 23 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 18, 19, 20, 21, 22, and 23. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in all unit 1s in the posted set. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

19 Confirm the command. Type

>Y
and press the Enter key.

20 Busy all unit 1s. Type

>BSY UNIT 1 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

Use the PRL circuit card to parallel load XPMs (continued)

21 Confirm the command. Type

>Y
and press the Enter key.

22 Activate the XPM processor firmware in all unit 1s. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

23 Confirm the command. Type

>Y
and press the Enter key.

24 Go to step 27.

25 Busy all unit 1s. Type

>BSY UNIT 1 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

26 Confirm the command. Type

>Y
and press the Enter key.

27

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter to update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load all unit 1s in the posted set. Type

>LOADPM UNIT 1 ALL
and press the Enter key.

28 Confirm the command. Type

>Y
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

29 Confirm the PRSU status of each unit 1 in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 1 | DTC 2 1 | +
>'DTC 3 1 | DTC 4 1
```

c. Display the PRSU list for one unit 1. Type

>REPORT DEST pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 1
```

d. Repeat step 29c. for each updated unit 1.

Use the PRL circuit card to parallel load XPMs (continued)

e. Compare the displayed PRSM database for each unit 1 with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each unit 1.	step 29l.
all PRSUs for the new load are not applied to each unit 1	step 29f.
any PRSUs from the previous load are listed at VA status	step 29b. If a DBAUDIT was performed, contact the next level of support.
any PRSUs from the previous load are listed at NV status	step 29l. The PRSM daily FILEAUDIT removes these PRSUs.

f. Apply the PRSUs to any applicable unit 1. Type

>APPLY 'prsu_id IN pm_type pm_no 1
and press the Enter key.

where

prsu_id is the name of the PRSU (repeat variable as required)
pm_type is the type of PM
pm_no is the number of the PM

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 1
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 1
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 29f. as required for each updated unit 1.

Use the PRL circuit card to parallel load XPMs (continued)

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 1 | DTC 1 1 | DTC 2 1 | +
>'DTC 3 1 | DTC 4 1
```

i. Display the PRSU list for one unit 1. Type

>REPORT DEST pm_type pm_no 1
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 1
```

j. Repeat step 29i. for each updated unit 1.

k. Compare the displayed PRSM database with the PRSU list for the new load.

If the PRSU list	Do
matches the PRSM database	step 29l.
does not match the PRSM database	step 29f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

30 Return all unit 1s in the posted set to service. Type

>RTS UNIT 1 ALL
and press the Enter key.

31 Confirm the command. Type

>Y
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

32 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

33 Switch activity from the unit 1s to the unit 0s. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm switch of activity (SWACT), do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

34 Confirm the switch of activity. Type

>Y
and press the Enter key.

35

ATTENTION
Office policy can support the use of destination sets to simplify the parallel loading of XPMs.

Assign the load to all unit 0s in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

b.

ATTENTION

Do not use the DBAUDIT command unless the command is specified in this procedure. The use of the DBAUDIT command prior to the LOADPM command links PRSUs from the previous load to the new PM load.

Assign the new load to all unit 0s in the posted set. Type

>ASSIGN UPGRADE_LD new_load IN DESTSET pm_type pm_no 0
and press the Enter key.

where

new_load	is the name of the new load
pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>ASSIGN 'UPGRADE_LD ECL81AZ IN DESTSET DTC 0 0 | +
>'DTC 1 0 | DTC 2 0 | DTC 3 0 | DTC 4 0
```

c. Exit the utility. Type

>QUIT
and press the Enter key.

36 Determine if a change to the XPM processor firmware load name was performed in step 4 during this update shift.

If the XPM processor firmware load name	Do
was changed	step 37
was not changed	step 44

Use the PRL circuit card to parallel load XPMs (continued)

37

ATTENTION

Perform steps 37, 38, 39, 40, 41, and 42 consecutively to ensure the new firmware load updates properly. Do not enter the PMRESET or LOADPM command.

If the user enters the PMRESET command, the LOADFW INACTIVE UPGRADE command passes the step, but the firmware does not update.

Verify the active firmware load if the user enters the PMRESET or LOADPM command between steps 37, 38, 39, 40, 41, and 42. Repeat the firmware download and upgrade process if the firmware does not update to the latest firmware load.

Load the XPM processor firmware in all unit 0s in the posted set. Type

>LOADFW INACTIVE ALL
and press the Enter key.

Note: If the firmware_file is not specified with the LOADFW command, the command applies the firmware_file entered in the appropriate inventory table.

38 Confirm the command. Type

>Y
and press the Enter key.

39 Busy all unit 0s. Type

>BSY UNIT 0 ALL
and press the Enter key.

40 Confirm the command. Type

>Y
and press the Enter key.

41 Activate the XPM processor firmware in all unit 0s in the posted set. Type

>LOADFW INACTIVE UPGRADE ALL
and press the Enter key.

42 Confirm the command. Type

>Y
and press the Enter key.

43 Go to step 46.

Use the PRL circuit card to parallel load XPMs (continued)

44 Busy all unit 0s. Type

>BSY UNIT 0 ALL
and press the Enter key.

Note: The PM does not respond to this command when a maintenance audit is in progress. Wait a few seconds and enter the command again. Do not use the FORCE parameter.

45 Confirm the command. Type

>Y
and press the Enter key.

46

CAUTION
Possible service interruption
Do not use the LOADPM CC command with the file name parameter when you update a PM with a PPXL. Obsolete PRSUs can be loaded, and PRSUs not included in the PPXL are not loaded.

Load all unit 0s in the posted set. Type

>LOADPM UNIT 0 ALL
and press the Enter key.

47 Confirm the command. Type

>Y
and press the Enter key.

48 Confirm the PRSU status for each unit 0 in the posted set. Perform the following steps.

a. Enter the PRSM utility. Type

>PRSM
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (continued)

b. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 0 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 0 | DTC 4 0
```

c. Display the PRSU list for one unit 0. Type

>REPORT DEST pm_type pm_no 0
and press the Enter key.

where

pm_type is the type of PM
pm_no is the number of the PM

Example of command

```
>REPORT DEST DTC 0 0
```

d. Repeat step 48c. for each updated unit 0.

e. Compare the displayed PRSM database for each unit 0 with the list of PRSUs for the new load.

If	Do
all PRSUs for the new load are applied to each unit 0.	step 48l.
all PRSUs for the new load are not applied to each unit 0	step 48f.
any PRSUs from the previous load are listed at VA status	step 48b. If a DBAUDIT was performed, contact the next level of support.
any PRSUs from the previous load are listed at NV status	step 48l. The PRSM daily FILEAUDIT removes these PRSUs.

Use the PRL circuit card to parallel load XPMs (continued)

f. Apply the PRSUs to any applicable unit 0. Type

>APPLY 'prsu_id IN pm_type pm_no 0
and press the Enter key.

where

prsu_id	is the name of the PRSU (repeat variable as required)
pm_type	is the type of PM
pm_no	is the number of the PM

Example of single-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 IN DTC 0 0
```

Example of double-line command

```
>APPLY 'XAJ13X08 | XRP29X08 | XBA45X08 | XDJ02X08 | +
>'XD02908 | XJL87X08 | XAH13X08 IN DTC 0 0
```

Note: It is not necessary to apply the PRSUs in an exact order. PRSM automatically sorts the PRSUs when applied as a set.

g. Repeat step 48f. as required for each updated unit 0.

h. Update the PRSM database. Type

>DBAUDIT pm_type pm_no 0
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>DBAUDIT 'DTC 0 0 | DTC 1 0 | DTC 2 0 | +
>'DTC 3 0 | DTC 4 0
```

i. Display the PRSU list for one unit 0. Type

>REPORT DEST pm_type pm_no 0
and press the Enter key.

where

pm_type	is the type of PM
pm_no	is the number of the PM

Example of command

```
>REPORT DEST DTC 0 0
```

j. Repeat step 48i. for each updated unit 0.

Use the PRL circuit card to parallel load XPMs (continued)

k. Compare the displayed PRSM database with the PRSU list for the new load.

If the PRSU list	Do
matches the PRSM database	step 48l.
does not match the PRSM database	step 48f.

l. Exit the utility. Type

>QUIT
and press the Enter key.

49 Return all unit 0s in the posted set to service. Type

>RTS UNIT 0 ALL
and press the Enter key.

50 Confirm the command. Type

>Y
and press the Enter key.

51 Wait for the MAP display to show the units are InSv. This ensures superframe sync and data sync are achieved. The units can take two to three minutes to display InSv.

52 Switch activity between the units. Type

>SWACT ALL
and press the Enter key.

Note: If the DMS switch can not perform a warm SWACT, do not continue this procedure. The DMS switch possibly detected a fault not related to the software update. Troubleshoot the condition or contact the next level of support.

53 Confirm the switch of activity. Type

>Y
and press the Enter key.

Use the PRL circuit card to parallel load XPMs (end)

54 You have used the PRL circuit card to parallel load the set of XPMs and have completed this procedure. Review the update schedule.

If there are	Do
additional XPMs to update during this shift	Follow the recommendations in "Overview of update process" in this document and repeat this procedure or go to the appropriate update procedure in this document.
other PMs or hardware types to update during this shift	Go to the appropriate update procedure in this document.
no other PMs or hardware types to update during this shift	Go to the procedure "Finish a PM update shift" in this document.

Finish a PM update shift

Application

Use this procedure to complete a PM update shift in an office.

Prerequisites

Perform the procedure "Start a PM update shift" in this document before performing this procedure.

Required information

Determine if the time of the post-release software manager (PRSM) automated processes was changed during the procedure "Start a PM update shift."

Update sequence

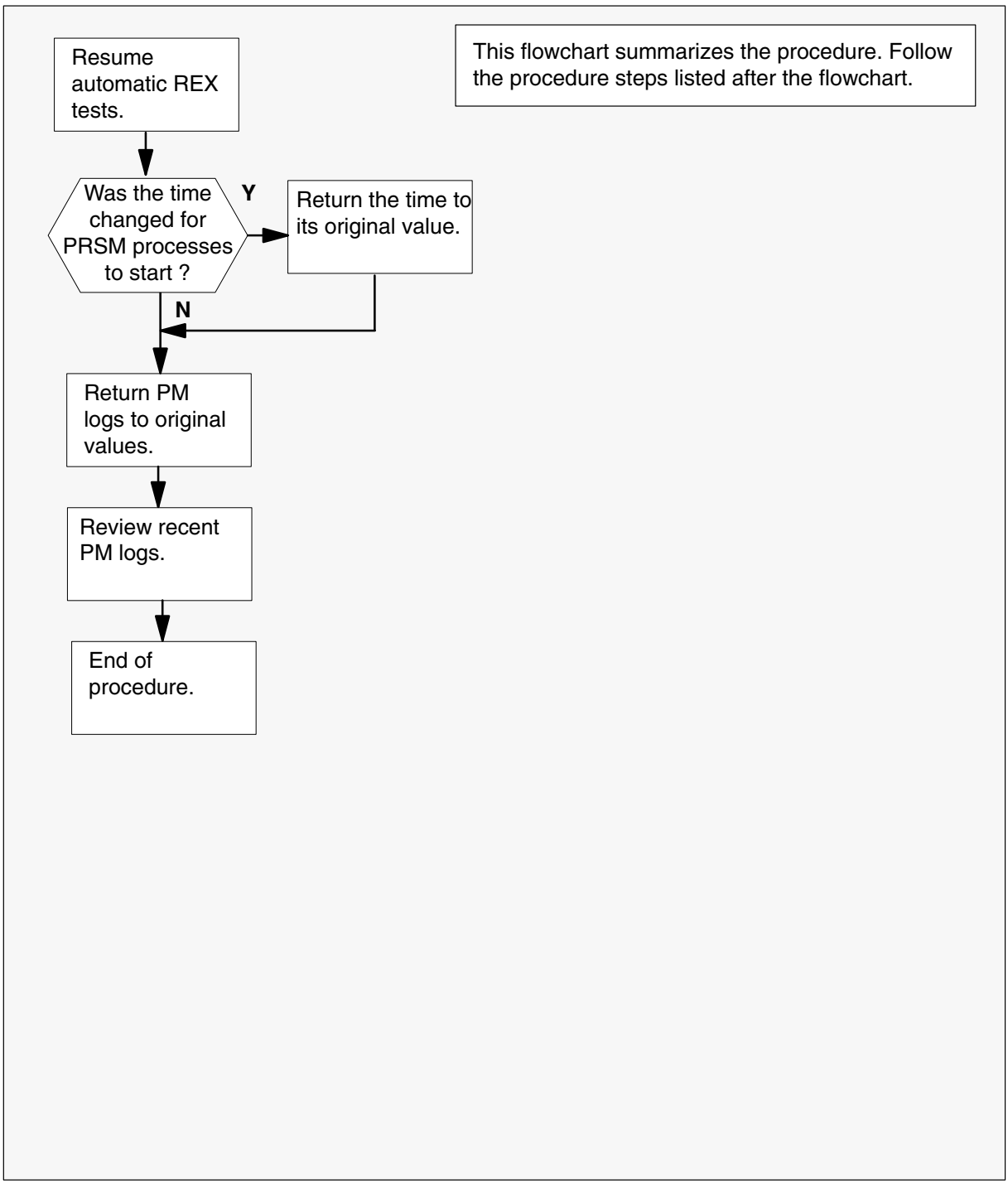
Not applicable

Notes

This procedure does not include steps to delete old load names from table PMLOADS or load files from the disk volume. Check office policy. Available memory can determine if load files are deleted during a PM update shift, after a PM update shift, or after completion of the office's PM update. Office alarm clearing policy can determine when old load files are deleted from table PMLOADS.

Finish a PM update shift (continued)

Summary of procedure



Finish a PM update shift (continued)

Steps of procedure

ATTENTION

Follow office policy if a command fails during this procedure. If an RTS command fails, for example, office policy can require you to contact the next level of support, terminate all update activities for the shift, troubleshoot the problem, or select another PM to update.

At the CI level of the MAP display

1 Resume automatic REX tests. Type

>REXTEST RESUME ALL
and press the Enter key.

2 Review the activity for this shift to determine if the start time for PRSM automated processes was changed.

If the start time for PRSM automated processes	Do
was changed at the start of this shift	step 3
was not changed at the start of this shift	step 4

3 Change the time to the original time. Perform the following steps.

a. Open table AUTOOPTS. Type

>TABLE AUTOOPTS
and press the Enter key.

b. Change the time to the original time. Type

>CHA week_day old_time
and press the Enter key.

where

week_day is the day of the week of the PM update shift
old_time is the original time that PRSM automated processes start

c. Confirm the change. Type

>Y
and press the Enter key.

d. Display the table and confirm the change was made. Type

>LIS
and press the Enter key.

e. Close the table. Type

>QUIT
and press the Enter key.

4 Return PM logs to their original states. Perform the following steps.

Note: This step can be modified and repeated, depending on the hardware types updated during this shift. If a DPP was updated, return all DPP logs to their original states. If an ESA was updated, return all ESA logs to their original states. If an MPC was updated, return all MPC logs to their original states. If an ENET was updated, return all ENET logs to their original states. If an MS multi-port circuit card (NT9X17) was updated, return all MS logs to their original states.

a. Enter LOGUTIL. Type

>LOGUTIL
and press the Enter key.

b. Suspend any PM logs that were resumed at the beginning of this shift. Type

>SUPPRESS PM log_no
and press the Enter key.

where

log_no is the number of the log to be suspended

Note: Multiple logs can be suspended by telescoping the log number on the single SUPPRESS command. All PM logs can be suspended with the command SUPPRESS PM with no log numbers in the command.

Example of command

```
>SUPPRESS PM 129 181
```

c. Change the threshold values of any PM logs changed to 0 at the start of this shift. Type

>THRESHOLD th_value PM log_no
and press the Enter key.

where

th_value is the original threshold value recorded during the procedure “Start a PM update shift”
log_no is the number of the log

Note: Multiple logs can be thresholded by telescoping the log number on the single THRESHOLD command. All PM logs can be thresholded with the command THRESHOLD PM with no log numbers in the command.

Example of command

```
>THRESHOLD 10  PM 129 181
```

Finish a PM update shift (end)

d. Exit LOGUTIL. Type

>QUIT
and press the Enter key.

5 Review any recent logs. Verify the PMs and hardware types updated during this shift have remained in-service.

6 You have completed this procedure and finished a PM update shift.

Appendix A: Loading times

This appendix provides sample loading times for peripheral modules and offices. This information is provided for reference only to assist in preparing the update schedule. Loading times were recorded in laboratories in a variety of office and traffic conditions, and they should not be used as standards in any office.

Loading time and simplex time

The length of time required to load a PM will vary depending on traffic, CPU occupancy, and office configuration. However, two factors must be considered when estimating the length of time required to load a PM:

- loading time
- simplex time

Office policy will typically dictate which factor is more important.

Loading time

Loading time is the length of time required to successfully load a PM with new software. It starts when the PM is busied and ends when the PM is returned to service. It includes the time for both loading and patching.

The following table lists the sample loading times for several kinds of PMs. The loading times listed are based on loading a BCS36 load with no patches on a M68K SuperNode switch. Loading times for dual unit PMs includes both units. Loading times are shown in hours:minutes:seconds.

Sample PM loading times

PM type	Loading time
DTCI	00:22:34
FRIU	00:03:25
LCME	00:05:36
LGC	00:24:36
LIU7	00:04:25
LTC	00:19:32
NIU	00:03:17
RCC	00:28:42
SMR	00:19:33
XLIU	00:05:50

Simplex time

Simplex time is the length of time that a dual unit PM spends operating in simplex mode while being updated. Total office simplex time is the time a set of PMs in an office spends operating in simplex mode.

The following table lists typical PM set sizes with sample total loading time and total office simplex time for each set size. Loading times are based on loading both units of a DTC with a BCS36 load with 42 patches on a M88K (BRISC) switch. Times are shown in hours:minutes:seconds.

Comparison of sample loading and simplex times

	Individual loading		Broadcast mate loading		Parallel loading	
# PMs	Total loading time	Total office simplex time	Total loading time	Total office simplex time	Total loading time	Total office simplex time
2	01:39:40	01:39:40	01:08:32	02:15:24	00:50:40	01:39:40
5	04:09:10	04:09:10	01:11:03	05:47:19	00:51:35	04:09:59
10	08:18:20	08:18:20	01:17:44	12:40:32	00:53:18	08:36:12
35	29:04:10	29:04:10	01:31:50	51:54:26	02:34:48	21:19:36
126	104:39:00	104:39:00	01:29:22	171:00:12	11:15:12	107:10:00
128	106:18:40	106:18:40	01:29:00	172:56:00	12:04:12	108:48:00

CPU occupancy

CPU occupancy directly affects loading times. Loading times increase as percent CPU occupancy increases. The following table compares percent CPU occupancy rates to sample loading times for each rate. Loading times are based on loading ED702CJ1 on a DTC with 42 patches on a JNET switch. The loading time is for one DTC unit.

Comparison of CPU occupancy to load times

Percent CPU occupancy	Parallel load 10 DTCs	Broadcast mate load 35 DTCs
3%	31 minutes	51 minutes
22%	34 minutes	56 minutes
30%	35 minutes	59 minutes
38%	37 minutes	62 minutes
49%	41 minutes	76 minutes
53%	Fail	Fail
64%	62 minutes (2 DTCs failed to load)	Fail

If CPU occupancy exceeds 38 percent, consider updating one PM at a time or rescheduling the PM update.

Appendix B: PM EXECs

This appendix provides information about the EXEC files and TRMTYP files for the Digital Multiplex System (DMS) peripheral modules.

Introduction

An EXEC (executable) file is used to provide a set of basic operating instructions to the PM. A TRMTYP (terminal type) file supports a single EXEC and is coded to a trunk. A Series I PM, such as a maintenance trunk module (MTM), has a single EXEC file and no TRMTYP files. A Series II PM or XMS-based peripheral module (XPM), such as a digital trunk controller (DTC), has multiple TRMTYP files, and a single EXEC file associated with each TRMTYP file. A Series III PM or integrated services node (ISN) PM, such as the link interface module (LIM), does not have EXEC files or TRMTYP files.

PM-to-EXEC cross-reference

The following table lists the EXEC files and TRMTYP files used for Series I and Series II PMs. This information is provided to assist with troubleshooting update errors or datafill errors. It is not necessary to confirm this information during a software update.

TRMTYPs and EXECs

PM	Functionality	Trunk types	TRMTYP	EXEC
ATM	AUTOVON interswitch trunks	AVINSW	Not applicable	ATMEX
	AUTOVON interswitch No. 5 crossbar trunks	AVNO5	Not applicable	ATMEX
	AUTOVON overseas trunks	AVOVS	Not applicable	ATMEX
	AUTOVON tandem trunks	AVTNDM	Not applicable	ATMEX
CTM			Not applicable	DDCLEX

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	TATS FEATSIM and DATATRAF		Not applicable	FEATSIMEX
	T101 off MTM instead of TM		Not applicable	IMTMEX
	DMS-250 MTM, STM		Not applicable	MTM250EX
	DMS-300 MTM		Not applicable	MTM300
	Basic MTM + audio tone detectors		Not applicable	MTMATD
			Not applicable	MTMEX
	NSG use		Not applicable	MTMTTT
	MTM250 packaged TM shelf		Not applicable	TM250P
	Tres load, 3X27		Not applicable	TRS327
	Tres load, 7271		Not applicable	TRS727
	Tres load, CCS7		Not applicable	TRSCCS
	Tres load, ISDN		Not applicable	TRSISD
	Tres load, DTCPTS		Not applicable	TRSPTS
	Tres load, traffic		Not applicable	TRSTRF
	UK MTM on DMS-250		Not applicable	UKMTM
DCM	DMS-250 + programmable filter time		Not applicable	DCM25X
	DMS-300 DCM		Not applicable	DCM300
	NSG cellular software		Not applicable	DCMCSC
	DCM with any combination of non-FX trunks. Does not support IBN FX trunks or PX FX trunks.		Not applicable	DCMEX
	DCM with IBN FX trunks Supports non-FX trunks. Does not support PX FX trunks.		Not applicable	FXODCM
	DCM with PX FX trunks. Does not fully support other trunk types.		Not applicable	PXFXEX
	Tres load, 3X27		Not applicable	TRS327
	Tres load, 7271		Not applicable	TRS727
	Tres load, CCS7		Not applicable	TRSCCS

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	Tres load, ISDN		Not applicable	TRSISD
	Tres load, DTCPTS		Not applicable	TRSPTS
	Tres load, traffic		Not applicable	TRSTRF
	AUTOVON interswitch trunks (multifrequency (MF))	AVINSW	Not applicable	ADCMEX
	AUTOVON four-wire line trunks	AVLN	Not applicable	ADCMIX
	AUTOVON interswitch No. 5 crossbar trunks	AVNO5	Not applicable	ADCMEX
	AUTOVON overseas trunks	AVOVS	Not applicable	ADCMEX
	AUTOVON PBX trunks (DP/DT)	AVPBX	Not applicable	ADCMIX
	AUTOVON PBX trunks (MF)	AVPBX	Not applicable	ADCMEX
	AUTOVON tandem trunks	AVTNDM	Not applicable	ADCMEX
DES	Digital echo suppressor		Not applicable	DESEX
DTC	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks and IBN FXO trunks		ABTRK	FXODTC
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks and IBN FXO trunks, but no IBN FXS trunks		ABTRK AB250	FXODTC PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	DMS-250 with universal tone receiver		AB250	UTR250
	TATS DTC traffic		ABTRK	TATSEX
	TATS terminal		TATS_TERM	TATSEX
	AUTOVON automatic PBX trunks (DP/DT)	AVAPBX	AVTRK	ADTCEX

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	AUTOVON automatic PBX trunks (MF)	AVAPBX	AVTRK	ADTCIX
	AUTOVON interswitch trunks	AVINSW	AVTRK	ADTCIX
	AUTOVON interswitch No. 5 crossbar trunks	AVNO5	AVTRK	ADTCIX
	AUTOVON four-wire line trunks	AVLN	AVTRK	ADTCEX
	AUTOVON overseas trunks	AVOVS	AVTRK	ADTCIX
	AUTOVON PBX (DP/DT)	AVPBX	AVTRK	ADTCEX
	AUTOVON PBX (MF)	AVPBX	AVTRK	ADTCIX
	AUTOVON tandem trunks	AVTNDM	AVTRK	ADTCIX
DTCI	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks and IBN FXO trunks		ABTRK	FXODTC
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks and IBN FXO trunks, but no IBN FXS trunks		ABTRK AB250	FXODTC PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	DMS-250 with universal tone receiver		AB250	UTR250
	TATS DTC traffic		ABTRK	TATSEX
	TATS terminal		TATS_TERM	TATSEX
	Autovon 4WSUB/PBX		AVACC	ADTCEX
	Autovon interswitch trunks		AVTRK	ADTCIX
	ISDN for DTCs with non-FX trunks		ISDN_UP	DTCEX
	ISDN B channel for DMS-250 DTCs		PRAB	DTC250

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	ISDN B channel for DTCs with non-FX trunks		PRAB	DTCEX
	ISDN B channel for DTCs with non-FX trunks and IBN FXO trunks		PRAB	FXODTC
	ISDN B channel for DMS-250 DTCs		PRAB	UTR250
DTM	Autovon MTMs; IBN TOO for DTMF outpulsing		Not applicable	AMTMEX
			Not applicable	DDCLEX
	TATS FEATSIM and DATATRAF		Not applicable	FEATSIMEX
	T101 off MTM instead of TM		Not applicable	IMTMEX
	DMS-250 MTM, STM		Not applicable	MTM250EX
	DMS-300 MTM		Not applicable	MTM300
	Basic MTM + audio tone detectors		Not applicable	MTMATD
				MTMEX
	NSG use		Not applicable	MTMTTT
	MTM250 packaged TM shelf		Not applicable	TM250P
	Tres load, 3X27		Not applicable	TRS327
	Tres load, 7271		Not applicable	TRS727
	Tres load, CCS7		Not applicable	TRSCCS
	Tres load, ISDN		Not applicable	TRSISD
	Tres load, DTCPTS		Not applicable	TRSPTS
	Tres load, traffic		Not applicable	TRSTRF
	UK MTM on DMS-250		Not applicable	UKMTM
ESA			Not applicable	TRSTRF
	ESA POTS lines and keyset		ESA_LINES	ESAEX
	International ESA		ESA_LINES	IESAEX
	Remote maintenance module		RMM_TERM	RSMEX
ICP	Standard digital trunks		ABTRK	DTCEX
LGC	Key sets on LTC (P-phone)		KEYSET	KSETEX

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
	Remote maintenance module		RMM_TERM	RSMEX
LM	Line module			LMEX
LTC	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks and IBN FXO trunks		ABTRK	FXODTC
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks and IBN FXO trunks, but no IBN FXS trunks		ABTRK AB250	FXODTC PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	ISDN for DTCs with non-FX trunks		ISDN_UP	DTCEX
	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
	ISDN B channel for DMS-250 DTCs		PRAB	DTC250
	ISDN B channel for DTCs with non-FX trunks		PRAB	DTCEX

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	ISDN B channel for DTCs with non-FX trunks and IBN FXO trunks		PRAB	FXODTC
	Remote maintenance module		RMM_TERM	RSMEX
	AUTOVON automatic PBX trunks (DP/DT)	AVAPBX	AVACC	ADTCEX
	AUTOVON automatic PBX trunks (MF)	AVAPBX	AVTRK	ADTCIX
	AUTOVON interswitch trunks	AVINSW	AVTRK	ADTCIX
	AUTOVON four-wire line trunks	AVLN	AVACC	ADTCEX
	AUTOVON interswitch No. 5 crossbar trunks	AVNO5	AVTRK	ADTCIX
	AUTOVON overseas trunks	AVOVS	AVTRK	ADTCIX
	AUTOVON tandem trunks	AVTNDM	AVTRK	ADTCIX
	AUTOVON PBX trunks (DP/DT)	AVPBX	AVACC	ADTCEX
	AUTOVON PBX trunks (MF)	AVPBX	AVTRK	ADTCIX
MTM	AV101 test lines/basic MTM	AV01	Not applicable	AVTMEX
			Not applicable	DDCLEX
			Not applicable	FEATSIMEX
			Not applicable	IMTMEX
	DMS-250 MTM, STM		Not applicable	MTM250EX
	DMS-300 MTM		Not applicable	MTM300
	Basic MTM with audio tone detectors. Does not support OAU, DRAM, RCVROIN, or TTT type circuits.		Not applicable	MTMATD
	Basic MTM		Not applicable	MTMEX
			Not applicable	MTM1EX
			Not applicable	MTMTTT
			Not applicable	TM250P
			Not applicable	TRS327
			Not applicable	TRS727

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TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
			Not applicable	TRSCCS
			Not applicable	TRSISD
			Not applicable	TRSPTS
			Not applicable	TRSTRF
			Not applicable	UKMTM
OAU	Office alarm unit		Not applicable	MTMEX
			Not applicable	OAUEX
PTM	NT3X68AB DTMF senders	SVDTMF	Not applicable	AMTMEX
	AV101 test lines/basic MTM	AV01	Not applicable	AVTMEX
PDTC	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks and IBN FXO trunks		ABTRK	FXODTC
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks and IBN FXO trunks, but no IBN FXS trunks		ABTRK AB250	FXODTC PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	DMS-250 with universal tone receiver		AB250	UTR250
	TATS DTC traffic		ABTRK	TATSEX
	TATS terminal		TATS_TERM	TATSEX
	Autovon 4WSUB/PBX		AVACC	ADTCEX
	Autovon interswitch trunks		AVTRK	ADTCIX
	ISDN for DTCs with non-FX trunks		ISDN_UP	DTCEX
	ISDN B channel for DMS-250 DTCs		PRAB	DTC250

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	ISDN B channel for DTCs with non-FX trunks		PRAB	DTCEX
	ISDN B channel for DTCs with non-FX trunks and IBN FXO trunks		PRAB	FXODTC
	ISDN B channel for DMS-250 DTCs		PRAB	UTR250
	DMS-250 PDTC call processing		ABTRK	PDTCEX
	CCITT6 and CCITTR1		ABTRK	DTC300
	CCITT R1 voice trunk		R1_TERM	DTC300
	CCITT6 voice trunk		N6_TERM	DTC300
RCC	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks and IBN FXO trunks		ABTRK	FXODTC
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks and IBN FXO trunks, but no IBN FXS trunks		ABTRK AB250	FXODTC PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	ESA POTS lines and keyset		ESA_LINES	ESAEX
	International ESA		ESA_LINES	IESAEX
	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
	Remote maintenance module		RMM_TERM	RSMEX

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TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
RCC2	Non-FX trunks		ABTRK	DTCEX
	Non-FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK	DTCFX
	PX FX trunks		AB250	PXDTCX
	PX FX trunks and non-FX trunks		ABTRK AB250	DTCEX PXDTCX
	PX FX trunks, IBN FXO trunks, and IBN FXS trunks		ABTRK AB250	DTCFX PXDTCX
	DMS-250 trunks		AB250	DTC250
	ESA POTS lines and keyset		ESA_LINES	ESAEX
	ISDN for DTCs with non-FX trunks		ISDN_UP	DTCEX
	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
	Remote maintenance module		RMM_TERM	RSMEX
RMM	International ESA		ESA_LINES	IESAEX
	Remote maintenance module		RMM_TERM	RSMEX
			Not applicable	TRSTRF
SMA	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
SMA2	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX

—continued—

TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
SMS	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
SMU	Key sets on LTC (P-phone)		KEYSET	KSETEX
	Key sets on LTC (M5018 P-phone)		M5018_TERM	KSETEX
	Key sets on LTC (M5009/M5209 P-phone)		MX509_TERM	KSETEX
	Key sets on LTC (M5112/M5312/M5212 P-phone)		MX5212_TERM	KSETEX
	POTS		POTS	POTSEX
STM			Not applicable	AMTMEX
			Not applicable	DDCLEX
			Not applicable	IMTMEX
			Not applicable	MTM250EX
			Not applicable	MTM300
			Not applicable	MTMATD
			Not applicable	MTMEX
			Not applicable	MTMTTT
			Not applicable	UKMTM
T8A			Not applicable	T8AEX
			Not applicable	T8A300
			Not applicable	UKECEX

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TRMTYPs and EXECs (continued)

PM	Functionality	Trunk types	TRMTYP	EXEC
TAN	Test access network		Not applicable	MTM300
			Not applicable	TANEX
TM2			Not applicable	TM2EX
TM4			Not applicable	ATMEX
			Not applicable	TM4EX
TM8			Not applicable	ATMEX
			Not applicable	FEATSIMEX
			Not applicable	MTMEX
			Not applicable	OAUEX
	Basic TM8		Not applicable	TM8EX
	Basic MTM with audio tone detectors. Does not support OAU, DRAM, RCVROIN, or TTT type circuits.		Not applicable	TM8AT
			Not applicable	TRS327
			Not applicable	TRS727
			Not applicable	TRSCCS
			Not applicable	TRSISD
			Not applicable	TRSPTS
			Not applicable	TRSTRF
			Not applicable	UKECEX
			Not applicable	UKTMEX
TMS	Non-FX trunks		ABTRK	DTCEX
	ISDN		ISDN_UP	DTCEX
	ISDN B-channel for DTCs with non-FX trunks		PRAB	DTCEX

—end—

Appendix C: EDRAM base load and voice files

This appendix provides information on the enhanced digital recorded announcement machine (EDRAM) software loads, on the update process, and on the digital trunk module (DTM) card with EDRAM load files available with this release.

Overview

EDRAM uses two types of loads: a PM load and a set of voice files. The PM load is the firmware loaded into the EDRAM. The voice files are pre-recorded announcements. Each EDRAM can be loaded with different voice files, as defined by the voice file names datafilled in table EDRAMINV, but all voice files must be copied to the selected volume.

Load files available with this release

This release provides two software load types:

- PM load delivered with product-specific PM load tape, i.e. EDRMxxyy or ED16xxyy
- Voice files delivered on separate tape, i.e., EDRM0001 or ED160001

PM load types

The following table lists the two PM load types and hardware requirements.

EDRAM base loads

DTM with EDRAM base load	Hardware
EDRMxxyy	NT1X80AA
ED16xxyy	NT1X80BA
Note: Both EDRAM base loads are not supported in all markets.	

Compatibility

Due to market and release requirements, EDRAM PM loads are delivered independent of a product computing module layer (PCL) software release.

Update process

The digital trunk module (DTM) with EDRAM can be updated as part of an office-wide PM update, or it can be updated individually. If the DTM is updated as part of an office-wide PM update, update the DTM prior to updating the ENET. Refer to procedure "Update the DTM" to perform an update.

PM load

The following table lists the EDRAM PM load available with this release. The column Type identifies the type of PM as posted at the MAP display. The column Description describes the service provided by the PM. The column Hardware lists product engineering codes (PEC) for the EDRAM card. The column Load lists the new EDRAM load provided with this release. The column Description describes the new load.

PM load

Type	Description	Hardware	Load	Description
DTM	DTM with EDRAM	NT1X80AA	EDRMAE10	
		NT1X80BA	ED16AA06	EDRAM base load

PM load ED16AA04 can be added as an initial load, and ED16AA05 can be added as an up–version.

PM load history

The following table lists EDRM PM loads and the reasons for their release

Load history

Load	Reason for release
ED16AA06	Add ED16AA06 as EDRAM base load for LLT18
ED16AA04	Add ED16AA04 as EDRAM base load for LLT17
EDRMAE10	Replace EDRMAE06, EDRMAE07, EDRMAE08 with EDRMAE10
EDRMAE08	Replace EDRMAE06, EDRMAE07 with EDRMAE08

Load history (continued)

Load	Reason for release
EDRMAE07	SW Vault 2.0 Migration
EDRMAE06	Replace EDRMAE47 with EDRMAE06
EDRMAE47	UT81947, UT82446, UT82398
EDRMAE05	
EDRMAE02	CM6026,BY36523, BY44179, BY23624
EDRMAE01	BX85848
EDRMAD06	BX63148, EV50088, UT500188
EDRMAD05	UT409148
EDRMAD04	UT407331, UT407628, UT407692, UT407934, UT408043, UT409148

Voice files

Voice files for this release are delivered on tape EDRM0001. Refer to the document included with this tape for information on voice files.

The following table lists the provisionable voice files available with this release. Each EDRAM can be loaded with different voice file names as entered in table EDRAMINV.

The columns in table Voice files provide the following information:

- Language lists the available languages.
- Feature lists the supported features for each language.
- File lists the name of each voice file.
- Market or customer lists any unique market or customer identifiers.

Voice files

Language	Feature	File	Market or customer
English/ Japanese	NTC Multi-Language	jpatc0ca jpatc0cb jpatc0cc jpatc0dd	Japan
English	Automated Alternate Billing Service (AABS)	eaabs0hc	
English	Automatic Calling Card Services (ACCS)	eaccs0ah	
English	Automatic Coin Telephone Service (ACTS)	eacts0ae	
English	Auxiliary Operator Services Systems (AOSS)	eaoss0af eaoss0ag	
English	Automatic Recall Date and Time (ARDT)	eardt0ja eardt0jb	
English	Call Forward Remote Activation (CFRA)	ecfra0am	
English	Call Management Services (CMS) Phase 2	acmsl0ga acmsl0gb acmsl0gc acmsc0ge acmsc0gf acmsc0gg acmsc0gh acmsc0gj acmsc0gk acmsc0gl acmsc0gm	 Bell South Bell Atlantic United Tel GTE Pacific Bell Ameritech Southwest Bell U.S. West
English	Customized Local Access Signaling Services (CLASS) Phase 1	ecls10aj ecls10ak	

Note: Due to market and release requirements, the office does not always receive all voice files listed in this table.

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Voice files (continued)

Language	Feature	File	Market or customer
English	Customized Local Access Signaling Services (CLASS) Phase 2	ecls20ap ecls20aq ecls20ar ecls20as ecls20at ecls20au ecls20av ecls20aw	
English	Mechanized Credit Card Service (MCSS)	emccs0ca	
English	NTC Multi-Language	jpatc0da jpatc0db jpatc0dc jpatc0dd	Japan
English	Standard Announcements	astd0ab estd0aa	United States Canada
French	Automated Alternate Billing Service (AABS)	faabs0hd	
French	Automatic Calling Card Services (ACCS)	faccs0bh	
French	Auxiliary Operator Services Systems (AOSS)	faoss0bf faoss0bg	
French	Customized Local Access Signaling Services (CLASS) Phase 1	fcls10bj fcls10bk	
French	Customized Local Access Signaling Services (CLASS) Phase 2	fcls20bp fcls20bq fcls20br fcls20bs fcls20bt fcls20bu fcls20bv fcls20bw	
French	Standard Announcements	fstd0ba	

Note: Due to market and release requirements, the office does not always receive all voice files listed in this table.

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Voice files (continued)

Language	Feature	File	Market or customer
Japanese	Denied Malicious Call Termination (DTCM)	jpdtcm00	
Japanese	NTC Multi-Language	jpatc0ea jpatc0eb jpatc0ec jpatc0ed	Japan
Korean	NTC Multi-Language	korean01 korean23 korean45 korean67 korean8	Japan
Malay	NTC Multi-Language	malay01 malay23 malay45 malay67 malay89	Japan
Mandarin	NTC Multi-Language	mndrn01 mndrn23 mndrn45 mndrn67	Japan
Portuguese	NTC Multi-Language	prtugs01 prtugs23 prtugs45 prtugs67 prtugs89 prtugs10	Japan
Spanish	Customized Local Access Signaling Services (CLASS) Phase 1	scls10cj scls10ck	

Note: Due to market and release requirements, the office does not always receive all voice files listed in this table.

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Voice files (continued)

Language	Feature	File	Market or customer
Spanish	Customized Local Access Signaling Services (CLASS) Phase 2	scls20cp scls20cq scls20cr scls20cs scls20ct scls20cu scls20cv scls20cw	
Spanish	NTC Multi-Language	spansh01 spansh23 spansh45 spansh67 spansh8	Japan
Tagalog	NTC Multi-Language	tagalog1 tagalog2 tagalog3 tagalog4	Japan
Thai	NTC Multi-Language	thai01 thai23 thai45 thai67 thai89	Japan
Note: Due to market and release requirements, the office does not always receive all voice files listed in this table.			
—end—			

List of terms

ADAS
Automated directory assistance service. A DMS traffic operator position system (TOPS) feature that automates the inquiry portion of directory assistance calls.

APU
Application processing unit. A DMS SuperNode ASU that controls the TOPS ADAS applications and voice processor unit (VPU).

ASU
Application-specific unit. A group of hardware and software components in a link peripheral processor (LPP) that perform application-specific functions on signals carried by channel buses (C-bus) and frame transport buses (F-bus). Examples of ASUs are Ethernet interface units (EIUs) and network interface units (NIUs).

ATM
Autovon (automatic voice network) trunk module.

BCS
Batch change supplement. Nortel Networks' traditional method of releasing software, with custom loads, created from features available in a given BCS cycle. BCS has been replaced with product computing-module load (PCL). *See also* product computing-module load.

BERT
Bit error rate test. A test that measures the transmission quality of a loop. A BERT transmits a known bit pattern over a line, and compares the reflected signal to the known bit pattern.

CC
Central control. A part of the NT40 processor that includes the data processing functions, the data store, and the program store.

CCS7
Common channel signaling 7. A digital message-based network signaling standard, defined by the CCITT, that separates call signaling information from voice channels so that interoffice signaling is exchanged over a separate signaling link.

channelized access
A method of providing direct access between a common channel signaling 7 (CCS7) network and the application-specific units (ASU) in a link peripheral processor (LPP) without the need for channel banks. A network interface unit (NIU), with either a junctored network (JNET) module or an enhanced network (ENET) module, provides channelized access between the CCS7 network and ASUs.

CI level
Command interpreter level. MAP level from where commands are entered.

CLASS
Custom local area signaling services. A set of call features that provides the ability to supply calling line identification (CLI) to the call destination, store information on the last incoming and last outgoing call, and monitor the status of a destination line.

CM
Computing module. The processor and memory of the dual-plane combined core (DPCC) used by DMS SuperNode. Each CM consists of a pair of central processing units (CPUs) with associated memory that operate in a synchronous matched mode on two separate planes. Only one plane is active to maintain overall control of the system while the other plane is on standby.

CMR
CLASS modem resource. The CMR card is used by custom local area signaling services (CLASS) features to transmit calling number and name information to customer premises equipment (CPE).

C-side
Central side. The side of a node that faces away from the peripheral modules (PMs) and toward the central control (CC). Also known as control side. *See also* peripheral side (P-side).

CTM
Conference trunk module. The NT1X81 card in the maintenance trunk module (MTM) or service trunk module (STM).

datafill

A term that denotes the entry of data into tables or the data entered into tables.

DCH

D-channel handler. A card in an ISDN line group controller (LGCI) or in an ISDN line trunk controller (LTCI) that provides the primary interface to all D-channels. The DCH performs a Q.921 link access procedure on D-channel (LAPD) layer 2 processing. The DCH is connected permanently to an ISDN loop and receives or sends messages on the signaling/packet data channel.

DCM

Digital carrier module. A peripheral module (PM) located in a digital carrier equipment (DCE) frame that provides speech and signaling interfaces between a DS30 network port and digital trunks. A DCM is provisioned with up to five line cards.

DES

Digital echo suppressor. A voice-activated device that monitors the level of digital speech signals on the transmit and receive paths between interconnected trunk circuits. The DES automatically applies attenuation, when necessary, to reduce echo effects on long-haul trunk circuits.

DLIU

Dual-link interface unit. A peripheral module that terminates a high-speed signaling data link. The dual-link interface unit consists of a high-speed link interface unit (HLIU) and a high-speed link router (HSLR).

DMS

Digital multiplex system. A central office (CO) switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots.

DMS-100

A member of a family of digital multiplexed switching systems. The DMS-100 is a local switch.

DMS-100 Family switches

A family of digital multiplexed switching systems, which includes the following members: DMS-100, DMS-100/200, DMS-100 switching cluster, DMS-100 switching network, DMS-200, DMS-250, and DMS-300.

DMS SuperNode

A central control complex (CCC) for the DMS-100 switch. The two main parts of the DMS-100 SuperNode are the computing module (CM) and the

message switch (MS). Both parts are compatible with the network module (NM), the input/output controller (IOC), and the XMS-based PM (XPM).

DMS-100 switching network

A member of a family of digital multiplexed switching systems. A DMS-100 switching network consists of multiple DMS-100 Family products that are maintained from a centralized operation, administration, and maintenance (COAM) application.

DMS-X

A link control protocol used with DS30A links for messaging between peripheral modules.

DPCC

Dual-plane combined core. One of the three cabinet models for the DMS SuperNode processor. The DPCC contains two message switches and a system load module (SLM).

DPN

Data packet network. A packet-switched networking system.

DPP

Distributed processing peripheral. A peripheral module (PM) that accepts data from the DMS-100, formats the data if necessary, and stores it on disk. On request, the DPP retrieves and sends data to the host office collector.

DTC

Digital trunk controller. A peripheral module (PM) that connects DS30 links from the network with digital trunk circuits.

DTCI

Digital trunk controller with ISDN. A peripheral module (PM) that connects DS30 links from the network with ISDN digital trunk circuits.

DTM

Digital trunk module. The NT1X80 card in the maintenance trunk module (MTM) or service trunk module (STM).

DTU

Digital test unit. A card in the maintenance trunk module (MTM) used to perform bit error rate tests (BERT) on trunk circuits.

EDCH

Enhanced D-channel handler. A card in an ISDN line group controller (LGCI) or in an ISDN line trunk controller (LTCI) that provides the primary interface to all D-channels. The EDCH also performs Q.921 LAPD layer 2 processing. It is connected permanently to an ISDN loop, and receives or sends messages on the signaling and packet data channel. Similar to the DCH, the EDCH has a memory upgrade from 1 Mbyte to 4 Mbyte, a clock speed upgrade from 16 MHz to 20 MHz, and a data bus upgrade from a 16-bit width to 32 bits. *See also* DCH.

EIU

Ethernet interface unit. The unit that connects the DMS SuperNode to the local area network.

ENET

Enhanced network. A channel-matrixed time switch that provides pulse code modulated voice and data connections between peripheral modules (PMs). ENET also provides message paths to the DMS-bus components.

ESA

Emergency stand-alone. An emergency service that permits local calling within a remote switching center (RSC) or remote line concentrating module (RLCM) in the event of loss of communication with the host office.

EXEC or exec

An executable file that contains programs or commands that perform operations or actions to be taken.

F-bus

Frame transport bus. An 8-bit bus that provides communications between a LIM and ASU. The LIM and ASU must be in a LPP cabinet or frame. To increase reliability, two load-sharing F-buses are in the LPP. Each F-bus provides service to a LIM unit.

FRIU

A frame relay interface unit (FRIU) is the application-specific unit (ASU) for Dataspan frame relay service. It provides the physical connection for T1 carriers at the link peripheral processor (LPP).

HDLC

High-level data link control. The channel that high-level control messages from the central control (CC) are carried between the digital carrier module (DCM) and remote line modules (RLM).

HLIU
High-speed link interface unit. A high-speed link interface unit physically consists of an NTEX22CA integrated P-bus and F-bus processor (IPF), an NTEX76AA high-speed signaling terminal (HST), and an NTEX78AA backplane paddleboard.

HSLR
High-speed link router. A high-speed link router consists of a single NTEX22CA integrated processor and F-bus card.

ILD
ISDN line drawer. A drawer type that can be installed in DMS-100 Family remotes in the North America market and houses up to 28 BRI ISDN lines.

InSv
In-service. Refers to the state of switching equipment when it is performing normal call processing functions (that is, providing subscriber service).

IOM
Input output module. A peripheral module (PM) that emulates most of the Input Output Controller (IOC) functionality such as RS-232C, V.35, DS30, and Current Loop. Currently, the IOM only resides on an Integrated Service Module (ISM) shelf.

ISDN
Integrated services digital network. A set of standards proposed by the CCITT to establish compatibility between the telephone network and various data terminals and devices. ISDN is a communications network that provides access to voice, data, and imaging services from a single type of connector.

ISTb
In-service trouble. This state is imposed on a unit that indicates trouble but that can still process calls.

JNET
Junctored network. A time-division multiplexing (TDM) system that can switch 1920 duplicated channels in each network pair. External junctors, internal junctors, and a digital network interconnecting (DNI) frame are used to establish additional channels. Channels route directly or through alternate routing that use junctors, a DNI frame, and software control.

LAPD
Link access procedure on the D-channel. An ISDN access protocol used with links established on a D-channel.

LCM
Line concentrating module. A peripheral module (PM) that connects the line trunk controller (LTC) or line group controller (LGC) and up to 640 subscriber lines, using two to six DS30A links.

LCME
Enhanced line concentrating module with ISDN. A dual-unit peripheral module (PM) that terminates ISDN 2B1Q (two binary one quaternary) U-type (single slot) lines, ISDN S/T-type lines, plain old telephone service (POTS) lines, electronic business set (EBS) lines, and Datapath lines. The LCME also provides access to the ISDN B-, D-, and M-channels. The LCME supports 480 POTS or EBS lines, or 240 Datapath lines.

LGC
Line group controller. A peripheral module (PM) that connects DS30 links from the network to line concentrating modules (LCM).

LGCI
Line group controller with ISDN. A peripheral module (PM) that connects DS30 links from the network.

LIM
Link interface module. A peripheral module (PM) that controls messaging between link interface units (LIU) in a link peripheral processor (LPP). The LIM also controls messages between the LPP and the DMS-bus component. A LIM consists of two LIM units and two frame transport buses (F-bus). The two LIM units operate in a load-sharing mode with each other.

linkset
A term that denotes a group of links related to one application instance or a collection of links connecting two adjacent signaling points in CCITT no. 6 signaling (N6), common channel interoffice signaling no. 6 (CCIS6), and common channel signaling 7 (CCS7).

LIU7
CCS7 link interface unit. A peripheral module (PM) that processes messages entering and leaving a link peripheral processor (LPP) through an individual signaling data link. Each LIU7 consists of a set of cards and a paddle board provisioned in one of the link interface shelves of the LPP.

LM
Line module. A peripheral module (PM) that provides speech and signaling interfaces for up to 640 subscriber lines. The LM consists of line drawers, a line module controller (LMC), and a frame supervisory panel (FSP).

LPP
Link peripheral processor. The DMS SuperNode equipment frame or cabinet that contains the LIM and one or more ASUs.

LTC
Line trunk controller. A peripheral module (PM) that is a combination of the line group controller (LGC) and the digital trunk controller (DTC) and provides all the services offered by both. It supports line concentrating module (LCM) and AB trunks.

LTCI
Line trunk controller with ISDN. A peripheral module (PM) that combines the line group controller (LGC) and the digital trunk controller (DTC) and provides all the services offered by both. It also supports ISDN channeling.

ManB
Manual busy. A busy state manually imposed on a trunk by operating a panel control or entering a command at the keyboard of a visual display unit.

MAP
Maintenance and administration position. A group of components that provides a user interface between operating company personnel and the DMS-100 Family switches. The interface consists of a video display unit (VDU) and keyboard, a voice communications module, test facilities, and special furniture.

MPC
Multiprotocol controller. A general-purpose card that allows data communications between a DMS-100 Family switch and an external computer (for example, between a central office (CO) billing computer and a DMS-100 Family switch). The MPC card resides on the I/O controller (IOC) shelf. MPC card protocol software is downloaded from the DMS-100 CPU and then used to support software routines for data packet network (DPN) communications.

MS
Message switch. A high-capacity communications facility that functions as the messaging hub of the dual-plane combined core (DPCC) of a DMS SuperNode processor. The MS controls messaging between the DMS-bus components by concentrating and distributing messages and by allowing other DMS-STP components to communicate directly with each other.

MTA
Metallic test access. A hardware device providing metallic connections between test access points (for example, in subscriber line circuits in a digital switching center) and various types of test equipment.

MTC
Maintenance level. A MAP level used to access several areas of the DMS-100 switch, such as central control (CC), peripheral modules (PMs), the lines maintenance subsystem (LNS), and others.

MTM
Maintenance trunk module. In a trunk module equipment (TME) frame, a peripheral module (PM) that is equipped with test and service circuit cards and contains special buses to accommodate test cards for maintenance. The MTM provides an interface between the DMS-100 Family digital network and the test and service circuits.

MTU
Magnetic tape unit. A general term used to describe the magnetic tape recording function as a maintenance tool. The MTU can be any type of magnetic tape drive that functions in this way. The MTU is also known as tape unit.

NA100
North American DMS-100. The development stream for all DMS-100/200 features in North America.

NAV
Network applications vehicle. An audio processor that uses Flexible Vocabulary Recognition to support telecommunications services, including operator services.

NIU
Network interface unit. A DMS SuperNode application-specific unit (ASU) that provides channelized access for F-bus resident link interface units (LIUs) using a channel bus (C-bus). The NIU resides in a link peripheral processor (LPP) frame.

OAM&P
Operation, administration, maintenance, and provisioning.

OAU
Office alarm unit. A peripheral module (PM) located in a trunk module equipment (TME) frame. The OAU is similar to the maintenance trunk

module (MTM), but is equipped with circuit cards that provide an interface with various types of office alarm circuits instead of test circuits.

ONP
One-night process. An eight-week process that culminates in the overnight application of software to the switch.

paddleboard
A small circuit pack based on the standard circuit pack. The paddleboard, located on the rear of the DMS SuperNode shelf, carries the cable interfaces as well as local service functions such as local clock sources and bus termination.

patch
An incremental change to software applied after the load has been compiled. *See also* PRSU.

PCL
Product computing-module load. A compiled software load that replaces the batch change supplement (BCS). A PCL consists of features selected from the North American development stream intended for a particular DMS SuperNode application in a particular market. Every PCL with the same name is the same in terms of software content.

PCM30
A 32-channel, 2.048 megabits per second PCM speech-signaling and message-signaling link that is used in international trunks.

PDTC
PCM30 digital trunk controller. A PM that provides the ability to use PCM30 signaling hardware configuration of an international digital trunk controller (IDTC). The PDTC runs the software of a DTC.

PDTCI
PCM30 digital trunk controller with ISDN. A peripheral module (PM) that provides the ability to use PCM30 signaling on the DMS-MTX switch with integrated services digital network (ISDN) for the international marketplace.

PLGC
PCM30 line group controller. A PM that provides the ability to use PCM30 signaling hardware configuration of an international line group controller (ILGC). The PLGC runs the software of an LGC.

PM

Peripheral module. Any hardware module in the DMS-100 Family switches that provides an interface between external line, trunk, or service facilities. A PM contains peripheral processors (PP), which perform local routines, thus relieving the load on the CPU.

PM firmware

The peripheral module (PM) operating system. Software residing in the PM consists of the following classes:

- software residing in read-only memory (ROM) that satisfies the customary definition of firmware
- software loaded into random access memory (RAM) when the peripheral is placed into service
- software that consists of execs, which are resident subprograms made up of primitive instructions

PMUPGRADE

PANTHER PM upgrade file copy and planning utility, CI super command.

PPXL

Pre-patched XPM load. An XPM load that has corrective post-release software updates (PRSUs) built into the XPM load files. PPXLs are incremental up-issues of the respective base load.

PRL

Peripheral remote loader. A circuit card that is used to update software loads to like peripheral modules.

PRSM

Post-release software manager. The tool that applies software updates after the milestone release of a load.

PRSU

Post-release software update. A software change distributed after the milestone release of a load.

PRSUID

The name of a PRSU.

P-side

Peripheral side. The side of a node facing away from the central control (CC) and toward the peripheral modules (PMs).

RCC
Remote cluster controller. A dual-shelf peripheral module (PM) that provides a master controller for all units at the remote switching center (RSC) and is, in turn, controlled by the host line trunk controller (LTC).

RCC2
Remote cluster controller 2. A remote cluster controller (RCC) for the remote switching center-SONET (RSC-S). The RCC2 is an enhanced RCC that provides the central control of the RSC-S. It is connected to the host by metallic or fiber connections. The RCC2 is a single-shelf peripheral module (PM) that provides the same functions for all units at the RSC.

RCU
Remote carrier urban. A PM that provides remote subscriber loop concentration for a DMS-1 urban carrier system. The RCU uses high-level message protocol to communicate over one or two message channels. The RCU supports a maximum of 528 subscriber lines over a maximum of eight DS-1 links in configuration with a digital switch.

RLCM
Remote line concentrating module. An equipment frame that provides an interface between two to six DS-1 links (from the line group controller (LGC) at the host office) and up to 640 subscriber lines (connected locally). An RLCM is equipped with one line concentrating module (LCM), a remote maintenance module (RMM), and a host interface equipment (HIE) shelf.

RLD
Remote line drawer. *See* STAR Module.

RLM
Remote line module. A pair of remotely located line modules that provide an interface (over two to eight DS-1 links) between a digital carrier module (DCM) at the host office and up to 1280 subscriber lines.

RMM
Remote maintenance module. A peripheral module (PM) with a configuration similar to that of the maintenance trunk module (MTM). An RMM accommodates up to 12 service and test cards.

RSC
Remote switching center. A remote common peripheral module (CPM) that provides an interface at a remote location with a large number of analog lines of digital trunking. The RSC handles remote-off-remote connections from other remote sites.

RSC-S
Remote switching center-SONET. An enhanced version of the RSC with increased capacity and the option of fiber optic connectivity. The RSC-S is a remote common peripheral module (CPM).

SCM-100
Subscriber carrier module-100. A family of peripheral modules (PMs) that connect three types of remote terminals with DMS-100 Family switches. The SCM-100 family consists of subscriber carrier module-100S (SMS), subscriber carrier module-100S remote (SMSR), and subscriber carrier module-100 urban (SMU).

SDM
SuperNode data manager.

SFDEV
Store file device in the DMS-100 switch.

SLC-96
Subscriber loop carrier. A carrier loop that supports up to 96 subscribers over two to four DS-1 links.

SLM
System load module. A mass storage system in a DMS SuperNode processor that stores office images. From the SLM, new loads or stored images can be booted into the computing module (CM).

SMA
Subscriber carrier module-100 access. The LTC-based DMS peripheral that provides common signaling channel/embedded operations channel (CSC/EOC) link management, DS-1 facility management, and the interface to the DMS-core component.

SMA2
Subscriber carrier module-100 access 2. A subscriber carrier module-100 access (SMA) that supports 28 DS-1 links.

SMS
Subscriber carrier module-100S. A subscriber carrier module that provides an interface between the remote concentrator SLC-96 of an SLC-96 system and the central office (CO) of a DMS-100 Family switch.

SMSR
Subscriber carrier module-100S remote. A subscriber carrier module that provides an interface between the remote concentrator SLC-96 (RCS) and a remote switching center (RSC).

SMU
Subscriber carrier module-100 urban. A subscriber carrier module that provides an interface between the remote carrier urban (RCU) of a DMS-1 switch and the central office (CO) of a DMS-100 Family switch.

SPM
Spectrum Peripheral Module. The SPM is a multi-application high-speed DMS Series III PM type that provides customized network access capabilities.

STAR
Star Remote Hub. A remote PM that functions like a (RLCM). the star hub resides in the star hub remote equipment frame, which is a standard DMS-100 indoor frame. The star hub connects to the SuperNode switch through 2-to-16 DS-1 links to an LGC+, LTC+, or RCC2. The star hub supports up to 1152 lines that connect to a maximum of 18 line drawers, or a maximum of 16 remote line drawers (RLDs).

STAR Module
The Star Module is an RLD that supports up to 64 lines. The Star Module is in a Star Remote Module Equipment (SRME) wall mounted cabinet or a Star Remote Module Outside (SRMO) cabinet. The Star Module connects to the Star Hub using one or two DS-1 links.

STM
Service trunk module. A peripheral module (PM) in the DMS-100 Family switches that consists of two compact maintenance trunk modules (MTM).

SWACT
Switch activity. A switch in a DMS fault tolerant system that changes the states of two identical devices devoted to the same function. In other words, an SWACT makes an active device inactive and an inactive device active.

switching network
A digital-switching matrix that interconnects the peripheral modules (PMs), using time-division multiplexing (TDM). The switching network components are microprocessor controlled, digital-switching network modules. The switching network has duplicate network planes for reliability and can be connected to either the central message controller (CMC) or the DMS-bus and the PMs. The two generations of the switching network are

the junctored network (JNET) and the enhanced network (ENET). The NT40 can use only the JNET while the DMS SuperNode can use either. *See also* enhanced network (ENET) and junctored network (JNET).

SWUPGRADE PM

PANTHER PM upgrade execution engine, CI super command.

SysB

System busy. A term that denotes

- a busy state that is automatically imposed by equipment in response to a fault condition
- the status of trunk circuits that have failed the tests performed by the automatic trunk testing facilities. Failed trunks are taken out of service and added to a list of SysB trunks that can be accessed by operating company personnel.
- the equipment state that occurs when the central control has removed equipment from normal service

T8A

A trunk module (TM) with 120 pairs (eight-wire circuits) of conductors wired to the distribution frame and a metallic test access (MTA) bus for access to CCITT circuits.

TAN

Test access network. A peripheral module (PM) that provides metallic connections between a trunk test position (TTP) or a test trunk and the access bus on a special type of trunk module (TM) used in the DMS-300 switch.

TDM

Time-division multiplexing. A method of multiplexing that obtains channels over a single path. The TDM divides the path into a number of time slots and assigns each channel its own repeated time slot that is not continuous. At the receiving end, each time-separated channel assembles again. The system can transmit digital data and digitizes speech and other signals. The time slot allocation can repeat at normal intervals (fixed cycle) or according to demand (dynamic).

TM

Trunk module. A peripheral module (PM) in a trunk module equipment (TME) frame that provides speech and signaling interfaces between a DS30 network port and analog trunks.

TM2
A trunk module (TM) with 30 pairs (two-wire circuits) of conductors wired to the distribution frame.

TM4
A trunk module (TM) with 60 pairs (four-wire circuits) of conductors wired to the distribution frame.

TM8
A trunk module (TM) with 120 pairs (eight-wire circuits) of conductors wired to the distribution frame.

TMS
TOPS message switch. A DMS-100 Family extended multiprocessor system (XMS)-based peripheral module (XPM) used as a concentration and switching device for data links.

TOPS
Traffic operator position system. A Nortel networks trademark for a semi-automatic telephone switchboard.

TPC
TOPS position controller. A control unit that functions as a workstation-based microcomputer with networking capabilities.

unit
One of two parts of an extended multiprocessor system (XMS)-based peripheral module (XPM) or a line concentrating module (LCM). Each unit has independent processing capabilities. The active unit does all the processing while the inactive unit is on standby.

UMP
Universal maintenance pack. The UMP is a maintenance card that contains the functionalities of several circuit cards of MTM. The UMP card acts as a LIU for measurement tests, as an MTA for metallic test access to the line, and as a MONTALK/VER90 for monitoring and talking to a line. The UMP also acts as an alarm scan and distribution circuit. There are one or two UMP cards in the star remote hub.

UP
Unified processor. A processor that replaces the master processor (MP), signaling processor (SP), and the memory cards associated with these processors.

VPU
Voice processor unit. A DMS SuperNode ASU used by TOPS ADAS that plays prompts, tones, and caller responses as well as detects dual-tone multi-frequency (DTMF) tones.

X.25
A CCITT-defined network layer protocol that is used in packet switching to establish, maintain, and clear virtual circuit connections between an ISDN terminal and a destination in the packet switching network.

X.75
A CCITT-defined network layer protocol that is used in packet switching to establish, maintain, and clear virtual circuit connections between packet switching networks.

XA-Core
Extended architecture core. A multiprocessing system that supports the DMS-100 Family switches.

XLCM
A line concentrating module (LCM) with a large memory (256 kbyte) load.

XLIU
X.25-X.75 line interface unit. An X.25-X.75 link interface unit is the application-specific unit (ASU) for Dataspan frame relay service. It provides the physical connection for T1 carriers at the link peripheral processor (LPP).

XMS
Extended multiprocessor system. A workstation-based microcomputer with networking capabilities based on a Motorola 68000 microprocessor with system software written in Bell-Northern Research (BNR) Pascal.

XPM
XMS-based peripheral module. The generic name for peripheral modules (PMs) that use the Motorola 68000 microprocessor. An XPM has two processors in a hot-standby configuration: a master processor (MP) and a signaling processor (SP).

XPM-PLUS
XMS-based peripheral module product life upgrade strategy. The integration of a new processor complex into the existing XPM architecture.

DMS

DMS

Peripheral Module Software Release Document

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