Meridian 1

Upgrade overview

Upgrading to Meridian 1 system options

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Contents

General information

This manual consists of sections that contain technical and procedural information necessary to upgrade SL-1 and Meridian 1 systems to operate on X11 release 19 or higher software.

It also provides step-by-step procedures for upgrading an SL-1 system to a Meridian 1 system or to upgrade one Meridian 1 option to another Meridian 1 option to expand system capacity and system features.

Sections in this manual provide you with the information you need to engineer the system upgrade, install the upgrade hardware, and convert the software from a pre-release 19 to X11 release 19 or higher.

Who should read this manual

You should read this manual if you are planning to upgrade an existing SL-1 or Meridian 1 system to expand the system capacity and system features provided by the hardware and software upgrade.

This section of the manual identifies the upgrade options supported. Select the upgrade option best suited for your existing system and your traffic capacity and feature requirements.

In addition to this manual, you should have on hand as reference material the following documents:

— *Meridian 1 system overview* (553-3001-100)

— *Meridian 1 installation planning* (553-3001-120)

— *Meridian 1 system engineering* (553-3001-151)

— *Spares planning* (553-3001-153)

— *Meridian 1 equipment identification* (553-3001-154)

— *Upgrade system installation to X11 release 24* (553-3001-258)

— *X11 software management* (553-3001-300)

— *Meridian 1 installation planning* (553-3001-120)

— *Circuit card installation and testing* (553-3001-211)

— *X11 input/output guide*

— *X11 features and services*

For more information, refer to *Library navigator* (553-3001-000) in this manual to find titles and part numbers of Northern Telecom Publications (NTPs) you may wish to reference to obtain additional information about your system hardware or software.

What's in this manual

In addition to this section, this manual contains the following sections:

Upgrade engineering (553-3001-150) describes engineering issues you must consider when upgrading a system. It shows you how to inventory the existing system, how to determine your current and future traffic and services needs, and how to select the most appropriate upgrade method to convert the existing system to the desired upgraded system.

This section also provides recommendations for power distribution, electromagnetic interference suppression, and power and ground engineering for systems consisting of multiple columns in Meridian 1 upgrades or a combination of cabinets and columns in SL-1 to Meridian 1 upgrades.

There are two sections relating to hardware upgrades. These two sections are *Upgrade system installation to X11 release 24* (553-3001-258) and *Upgrade system installation through X11 release 21* (553-3001-250).

- *Upgrade system installation to X11 release 24* (553-3001-258) defines the procedures for systems upgrading to option 51C, 61C and 81C, where the existing system is on release 19 or later. This NTP may reference the upgrade procedures in *Upgrade system installation through X11 release 21* (553-3001-250).

- *Upgrade system installation through X11 release 21* (553-3001-250) documents hardware upgrades to release 21 and is used as a reference

Upgrade system installation through X11 release 21 (553-3001-250) and *Upgrade system installation to X11 release 24* (553-3001-258) describe specific SL-1 and Meridian 1 systems and provide step-by-step procedures for upgrading an existing system to operate on X11 software. They instruct you how to prepare the existing system for upgrade, how to install the new hardware, and how to transfer system configuration data.

Both NTPs also show different system power configurations for multi-column systems and for systems consisting of SL-1 cabinet(s) and Meridian 1 column(s). It describes how to power a cabinet and a column of an upgraded system using a common power source and how to provide independent power sources for the cabinet(s) and for column(s).

Library navigator (553-3001-000) lists NTPs that support Meridian 1 options 21, 51, 51C, 61, 61C, 71, 81, and 81C operating with X11 release 15 or higher.

Software conversion procedures (553-2001-320) explains how to upgrade any X11 release software starting from X11 release 8 to a higher release software, including X11 release 24. It describes in detail how to perform parallel reloads, which allow you to upgrade system hardware and software without disrupting call processing for a system with redundant common equipment.

This section also describes the conversion steps for each type of system. It shows how some systems allow inline conversion that does not require conversion programs, as well as some systems that require hardware upgrade when upgrading from one release software to a higher release software.

Product compatibility (553-3001-156) summarizes system compatibility for software releases and hardware products designed for Meridian 1, Meridian SL-1, and SL-1 systems. It lists software release compatibility, ROM compatibility by software release and system type, terminal equipment compatibility, and system hardware compatibility such as circuit cards and shelves.

Meridian 1 system installation procedures (553-3001-210) provides installation and acceptance testing procedures for pre-assembled Meridian 1 options 21, 51, 51C, 61, 61C, 71, 81, and 81C. It also describes how to add a universal equipment module to an existing Meridian 1 column.

This section also explains how to prepare a site for installation, locate and secure the system at the site, and connect the power and ground to the system. It describes how to connect common, network, and peripheral equipment cables between cards and to I/O panel connectors and MDF connectors.

Disk drive upgrade procedures (553-3001-251) provides detailed instructions for adding a Floppy Disk Unit (FDU) with a corresponding Floppy Disk Interface (FDI) card, a Small system Multi-Disk Unit (SMDU) with a corresponding Enhanced Mass Storage Interface (EMSI) card, a Multi Disk Unit (MDU) with a corresponding Mass Storage Interface (MSI) card, and a IO Processor (IOP) and a Core Multi Disk Unit (CMDU) combination IOP/CMDU. These procedures are used to replace the existing storage devices with the latest FDUs, SMDUs, MDUs, CMDUs, and IOP/CMDUs to support advance software releases and provide higher storage capacity and better system performance.

Power monitor/common equipment auxiliary shelves description and installation (553-3001-570) describes how to engineer and install a Power Monitor/CE Auxiliary shelf. This shelf is used to house Floppy Disk Units (FDUs), Hard Disk Units (HDUs), and 3.5-inch Mass Storage Units (MSUs). This shelf can also accommodate DTI/PRI cards.

System upgrading methods overview

When you are planning to upgrade your system, you must first analyze the system to determine what type of upgrade will meet your present and future traffic and service requirements.

Depending on your existing system type and the upgraded system type you planned, you can select one of the following upgrade methods:

— Card level upgrade

— Module level upgrade

— Card cage level upgrade

— Shelf level upgrade

Table 1 identifies system types before they are upgraded, corresponding systems after they are upgraded, and the upgrade package required for each upgrade. The upgrade package contains the hardware, the software, and the documentation required to complete the upgrade. The table also shows the upgrade type for each upgrade.

Table 1
Supported system upgrades and methods

From	To	Upgrade method
ST	STE	Card level
21A, 21	21E	Card level
51, 61, 71, 81	51, 61, 71, 81	Card level
RT, NT, XT	RT, NT, XT	Card level
A, M, S, MS, ST, STE, 21, 21A, 21E	51C	Module level
L, LE(23), LE(96), A, M, S, MS, ST, STE, N, NT, RT, 21, 21A, 21E, 51, 51C	61C	Module level
L, LE(23), LE(96), N, VL, VLE, XL(24), XL(97), XN, NT, XT, 61, 71	81	Module level
L, LE(23), LE(96), N, VL, VLE, XL(24), XL(97), XN, NT, XT, 61, 61C, 71	81C	Module level
21, 21E, 51	51C	Card cage level
61	61C	Card cage level
71, 81	81C	Card cage level

Card level upgrade

Card level upgrade is used to upgrade an existing system to run on more advanced X11 release software that may require different common equipment and storage devices. This type of upgrade does not necessarily expand the system capacity, but provides additional features and services.

Among other things, his type of upgrade may require replacement of the CPU, the ROM card, disk drives, and memory.

Typical examples of card level upgrades are

— Meridian 1 option 21 or 21A to option 21E

— Meridian 1 option 51 to option 51 X11 release 21

— Meridian 1 option 61 to option 61 X11 release 21

— Meridian 1 option 71 to option 71 X11 release 21

— Meridian 1 option 81 to option 81 X11 release 21

— SL-1 ST system to the STE system X11 release 21

— SL-1 RT system to the RT X11 release 21

— SL-1 NT system to the NT X11 release 21

— SL-1 XT system to the XT X11 release 21

Module level upgrade

Module level upgrade is used to expand system capacity and at the same time upgrade system software to X11 release 19 or higher. This type of upgrade is used to expand system capacity and services in Meridian 1 options 21, 21A, 51, 51C, 61, 61C, and 71 systems.

Module level upgrade is also used to upgrade SL-1 systems to Meridian 1 options 51C, 61, 61C, 81, and 81C. This upgrade method uses the SL-1 system cabinet to continue to support peripheral equipment cards such as line, trunk, and peripheral controller and buffer cards. Common and network equipment, for the upgraded system, is supported in Meridian 1 modules. These modules are pre-installed at the factory into a column, which is delivered to the site completely assembled with circuit cards already installed.

When upgrading SL-1 systems to Meridian 1 X11 release 19 or higher systems, determine through engineering analyses the following:

— whether the system can be powered from a single power source such as the SL-1 system rectifier, or whether it will require independent power sources, one for the SL-1 cabinet and another for the Meridian 1 column

— how to connect system ground

— how to connect cables between the cabinet and the column to meet the electromagnetic interference suppression requirements and what type of cables should be used

These three important installation considerations are described in *Upgrade system installation* (553-3001-250) and *Upgrade engineering* (553-3001-150) sections in this manual.

The following are typical examples of module level upgrades.

— Meridian 1 option 21, 21A, or 21E to option 51C X11 release 20 or higher, or to option 61C X11 release 19 or higher

— Meridian 1 option 51 to option 61C X11 release 19 or higher

— Meridian 1 option 51C to option 61C X11 release 20 or higher

— SL-1 A, M, S, MS, ST, or STE system to option 51C X11 release 20 or higher

— SL-1 A, M, S, MS, ST, or STE system to option 51C X11 release 20 or higher

— SL-1 A, M, S, MS, ST, N, STE, L, RT, NT, or LE system to option 61C X11 release 19 or higher

— SL-1 L, LE, N, NT, VL, VLE, XL, XN, or XT system to Meridian 1 option 81 X11 release 19, 20, or 21

— SL-1 L, LE, N, NT, VL, VLE, XL, XN, or XT system to Meridian 1 option 81C X11 release 21 or higher

— Meridian 1 option 61, 61C, or 71 to Meridian 1 option 81 X11 release 19, 20, or 21

— Meridian 1 option 61, 61C, or 71 to Meridian 1 option 81C X11 release 21 or higher

Card cage level upgrade

Card cage level upgrade is used to upgrade an existing Meridian 1 option to a different Meridian 1 option without rearranging modules in the existing column.

After the card cage upgrade, you can expand the system by using the module level upgrade to add modules to the existing column or by adding another column to support additional peripheral equipment or application products.

The following are typical examples of card cage level upgrades:

— Meridian 1 option 21, 21E, or 51 to option 51C X11 release 20 or higher (accomplished by replacing the CE/PE card cage in option 21 or 21E, or the CPU/Network card cage in option 51 with the Core/Network card cage for option 51C)

— Meridian 1 option 61 to option 61C X11 release 19 or higher (accomplished by replacing the two CPU/Network card cages in option 61 with Core/Network card cages for option 61C)

— Meridian 1 option 71 to option 81 X11 release 19, 20, or 21 (accomplished by replacing the two CPU card cages in option 71 with two Core card cages for option 81)

— Meridian 1 options 71 and 81 to option 81C X11 release 21 or higher (accomplished by replacing the two CPU card cages in option 71 or two Core card cages in option 81 with Core/Network card cages for option 81C)

Shelf level upgrade

Shelf level upgrade is not widely used. The only application supported for shelf level upgrade is the Power Monitor/CE Auxiliary shelf used to house 2MB Floppy Disk Units (FDUs), 2MB and 4MB Hard Disk Units (HDUs), 3-1/2 inch Mass Storage Units (MSUs), and DTI/PRI cards.

Index

Meridian 1
Upgrade overview
Upgrading to Meridian 1 system
options

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