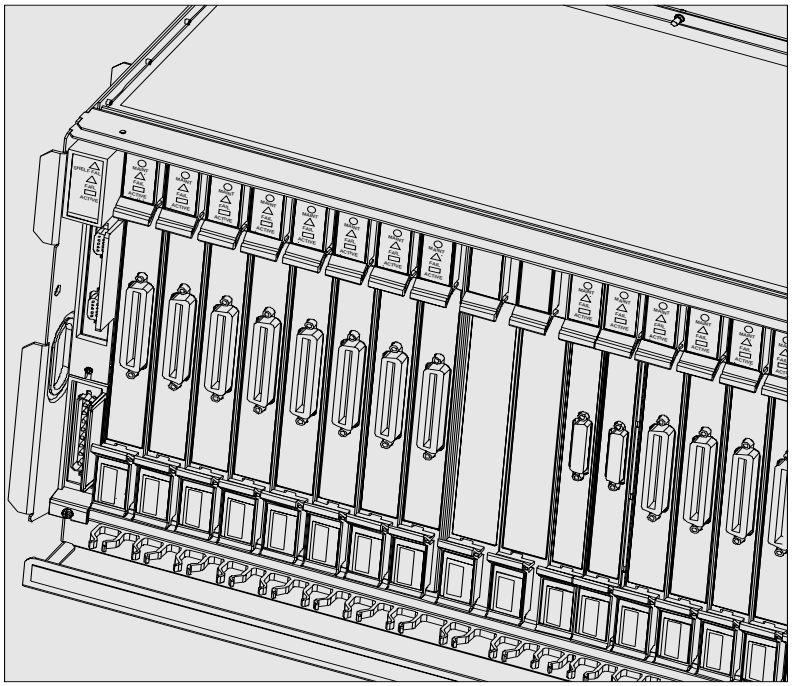
297-8391-302

DMS-100

Universal Edge 9000

Data OAM&P User Guide

NA015 Standard 01.01 March 2001



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Front cover

DMS-100
Universal Edge 9000
Data OAM&P User Guide

Title page

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Publication history

March 2001

NA015 Standard 01.01 release of the document as 297-8391-302. Changes include:

- removed SDSL and 1MM line cards from document, since they are not applicable to the UE 9000 DMS
- added information on DS3 ATM card throughout document

August 2000

AD3.0 Beta 1.1 release of the document. Changes include:

- consolidated ADSL and SDSL provisioning procedures into generic xDSL procedures.
- added information for the Sun workstation throughout this document, where appropriate
- added information for the DS3 ATM core card(s) throughout this document, where appropriate
- added information for the full-rate ADSL and G.Lite multi-circuit line cards (MLCs) throughout this document, where appropriate
- added information for the SDSL-16 MLC throughout this document, where appropriate
- added information for 1-Meg Modem MLC throughout this document, where appropriate
- added alarm browser to Appendix A
- added description on viewing alarm information to Appendix B
- added the color pink to the list of uEMS colors

July 2000

AN18 Standard release of the document, Issue 1.0. Changes include:

- moved Chapter 5, “Routine maintenance of the UE9000 equipment,” Chapter 6, “Troubleshooting,” and Chapter 7, “Events,” to a new book, *UE9000 Data Troubleshooting Guide*
- renamed Chapter 3 from “Routine maintenance” to “Software management”
- revised Appendix D, “MIBS”
- revised description of the Status Bar in Appendix B, “Using uEMS”
- updated referenced documents in “About this Guide”

January 2000

AN17.30 Standard release of the document. Issue 3.0. Changes include:

- updated Procedure 1-6 on page 1-31 and Table 2-2 on page 2-5 to place greater emphasis on using DS1 link number 1 first when provisioning DS1 facilities
- added note to Procedure 1-6 on page 1-31 that quantity of DS1s provisioned in uEMS must match quantity provisioned when ATM is commissioned
- Corrected network element CLUI provisioning command format in Table 2-2 on page 2-5
- added Appendix C - Connecting to INM detailing how to connect from the uEMS to the INM
- added Appendix D - MIBs with information on supported MIBs
- updated the procedures for upgrading ATM and ADSL line cards (now one procedure — Procedure 3-2 on page 3-4) to reflect new load lineups
- corrected Procedure 5-1 on page 5-5
- added “unprov pending” alert information to Table 5-10 on page 5-24
- added section on user permissions to Chapter 4
- modified user events to include new alarms and alarm banner summary in Chapter 7
- added information on adding, removing, and using the new uEMS icon in Chapter 9
- added note to Table 1-3 on page 1-14 regarding the VPI field
- added information in Procedure 1-12 on page 1-50 on forcing a delete of a UE9000 component that is in an “unprov pending” state (step 20)

- added caution in Procedure 6-5 on page 6-29 and Procedure 6-8 on page 6-37 about possibility of losing service on a line card for 5 minutes after reseating it

October 1999

AN17.20 Standard release of the document. Issue 2.0. Changes include:

- rewrote Procedures 4-2 and 4-3
- added note to Procedure 1-6
- added step to Procedure 6-1
- added caution to Procedure 6-6 that scrambling must be disabled on far-end equipment
- added symptom to Table 6-2

August 1999

Initial release of the document, Issue 1.0.

Table of contents

About this document

Audience

The intended audience for this document includes the following groups:

- maintenance technicians and experienced installers
- network administrators

Required reading

Before using this book, you should be familiar with the Release Notes for the Universal Edge 9000 element management system (uEMS). The Release Notes are provided on the uEMS software CD-ROM.

If you have limited experience with Hewlett Packard's™ HP OpenView™ Network Node Manager™ graphical user interface software, you should read Appendices A and B before using this guide.

How to use this guide

This guide is designed to be used after the following events have occurred:

- uEMS software is operational; that is, it has been installed and connected to the network
- The Universal Edge 9000 (UE9000) digital multiple switch (DMS) is installed; cables and power are connected

This guide should be used with the Hewlett Packard HP OpenView Network Node Manager documentation.

Additional documentation

The following additional documentation is available for the Universal Edge 9000 (UE9000) product:

- *UE9000 Data Testing and Troubleshooting Guide*
-
-
-
-
-
-
-
-

For information on the AccessNode UE9000 (D-link) product, see the following documents:

- *UE9000 Pre-installation Quick Reference*
- *UE9000 Installation Quick Reference*
- *UE9000 Adjacent Bay Installation Quick Reference*
- *UE9000 Data System Setup Quick Reference*
- *UE9000 Data Network Design Guidelines*
- *UE9000 Data System Setup Guide*
- *UE9000 Data OAM&P User Guide*
- *UE9000 Voice System Setup*
- *UE9000 LED Quick Reference*
- *UE9000 Voice OAM&P User Guide*

The following documentation is provided with the Universal Edge 9000 element management system (uEMS) software CD-ROM:

- *uEMS Release Notes*

Radio-frequency emissions notice

The following regulatory notice applies to UE9000-DMS equipment:

"This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his own expense."

About the UE9000-DMS

The UE9000-DMS is a line concentrating module (LCM) variant peripheral for the DMS-100. It consists of a bayframe, UE9000 DMS shelf, and circuit packs that provide voice and data services on residential and business loops. The UE9000-DMS supports the following circuit packs:

- ATM core cards (asynchronous transfer mode)
- TDM core card (time division multiplexing)
- SI card (system interface)
- Power I/O card
- Multi-circuit line cards (MLCs)

The UE9000 element management system (uEMS) is the software program that controls the UE9000-DMS. You use uEMS to provision and monitor data and voice services independently from one another. The uEMS runs on a Hewlett-Packard (HP) OpenView workstation and uses a graphical user interface.

Provisioning data services

This chapter contains information on:

- provisioning the Universal Edge 9000 (UE9000) using the UE9000 element management system graphical user interface (uEMS GUI)
- updating a UE9000 component's provisioning information
- removing a UE9000 component from the uEMS database

Note 1: This book does not contain information on the initial setup and commissioning of the UE9000 data network. For this information, see the *UE9000 Data System Setup Guide*.

Note 2: For detailed information on how to engineer the UE9000 data network and Nortel Networks' recommended configurations for the UE9000 data network, see the *UE9000 Data Network Design Guidelines*.

Chapter contents

This chapter contains the following topics:

This chapter contains the following tasks.

Task	See
Provisioning ATM service descriptor groups	Procedure 1-1 on page 1-7
Provisioning ATM service descriptors	Procedure 1-2 on page 1-13
Provisioning a network element	Procedure 1-3 on page 1-22
Provisioning a UE9000 shelf	Procedure 1-4 on page 1-25
Provisioning an ATM core card	Procedure 1-5 on page 1-28
Provisioning DS1 carriers	Procedure 1-6 on page 1-34
Verifying DS3 carrier provisioning	Procedure 1-7 on page 1-38
Provisioning xDSL multi-circuit line cards	Procedure 1-8 on page 1-40
Provisioning xDSL subscriber circuits	Procedure 1-9 on page 1-45
Verifying data service	Procedure 1-10 on page 1-52
Checking ADSL circuit capabilities	Procedure 1-11 on page 1-55
Updating provisioning information	Procedure 1-12 on page 1-58
Force provisioning	Procedure 1-13 on page 1-60
Unprovisioning subscriber cross-connects	Procedure 1-14 on page 1-64
Unprovisioning subscriber circuits	Procedure 1-15 on page 1-67
Unprovisioning xDSL multi-circuit line cards	Procedure 1-16 on page 1-70
Unprovisioning DS1 carriers	Procedure 1-17 on page 1-73
Unprovisioning ATM core cards	Procedure 1-18 on page 1-75
Unprovisioning a UE9000 shelf	Procedure 1-19 on page 1-77
Unprovisioning a network element	Procedure 1-20 on page 1-78
Unprovisioning ATM service descriptors	Procedure 1-21 on page 1-79

—continued—

Task	See
Unprovisioning ATM service descriptor groups	Procedure 1-22 on page 1-80
Viewing service descriptors	Procedure 1-23 on page 1-81
Opening a temporary read-write map	Procedure 1-24 on page 1-82

—end—

Provisioning order

Table 1-1 describes the correct order for provisioning UE9000 components using the uEMS GUI. Provisioning must be done in the order specified in Table 1-1.

Note: If you pre-provision equipment that has not been installed, a "No Hardware" alert appears on the equipment icon.

Table 1-1
UE9000 provisioning order

Step	Task	See
1	ATM service descriptor group	Procedure 1-1 on page 1-7
2	ATM service descriptor	Procedure 1-2 on page 1-13
3	Network element	Procedure 1-3 on page 1-22
4	UE9000 shelf	Procedure 1-4 on page 1-25
5	ATM core card	Procedure 1-5 on page 1-28
6	DS1 carrier	Procedure 1-6 on page 1-34
	OR	
	DS3 carrier	Procedure 1-7 on page 1-38
7	xDSL Multi-circuit line card	Procedure 1-8 on page 1-40
8	xDSL Subscriber circuit	Procedure 1-9 on page 1-45
9	Verify data service	Procedure 1-10 on page 1-52

Maintenance

Use the following procedures for maintenance purposes.

Table 1-2
UE9000 provisioning maintenance procedures

Task	See
Checking ADSL circuit capabilities	Procedure 1-11 on page 1-55
Updating provisioning information	Procedure 1-12 on page 1-58
Force provisioning	Procedure 1-13 on page 1-60

Navigation aids

This section contains aids to help you navigate the uEMS GUI.

Figure 1-1 shows the buttons in the tool bar that are used to navigate between different submaps.

Figure 1-1
Tool bar navigation buttons

UE-1017

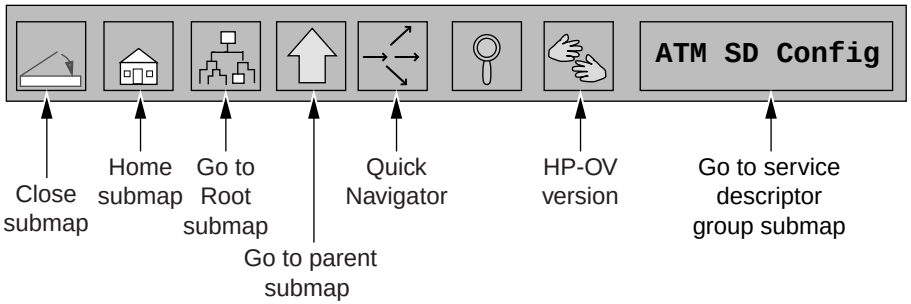


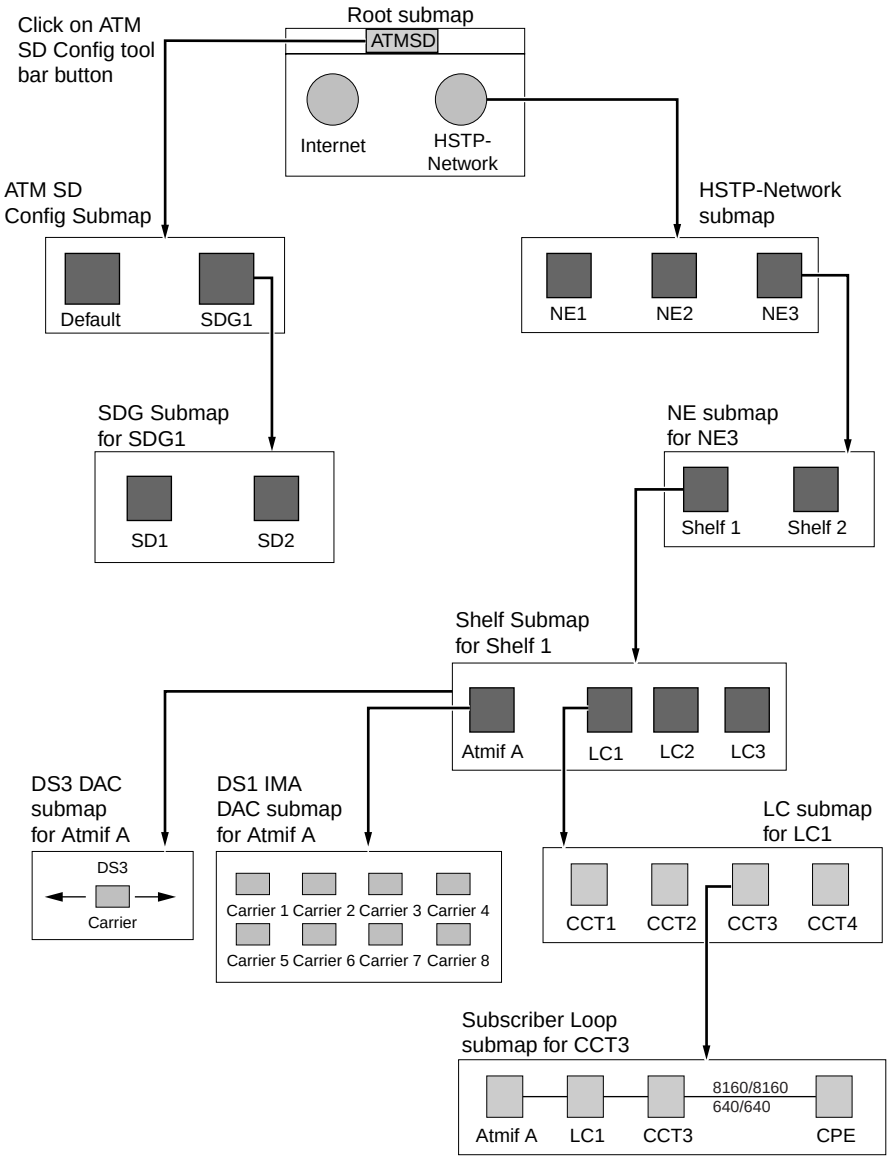
Figure 1-2 on page 1-6 shows:

- the uEMS GUI submap hierarchy
- which symbols are provisioned in each submap
- how to navigate between different submaps

For more information about the uEMS submap hierarchy, see uEMS submap hierarchy on page 4-7.

Figure 1-2
Submap navigation chart

UE-1073



Procedure 1-1
Provisioning ATM service descriptor groups

Use this procedure to provision service descriptor groups (SDG) using the UE9000 element management system (uEMS). If you wish to use the provided default SDG, then you may skip this procedure.

> ***Note:*** Service descriptors (SD) must be provisioned before the subscriber circuits cross-connects (virtual circuits) are provisioned.

When an SD is provisioned, it must be provisioned within an SDG. An SDG can contain any number of SDs. For more information about service descriptors, see Procedure 1-2, “Provisioning ATM service descriptors” on page 1-13.

> ***Note 1:*** The uEMS software automatically provisions one SDG when a map is created. This is the default SDG.
>
> ***Note 2:*** Virtual paths (VP) and SD names within the same SDG cannot have the same value. VPs and SD names with the same value can be provisioned in different SDGs.

Before you begin

Make sure you have all the information required for the provisioning fields shown in Table 1-3 on page 1-12.

Verify the following:

- the uEMS software is running (see Procedure 5-1, “Starting the uEMS graphical user interface” on page 5-2).

  Note: For information on installing the uEMS software, see the *UE9000 Data System Setup Guide*.

- VPs are provisioned in the ATM network
- the VP names on the ATM core card and the ATM switch match

—continued—

Procedure 1-1 (continued)
Provisioning ATM service descriptor groups

Action

Step	Action
1	Go to the Root submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Click the **ATM SD Config** button in the tool bar. *The ATM SD Config submap with the Default symbol appears.* ***Note:*** If you wish to use the default SDG, stop now and go to Procedure 1-2, "Provisioning ATM service descriptors" on page 1-13.
4	From the Edit pull-down menu, select **Add Object**. *The Add Object Palette dialog appears.*
5	In the top field of the dialog, click once on the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
6	In the bottom field of the dialog, drag the **SdGroup** symbol subclass to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*

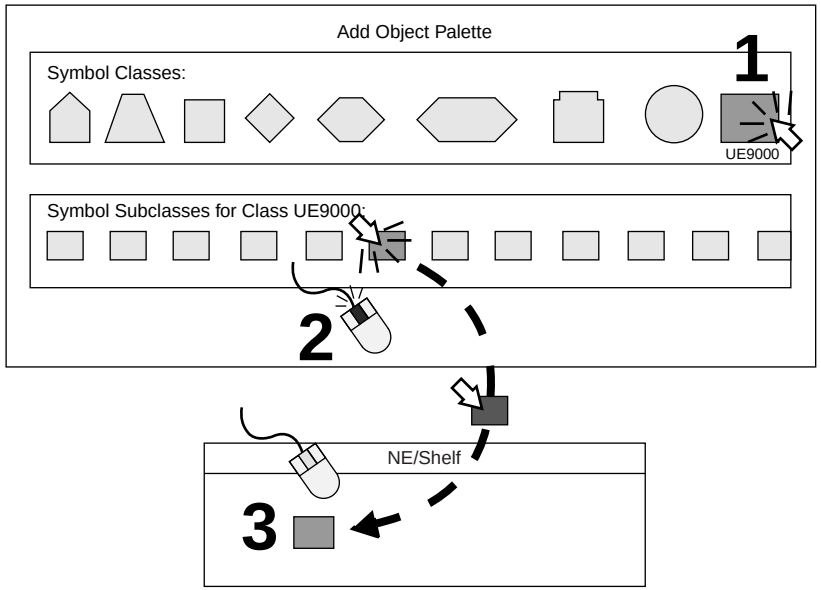
—continued—

Procedure 1-1 (continued)
Provisioning ATM service descriptor groups

Step **Action**

Figure 1-3
Adding an object

UE-1074



7 In the Label field, type the name you want to appear under the SDG symbol.

Note: The Label field is optional. If nothing is entered in this field, the uEMS assigns a label, using the name entered in the Name field (see step 12 on page 1-10).

CAUTION
Risk of database corruption
Do not enter a label that is already in use, or the uEMS database will become corrupted.

—continued—

Procedure 1-1 (continued)
Provisioning ATM service descriptor groups

Step	Action
8	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
9	Complete the provisionable field for the SDG using Table 1-3 on page 1-12.
10	When you have finished, click the **Verify** button and follow any instructions that appear during verification.
11	When verification is complete, click the **OK** button. *The Add Object dialog appears.*
12	Set the selection name (see Figure 1-4). **a.** Click the **Set Selection Name** button. *The Set Selection Name dialog appears.* **b.** In the Name field, click once on the first name in the list. **c.** Click the **OK** button. *The Add Object dialog appears.*

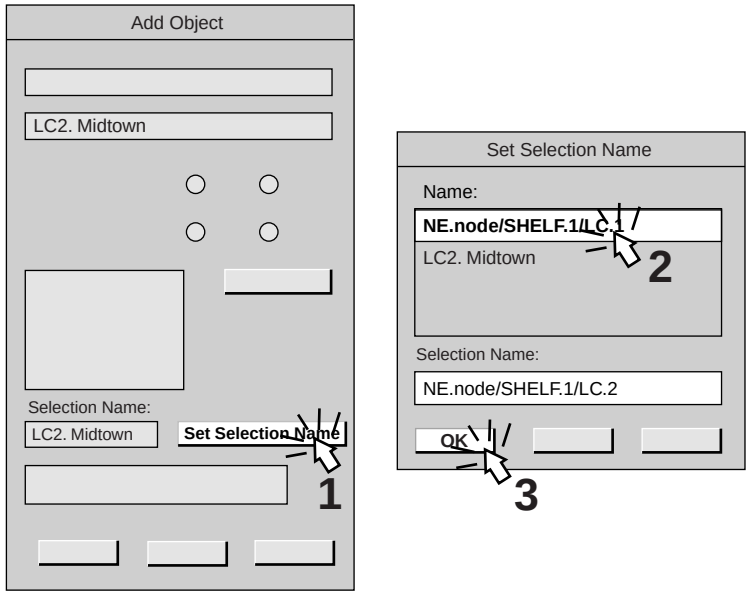
—continued—

Procedure 1-1 (continued)
Provisioning ATM service descriptor groups

Step **Action**

Figure 1-4
Setting the selection name

UE-1019



13 Click the **OK** button.

The Add Object Palette appears.

14 Click the **Close** button.

The SDG symbol appears in the submap.

Note: You can leave the Add Object Palette open when adding multiple objects.

—end—

Table 1-3
Service descriptor group fields

Field	Parameter values	Description
HSTP-Name for SD Group	This is not a provisionable field.	
SD Group name	text string ***Note:*** Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive.	name of the service descriptor group

Procedure 1-2
Provisioning ATM service descriptors

Use this procedure to provision service descriptors (SD) using the UE9000 element management system (uEMS).

> ***Note:*** SDs must be provisioned before the subscriber cross-connects (virtual circuits) are provisioned.

SDs are used by the uEMS to define and identify each virtual path (VP) between the ATM core card and the ATM edge switch. Each VP on the network side of the ATM core card is associated with a SD. An SD contains virtual path identifier (VPI), traffic, and quality of service (QoS) information. When you provision the first subscriber circuit on a shelf with an SD, the uEMS provisions a VP on the network side of the ATM core card using that SD's provisioned values.

SDs simplify the provisioning of subscriber cross-connects. Using SDs, you can define the traffic and QoS characteristics for each subscriber's cross-connects by entering one word, rather than a long list of values.

Defining service descriptors

The main approaches to defining SDs are:

- an SD may be associated with service provider and QoS values. The VP on the network side of the ATM core card transports data traffic with a specific QoS to one service provider.

  An example SD name with this approach is Nortel-Gold. This example VP transports all data traffic addressed to Nortel using the best quality of service.

- an SD may be associated with only QoS values. The VP on the network side of the ATM core card transports all data traffic with a specific QoS. Because no service provider is defined, a service gateway on the other side of the ATM network must route the data traffic to each service provider.

  An example SD name with this approach is Gold. The example VP transports all data traffic using the best quality of service no matter what service provider the data traffic is addressed to.

—continued—

Procedure 1-2 (continued)
Provisioning ATM service descriptors

Requirements

Before beginning this procedure, you must do the following:

- Complete Procedure 1-1, “Provisioning ATM service descriptor groups” on page 1-7.
- Make sure you have all the information required for the provisioning fields. For DS1 IMA ATM, refer to Table 1-4 on page 1-16. For DS3 ATM, refer to Table 1-5 on page 1-18. Default values are in bold type.

Action

Step	Action
1	Go to the service descriptor group (SDG) submap (see Figure 1-2 on page 1-6) by double-clicking on the SDG symbol.
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Select **Add Object** from the Edit pull-down menu. *The Add Object Palette dialog appears.*
4	In the top field of the dialog, click the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
5	In the bottom field of the dialog, drag the **Sd** symbol subclass to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*
6	In the Label field, type the name you want to appear under the SD symbol. ***Note:*** The Label field is optional. If nothing is entered in this field, the uEMS assigns a label, using the name entered in the Name field (see step 11 on page 1-15).

—continued—

Procedure 1-2 (continued)
Provisioning ATM service descriptors

Step	Action

CAUTION
Risk of database corruption
Do not enter a label that is already in use, or the uEMS database will become corrupted.

7 Double-click **UE9000 Map Application** in the Object Attributes field.

The Add Object - Set Attributes dialog appears.

CAUTION
Loss of service
The values provisioned for each SD must match the values provisioned for the corresponding VP in the ATM network. If the SD and VP values do not match, ATM traffic from the UE9000 shelf will not be passed through the network.

8 Complete the provisionable fields for the SD using Table 1-4 on page 1-16 for DS1 IMA and Table 1-5 on page 1-18 for DS3.

9 When you have finished, click the **Verify** button and follow any instructions that appear during verification.

10 When verification is complete, click the **OK** button.

The Add Object dialog appears.

11 Set the selection name (see Figure 1-4 on page 1-11).

a. Click the **Set Selection Name** button.

The Set Selection Name dialog appears.

b. In the Name field, click once on the first name in the list.

c. Click the **OK** button.

The Add Object dialog appears.

12 Click the **OK** button.

The Add Object Palette appears.

—continued—

Procedure 1-2 (continued)
Provisioning ATM service descriptors

Step	Action
13	Click the **Close** button. *The SD symbol appears in the submap.* ***Note:*** You can leave the Add Object Palette open when adding multiple objects.
14	To close the SDG submap, select: **Map -> Close Submap**

—end—

Table 1-4
DS1 Service descriptor fields

Field	Parameter values	Description
HSTP-Name for Service Descriptor	This is not a provisionable field.	
SD name	text string	name of the service descriptor
	Note: This parameter can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive.	
VPI	**0** to 255	virtual path identifier. This is the address of the virtual path that the SD is cross-connected to.
	Note: Do not add a “0” or “0x0” before the number you enter in the VPI field. When you add a “0” or “0x0” before the number, an incorrect VPI is provisioned and service is lost. A “0” before a number identifies the number as an octal number. A “0x0” before a number identifies the number as a hexadecimal number. The uEMS workstation then converts the number to its decimal equivalent. For example, when you enter 012, the uEMS workstation reads this number as an octal number and converts the number to its decimal value of 10. Correct: 12, 255 Incorrect: 012, 0255, 0x012	

—continued—

Table 1-4
DS1 Service descriptor fields (continued)

Field	Parameter values	Description
(Downstream/ Upstream) Service Category	service class for the downstream/upstream virtual path	
	Unset	not available
	ubr	unspecified bit rate
(Downstream/ Upstream) Traffic Descriptor	quality of service (QoS) parameter	
	Unset	not available
	atmNoClpTaggingNoScr	no cell loss priority tagging, no sustained cell rate (used with ubr Service Category value only) = does not attempt to manage the ATM traffic flow.
	atmNoClpNoScrCdvt	no cell loss priority tagging, no sustained cell rate, cell delay variation tolerance
(Downstream/ Upstream) Peak cell rate (cells/s)	1 to **28744**	defines the peak cell rate in cells per second (specify for both upstream and downstream). This value is calculated based on the bandwidth of the DS1.
(Downstream/ Upstream) CDVT (microseconds)	**0**	cell delay variation tolerance (specify for both upstream and downstream)
—end—		

Table 1-5
DS3 Service descriptor fields

Field	Parameter values	Description
HSTP-Name for Service Descriptor	This is not a provisionable field.	
SD name	text string	name of the service descriptor
	Note: This parameter can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive.	
VPI	**0** to 255	virtual path identifier. This is the address of the virtual path that the SD is cross-connected to.
	Note: Do not add a “0” or “0x0” before the number you enter in the VPI field. When you add a “0” or “0x0” before the number, an incorrect VPI is provisioned and service is lost. A “0” before a number identifies the number as an octal number. A “0x0” before a number identifies the number as a hexadecimal number. The uEMS workstation then converts the number to its decimal equivalent. For example, when you enter 012, the uEMS workstation reads this number as an octal number and converts the number to its decimal value of 10. Correct: 12, 255 Incorrect: 012, 0255, 0x012	
(Downstream/ Upstream) Service Category	service class for the downstream/upstream virtual paths	
	Unset	not available
	ubr	unspecified bit rate
	ubrPcr	unspecified bit rate with peak cell rate
	ubrMcr	unspecified bit rate with minimum cell rate
	cbr	constant bit rate
	rtVbr	real-time variable bit rates

—continued—

Table 1-5
DS3 Service descriptor fields (continued)

Field	Parameter values	Description
UBR Service Category traffic parameters		
(Downstream/ Upstream) Traffic Descriptor	quality of service (QoS) parameter	
	Unset	not available
	atmNoClpTaggingNoScr	no cell loss priority tagging, no sustained cell rate; does not attempt to manage the ATM traffic flow
	atmNoClpNoScrCdvt	no cell loss priority tagging, no sustained cell rate, cell delay variation tolerance
(Downstream/ Upstream) Peak cell rate (cells/s)	1 to **28744**	defines the peak cell rate in cells per second
(Downstream/ Upstream) (CDVT) (microseconds)	100 - best effort	cell delay variation tolerance (it is not recommended to change from the default value)
UBR-PCR and UBR-MCR Service Category traffic parameters		
(Downstream/ Upstream) Traffic Descriptor	quality of service (QoS) parameter	
	Unset	not available
	atmClpNoTaggingMcr	cell loss priority tagging with minimum cell rate guaranteed
(Downstream/ Upstream) Peak cell rate (cells/s)	1 to **28744**	defines the peak cell rate in cells per second
(Downstream/ Upstream) (CDVT) (microseconds)	100 - best effort	cell delay variation tolerance (it is not recommended to change from the default value)
(Downstream/ Upstream) Minimum cell rate (cells/s)	**0** to 100604	defines the minimum guaranteed cell rate by network

—continued—

Table 1-5
DS3 Service descriptor fields (continued)

Field	Parameter values	Description
CBR Service Category traffic parameters		
(Downstream/ Upstream) Traffic Descriptor	quality of service (QoS) parameter	
	Unset	not available
	atmClpTransparentNoScr	Conformance measurement is done through the use of a continuous state leaky bucket algorithm at the ATM network access node.
(Downstream/ Upstream) Peak cell rate (cells/s)	1 to **28744**	defines the peak cell rate in cells per second
(Downstream/ Upstream) (CDVT) (microseconds)	100 - best effort	cell delay variation tolerance (it is not recommended to change from the default value)
rt-VBR Service Category traffic parameters		
(Downstream/ Upstream) Traffic Descriptor	quality of service (QoS) parameter	
	Unset	not available
	atmClpTransparentScr	Conformance measurement is done through the use of a continuous state leaky bucket algorithm that measures the cell traffic coming from the user against the parameters specified for a particular service contract.
(Downstream/ Upstream) Peak cell rate (cells/s)	1 to **28744**	defines the peak cell rate in cells per second
(Downstream/ Upstream) (CDVT) (microseconds)	100 - best effort	cell delay variation tolerance (it is not recommended to change from the default value)

—continued—

Table 1-5
DS3 Service descriptor fields (continued)

Field	Parameter values	Description
(Downstream/ Upstream) Sustainable cell rate (SCR) (cells/s)	**0** to 100604	defines the upper edge of the average cell rate that will be transmitted
(Downstream/ Upstream) Maximum burst size (MBS) (cells)	**0** to 100604	used with the SCR to specify the number of cells per second that can be transmitted at the peak rate and still be in conformance with the traffic management algorithm
—end—		

Procedure 1-3
Provisioning a network element

Use this procedure to provision a network element using the UE9000 element management system (uEMS).

Before you begin

Ensure that you have all the information required for the provisioning fields shown in Table 1-6 on page 1-24.

Action

Step	Action
1	Go to the HSTP-Network submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	From the Edit pull-down menu, select **Add Object**. *The Add Object Palette dialog appears.*
4	In the top field of the dialog, click once on the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
5	In the bottom field of the dialog, drag the **NE** symbol subclass to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*
6	In the Label field, type the name you want to appear under the NE symbol. ***Note:*** The Label field is optional. The uEMS assigns a label if this field is empty.

—continued—

Procedure 1-3 (continued)
Provisioning a network element

Step	Action

CAUTION
Risk of database corruption
Do not enter a label that is already in use, or the uEMS database will become corrupted.

7 Double-click **UE9000 Map Application** in the Object Attributes field.

The Add Object - Set Attributes dialog appears.

8 Complete the provisionable fields for the NE you are provisioning. See Table 1-6 on page 1-24.

9 When you have finished, click the **Verify** button and follow any instructions that appear during verification.

10 When verification is complete, click the **OK** button.

The Add Object dialog appears.

11 Set the selection name (see Figure 1-4 on page 1-11).

a. Click the **Set Selection Name** button.

The Set Selection Name dialog appears.

b. In the Name field, click once on the first name in the list.

c. Click the **OK** button.

The Add Object dialog appears.

12 Click the **OK** button.

The Add Object Palette appears.

13 Click the **Close** button

The symbol for the NE appears in the submap.

Note: You can leave the Add Object Palette open when adding multiple objects.

—continued—

Procedure 1-3 (continued)
Provisioning a network element

Step	Action
Troubleshooting	
14	Check the provisioned UE9000 component symbol for a shadow.

If the symbol is	Then
shadowed	The UE9000 component was added to the uEMS database incorrectly. • Delete the symbol by selecting **Delete symbol** from the right-click menu. • Provision the UE9000 component again. • Check for uEMS trouble events. See the *UE9000 Data Testing and Troubleshooting Guide* for more information.
not shadowed	You are finished with this procedure.

—end—

Table 1-6
Network element fields

Field	Parameter values	Description
HSTP-Name for the NE	This is not a provisionable field.	
Network Element ID	text string ***Note:*** This parameter can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive.	name of the NE
Network Element Type	• UE-DMS • AccessNode	• for UE9000 shelf in UE9000-DMS • for UE9000 shelf in AccessNode (digital loop carrier)

Procedure 1-4
Provisioning a UE9000 shelf

Use this procedure to provision a UE9000 shelf using the UE9000 element management system (uEMS) graphical user interface (GUI).

Before you begin

Ensure that you have all the information required for the provisioning fields shown in Table 1-7 on page 1-27.

Action

Step	Action
1	Go to the NE submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	From the Edit pull-down menu, select **Add Object**. *The Add Object Palette dialog appears.*
4	In the top field of the dialog, click once on the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
5	In the bottom field of the dialog, drag the **Shelf** symbol subclass to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*
6	In the Label field, type the name you want to appear under the UE9000 component symbol. ***Note:*** The Label field is optional. The uEMS assigns a label if this field is empty.

—continued—

Procedure 1-4 (continued)
Provisioning a UE9000 shelf

Step	Action

CAUTION
Risk of database corruption
Do not enter a label that is already in use, or the uEMS database will become corrupted.

7 Double-click **UE9000 Map Application** in the Object Attributes field.

The Add Object - Set Attributes dialog appears.

8 Complete the provisionable fields for the UE9000 shelf you are provisioning. See Table 1-7 on page 1-27.

9 When you have finished, click the **Verify** button and follow any instructions that appear during verification.

10 When verification is complete, click the **OK** button.

The Add Object dialog appears.

11 Set the selection name (see Figure 1-4 on page 1-11).

a. Click the **Set Selection Name** button.

The Set Selection Name dialog appears.

b. In the Name field, click once on the first name in the list.

c. Click the **OK** button.

The Add Object dialog appears.

12 Click the **OK** button.

The Add Object Palette appears.

13 Click the **Close** button

The symbol for the shelf appears in the submap.

Note: You can leave the Add Object Palette open when adding multiple objects.

—continued—

Procedure 1-4 (continued)
Provisioning a UE9000 shelf

Step	Action

Troubleshooting

14 Check the provisioned UE9000 component symbol for a shadow.

If the symbol is	Then
shadowed	The UE9000 component was added to the uEMS database incorrectly. • Delete the symbol by selecting **Delete symbol** from the right-click menu. • Provision the UE9000 component again. • Check for uEMS trouble events. See the *UE9000 Data Testing and Troubleshooting Guide* for more information.
not shadowed	You are finished with this procedure.

—end—

Table 1-7
UE9000 shelf fields

Field	Parameter values	Description
HSTP-Name for the shelf	This is not a provisionable field.	
Shelf ID	text string ***Note:*** This parameter can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive.	name of the UE9000 shelf
HSTP name of the Service Descriptor Group for this shelf	text string	HSTP name of the service descriptor group assigned to the UE9000 shelf

Procedure 1-5
Provisioning an ATM core card

Use this procedure to provision an ATM core card using the UE9000 element management system (uEMS).

Note: The first ATM core card (DS1 IMA or DS3) must be provisioned in slot 10 (Atmif A) of the UE9000 shelf. The standby ATM core card (DS3 only), if installed, is provisioned in slot 11 (Atmif B).

Before you begin

Ensure that you have all the information required for the provisioning fields shown in Table 1-8 on page 1-31. Default values are in bold type.

Action

Step	Action
1	Go to the shelf submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	From the Edit pull-down menu, select **Add Object**. *The Add Object Palette dialog appears.*
4	In the top field of the dialog, click once on the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
5	In the bottom field of the dialog, drag the appropriate **Atmif** (DS1 or DS3) symbol subclass to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*
6	In the Label field, type the name you want to appear under the UE9000 component symbol. ***Note:*** The Label field is optional. The uEMS assigns a label if this field is empty.

—continued—

Procedure 1-5 (continued)
Provisioning an ATM core card

Step	Action

CAUTION
Risk of database corruption
Do not enter a label that is already in use, or the uEMS database will become corrupted.

7 Double-click **UE9000 Map Application** in the Object Attributes field.

The Add Object - Set Attributes dialog appears.

8 Complete the provisionable fields for the ATM core card. See Table 1-8 on page 1-31 (default values are in bold type).

9 When you have finished, click the **Verify** button and follow any instructions that appear during verification.

10 When verification is complete, click the **OK** button.

The Add Object dialog appears.

11 Set the selection name (see Figure 1-4 on page 1-11).

a. Click the **Set Selection Name** button.

The Set Selection Name dialog appears.

b. In the Name field, click once on the first name in the list.

c. Click the **OK** button.

The Add Object dialog appears.

12 Click the **OK** button.

The Add Object Palette appears.

13 Click the **Close** button

The symbol for the ATM core card appears in the submap.

Note: You can leave the Add Object Palette open when adding multiple objects.

14 Repeat steps 1 through 13 for the second DS3 ATM core card, if applicable.

—continued—

Procedure 1-5 (continued)
Provisioning an ATM core card

Step	Action

Note 1: The UE9000 supports two DS3 ATM core cards (one “active”, one optional “standby”) per shelf. Only one DS1 IMA ATM core card is supported per shelf.

Note 2: If you pre-provision equipment that has not been installed, an alert bubble appears near the symbol to indicate that there is no hardware.

Note 3: The *UE9000 Data System Setup Guide* describes how to commission and cold restart the ATM core card. If this process has already been completed, then the uEMS automatically discovers the ATM core card and adds the ATM core card symbol to the submap.

If two DS3 ATM core cards are installed in the shelf, the first card to signal that is ready will be the “active” card, and the other will be the “standby” card. The “standby” DS3 ATM core card is indicated by an “S” label on the Atmif DS3 symbol.

If the ATM core card has been commissioned but not cold restarted, see the *UE9000 Data Testing and Troubleshooting Guide* for the restarting procedure.

Troubleshooting

15 Check the provisioned UE9000 component symbol for a shadow.

If the symbol is	Then
shadowed	The UE9000 component was added to the uEMS database incorrectly. • Delete the symbol by selecting **Delete symbol** from the right-click menu. • Provision the UE9000 component again. • Check for uEMS trouble events. See the *UE9000 Data Testing and Troubleshooting Guide* for more information.
not shadowed	You are finished with this procedure.

—end—

Table 1-8
ATM core card fields

Field	Parameter values	Description
HSTP-Name for the ATMIF	These are not provisionable fields.	
Physical Slot number (for reference)		
Provisioned Card Type		
Actual Card Type		
--------- Values to Provision-------- --------- Identity Category --------		
Logical card ID	the UE9000 logical card number that the ATM core card occupies	
	Unset	not available
	A	active ATM core card (physical slot 10)
	B	standby (DS3 only) ATM core card (physical slot 11)
IP Address	IP address in decimal format Example: 192.67.8.35	IP address of the ATM core card (used by uEMS t6o communicate with the card)
Atmif Load Name	The provisioned ATM core card software load. Example: HW203bl	The ATM core card software load is stored in this directory path on the uEMS workstation: /etc/opt/OV/share/loads/Nortel/HSTP/
Initial Administrative State	state of the ATM core card at start-up	
	Unset	not available
	locked	out-of-service
	unlocked	in-service

—continued—

Table 1-8
ATM core card fields (continued)

Field	Parameter values	Description
SNMP Read Community	text string (Default = **public**) ***Note:*** This is a read-only field.	password for read access to the ATM core card
SNMP Write Community	text string (Default = **private**) ***Note:*** This is a read-only field.	password for read-write access to the ATM core card
Additional fields for DS3 ATM core cards		
Bandwidth Oversubscription Factor for CBR	**1** to 100	amount by which connections provisioned for constant bit rate (CBR) may be oversubscribed on a physical link Example: a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.
Bandwidth Oversubscription Factor for rt-VBR	**1** to 100	amount by which connections provisioned for real-time variable bit rate (rt-VBR) may be oversubscribed on a physical link Example: a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.
Bandwidth Oversubscription Factor for UBR-MCR	**1** to 100	amount by which connections provisioned for unspecified bit rate with minimum cell rate (UBR-MCR) may be oversubscribed on a physical link Example: a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.

—continued—

Table 1-8
ATM core card fields (continued)

Field	Parameter values	Description
Expected TxCell Throughput (cells/second)	0 to 2147483647 **100000**	maximum transmit bandwidth configured for this interface for use with connection admission control (CAC)
Expected RxCell Throughput (cells/second)	0 to 2147483647 **100000**	maximum receive bandwidth configured for this interface for use with connection admission control (CAC)
—end—		

Procedure 1-6
Provisioning DS1 carriers

Use this procedure to provision DS1 carriers using the UE9000 element management system (uEMS).

When a DS1 IMA ATM core card is provisioned, eight DS1 symbols are added to the data access card (DAC) submap but are not provisioned.

> ***Note:*** Ensure that the far-end equipment does not have scrambling enabled on the IMA interface. Scrambling is an ATM parameter that UE9000 equipment does not support over the DS1 IMA links because it is not required at T1 speeds. If scrambling is enabled, the ATM cells experience payload corruption, resulting in CRC errors at the CPE.

The carriers that were provisioned through the local craft interface (LCI) when the DS1 IMA ATM core card was commissioned will be auto-provisioned on the uEMS after the ATM core card finishes rebooting and starts communicating with uEMS. You may need to wait a few minutes for the ATM to send the carrier provisioning information to the uEMS. See the *UE9000 Data System Setup Guide*, for more information on commissioning the DS1 IMA ATM core card.

Before you begin

Ensure that you have all the information required for the provisioning fields shown in Table 1-9 on page 1-37. Default values are in bold type.

Action

Step	Action
1	Go to the DAC submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.

—continued—

Procedure 1-6 (continued)
Provisioning DS1 carriers

Step	Action

CAUTION
Loss of service
To avoid loss of or erratic service, always provision the DS1s in sequential order, starting with DS1 link number 1. DS1 link number 1 must always be the IMA timing reference link due to differences between the IMA protocol implementation on the ATM IF card and the IMA protocol implementation on other ATM devices.

If a loss of service occurs on DS1 link number 1, the ATM IF card will transfer timing to another link. However, users may see erratic behavior because of a loss of timing synchronization between the UE and the far-end ATM device.

Note: The current ATM IF card hardware and software support IMA version 1.0.

3 Right click the carrier symbol you want to provision. Select **Provision/Edit** from the symbol's pop-up menu.

The Object Description dialog appears.

4 Double-click **UE9000 Map Application** in the Object Attributes field.

The Add Object - Set Attributes dialog appears.

—continued—

Procedure 1-6 (continued)
Provisioning DS1 carriers

Step	Action

CAUTION
Loss of service
The values provisioned for each DS1 facility must match the DS1 values provisioned on the ATM edge switch and other DS1 inverse multiplexing over ATM (IMA) devices in the ATM network. If these values do not match, ATM traffic from the UE9000 shelf is not passed through the network.

Note: If a mapping table exists at the ATM edge switch, the values may not match, but the ATM edge switch can still pass ATM traffic.

5 Complete the provisionable fields for the DS1 you are provisioning. See Table 1-9 on page 1-37 (default values are in bold type).

6 When you have finished, click the **Verify** button and follow any instructions that appear during verification.

7 When verification is complete, click the **OK** button.

The Object Description dialog appears.

8 Click the **OK** button.

The DS1 carrier's parameters are set.

9 Repeat this procedure for each DS1 carrier you want to provision.

—end—

Table 1-9
DS1 carrier fields

Field	Parameter values	Description
HSTP-Name for the DS1 Link	This is not a provisionable field.	
Initial Administrative State	state of the DS1 carrier at start-up	
	Unset	not available
	locked	out-of-service
	unlocked	in-service
Frame Format	framing format of the DS1 path	
	Unset	not available
	dsx1ESF	extended superframe
	dsx1D4	D-4 framing
Line Coding	DS1 line encoding	
	Unset	not available
	dsx1B8ZS	bipolar with eight zero substitution
	dsx1AMI	alternate mark inversion
Transmit Clock Source	primary synchronization clock for the DS1	
	Unset	not available
	loopTiming	the transmit DS1 signal is derived from the receive DS1 signal
	localTiming	in this mode, the DS1 signal is derived form an oscillator on the ATM core card
	throughTiming	for the UE9000, there is no difference between through timing and loop timing

Procedure 1-7
Verifying DS3 carrier provisioning

Use this procedure to verify the DS3 carrier provisioning. When a DS3 ATM core card is provisioned, a DS3 carrier symbol is added to the DAC submap.

The DS3 carrier is provisioned through the local craft interface (LCI). The DS3 ATM core card will be auto-provisioned on the uEMS after the DS3 ATM core card finishes rebooting and starts communicating with uEMS. You may need to wait a few minutes for the ATM to send the carrier provisioning information to the uEMS. See the for more information.

Before you begin

The provisioning fields shown in Table 1-10 on page 1-39 are read only. Default values are in bold type.

Action

Step	Action
1	Go to the DAC submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Right click the DS3 carrier symbol. Select **Provision/Edit** from the symbol’s pop-up menu. *The Object Description dialog appears.*
4	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.* Table 1-10 on page 1-39 lists the provisionable fields for the DS3 carrier (default values are in bold type).These fields are read only through the uEMS. To change any of the fields, you must use the LCI. See the *UE9000 Data System Setup Guide* for more information. **—end—**

Table 1-10
DS3 carrier fields

Field	Parameter values	Description
HSTP-Name for the DS3 Link	This is not a provisionable field.	
Initial Administrative State	state of the DS3 carrier at start-up	
	Unset	not available
	locked	out-of-service
	unlocked	in-service
Carrier DS3 ConvSublayerMap	controls DS3 framing mode	
	phyLayerConvPr	activates the transmission of 12 rows of ATM cells every 125 microseconds
	direct	cell delineation is used to locate the cell boundaries
Frame Format	framing format of the DS3 path	
	Unset	not available
	dsx3CBITParity	for ANSI T1.107a-1989
	dsx3M23	for ANSI T1.107-1988
Line Coding	DS3 line encoding	
	Unset	not available
	dsx3B3Z	type of zero code suppression
Transmit Clock Source	primary synchronization clock for the DS1	
	Unset	not available
	loopTiming	the recovered receive clock is used as the transmit clock
	localTiming	the internal free-running clock is used as the transmit clock
	throughTiming	the recovered receive clock from another interface is used as the transmit clock

Procedure 1-8
Provisioning xDSL multi-circuit line cards

Use this procedure to provision the xDSL multi-circuit line cards using the UE9000 element management system (uEMS).

When you provision and cold restart an ATM core card, uEMS automatically discovers the data line cards. The uEMS then adds the line card symbols on the shelf submap.

> ***Note:*** Although uEMS displays symbols for voice-only line cards, you cannot move, provision, or delete voice-only line cards in uEMS. See the *UE9000 Voice OAM&P User Guide* for more information.

Before you begin

Make sure you have all the information required for the provisioning fields shown in Table 1-11 on page 1-43. Default values are in bold type.

Action

Step	Action
1	Go to the shelf submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Proceed according to the following table.

If	Then go to
you need to add a line card symbol, such as when pre-provisioning	step 4
the card is already installed	step 8

4	From the Edit pull-down menu, select **Add Object**. *The Add Object Palette dialog appears.*

—continued—

Procedure 1-8 (continued)
Provisioning xDSL multi-circuit line cards

Step	Action
5	In the top field of the dialog, click once on the **UE9000** symbol class. *The subclasses for the UE9000 symbol class appear in the bottom field of the dialog.*
6	In the bottom field of the dialog, drag the appropriate line card symbol subclass (i.e. ADSL4+4 LC) to the submap screen using the middle mouse button (see Figure 1-3 on page 1-9). When the cursor is in the submap screen, release the middle mouse button. *The Add Object dialog appears.*
7	In the Label field, type the name you want to appear under the line card symbol. ***Note:*** The Label field is optional. If nothing is entered in this field, the uEMS assigns a label, using the name entered in the Name field (see step 13). **CAUTION** **Risk of database corruption** Do not enter a label that is already in use, or the uEMS database will become corrupted.
8	Right click the line card symbol you want to provision. Select **Provision/Edit** from the symbol's pop-up menu. *The Object Description dialog appears.*
9	Double-click **UE9000 Map Application** in the Object Attributes field. *The Attributes dialog appears.*
10	Complete the provisionable fields for the line card. See Table 1-11 on page 1-43 (default values are in bold type).
11	When you have finished, click the **Verify** button and follow any instructions that appear during verification.
12	When verification is complete, click the **OK** button. *The Object Description dialog appears.*

—continued—

Procedure 1-8 (continued)
Provisioning xDSL multi-circuit line cards

Step	Action
13	Set the selection name (see Figure 1-4 on page 1-11).
	a. Click the **Set Selection Name** button.
	The Set Selection Name dialog appears.
	b. In the Name field, click once on the first name in the list.
	c. Click the **OK** button.
	The Object Description dialog appears.
14	Click the **OK** button.
	The line card symbol changes color when the equipment is in-service.
	Note: If you pre-provision equipment that has not been installed, annotation text appears on the symbol to indicate that there is no hardware. See "Annotation text and alert bubbles" on page 4-30 for more information.
Changing the Line Card Load Default	
	In rare cases, you may want to change the line card default. Do this as follows:
15	From the line card's right-click menu, select **Change Line Card Provisioned Load**.
	The Load Selection Popup dialog appears.
16	Select a load from the list of available loads and click **OK**.
	The provisioned line card load is changed. The line card will receive the new load the next time it is restarted.
17	Repeat this procedure for each line card that you want to provision.

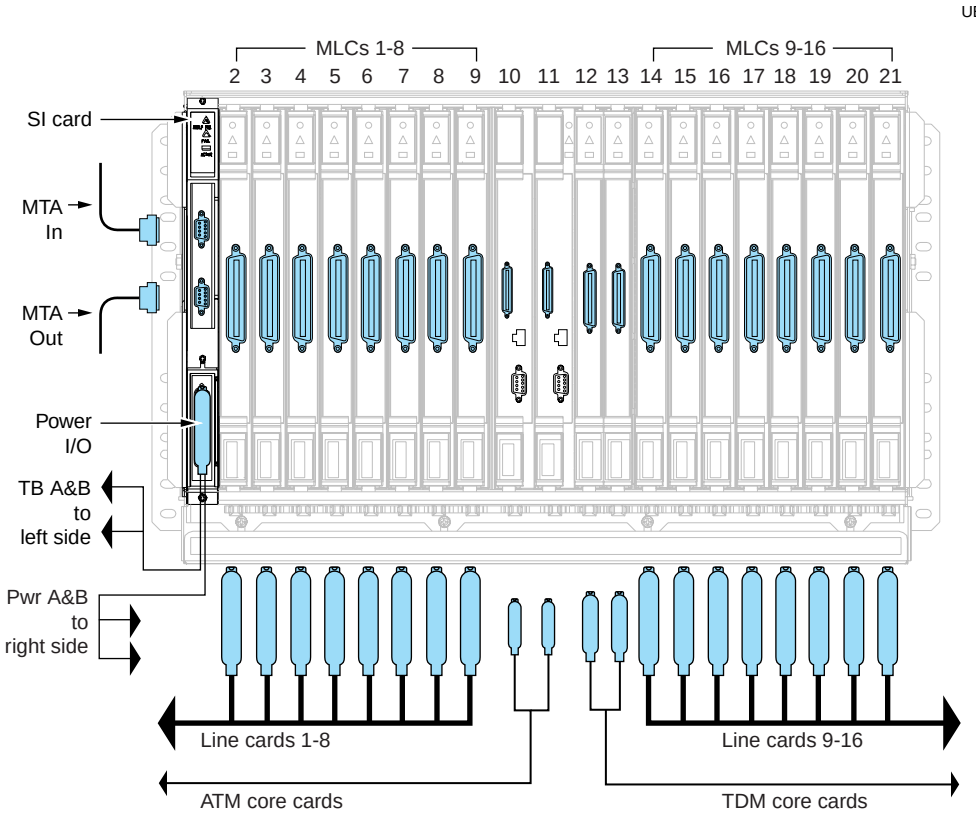
—end—

Table 1-11
ADSL multi-circuit line card fields

Field	Parameter values	Description
HSTP-Name for the Line Card	This is not a provisionable field.	
Physical slot number (for reference)	This is not a provisionable field.	
Provisioned Card Type	This is not a provisionable field.	
Actual Card Type	This is not a provisionable field.	
Logical Line Card Number of the ADSL MLC	1 to 16	(see Figure 1-5 on page 1-44)
Logical Line Card Number for UE9000 DMS	0 to 15	(see Figure 1-5 on page 1-44)
Line Card Load Name	The provisioned line card software load. Example: LC4x4FR02.0314 The line card software load is stored in this directory path on the uEMS workstation: /etc/opt/OV/share/loads/Nortel/HSTP/	
Initial Administrative State	state of the ADSL MLC at start-up	
	Unset	not available
	locked	out-of-service
	unlocked	in-service

Figure 1-5 shows the logical line card assignments (MLC numbers) on the UE9000 shelf.

Figure 1-5
Logical slot numbers for multi-circuit line cards (MLCs) on a UE9000 shelf



Procedure 1-9
Provisioning xDSL subscriber circuits

Use this procedure to provision either full-rate or xDSL subscriber circuits using the UE9000 element management system (uEMS). When you provision an xDSL multi-circuit line card (MLC), the uEMS automatically adds the subscriber circuit symbols on the LC submap. However, you must provision each circuit manually.

Before you begin

Make sure you have all the information required for the provisioning fields shown in Table 1-12 on page 1-46. Default values are in bold type.

Action

Step	Action
1	Go to the LC submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Right click the circuit symbol you want to provision. Select **Provision/Edit** from the symbol's pop-up menu. *The Object Description dialog appears.*
4	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
5	Complete the provisionable fields for the circuit you are provisioning. See Table 1-12 beginning on page 1-46 (default values are in bold type).
6	When you have finished, click the **Verify** button and follow any instructions that appear during verification.
7	When verification is complete, click the **OK** button. *The Object Description dialog appears.*

—continued—

Procedure 1-9 (continued)
Provisioning xDSL subscriber circuits

Step	Action
8	Click the **OK** button. *The facility's parameters are changed.*
9	Repeat this procedure for each facility that you want to provision.

—end—

Table 1-12
ADSL subscriber circuit fields

Field	Parameter values	Description
HSTP-Name for the Subscriber Circuit	This is not a provisionable field.	
Initial Administrative State	state of the ADSL subscriber circuit at start-up	
	Unset	not available
	locked	out-of-service
	unlocked	in-service
ADSL Circuit Enabling	allows the user to select a specific type of ADSL service; indicates the mode in which the customer premise equipment (CPE) is allowed to train. See Procedure 1-11 on page 1-55 for more information.	
	autodetect	permits the circuit to train up in any of the valid ADSL modes; the actual link mode is reported automatically to the user when the link is up
	t1.413ANSI	full-rate ADSL (refers to ANSI standard T1.1413)
	glite	G.Lite (splitterless) ADSL (refers to ITU-T standard G.992.2); uses same modulation techniques as T1.413

—continued—

Table 1-12
ADSL subscriber circuit fields (continued)

Field	Parameter values	Description
Enable Auto Fast Retrain	Enables or disables automatic fast retrains; applies only to G.Lite	
	enabled	allows fast retrains to be performed automatically when an on- or off-hook condition occurs
	disabled	disables fast retrain
Profile Selection Tolerance (dB)	determines how strictly profiles are selected during a fast retrain; the delta is to be met with a given profile between measured SNR margin at the time of fast retrain, target SNR margin, and the stored profile SNR margin, on a per carrier basis; for G.Lite only. ***Note:*** Changing the profile selection tolerance may result in a full retrain of the circuit. Range is 0 to 15 dB. Default is 3 dB. ***Note:*** A higher value increases the possibility of a profile match, but may result in sub-optimal performance. A lower value will decrease the possibility of a profile match, but may result in more full link retrains than necessary.	
Maximum Downstream Speed (kb/s)	allows the service provider to limit the maximum data rate delivered to the subscriber; configurable in 32 kbit/s intervals	
	Unset	not available
	32 to **13380**	maximum downstream data rate in kbit/s
Maximum Upstream Speed (kb/s)	indicates the maximum data rate the subscriber can send data upstream; configurable in 32 kbit/s intervals	
	Unset	not available
	32 to **1440**	maximum upstream data rate in kbit/s
Bandwidth Oversubscription Factor for CBR	amount by which connections provisioned for constant bit rate (CBR) may be oversubscribed on a physical link For example, a value of 2 means that twice the amount of physical bandwidth may be allocated by the provisioned connections.	
	1 to 100	see general description and example above

—continued—

Table 1-12
ADSL subscriber circuit fields (continued)

Field	Parameter values	Description
Bandwidth Oversubscription Factor for rt-VBR	amount by which connections provisioned for real-time variable bit rates (rt-VBR) may be oversubscribed on a physical link For example, a value of 2 means that twice the amount of physical bandwidth may be allocated by the provisioned connections.	
	1 to 100	see general description and example above
Bandwidth Oversubscription Factor for UBR-MCR	amount by which connections provisioned for unspecified bit rate with minimum cell rate (UBR-MCR) may be oversubscribed on a physical link For example, a value of 2 means that twice the amount of physical bandwidth may be allocated by the provisioned connections.	
	1 to 100	see general description and example above
Downstream (central) Target Signal-to-Noise Margin (dB)	the acceptable signal-to-noise ratio for downstream data integrity with minimum power use; allows the operator to make adjustments based on the type of traffic and its tolerance for errors.	
	0 to 15 dB Defaults: • **6 dB** for full-rate • 4 dB for G.Lite	A *higher margin* increases the robustness of the signal, but decreases the loop reach. A *lower margin* decreases the robustness of the signal, but increases the loop reach. ***Note:*** The recommended setting for G.Lite is 4 dB; the default is not automatically changed when G.Lite is provisioned.
Downstream (central) Maximum Interleave Delay (ms)	the acceptable delay caused by the interleaving of downstream data between frames	
	0 to 256 ms Default: **10 ms**	Increasing this parameter provides higher immunity to impulse noise on the subscriber loop, but increases data transmission delay. Increased delay may result in reduced file transfer data rates.

—continued—

Table 1-12
ADSL subscriber circuit fields (continued)

Field	Parameter values	Description
Upstream (CPE) Target Signal-to-Noise Margin (dB)	the acceptable signal-to-noise ratio for upstream data integrity with minimum power use; allows the operator to make adjustments based on the type of traffic and its tolerance for errors.	
	0 to 15 dB Defaults: • **6 dB** for full-rate • 4 dB for G.Lite	A *higher margin* increases the robustness of the signal, but decreases the loop reach. A *lower margin* decreases the robustness of the signal, but increases the loop reach. ***Note:*** The recommended setting for G.Lite is 4 dB; the default is not automatically changed when G.Lite is provisioned.
Upstream (CPE) Maximum Interleave Delay (ms)	the acceptable delay caused by the interleaving of upstream data between frames	
	0 to 256 ms Default: **10 ms**	Increasing this parameter provides higher immunity to impulse noise on the subscriber loop, but increases data transmission delay. Increased delay may result in reduced file transfer data rates.

—continued—

Table 1-12
ADSL subscriber circuit fields (continued)

Field	Parameter values	Description
Cross-connect for VCC 1 ... Cross-connect for VCC 8	cross-connects the PVC of the subscriber circuit with an assigned VCI in the VP identified by the Service Descriptor Name. You can enter up to eight combinations, each on a different line. ***Note 1:*** This parameter can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods. This field is case-sensitive. ***Note 2:*** Service descriptors must be provisioned before the cross-connects, or subscriber virtual circuits (VCs), are provisioned. ***Note 3:*** To view service descriptors, see Procedure 1-23, "Viewing service descriptors" on page 1-81.	
	Syntax: **[Service Descriptor Name],[up/down],[networkside_VCI], [oamOn/oamOff]** where	
	Service Descriptor Name	text string
	up/down	up = unlocked (active) down = locked (inactive)
	networkside_VCI	an integer from 0 to 65535 ***Note:*** An entry of 0 causes the uEMS to automatically assign a unique identifier
	oamOn/oamOff	oamOn = ATM enabled for F5 loopback test performed by an ATM edge switch oamOff = ATM disabled for F5 loopback test ***Note 1:*** If blank, this field defaults to **oamOff**. ***Note 2:*** This field must be set to **oamOff** for DS1 IMA ATM cards. ***Note 3:*** A limited number of VCs may have oamOn. See VCC OAM management tool on page 4-24.
	Example: **AOL,up,101,oamOff**	
—continued—		

Table 1-12
ADSL subscriber circuit fields (continued)

Field	Parameter values	Description
Expected Tx Cell Throughput	Range is based on type of circuit being provisioned. This should be set as close as possible to maximum cell throughput but not over. It is the actual cell throughput not the link nominal speed.	
	No limit	
Expected Rx Cell Throughput	Range is based on type of circuit being provisioned. This should be set as close as possible to maximum cell throughput but not over. It is the actual cell throughput not the link nominal speed.	
	No limit	
—end—		

Procedure 1-10
Verifying data service

Use this procedure to verify that the UE9000 equipment in-service and ready to send data traffic.

Action

Step	Action
1	Go to the Shelf submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Verify that the ATM carriers are unlocked (active/in service) by double-clicking on the Atmif symbol. If the carrier symbols on the next dialog are green, the carriers are unlocked. In a **DS1** system, there are eight carriers. It is possible, though not recommended, to continue receiving traffic if one of the carriers is locked. To unlock a DS1 carrier, do the following: **a.** Right click the carrier symbol. **b.** Select **Maintenance -> Unlock -> Normal**. In a **DS3** system, there is only one carrier. If the carrier symbol is yellow, this indicates minor faults and you can proceed. However, if the carrier symbol is any color other than green or yellow, you must resolve the fault(s) as follows before proceeding. **a.** Right click the carrier symbol. **b.** Select **Show -> Fault**. **c.** Troubleshoot based on the fault explanations(s) that appear in the subsequent Alarms dialog. **—continued—**

Procedure 1-10 (continued)
Verifying data service

Step	Action
4	Verify that the ATM core card is unlocked. (If it is locked, the symbol is tan and the annotation text is “L”). To unlock the ATM core card, do the following: **a.** Right click the ATM symbol. **b.** Select **Maintenance -> Unlock -> Normal** from the right-click pop-up menu. *The ATM core card symbol changes color when the equipment is in-service.*
5	Verify that the line card symbol is unlocked. To unlock the line card, do the following: **a.** Right click the line card symbol on the shelf submap. **b.** Select **Maintenance -> LC -> Unlock -> Normal** from the right-click pop-up menu. *The line card symbol changes color when the equipment is in-service.*
6	Verify that the subscriber data circuits are unlocked. **To unlock a specific subscriber circuit**, do the following: **a.** Right click on the circuit symbol on the LC submap. **b.** Select **Maintenance -> Circuit -> Unlock -> Normal**. **To unlock all subscriber circuits simultaneously**, do the following: **c.** Right click the line card symbol on the shelf submap. **d.** Select **Maintenance -> Circuit -> All Unlock** from the right-click pop-up menu.
7	Repeat steps 5 and 6 for each line card in the UE9000 shelf.

—continued—

Procedure 1-10 (continued)
Verifying data service

Step	Action
	Verify cross-connects are up
8	Go to the LC submap and right-click on the CCT symbol to be activated.
9	Select **Provision/Edit** from the right-click pop-up menu. *The Object Description dialog appears.*
10	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
11	Scroll to the appropriate “Cross connect” field and make sure that the SD name is followed by **up** (for example, **AOL,up,101,oamOff**). ***Note:*** In this field, **up** means unlocked and **down** means locked.
12	Click the **Verify** button and follow any instructions that appear during verification.
13	When verification is complete, click the **OK** button. *The Add Object - Set Attributes dialog disappears.*
14	Click the **OK** button. *The Add Object dialog disappears.*
15	The UE9000 is ready to send data traffic.

—end—

Procedure 1-11
Checking ADSL circuit capabilities

Use this procedure to verify that the provisioning for ADSL circuits matches the capabilities of the customer premises equipment (CPE). It is important to perform this procedure during provisioning to avoid unnecessary communications problems later.

Action

Step	Action
1	Go to the LC submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Right click the circuit symbol you want to check and select the following from the symbol's pop-up menu: **Show -> Circuit Capabilities** *The Info dialog box appears, displaying the training capabilities for the circuit and its associated CPE.*

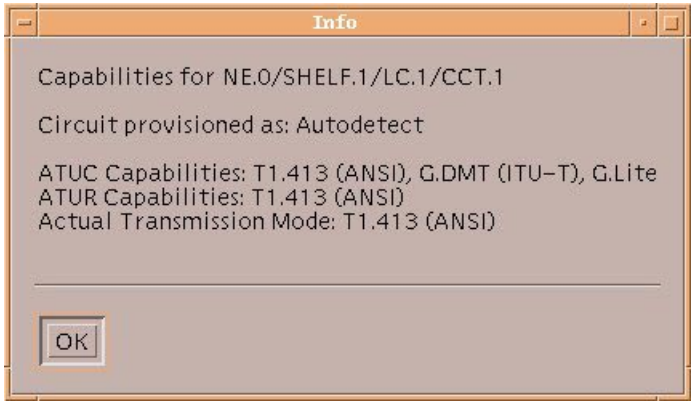
—continued—

Procedure 1-11 (continued)
Checking ADSL circuit capabilities

Step **Action**

Figure 1-6
Circuit capabilities dialog box

SC-10470



4 Compare the capability information displayed for the ATUC and the ATUR. Is there a common item displayed for each?

If	Then
Yes	Go to step 5.
No	Either: • replace the CPE (ATUR) to match the line card capabilities, or connect the CPE to an LC that matches the CPE capabilities. • change the ADSL circuit provisioning (ATUC) to match the CPE capabilities (see Procedure 1-9 on page 1-45). The specific parameter is called "ADSL Circuit Enabling" as shown in Table 1-12 on page 1-46.

—continued—

Procedure 1-11 (continued)
Checking ADSL circuit capabilities

Step	Action
5	Compare the “Circuit provisioned as” information to the “Actual transmission mode” information.

If the	Then
Circuit Provisioning is set to autodetect	communication to the CPE should work properly. See the *UE9000 Data Testing and Troubleshooting Guide* if communication does not work.
Circuit Provisioning does not match the **Actual Transmission Mode**	change the ADSL circuit provisioning (ATUC) to match the CPE capabilities (see Procedure 1-9 on page 1-45). The specific parameter is called “ADSL Circuit Enabling” as shown in Table 1-12 on page 1-46.
Actual Transmission Mode is **Unknown**	wiring or provisioning are incomplete, or the CPE likely has communication problems. See the *UE9000 Data Testing and Troubleshooting Guide*.

—end—

Procedure 1-12
Updating provisioning information

Use this procedure to update or change a UE9000 component's provisioning information in the uEMS database.

Note 1: To update or change the software load on the equipment, refer to Procedure 3-2, "Upgrading ATM and line card loads" on page 3-4.

Note 2: Provisioning information given for a line card without first locking the line card will not take effect until the line card is locked and unlocked, or a retrain is initiated on the line card. This allows for provisioning information to be changed without affecting service until a convenient time, at which the new provisioning information will take effect and service will be interrupted for the duration that the card is locked.

CAUTION
Loss of bandwidth
When you update the provisioning for a DS1 or DS3, the uEMS automatically locks that DS1 or DS3 while uEMS sends the provisioning changes to the ATM core card. The DS1 or DS3 does not pass subscriber traffic while it is in a locked state.

Action

Step	Action
1	Go to the appropriate submap (see Figure 1-2 on page 1-6) and right click the UE9000 component that you want to update. Select Provision/Edit from the pop-up menu. *The Object Description dialog appears.*

—continued—

Procedure 1-12 (continued)
Updating provisioning information

Step	Action
2	Double-click the **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
3	Enter the new information in the appropriate provisionable fields. When you are finished, click the **Verify** button and follow any instructions that appear during verification.
4	When verification is complete, click the **OK** button. *The Add Object - Set Attributes dialog disappears.*
5	Click **OK**. *The Object Description dialog disappears.*
6	You are finished with this procedure. **—end—**

Procedure 1-13
Force provisioning

Use this procedure to reprovision a multi-circuit line card (MLC) to a different type of hardware without changing the circuit address and without immediately changing the hardware present in the UE9000 shelf.

This procedure is useful in situations where the MLC is reprovisioned before the hardware is replaced.

Completion of this procedure causes the UE9000 equipment to report a “h/w mismatch” alarm. The alarm clears when hardware matching the new provisioning is installed.

Action

Step	Action
1	Unprovision all the subscriber circuits on the MLC using Procedure 1-15 on page 1-67.
2	Unprovision the MLC using Procedure 1-16 on page 1-70.
3	Go to the shelf submap (see Figure 1-2 on page 1-6).
4	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.

—continued—

Procedure 1-13 (continued)
Force provisioning

Step	Action
5	Right click the line card symbol you want to reprovision and select the following from the symbol's pop-up menu: **Maintenance -> [old MLC type] -> Force Provision -> as [new MLC type]** where [old MLC type] is the existing MLC type of the symbol that you clicked on [new MLC type] is the type of MLC that will replace the existing MLC *The symbol changes to the new type and turns brown. The annotation text states "h/w mismatch" until the matching MLC is installed.*
6	Provision the subscriber circuits using the appropriate procedure as described in Table 1-1 on page 1-4.

—end—

Removing hardware

Before physically removing a hardware device from the UE9000 shelf, Nortel Networks recommends that you unprovision the device's database entry (object) from the uEMS database. Otherwise, alarms will be generated when you physically remove the device.

> ***Note:*** You cannot unprovision a parent object until you unprovision all of its children objects.

You must unprovision UE9000 components from the uEMS database in the reverse order from which they were provisioned. For example, before you can unprovision a UE9000 shelf, you must unprovision all of the MLCs and ATM core cards provisioned under it.

Table 1-13 describes the correct order for unprovisioning UE9000 components from the uEMS database. Unprovisioning must be done in the order specified in Table 1-13.

> ***Note:*** If you try to unprovision components in the incorrect order, you will receive an error.

Table 1-13
UE9000 unprovisioning order

Step	Task	See
1	Subscriber cross-connects	Procedure 1-14 on page 1-64
2	Subscriber circuits	Procedure 1-15 on page 1-67
3	xDSL MLCs	Procedure 1-16 on page 1-70
4	DS1 carriers ***Note:*** You cannot unprovision DS1 Carrier 1 because it is the IMA timing reference. You must unprovision DS1 carriers in descending order (for example, Carrier 8, then Carrier 7, then Carrier 6, etc.). ***Note:*** In a DS3 configuration, you do not need to unprovision the DS3 carrier before you unprovision the ATM core card.	Procedure 1-17 on page 1-73
5	ATM core cards	Procedure 1-18 on page 1-75
6	UE9000 shelf	Procedure 1-19 on page 1-77
7	Network element	Procedure 1-20 on page 1-78
8	ATM service descriptors ***Note:*** To unprovision a service descriptor, every subscriber cross-connect provisioned against that service descriptor must be unprovisioned.	Procedure 1-21 on page 1-79
9	ATM service descriptor groups	Procedure 1-22 on page 1-80

Procedure 1-14
Unprovisioning subscriber cross-connects

Use this procedure to unprovision one or more subscriber cross-connects (virtual circuits) from a subscriber circuit in the uEMS database.

Action

Step	Action
1	Go to the appropriate line card (LC) submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	How many cross-connects are you unprovisioning?

If you are unprovisioning	Then
one cross-connect	go to step 4
all the cross-connects for a circuit	see Procedure 1-15 on page 1-67
all the circuits (including their cross-connects) for a line card	see Procedure 1-16 on page 1-70

Unprovisioning one cross-connect

4 Right-click the symbol of the circuit (CCT) containing the subscriber cross-connect you want to unprovision.

5 Select **Maintenance -> Circuit -> Lock -> Normal** from the pop-up menu.

A confirmation message appears asking if you are sure you want to lock the subscriber circuit.

6 Click **OK**.

The confirmation message disappears and the circuit is locked.

7 Select **Provision/Edit** from the appropriate circuit (CCT) symbol's pop-up menu.

The Object Description dialog appears.

—continued—

Procedure 1-14 (continued)
Unprovisioning subscriber cross-connects

Step	Action
8	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
9	Lock the subscriber cross-connect by doing the following: **a.** Scroll to the appropriate “Cross connect” field. **b.** Ensure that the service descriptor name is followed by the word **down**. If the field is **up**, then delete the word **up** and replace it with the word **down**. ***Note:*** In this field, **up** means “unlocked” and **down** means “locked”.
10	Click **Verify** and follow any instructions that appear during verification.
11	When verification is complete, click **OK**. *The Object Description dialog appears.*
12	Click **OK**. (This step is necessary to lock the cross connect before it can be unprovisioned.) *The Object Description dialog disappears.*
13	On the LC submap, right-click on the same CCT symbol. Select **Provision/Edit** from the right-click pop-up menu. *The Object Description dialog appears.*
14	Double-click **UE9000 Map Application** in the Object Attributes field. *The Add Object - Set Attributes dialog appears.*
15	Scroll to the appropriate “Cross connect” field and delete the entire line of text.
16	Click **Verify** and follow any instructions that appear during verification.
17	When verification is complete, click **OK**. *The Add Object - Set Attributes dialog disappears.*
18	Click **OK**. *The Object Description dialog disappears. The subscriber cross-connect for that line card is now unprovisioned.*

—continued—

Procedure 1-14 (continued)
Unprovisioning subscriber cross-connects

Step	Action
19	Select **Maintenance -> Circuit -> Unlock -> Normal** from the pop-up menu. *The circuit is unlocked.*
Unprovisioning all cross-connects for a circuit	
20	Right-click the symbol of the circuit (CCT) containing the subscriber cross-connects you want to unprovision.
21	Select **Maintenance -> Circuit -> Lock -> Normal** from the pop-up menu. *A confirmation message appears asking if you are sure you want to lock the subscriber circuit.*
22	Click **OK**. *The confirmation message disappears and the circuit is locked.*
23	Select **Maintenance -> Circuit -> Unprovision** from the pop-up menu. *The circuit and all of its cross-connects are unprovisioned.*

—end—

Procedure 1-15
Unprovisioning subscriber circuits

Use this procedure to unprovision one or more subscriber circuits and their associated cross-connect from the uEMS database.

Action

Step	Action

1 How many circuits are you unprovisioning?

If you are unprovisioning	Then
one circuit	go to step 2
all the circuits for a line card	go to step 9
all the circuits for a shelf	go to step 15

Unprovisioning one circuit

2 Go to the appropriate line card (LC) submap (see Figure 1-2 on page 1-6).

3 Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.

4 Right-click the symbol of the circuit (CCT) you want to unprovision.

5 Select **Maintenance -> Circuit -> Lock -> Normal** from the pop-up menu.

A confirmation message appears asking if you are sure you want to lock the subscriber circuit.

6 Click **OK**.

The confirmation message disappears and the circuit is locked.

7 Select **Maintenance -> Circuit -> Unprovision** from the pop-up menu.

The circuit and all of its cross-connects are unprovisioned.

8 Go to step 20.

—continued—

Procedure 1-15 (continued)
Unprovisioning subscriber circuits

Step	Action
	Unprovisioning all circuits for a line card
9	Go to the appropriate shelf submap (see Figure 1-2 on page 1-6).
10	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
11	Select **Maintenance -> xDSL CCT -> All Lock** from the symbol's pop-up menu.
12	Unprovision the circuits by doing the following: **a.** Right-click on the appropriate line card (LC) symbol. **b.** Select **Maintenance -> xDSL CCT -> All Unprovision** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to delete all the subscriber circuits on the multi-circuit line card MLC.*
13	Click **OK**. *The confirmation message disappears. The circuit symbols become white (on the LC submap), indicating that they have been unprovisioned.*
14	Go to step 20.
	Unprovisioning all circuits for a shelf
15	Go to the appropriate network element (NE) submap (see Figure 1-2 on page 1-6).
16	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
17	Select **Maintenance -> Circuit -> All Lock** from the symbol's pop-up menu.

—continued—

Procedure 1-15 (continued)
Unprovisioning subscriber circuits

Step	Action
18	Unprovision the circuits by doing the following: **a.** Right-click on the appropriate shelf symbol. **b.** Select **Maintenance -> Circuit -> All Unprovision** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to delete all the subscriber circuits on the shelf.*
19	Click **OK**. *The confirmation message disappears. The circuit symbols become white (on the LC submap), indicating that they have been unprovisioned.*
20	Update recovery data (for DS3 only) for all ATM DS3 interfaces on the shelf where circuits were unprovisioned. **a.** Click on the Atmif DS3 symbol. **b.** On the pop-up menu, select **Update Recovery Data -> No Reboot**. ***Note:*** For more information updating the recovery data (DS3 ATM core cards only), see the *UE9000 Data Testing and Troubleshooting Guide*. **c.** Select **OK**. **—end—**

Procedure 1-16
Unprovisioning xDSL multi-circuit line cards

Use this procedure to unprovision one or more xDSL multi-circuit line cards (MLCs) from the uEMS database.

Action

Step	Action

1 How many line cards are you unprovisioning?

If you are unprovisioning	Then
one MLC	go to step 2
all the MLCs (including their circuits and cross-connects) for a shelf	go to step 10

Unprovisioning one MLC

2 Unprovision the line card's circuits using Procedure 1-15 on page 1-67.

3 Go to the appropriate shelf submap (see Figure 1-2 on page 1-6).

4 Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.

5 Lock the line card (LC) you want to unprovision by doing the following:

a. Right-click on the appropriate LC symbol.

b. Select **Maintenance -> LC -> Lock -> Normal** from the symbol's pop-up menu.

A confirmation message appears asking if you are sure you want to "lockout" the line card.

6 Click **OK**.

The confirmation message disappears and the line card is locked.

7 Unprovision the line card by doing the following:

a. Right-click on the appropriate LC symbol.

—continued—

Procedure 1-16 (continued)
Unprovisioning xDSL multi-circuit line cards

Step	Action
	b. Select **Maintenance -> LC -> Unprovision** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the MLC.*
8	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
9	Update recovery data (for DS3 only) for all ATM DS3 interfaces on the shelf where circuits were unprovisioned. **a.** Click on the Atmif DS3 symbol. **b.** On the pop-up menu, select **Update Recovery Data -> No Reboot**. ***Note:*** For more information updating the recovery data (DS3 ATM core cards only), see the *UE9000 Data Testing and Troubleshooting Guide*. **c.** Select **OK**.
Unprovisioning all the MLCs for a shelf	
10	Go to the appropriate network element (NE) submap (see Figure 1-2 on page 1-6).
11	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
12	Lock all the line cards (LC) on the shelf by doing the following: **a.** Right-click on the appropriate shelf symbol. **b.** Select **Maintenance -> LC -> All Lock** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to "lockout" the line cards.*
13	Click **OK**. *The confirmation message disappears and the line cards are locked.*
14	Unprovision the line cards by doing the following: **a.** Right-click on the same shelf symbol.

b. Select **Maintenance -> LC -> All Unprovision** from the symbol's pop-up menu.

A confirmation message appears asking if you are sure you want to unprovision the MLCs.

15 Click **OK**.

The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.

16 Update recovery data (for DS3 only) for all ATM DS3 interfaces on the shelf where circuits were unprovisioned.

a. Click on the Atmif DS3 symbol.

b. On the pop-up menu, select **Update Recovery Data -> No Reboot**.

Note: For more information updating the recovery data (DS3 ATM core cards only), see the *UE9000 Data Testing and Troubleshooting Guide*.

c. Select **OK**.

—end—

Procedure 1-17
Unprovisioning DS1 carriers

If this is a **DS1** configuration, use this procedure to unprovision the DS1 carriers from the uEMS database.

Note: You cannot unprovision DS1 Carrier 1 because it is the IMA timing reference. You must unprovision DS1 carriers in descending order (for example, Carrier 8, then Carrier 7, then Carrier 6, etc.).

Action

Step	Action
1	Go to the DAC submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Lock the DS1 carrier by doing the following: **a.** Right-click on the appropriate carrier's symbol. **b.** Select **Maintenance ->Lock -> Normal** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to "lockout" the carrier.*
4	Click **OK**. *The confirmation message disappears and the carrier is locked.*
5	Unprovision the carrier by doing the following: **a.** Right-click on the appropriate carrier's symbol. **b.** Select **Maintenance -> Unprovision** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the carrier.*

—continued—

Procedure 1-17 (continued)
Unprovisioning DS1 carriers

Step	Action
6	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
7	Repeat these steps for each DS1 carrier you want to unprovision.

—end—

Procedure 1-18
Unprovisioning ATM core cards

Use this procedure to unprovision ATM core cards from the uEMS database.

Note 1: In a **DS1** configuration, you cannot unprovision an ATM core card until you unprovision all of its associated DS1 carriers.

Note 2: In a **DS3** configuration, you do not need to unprovision the DS3 carrier before you unprovision the ATM core card.

Step	Action
1	Go to the appropriate shelf submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Check the following:

If the UE9000 shelf is equipped with	Then
a DS1 IMA ATM core card	go to step 4
one DS3 ATM core card	go to step 4
two DS3 ATM core cards	Unprovision the "standby" DS3 ATM card first. If the DS3 ATM card you want to unprovision is the "active" card, switch the card to "standby" (refer to "Performing a manual swact on the DS3 ATM core cards," in the *UE9000 Data Testing and Troubleshooting Guide*). Once the switch is complete, go to step 4

—continued—

Procedure 1-18 (continued)
Unprovisioning ATM core cards

Step	Action
4	Lock the ATM core card (Atmif) you want to unprovision by doing the following: **a.** Right-click on the appropriate Atmif symbol. **b.** From the symbol's pop-up menu, select: **Maintenance -> Atmif -> Lock ->Normal** (for ATM DS1) **Maintenance -> Lock -> Normal** (for ATM DS3) *A confirmation message appears asking if you are sure you want to "lockout" the card.*
5	Click **OK**. *The confirmation message disappears and the ATM core card is locked.*
6	Unprovision the ATM core card by doing the following: **a.** Right-click on the appropriate Atmif symbol. **b.** From the symbol's pop-up menu, select: **Maintenance -> Atmif -> Unprovision** (for ATM DS1) **Maintenance -> Unprovision** (for ATM DS3) **c.** Go to step 7. *A confirmation message appears asking if you are sure you want to unprovision the card.*
7	Click **OK**, then go to step 8. *The confirmation message disappears.* *If the ATM core card is physically still in the shelf, the symbol becomes white, indicating that it has been unprovisioned.* *If the ATM core card has been removed from the shelf, the Atmif symbol disappears from the submap, indicating that it has been unprovisioned.* ***Note:*** The "configuring" annotation text appears when an ATM core card is unprovisioned. Usually, the text disappears automatically after approximately 10 - 20 seconds.
8	Repeat these steps for each ATM core card you want to unprovision. **—end—**

Procedure 1-19
Unprovisioning a UE9000 shelf

Use this procedure to unprovision a UE9000 shelf from the uEMS database.

Step	Action
1	Go to the appropriate network element (NE) submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Right-click on the appropriate shelf’s symbol.
4	Select **Maintenance -> Shelf -> Unprovision** from the symbol’s pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the shelf.*
5	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
6	Repeat these steps for each UE9000 shelf you want to unprovision.

—end—

Procedure 1-20
Unprovisioning a network element

Use this procedure to unprovision a network element (NE) from the uEMS database.

Step	Action
1	Go to the appropriate HSTP network submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Right-click on the appropriate NE’s symbol.
4	Select **Maintenance -> NE -> Unprovision** from the symbol’s pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the NE.*
5	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
6	Repeat these steps for each NE you want to unprovision.

—end—

Procedure 1-21
Unprovisioning ATM service descriptors

Use this procedure to unprovision ATM service descriptors from the uEMS database.

> ***Note:*** To unprovision a service descriptor, every subscriber cross-connect provisioned against that service descriptor must be unprovisioned.

Step	Action
1	Go to the appropriate SDG submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
3	Right-click on the appropriate service descriptor's (SD) symbol.
4	Select **Unprovision** from the symbol's pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the service descriptor.*
5	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
6	Repeat these steps for each service descriptor you want to unprovision.

—end—

Procedure 1-22
Unprovisioning ATM service descriptor groups

Use this procedure to unprovision ATM service descriptor groups from the uEMS database.

Step	Action
1	Go to the appropriate ATM SD Config submap (see Figure 1-2 on page 1-6).
2	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.
3	Right-click on the appropriate service descriptor group’s (SDG) symbol.
4	Select **Unprovision** from the symbol’s pop-up menu. *A confirmation message appears asking if you are sure you want to unprovision the service descriptor group.*
5	Click **OK**. *The confirmation message disappears. The symbol either becomes white (if the hardware exists) or disappears from the submap (if the hardware does not exist), indicating that it has been unprovisioned.*
6	Repeat these steps for each service descriptor group you want to unprovision.

—end—

Procedure 1-23
Viewing service descriptors

Use this procedure to view all service descriptors provisioned in the UE9000 element management system (uEMS) workstation's database.

Action

Step	Action
1	Go to the Root submap (see Figure 1-2 on page 1-6).
2	Right-click the HSTP-Network symbol.
3	Select **Show -> Inventory -> Service Descriptors** from the pop-up menu.
4	Select the type of service descriptor that you wish to see. *The Service Descriptor Inventory window appears, listing all provisioned service descriptors.*
5	When you are finished, click the **Close** button.

—end—

Procedure 1-24
Opening a temporary read-write map

Use this procedure to open a temporary UE9000 element management system (uEMS) graphical user interface (GUI) map.

The first user to open a map has Read-Write access to the map. If a second user opens the same map, Read-Only access is the only access allowed. To get Read-Write access to a map that is already opened by another user, you must open a temporary map.

Note: For an explanation of maps and submaps, see Appendix A - Understanding the uEMS.

CAUTION
Loss of performance
Be sure to delete the temporary map when finished. Otherwise, uEMS performance will be reduced.

Action

Step	Action
1	Select **Map -> Maps** -> **New...** from the pull-down menu. *The New Map dialog appears.*
2	In the Name field, type the name of the temporary map that you are creating (for example, **Temporary Map 1**).
3	In the “Comments” field, type the reason that you are creating the temporary map, such as “This temporary map was created by John Doe to obtain read-write access.”
4	Click the **OK** button. *A temporary map with Read-Write access is created.*
5	When finished using the temporary map, delete it by selecting: **Map -> Maps -> Open/List** *The Available Maps dialog appears.*

—continued—

Procedure 1-24 (continued)
Opening a temporary read-write map

Step	Action
6	On the Available Maps dialog, select the map and click the Delete button. *The map is deleted.* **—end—**

Bulk provisioning data services

This chapter contains information on bulk provisioning of the UE9000 equipment using UNIX scripts containing UE9000 Element Management System (uEMS) command line user interface (CLUI) commands.

Note 1: The CLUI provides more provisionable parameters than uEMS.

Note 2: This chapter does not contain information on the initial set-up and commissioning of the UE9000 data network. For this information, see the *UE9000 Data System Setup Guide*.

Chapter contents

This chapter contains the following tasks.

Overview

Before using the CLUI to provision UE9000 equipment, you need to collect the information described in Table 2-1.

Table 2-1
UE9000 component provisioning information

If you are provisioning this UE9000 component	Then you need this information
service descriptor group	• name
service descriptor entry	• name • virtual path identifier (VPI) • downstream service class • downstream peak cell rate • downstream minimum cell rate (for UBR-MCR service only) • downstream sustainable cell rate (for rt-VBR service only) • downstream maximum burst size (for rt-VBR service only) • downstream cell delay variation tolerance • downstream traffic descriptor • upstream service class • upstream peak cell rate • upstream minimum cell rate (for UBR-MCR service only) • upstream sustainable cell rate (for rt-VBR service only) • upstream maximum burst size (for rt-VBR service only) • upstream cell delay variation tolerance • upstream traffic descriptor
—continued—	

Table 2-1
UE9000 component provisioning information (continued)

If you are provisioning this UE9000 component	Then you need this information
network element (NE)	• network element ID ***Note:*** The name for UE9000 equipment is usually the common language location identifier (CLLI) of the equipment.
UE9000 shelf	• shelf identifier name • name of service descriptor group
ATM core card (ATM)	• logical card number (A, B) • Internet protocol (IP) address of the ATM core card • ATM core card software load name
DS1 carriers ***Note:*** You do not need to provision DS3 carriers.	• frame format • line coding • signal mode • clock source
xDSL multi-circuit line card (MLC)	• logical card number (1 to 16) • logical card number for UE9000 DMS (0-15) • line card software load name
1-Meg Modem MLC	• logical card number (1 to 16) • line card software load name
UE9000 DMS	• logical card number (0 to 15) • line card software load name
—continued—	

Table 2-1
UE9000 component provisioning information (continued)

If you are provisioning this UE9000 component	Then you need this information
ADSL subscriber circuit	• maximum downstream speed (kbs) • maximum upstream speed (kbs) • bandwidth oversubscription factor for CBR • bandwidth oversubscription factor for rt-VBR • bandwidth oversubscription factor for UBR-MCR • downstream (central) target signal/noise margin (dB) • downstream (central) maximum interleave delay (ms) • upstream (central) target signal/noise margin (dB) • upstream (central) maximum interleave delay (ms)
—end—	

Using the CLUI

The CLUI uses the following syntax:

hstpprov [device-type] [operation] [device-name] [options]

where

[device-type]	is one of:	
	config.ue.sdg	for service descriptor group
	config.ue.sd	for service descriptor
	ne	for NE
	shelf.ue	for shelf
	dac.ue.atmds1	for DS1 IMA ATM core card
	dac.ue.atmds3	for DS3 ATM core card
	car.ue.ds1	for DS1 IMA carrier
	car.ue.ds3	for DS3 carrier
	lc.ue.adsl4	for ADSL multi-circuit line card
	cct.ue.adsl	for ADSL subscriber circuit
[operation]	is one of:	
	provision	
	update	
	unprovision	
[device-name]	is the unique name for the HSTP device	
[options]	is one or more options as shown in Table 2-3 through Table 2-9.	

Use Table 2-2 on page 2-7 to determine the provisioning command for each of the UE9000 device types.

The uEMS assigns every UE9000 component an HSTP-name that uniquely identifies it. The HSTP-name is used by uEMS to internally identify the UE9000 components in its span of control. All CLUI commands require that UE9000 components are identified by their HSTP-name.

HSTP-names follow the uEMS submap hierarchy. Each level in the hierarchy is divided by a slash “/” in the HSTP-name. For example, the name of an ATM core card contains the network element and the UE9000 shelf that the ATM core card is connected to. HSTP-names can have alphanumeric and symbol characters. Illegal characters include slashes, spaces, semicolons, or periods.

For more information about the device types, type the following at a HPUX prompt:

cd /opt/OV/bin/Nortel/HSTP/uems ↵

./hstpprov help ↵

An explanation of the device types supported by the hstpprov command is displayed.

For information about the provisionable parameters supported by a specific device type, type help after the device type:

cd /opt/OV/bin/Nortel/HSTP/uems ↵

./hstpprov dac.ue.atmds1 help ↵

A list of the provisionable parameters supported by the specified device type is displayed.

> ***Note:*** Type the commands in Table 2-2 on a single line. Some commands in Table 2-2 appear on multiple lines due to space limitations.

Table 2-2
CLUI provisioning command formats

UE9000 component	**Provisioning command format**
service descriptor group	./hstpprov config.ue.sdg provision SDG.[sdg_name] where [sdg_name] is the name of the service descriptor group Example command: **./hstpprov config.ue.sdg provision SDG.G1**
service descriptor	./hstpprov config.ue.sd provision SDG.[sdg_name]/SD.[sd_name] -atmTrafficDescrType_Downstream=[value1] -atmTrafficDescrParam1_Downstream=[value2] -atmTrafficDescrType_Upstream=[value3] -atmTrafficDescrParam1_Upstream=[value4] -vpi=[vpi#] [options] where [sdg_ name] is the name of the service descriptor group [sd_name] is the name of the service descriptor, for example, the Internet service provider [value1] is atmNoClpTaggingNoScr, atmNoClpNoScrCdvt, atmClpNoTaggingMcr, atmClpTransparentNoScr, or atmClpTransparentScr [value2] is an integer from 0 to 28744 [value3] is atmNoClpTaggingNoScr, atmNoClpNoScrCdvt, atmClpNoTaggingMcr, atmClpTransparentNoScr, or atmClpTransparentScr [value4] is an integer from 0 to 28744 [vpi#] is the virtual path identifier assigned to the service descriptor (0 to 255) [options] are one or more optional parameters. See Table 2-3 on page 2-13. ***Note:*** See Table 1-4 on page 1-16 for more information on these fields. Example command: **./hstpprov config.ue.sd provision SDG.G1/SD.ISP2 -atmTrafficDescrType_Downstream=atmNoClpTaggingNoScr -atmTrafficDescrParam1_Downstream=28744 -atmTrafficDescrType_Upstream=atmNoClpTaggingNoScr -atmTrafficDescrParam1_Upstream=28744 -vpi=3**

—continued—

Table 2-2
CLUI provisioning command formats (continued)

UE9000 component	Provisioning command format
network element	./hstpprov ne provision NE.[NE_name] where [NE_name] is the name of the network element ***Note:*** See Table 1-6 on page 1-24 for more information on this field. Example command: **./hstpprov ne provision NE.SNFCCA01**
UE9000 shelf	./hstpprov shelf.ue provision NE.[NE_name]/SHELF.[shelf_name] -sdgroup=[sdg_name] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [sdg_name] is the name of the service descriptor group [options] are one or more optional parameters. See Table 2-4 on page 2-15. ***Note:*** See Table 1-7 on page 1-27 for more information on these fields. Example command: **./hstpprov shelf.ue provision NE.SNFCCA01/SHELF.1 -sdgroup=G1**
—continued—	

Table 2-2
CLUI provisioning command formats (continued)

UE9000 component	Provisioning command format
ATM core card	
DS1 IMA	./hstpprov dac.ue.atmds1 provision NE.[NE_name]/SHELF.[shelf_name] /DAC.[card_#] -load=[load_name] -ipaddress=[ipaddress] [options]
DS3	./hstpprov dac.ue.atmds3 provision NE.[NE_name]/SHELF.[shelf_name] /DAC.[card_#] -load=[load_name] -ipaddress=[ipaddress] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ATM core card (A or B) [load_name] is the file name of the ATM core card software load [ipaddress] is the ipaddress of the ATM core card [options] are one or more optional parameters. See Table 2-4 on page 2-15 and Table 2-5 on page 2-16. ***Note:*** See Table 1-8 on page 1-31 for more information on these fields. Example command for DS1 IMA core card: **./hstpprov dac.ue.atmds1 provision NE.SNFCCA01/SHELF.1/DAC.A -load=HW203bl -ipaddress=193.6.54.81**

—continued—

Table 2-2
CLUI provisioning command formats (continued)

UE9000 component	Provisioning command format
DS1 IMA carrier	./hstpprov car.ue.ds1 provision NE.[NE_name]/SHELF.[shelf_name] /DAC.[card_#]/CAR.[DS1_link_#] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ATM core card (A or B) [DS1_link_#] is the number of the DS1 carrier (1 to 8) [options] are one or more optional parameters. See Table 2-6 on page 2-18. ***Note:*** See Table 1-9 on page 1-37 for more information on these fields. ***Note:*** To avoid loss of or erratic service, always provision the DS1s in sequential order, starting with DS1 link number 1. DS1 link number 1 must always be the IMA timing reference link due to differences between the IMA protocol implementation on the ATM IF card and the IMA protocol implementation on other ATM devices. ***Note:*** The current ATM IF card hardware and software support IMA version 1.0. Example command: **./hstpprov car.ue.ds1 provision NE.SNFCCA01/SHELF.1/DAC.A/CAR.2**
DS3 carrier	./hstpprov car.ue.ds3 provision NE.[NE_name]/SHELF.[shelf_name] /DAC.[card_#]/CAR.[DS3_link_#] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ATM core card (A or B) [DS3_link_#] is the number of the DS3 carrier (1) [options] are one or more optional parameters. See Table 2-7 on page 2-20. ***Note:*** See Table 1-10 on page 1-39 for more information on these fields. Example command: **./hstpprov car.ue.ds3 provision NE.SNFCCA01/SHELF.1/DAC.A/CAR.1**

—continued—

Table 2-2
CLUI provisioning command formats (continued)

UE9000 component	Provisioning command format
ADSL multi-circuit line card	./hstpprov lc.ue.adsl4 provision NE.[NE_name]/SHELF.[shelf_name] /LC.[card_#] -load=[load_name] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ADSL MLC (1 to 16) or (0 to 15) for UE9000 DMS [load_name] is the file name of the line card software load [options] are one or more optional parameters. See Table 2-8 on page 2-22. ***Note:*** See Table 1-11 on page 1-43 for more information on these fields. Example command: **./hstpprov lc.ue.adsl4 provision NE.SNFCCA01/SHELF.1/LC.4 -load=LC4X4FR02.0314**
ADSL subscriber circuit	./hstpprov cct.ue.adsl provision NE.[NE_name]/SHELF.[shelf_name] /LC.[card_#]/CCT.[circuit_#] [options] where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ADSL MLC (1 to 16) or (0 to 15) for UE9000 DMS [circuit_#] is number of the subscriber circuit on the ADSL MLC (1 to 4) [options] are one or more optional parameters. See Table 2-9 on page 2-22. ***Note:*** See Table 1-12 on page 1-46 for more information on these fields. Example command: **./hstpprov cct.ue.adsl provision NE.SNFCCA01/SHELF.1/LC.4/CCT.3**

—continued—

Table 2-2
CLUI provisioning command formats (continued)

UE9000 component	Provisioning command format
ADSL Virtual Cross Connect	./hstpprov cct.ue.adsl provision NE.[NE_name]/SHELF.[shelf_name] /LC.[card_#]/CCT.[circuit_#] -vcc=[sdg_name],[lock_status],[VCI] ***Note:*** If you want to add a VCC after the circuit is already provisioned, substitute "update" for "provision" in the above command. where [NE_name] is the name of the network element [shelf_name] is the name of the shelf [card_#] is the logical card number of the ADSL MLC (1 to 16) or (0 to 15) for UE9000 DMS [circuit_#] is number of the subscriber circuit on the ADSL MLC [sdg_name] is the name of the service descriptor group [lock_status] is down (i.e., lock) or up (i.e., unlock) [VCI] is the virtual circuit identifier (integer). If you enter zero, a unique number is automatically assigned. [options] are one or more optional parameters. See Table 2-9 on page 2-22. ***Note:*** See Table 1-12 on page 1-46 for more information on these fields. ***Note:*** You can provision up to eight VCCs for an ADSL circuit, using # as separators. Example command: **./hstpprov cct.ue.adsl update NE.SNFCCA01/SHELF.1/LC.4/CCT.3 -vcc=AOL,up,0#Sprint,up,0#Freenet,up,0**
—continued—	
—end—	

Optional parameters

Note: You do not need to provision optional parameters. If you do not provision a value, the default value is used.

Table 2-3 lists the provisionable attributes for the config.ue.sd device type.

Note: The DS1 IMA ATM core card supports unspecified bit rate (UBR) service only. The DS3 ATM core card supports all service categories listed in Table 2-3.

Table 2-3
Optional provisionable parameters for service descriptors

Parameter	Values (default values are in bold)	Description
-atmServiceCategory_Downstream=		service class for the downstream virtual path
	ubr	unspecified bit rate
	ubr-pcr	unspecified bit rate with peak cell rate
	ubr-mcr	unspecified bit rate with minimum cell rate
	cbr	constant bit rate
	rt-vbr	real-time variable bit rate
-atmTrafficFrameDiscard_Downstream=		If set to 'true', the data network will treat data in the downstream direction, as frames (e.g. AAL5 CPCS_PDU's) rather than as individual cells. The data network may discard entire frames during congestion, rather than a few cells from many frames.
	true	
-atmTrafficDescrParam2_Downstream=		downstream cell delay variation tolerance (CDVT)
	32 bit integer (**0**)	
-atmTrafficDescrParam3_Downstream=		Refer to rfc2514. The Default value depends on the service.
	32 bit integer (**0**)	
-atmTrafficDescrParam4_Downstream=		Refer to rfc2514. The Default value depends on the service.
	32 bit integer (**0**)	

—continued—

Table 2-3
Optional provisionable parameters for service descriptors (continued)

Parameter	Values (default values are in bold)	Description
-atmTrafficDescrParam5Downstream=	32 bit integer (**0**)	Not used.
-atmServiceCategory_Upstream=		service class for the upstream virtual path
	ubr	unspecified bit rate
	ubr-pcr	unspecified bit rate with peak cell rate
	ubr-mcr	unspecified bit rate with minimum cell rate
	cbr	constant bit rate
	rt-vbr	real-time variable bit rate
-atmTrafficFrameDiscard_Upstream=	**true**	If set to 'true', the data network will treat data in the upstream direction, as frames (e.g. AAL5 CPCS_PDU's) rather than as individual cells. The data network may discard entire frames during congestion, rather than a few cells from many frames.
-atmTrafficDescrParam2_Upstream=	32 bit integer (**0**)	upstream cell delay variation tolerance (CDVT)
-atmTrafficDescrParam3_Upstream=	32 bit integer (**0**)	Refer to rfc2514. The Default value depends on the service.
-atmTrafficDescrParam4_Upstream=	32 bit integer (**0**)	Refer to rfc2514. The Default value depends on the service.
-atmTrafficDescrParam5Upstream=	32 bit integer (**0**)	Refer to rfc2514. The Default value depends on the service.
—end—		

Table 2-4 lists the provisionable attributes for the dac.ue.atmds1 device type.

Table 2-4
Optional provisionable parameters for DS1 IMA ATM core cards

Parameter	Values (default values are in bold)	Description
-initialAdminState=	locked **unlocked**	state of the ATM core card at start-up out-of-service in-service
-atmInterfaceMaxVpcs=	0 to 4096 (**0**)	maximum number of virtual path connections (VPC) supported at this ATM interface. At the ATM user-network interface (UNI), the number of VPCs allowed is 0 to 256 only.
-atmInterfaceMaxVccs=	0 to 65536 (**0**)	maximum number of virtual channel connections (VCC) supported at this ATM interface
-atmInterfaceMaxActiveVpiBits=	0 to 12 (**0**)	maximum number of active virtual path identifier (VPI) bits configured for use at the ATM interface. At the ATM UNI, the number of active VPI bits allowed is 0 to 8 only.
—continued—		
-atmInterfaceMaxActiveVciBits=	0 to 16 (**0**)	maximum number of active virtual circuit identifier (VCI) bits configured for use at this ATM interface
-readcommunity=	text string (**public**)	password for read access to the ATM core card
-writecommunity=	text string (**private**)	password for read-write access to the ATM core card
—end—		

Table 2-5 lists the provisionable attributes for the dac.ue.atmds3 device type.

Table 2-5
Optional provisionable parameters for DS3 ATM core cards

Parameter	Values (default values are in bold)	Description
-initialAdminState=	locked **unlocked**	state of the ATM core card at start-up out-of-service in-service
-atmInterfaceMaxVpcs=	0 to 4096 (**0**)	maximum number of virtual path connections (VPC) supported at this ATM interface. At the ATM user-network interface (UNI), the number of VPCs allowed is 0 to 256 only.
-atmInterfaceMaxVccs=	0 to 65536 (**512**)	maximum number of virtual channel connections (VCC) supported at this ATM interface
-atmInterfaceMaxActiveVpiBits=	0 to 12 (**8**)	maximum number of active virtual path identifier (VPI) bits configured for use at the ATM interface. At the ATM UNI, the number of active VPI bits allowed is 0 to 8 only.
—continued—		
-atmInterfaceMaxActiveVciBits=	0 to 16 (**16**)	maximum number of active virtual circuit identifier (VCI) bits configured for use at this ATM interface
-circuitOvSubsCBR	0 to 100 (**1**)	amount by which connections provisioned for constant bit rate (CBR) may be oversubscribed on a physical link For example, a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.
-circuitOvSubsUBRMCR	0 to 100 (**1**)	amount by which connections provisioned for unspecified bit rate with minimum cell rate (UBR-MCR) may be oversubscribed on a physical link For example, a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.

Table 2-5
Optional provisionable parameters for DS3 ATM core cards (continued)

Parameter	Values (default values are in bold)	Description
-circuitOvSubsvtVBR	0 to 100 (**1**)	amount by which connections provisioned for real-time variable bit rate (rt-VBR) may be oversubscribed on a physical link For example, a value of **2** means that twice the amount of physical bandwidth may be allocated by the provisioned connections.
-snmpretry	0 to 2147483647 (**3**)	The number of retries for SNMP commands (i.e., set, get...)
-snmptimeout	0 to 2147483647 (**1000**)	Timeout between retries for SNMP commands
-expectedRxCellThroughout	0 to 2147483647 (**100000**)	maximum transmit bandwidth configured for this interface for use with connection admission control (CAC); measured in cells/second
—continued—		
-expectedTxCellThroughout	0 to 2147483647 (**100000**)	maximum receive bandwidth configured for this interface for use with connection admission control (CAC); measured in cells/second
-unitActivity	[active] [standby] (**active**)	specifies whether the DS3 ATM core card is the active ATM core card, or the standby ATM core card
-readcommunity=	text string (**public**)	password for read access to the ATM core card
-writecommunity=	text string (**private**)	password for read-write access to the ATM core card
—end—		

Table 2-6 lists the provisionable attributes for the car.ue.ds1 device type.

Table 2-6
Optional provisionable parameters for DS1 IMA carriers

Parameter	Values (default values are in bold)	Description
-initialAdminState=		state of the DS1 IMA carrier at start-up
	locked	out-of-service
	unlocked	in-service
-dsx1TransmitClockSource=		primary synchronization clock for the DS1
	loopTiming	recovered receive clock used as the transmit clock
	localTiming	internal free-running clock used as the transmit clock
	throughTiming	recovered receive clock from another interface used as the transmit clock
-dsx1Fdl=		use of the facilities data link (FDL)
	dsx1Ansi-T1-403	ANSI recommended FDL exchange
	dsx1Att-54016	extended superframe FDL exchange
	dsx1Fd1-none	no FDL exchange used by the DS1
-dsx1LineType=		framing format of the DS1 path. Frame format affects the number of bits per second that the DS1 can carry.
	dsx1ESF	extended superframe
	dsx1D4	AT&T D4 format framing
-dsx1LineCoding=		DS1 line encoding
	dsx1B8ZS	bipolar with eight zero substitution. Uses a specified pattern of normal bits and bipolar violations to replace a sequence of eight zero bits.
	dsx1AMI	alternate mark inversion. No zero code suppression is used. The higher layer must provide data which meets or exceeds the pulse density requirements, such as inverting HDLC data.

—continued—

Table 2-6
Optional provisionable parameters for DS1 IMA carriers (continued)

Parameter	Values (default values are in bold)	Description
-dsx1SendCode=		type of code sent across the DS1 interface
	dsx1SendNoCode	looped or normal data
	dsx1SendLineCode	line loopback request
	dsx1SendPayloadCode	payload loopback request
	dsx1SendResetCode	loopback termination request
-dsx1CircuitIdentifier=		transmission vendor's circuit identifier. Used to troubleshoot.
	text string (0 to 255)	
-dsx1LoopbackConfig=		loopback configuration of the DS1 interface
	dsx1NoLoop	not in the loopback state
	dsx1PayloadLoop	received signal is looped through the device. Typically the received signal is looped back for re-transmission after it has passed through the device's framing function
	dsx1LineLoop	received signal does not go through the device (minimum penetration) but is looped back out
—end—		

Table 2-7 lists the provisionable attributes for the car.ue.ds3 device type.

Table 2-7
Optional provisionable parameters for DS3 carrier

Parameter	Values (default values are in bold)	Description
-initialAdminState=		state of the DS3 carrier at start-up
	locked	out-of-service
	unlocked	in-service
-carrDS3ConvSublayerMap=		
	direct cell mapping	cell delineation is used to locate the cell boundaries
	phylayerConvPr	activates the transmission on 12 rows of ATM cells every 125 microseconds
-dsx3TransmitClockSource=		primary synchronization clock for the DS3
	loopTiming	recovered receive clock used as the transmit clock
	localTiming	internal free-running clock used as the transmit clock
	throughTiming	recovered receive clock from another interface used as the transmit clock
-dsx3LineType=		framing format of the DS3 path. Frame format affects the number of bits per second that the DS3 can carry.
	dsx3CbitParity	for ANSI T1.107a-1989
	dsx3M23	for ANSI T1.107-1988
-dsx3LineCoding=		DS3 line encoding
	dsx3B3ZS	bipolar with three zero substitution bits. Uses a specified pattern of normal bits and bipolar violations to replace a sequence of three zero bits.

—continued—

Table 2-7
Optional provisionable parameters for DS3 carrier (continued)

Parameter	Values (default values are in bold)	Description
-dsx3SendCode=		type of code sent across the DS1 interface
	dsx3SendNoCode	looped or normal data
	dsx3SendLineCode	line loopback request
	dsx3SendPayloadCode	payload loopback request
	dsx3SendResetCode	loopback termination request
-dsx3CircuitIdentifier=		transmission vendor's circuit identifier. Used to troubleshoot.
	text string (0 to 255)	
—continued—		
-dsx3LoopbackConfig=		loopback configuration of the DS1 interface
	dsx3NoLoop	not in the loopback state
	dsx3PayloadLoop	received signal is looped through the device. Typically the received signal is looped back for re-transmission after it has passed through the device's framing function
	dsx3LineLoop	received signal does not go through the device (minimum penetration) but is looped back out
-dsx3PayloadScrambling		payload scrambling; removes long strings of 1s and 0s that could be mistaken as error conditions
	SCR-ON	payload scrambling enabled
	SCR-OFF	payload scrambling disabled
—end—		

Table 2-8 lists the provisionable attributes for the lc.ue.adsl4 device type.

Table 2-8
Optional provisionable parameters for ADSL multi-circuit line cards

Parameter	Values (default values are in bold)	Description
-lcProvSoftware=	text string	default software load for the line card
-lcProvPec=	text string	line card Product Engineering Code (PEC). Use to distinguish between different types of line cards.
-initialAdminState=		state of the ADSL MLC at start-up
	locked	out-of-service
	unlocked	in-service

Table 2-9 lists the provisionable attributes for the cct.ue.adsl device type.

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits

Parameter	Values (default values are in bold)	Description
-initialCctAdminState=		state of the ADSL modem at start-up
	locked	out-of-service
	unlocked	in-service
-initialAdminState=		state of the ADSL subscriber circuit at start-up
	locked	out-of-service
	unlocked	in-service
-adslAtucChanConfInterleaveMinTxRate=	0 to 13380 bps in multiples of 32 (**32**)	minimum transmit rate for Interleave channels in bits per second (bps). See ATUR transmit rate for receive rates.

—continued—

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits (continued)

Parameter	Values (default values are in bold)	Description
-adslAtucChanConfInterleaveMaxTxRate =	0 to 13380 bps in multiples of 32 (**13376**)	maximum transmit rate for Interleave channels in bps. See ATUR transmit rate for ATUC receive rates.
-adslAtucChanConfMaxInterleaveDelay=	0 to 900(**0**)	maximum Interleave delay for this channel. Use only on the interleave channel. Defines the mapping (relative spacing) between subsequent input bytes at the interleaver input and the byte placement in the bit stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for improved impulse noise immunity at the expense of payload latency. Currently not configurable.
-adslAturConfRateMode=	fixed **adaptAtStartup** adaptAtRuntime	transmit rate adaptation configured on the modem.
-adslAturConfTargetSnrMgn=	0 to 15 (**6**)	target signal/noise margin. Noise margin the modem must achieve with a BER of 10-7 or better to successfully complete initialization. ***Note:*** The recommended setting for G.Lite is 4 dB; the default is not automatically changed when G.Lite is provisioned.
-adslAtucConfRateMode=	fixed **adaptAtStartup** adaptAtRuntime	transmit rate adaptation configured on the ADSL MLC.

—continued—

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits (continued)

Parameter	Values (default values are in bold)	Description
-adslAturChanConfInterleaveMinTxRate=	0 to 1440 bps (**32**)	minimum transmit rate for Interleave channels in bps. See ATUC transmit rate for ATUR receive rates.
-adslAturChanConfInterleaveMaxTxRate=	0 to 1440 bps (**1440**)	maximum transmit rate for Interleave channels in bps. See ATUC transmit rate for ATUR receive rates.
-adslAturChanConfMaxInterleaveDelay=	0 to 256 (**10**)	maximum Interleave delay for this channel. Use only on the interleave channel. Defines the mapping (relative spacing) between subsequent input bytes at the interleaver input and the byte placement in the bit stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for improved impulse noise immunity at the expense of payload latency.
-adslAtucConfTargetSnrMgn=	0 to 15 (**6**)	target signal/noise margin. Noise margin the ADSL MLC must achieve with a BER of 10-7 or better to successfully complete initialization. ***Note:*** The recommended setting for G.Lite is 4 dB; the default is not automatically changed when G.Lite is provisioned.
-circuitAtuc15MinThreshFecI=	0 to 2147483647 (**900**)	number of forward error correction errors which can occur on the interleaved data stream within a 15 minute period before a circuitAtucThreshFecITrap is generated
-circuitAtuc15MinThreshLcdI=	0 to 2147483647 (**25**)	number of loss of cell delineation errors which can occur on the interleaved data stream within a 15 minute period before a circuitAtucThreshLcdITrap is generated
-circuitAtuc15MinThreshCrcI=	0 to 2147483647 (**500**)	number of cyclical redundancy check errors which can occur on the interleaved data stream within a 15 minute period before a circuitAtucThreshCrcITrap is generated

—continued—

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits (continued)

Parameter	Values (default values are in bold)	Description
-circuitAtuc15MinThreshHecI=	0 to 2147483647 (**50**)	number of header error check errors which can occur on the interleaved data stream within a 15 minute period before a circuitAtucThreshHecITrap is generated
-adslAtucInitFailureTrapEnable=	enable **disable**	enables and disables the InitFailure trap
-adslAturThresh15MinLofs=	0 to 900 seconds (**25**)	number of loss of frame errors, in seconds, which can occur on the modem ADSL interface within a 15 minute period before an adslAtucPerfLofsThresh trap is generated. 0 disables the trap.
-adslAturThresh15MinLoss=	0 to 900 seconds (**25**)	number of loss of signal errors, in seconds, which can occur on the modem ADSL interface within a 15 minute period before an adslAtucPerfLossThresh trap is generated. 0 disables the trap.
-adslAturThresh15MinLprs=	0 to 900 (**25**)	number of loss of power errors, in seconds which can occur on the modem ADSL interface within a 15 minute period before an adslAtucPerfLprsThresh trap is generated. 0 disables the trap.
-adslAturThresh15MinESs=	0 to 900 (**800**)	number of errored seconds which can occur on the modem ADSL interface within a 15 minute period before an adslAtucPerfESsThresh trap is generated. 0 disables the trap.
-adslAtucThresh15MinLofs=	0 to 900 (**25**)	number of loss of frame errors, in seconds, which can occur on the ADSL MLC interface within a 15 minute period before an adslAtucPerfLofsThresh trap is generated. 0 disables the trap.
—continued—		

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits (continued)

Parameter	Values (default values are in bold)	Description
-adslAtucThresh15MinLoss=	0 to 900 (**25**)	number of loss of signal errors, in seconds, which can occur on the ADSL MLC interface within a 15 minute period before an adslAtucPerfLossThresh trap is generated. 0 disables the trap.
-adslAtucThresh15MinLprs=	0 to 900 (**1**)	number of loss of power errors, in seconds which can occur on the ADSL MLC interface within a 15 minute period before an adslAtucPerfLprsThresh trap is generated. 0 disables the trap.
-adslAtucThresh15MinESs=	0 to 900 (**500**)	number of errored seconds which can occur on the ADSL MLC interface within a 15 minute period before an adslAtucPerfESsThresh trap is generated. 0 disables the trap.
-adslAtucThreshold15MinFailedFastR	0 to 900 (**0**)	The number of failed fast retrains in a 15 minute window that may occur before an adslAtucThreshold15MinFailedFastRThresh trap is generated.
-atmInterfaceMaxVpcs=	0 to 4096 (**0**)	maximum number of virtual path connections (VPC) supported at this ATM interface. At the ATM user-network interface (UNI), the number of VPCs allowed is 0 to 256 only.
-atmInterfaceMaxVccs=	0 to 65536 (**0**)	maximum number of virtual channel connections (VCC) supported at this ATM interface
-atmInterfaceMaxActiveVpiBits=	0 to 12 (**0**)	maximum number of active virtual path identifier (VPI) bits configured for use at the ATM interface. At the ATM UNI, the number of active VPI bits allowed is 0 to 8 only.
-atmInterfaceMaxActiveVciBits=	0 to 16 (**0**)	maximum number of active virtual circuit identifier (VCI) bits configured for use at this ATM interface

—continued—

Table 2-9
Optional provisionable parameters for ADSL subscriber circuits (continued)

Parameter	Values (default values are in bold)	Description
-gLiteAtuFastRetrainEnabling	enabled (**1**) disabled(2)	This value allows the fast retrain operation to occur on a G.Lite circuit. Disabling this setting will inhibit fast retrain whether or not the circuit has microfilters.
-gLiteFastRetrainSNRMargin	0 to 15 (**3**)	determines how strictly profiles are selected during a fast retrain; the delta is to be met with a given profile between measured SNR margin at the time of fast retrain, target SNR margin, and the stored profile SNR margin, on a per carrier basis; for G.Lite only. ***Note:*** Changing the profile selection tolerance may result in a full retrain of the circuit. ***Note:*** A higher value increases the possibility of a profile match, but may result in sub-optimal performance. A lower value will decrease the possibility of a profile match, but may result in more full link retrains than necessary.
-vcc=	0 to 65535 (**0**)	virtual channel connection An entry of 0 causes uEMS to automatically assign a unique identifier.
-transmissionModeEnabling	autodetect (1) t1413ANSI (2) glite (3) gdmtITUT (4)	This parameter is valid for any ADSL circuit. It is used to choose in which services the circuit is allowed to operate. The service selection parameter allows one or all services to be enabled on a given circuit.
—end—		

Force provisioning

You can use the CLUI to reprovision a multi-circuit line card (MLC) to a different type of hardware without changing the circuit address and without immediately changing the hardware present in the UE9000 shelf.

However, the subscriber circuits are not usable until the hardware is replaced and the new subscriber circuits have been provisioned. See Procedure 1-13 on page 1-60 for more information.

The command format for this feature is:

./hstpprov [device type for new MLC] forceProvision NE.[NE_name] /SHELF.[shelf_name]/LC.[card_#]

where

[device type for new MLC]	is the device type for the MLC that will replace the existing MLC (see page 2-5)
[NE_name]	is the name of the network element
[shelf_name]	is the name of the shelf
[card_#]	is the logical card number of the MLC

Example command:

./hstpprov lc.ue.adsl4 forceProvision NE.1/SHELF.1/LC.2

In this example, the MLC in NE 1, shelf 1, slot 2 is provisioned as a ADSL multi-circuit line card. The shelf generates a “h/w mismatch” alarm until the hardware matching the new provisioning is installed in that slot.

Procedure 2-1
Provisioning multiple UE9000 components using a UNIX script

Use this procedure to provision a number of Universal Edge 9000 (UE9000) components in the UE9000 element management system (uEMS) database at one time. You can provision a UE9000 component before the hardware device is physically installed.

Before you begin

You need a basic knowledge of UNIX.

You need the information listed in Table 2-1 for the UE9000 components you are provisioning.

Action

Step	Action
Open the text editor	
1	Log into the workstation and open a text editor window.
Create a script	
2	Type in the UE9000 components you want to provision in the uEMS database. Use the uEMS command line user interface (CLUI) command format for each UE9000 component entered. See Table 2-2 on page 2-7 for detailed information on the CLUI command formats. To start a new line after each entry, press the **Return** key. ***Note 1:*** Include the prefix **hstpprov** only if you plan to delay the script file execution (see Procedure 2-2, "Scheduling a UNIX script execution" on page 2-33). ***Note 2:*** Type these commands on a single line. Some of the commands below appear on multiple lines due to space limitations.

—continued—

Procedure 2-1 (continued)
Provisioning multiple UE9000 components using a UNIX script

Step	Action

Example of a script

```
config.ue.sdg provision SDG.G1

config.ue.sd provision SDG.G1/SD.ISP2 -atmTrafficDescrType_Down
stream=atmNoClpTaggingNoScr -atmTrafficDescrParam1_Downstream=2
8744 -atmTrafficDescrType_Upstream=atmNoClpTaggingNoScr -atmTra
fficDescrParam1_Upstream=28744 -vpi=3

ne provision NE.SNFCCA01

shelf.ue provision NE.SNFCCA01/ SHELF.1 -sdgroup=G1

dac.ue.atmds1 provision NE.SNFCCA01/SHELF.1/DAC.A
-load=HW203bl -ipaddress=193.6.54.81

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.1

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.2

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.3

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.4

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.5

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.6
```

—continued—

Procedure 2-1 (continued)
Provisioning multiple UE9000 components using a UNIX script

Step	Action

```
car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.7

car.ue.ds1 provision NE.SNFCCA01/ SHELF.1/DAC.A/CAR.8

lc.ue.adsl4 provision NE.SNFCCA01/SHELF.1/LC.4 -load=LC4X4FR02.
0314

cct.ue.adsl provision NE.SNFCCA01/SHELF.1/LC.4/CCT.1

cct.ue.adsl provision NE.SNFCCA01/SHELF.1/LC.4/CCT.2

cct.ue.adsl provision NE.SNFCCA01/SHELF.1/LC.4/CCT.3

cct.ue.adsl provision NE.SNFCCA01/SHELF.1/LC.4/CCT.4

cct.ue.adsl update NE.SNFCCA01/SHELF.1/LC.4/CCT.1
-vcc=AOL,up,0#Sprint,up,0

cct.ue.adsl update NE.SNFCCA01/SHELF.1/LC.4/CCT.2
-vcc=AOL,up,0#Sprint,up,0

cct.ue.adsl update NE.SNFCCA01/SHELF.1/LC.4/CCT.3
-vcc=AOL,up,0#Sprint,up,0

cct.ue.adsl update NE.SNFCCA01/SHELF.1/LC.4/CCT.4
-vcc=AOL,up,0#Sprint,up,0
```

3 Save the file and exit the text editor.

—continued—

Procedure 2-1 (continued)
Provisioning multiple UE9000 components using a UNIX script

Step	Action

Provision the UE9000 components in the uEMS database

4 To input the provisioning data immediately, type the following at a UNIX prompt:

cd /opt/OV/bin/Nortel/HSTP/uems ↵

./hstpprov < [directory]/[file_name] ↵

where

<	a required special character that tells the **hstpprov** command to reference the file name that follows. Type this character exactly as shown. See the example below.
[directory]	UNIX directory path where the text file containing the provisioning data is located
[file_name]	name of the text file

Note: See Procedure 2-2 on page 2-33 for instructions on scheduling the script file to run at a future time or date.

Example of command to input provisioning data

```
./hstpprov < /tmp/cmds.txt
```

—end—

Procedure 2-2
Scheduling a UNIX script execution

Use this procedure to schedule a future time for the workstation to execute a UNIX script. The **at** command executes the commands stored in a script file at a specified time and date.

Requirements

You must create a script file that includes a **hstpprov** prefix for each command. For information on creating the script file, see Procedure 2-1 on page 2-29.

Action

Step	Action
1	Ensure that your user name is in the **/var/adm/cron/at.allow** file.
2	Issue the **at** command at the UNIX prompt using the following format: **at -f [script filename] [time-date]** where [script filename] the path and name of the script file created in Procedure 2-1 on page 2-29 [time-date] the time that you want the **at** file to run Examples: now + 10 minutes 8:15pm Sep 15 1300 tomorrow noon 10/31/99 0930 monday ***Note:*** See the UNIX man pages for more information on using the **at** command.

—continued—

Procedure 2-2 (continued)
Scheduling a UNIX script execution

Step	Action

Example

For example, to provision a DS1 IMA ATM core card at 9:30 a.m. on the following Monday, the **at** command consists of the following line:

at -f /tmp/myscript 0930 monday

In this example, the /tmp/myscript file includes the following line:

/opt/OV/bin/Nortel/HSTP/uems/hstpprov dac.ue.atmds1 provision NE.SNFCCA01/SHELF.1/DAC.A -load=HW203bl -ipaddress=193.6.54.81

—end—

Software management

This chapter describes how to manage the software for the Universal Edge 9000 (UE9000) system.

> ***Note:*** Some UE9000 data equipment procedures, such as posting equipment screens for UE9000 data equipment, can be performed using the access bandwidth manager's (ABM) network element user interface (NEUI). For information on these procedures, see the *UE9000 Voice OAM&P User Guide*.

Chapter contents

This chapter includes the following topics:

This chapter contains the following tasks:

Task	See
Loading UE9000 software on the uEMS workstation	Procedure 3-1 on page 3-3
Upgrading ATM and line card loads	Procedure 3-2 on page 3-4
Monitoring the /var partition	Procedure 3-3 on page 3-8

—continued—

Task	See
Backing up and restoring the uEMS workstation databases	Procedure 3-4 on page 3-10
Upgrading the uEMS software	Procedure 3-5 on page 3-12
—end—	

Software upgrade process

Table 3-1 outlines the software upgrade process for the Universal Edge 9000 (UE9000) data equipment.

Table 3-1
Software upgrade process

Step	Task	See
1	Loading UE9000 software on the uEMS workstation	Procedure 3-1 on page 3-3
2	Upgrading ATM and line card loads	Procedure 3-2 on page 3-4

Procedure 3-1
Loading UE9000 software on the uEMS workstation

Use this procedure to load software for the ATM core card and the xDSL multi-circuit line card (MLC) on the UE9000 element management system (uEMS) workstation.

Action

Step	Action
1	Read the instructions that accompany the new software load. Follow those instructions to install the load on the uEMS workstation that manages the ATM core card and xDSL MLC equipment.
2	Go to Procedure 3-2 on page 3-4.

—end—

Procedure 3-2
Upgrading ATM and line card loads

Use this procedure to update or change the software load on the UE9000 equipment.

Note: To see software load lineup (version) information for AccessNode release, uEMS, ATMIF (DS1 and DS3), and MLCs, select **Help -> Nortel uEMS-> uEMS Load Lineup**. The systems displays software version information for the current and two previous releases.

CAUTION
Loss of service
During a software upgrade, all data traffic on the ATM core card is dropped. Traffic cannot be restored until the software upgrade is finished.

1 How many devices are you updating?

If you are updating	Then
one piece of equipment	go to step 2
all similar equipment on a shelf	go to step 7
all similar equipment on an NE	go to step 13

Updating provisioning for one piece of equipment

2 Go to the shelf submap (see Figure 1-2 on page 1-6).

3 Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.

4 Right click the UE9000 component that you want to update.

5 Select **Change [device] Provisioned Load** from the pop-up menu.

The Load Selection Pop-up dialog appears.

—continued—

Procedure 3-2 (continued)
Upgrading ATM and line card loads

Step	Action
6	Select the desired load from the list of available loads and click **OK**. *The Load Selection Pop-up dialog disappears. The provisioned load is changed in the uEMS database. The new load will be sent to the equipment the next time you issue a a restart reload command. See the UE9000 Data Testing and Troubleshooting Guide for procedures.* ***Note:*** If you have two DS3 ATM core cards in the shelf, outage time during software upgrades can be minimized by loading the new software version on the "standby" DS3 card, and then performing a swact ("standby" card will become the "active" card). The new software version can then be loaded on the other DS3 card. For information on performing a swact, refer to the *UE9000 Data Testing and Troubleshooting Guide*.
Updating provisioning for all similar equipment on a shelf	
7	Go to the NE submap (see Figure 1-2 on page 1-6).
8	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
9	Right click the appropriate symbol for the shelf that you want to update.
10	Select Attribute **Change -> All [equipment] Loads** from the pop-up menu. *A confirmation message appears asking if you are sure you want to change the loads of all the equipment you selected.*
11	Click **OK**. *The Load Selection Pop-up dialog appears.*
12	Select the desired load from the list of available loads and click **OK**. *The Load Selection Pop-up dialog disappears. The provisioned load is changed in the uEMS database. The new load will be sent to the equipment the next time you issue a a restart reload command. See the UE9000 Data Testing and Troubleshooting Guide for procedures.*
Updating provisioning for all similar equipment on an NE	
13	Go to the HSTP-network submap (see Procedure 1-24, "Opening a temporary read-write map" on page 1-82).

—continued—

Procedure 3-2 (continued)
Upgrading ATM and line card loads

Step	Action
14	Confirm that [Read-Write] appears in the lower left corner of the submap. If you do not have read-write access, see Procedure 1-24, "Opening a temporary read-write map" on page 1-82.
15	Right click the appropriate symbol for the NE that you want to update.
16	Select Attribute **Change -> All [equipment] Loads** from the pop-up menu. *A confirmation message appears asking if you are sure you want to change the loads of all the equipment you selected.*
17	Click **OK**. *The Load Selection Pop-up dialog appears.*
18	Select the desired load from the list of available loads and click **OK**. *The Load Selection Pop-up dialog disappears. The provisioned load is changed in the uEMS database. The new load will be sent to the equipment the next time you issue a a restart reload command. See the UE9000 Data Testing and Troubleshooting Guide for procedures.* **—end—**

Administering the HP OpenView database

As the Hewlett Packard OpenView (HPOV) OVWDB database increases in size, the HPOV and uEMS GUI will decrease in performance and respond slower than usual. In addition, the increasing size of the database increases the likelihood of database corruptions.

If the OVWDB database becomes corrupted, the workstation's entire database must be erased to remove the corruption. Database information for all applications running on the HPOV workstation will be lost.

To prevent this from happening, a system administrator should be assigned to manage the HPOV database and keep the database at a proper size. Two ways to manage the OVWDB database are:

- monitoring the /var partition (see Procedure 3-3, "Monitoring the /var partition" on page 3-8)
- performing periodic database backups (see Procedure 3-4, "Backing up and restoring the uEMS workstation databases" on page 3-10)

Procedure 3-3
Monitoring the /var partition

Use this procedure to monitor the /var partition on the UE9000 element management system (uEMS) workstation.

Many UNIX processes use the /var partition to log events. Events are logged to the following UNIX files in the /var partition:

- /var/opt/OV/share/log/trapd.log
  When this log reaches a certain limit, HPOV renames the log file and continues logging into a new file with the above file name.
- /var/opt/OV/share/log/Nortel/HSTP

CAUTION
Risk of database corruption
The database becomes corrupted if the log files in /var/opt/OV/share/log/Nortel/HSTP exceed the disk space allotted to the /var partition. You can avoid this by archiving your log files to tape periodically.

One sign that the /var partition's disk space is almost full is that the Event Browser window opens slower than usual.

Action

Step	Action
1	Periodically run the HPUX cleanup utility to remove patch installation backup files and redundant patch information. Type the following at a terminal window: **cleanup** ↵ *The cleanup utility executes.* See the HPUX man pages on this utility for more information.

—continued—

Procedure 3-3 (continued)
Monitoring the /var partition

Step	Action
2	To prevent the /var partition's disk space from filling up, weekly maintenance must be performed. This includes: • checking the available space of the /var partition (see step 3) • reducing the files in the /var partition, if necessary (see step 4)
3	Check the size of the /var partition by opening a terminal window on the uEMS workstation. At the UNIX prompt, type: **bdf** ↵ *Output similar to the following appears.*

```
Filesystem          kbytes      used      avail     %used    Mounted on
/dev/vg00/lvo13     131072      35494     89605     28%      /
/dev/vg00/lvo13     47829       13717     29329     32%      /stand
/dev/vg00/lvo18     409600      276012    123579    69%      /var
/dev/vg00/lvo17     409600      326502    77457     81%      /usr
/dev/vg00/lvo15     409600      278431    122470    69%      /opt
/dev/vg00/lvo11     1024000     184095    787382    19%      /opt/nortel
```

4	If the /var partition is more than 95 percent full, call your system administrator to archive and delete unused files. The system administrator should concentrate first on directories that experience high disk usage.

—end—

Procedure 3-4
Backing up and restoring the uEMS workstation databases

Use this procedure to back up and restore the databases on the UE9000 element management system (uEMS) workstation.

Action

Step	Action
	Back up the databases
1	Make sure that you have superuser privileges.
2	Open a terminal window on the uEMS workstation and back up the databases by typing: **/opt/OV/bin/Nortel/HSTP/uems/uemsbackup** ↵ *The workstation databases are backed up in the /opt/uEMSbackup/ directory with a name similar to backup.13Jul1999_1730:00.* ***Note:*** To prevent data loss, Nortel recommends that you periodically copy the most recent backup file to tape or CD.

CAUTION
Loss of alarm monitoring
No alarm monitoring of the full network takes place during the following procedure. Events/alarms occurring are raised only once the procedure is completed.

3	If the uemsbackup command reports that it fails to do a backup because the system is too busy, type the following then go to step 1: **/opt/OV/bin/ovstop** ↵ **/opt/OV/bin/Nortel/HSTP/uems/uemsbackup** ↵ **/opt/OV/bin/ovstart** ↵

—continued—

Procedure 3-4 (continued)
Backing up and restoring the uEMS workstation databases

Step	Action
Restore backed up databases	
4	Open a terminal window on the workstation and log in as root. At the prompt, type: **/opt/OV/bin/Nortel/HSTP/uems/uemsrestore [backup file]** ↵ where [backup file] is the name of the backed-up file, such as **backup.13Jul1999_1730:00** *The workstation databases are restored.* **—end—**

Procedure 3-5
Upgrading the uEMS software

Use this procedure to upgrade the UE9000 element management system (uEMS) software, if necessary, after it has been installed on the HPOV workstation.

Action

Step	Action
1	Read the instructions that accompany the new uEMS software load. Follow those instructions to install the load on the uEMS workstation.

—end—

Network and user security

The Universal Edge 9000 element management system (uEMS) provides three types of security:

- UNIX/Solaris workstation login passwords
- file permissions
- simple network management protocol (SNMP) community strings

See Table 3-2 for a description of each security feature.

Table 3-2
uEMS security features

Security feature	Platform	Type of security provided
UNIX/Solaris workstation log in passwords	UNIX/Solaris	UNIX/Solaris provides the following security: • workstation user name and password • read, write, and executable permissions on executables and files
file permissions	HP OpenView (HPOV)	HPOV security is based off of the security provided by UNIX/Solaris. Every HPOV pull-down and pop-up menu item has an associated UNIX/Solaris file. If users have read permissions on the UNIX/Solaris file associated with a particular HPOV menu item, they can access that menu item. If the user does not have read permission, then the menu item is hidden and not accessible.

—continued—

Table 3-2
uEMS security features (continued)

Security feature	Platform	Type of security provided
SNMP community strings	SNMP	Every SNMP message includes a community string. This community string acts as a password. An SNMP agent accepts only the SNMP requests sent to it that contain a community string known by the SNMP agent. All SNMP requests with unknown community strings are rejected. If the community string is known, the SNMP agent checks the community string permission against the permission required to perform the requested operation. If the permissions match, the operation is performed by the SNMP agent. If the permissions do not match, the request is denied. ***Note:*** The SNMP community strings in uEMS are read-only and cannot be changed.
—end—		

User permissions

You can give users access to various uEMS commands based on their UNIX/Solaris user-group assignment.

Table 3-3 on page 3-15 summarizes the permissions for the various user levels.

Table 3-3
Permissions for user levels

UNIX/Solaris group		uEMS operations		
Access Level	**UNIX/Solaris Group ID**	**Lock and unlock**	**Provision, unprovision, update**	**Test, restart**
root	—	Yes	Yes	Yes
admin	adm	Yes	Yes	Yes
provisioning	prov	Yes	Yes	No
maintenance	maint	Yes	No	Yes
surveillance	surv	No	No	No
Others	—	No	No	No

Assigning user permissions

Use the /opt/OV/bin/Nortel/HSTP/uems/tools/uems_admin tool to assign users to the UNIX/Solaris user-groups (on the local machine only). You can launch this script from the main menu bar by selecting **Configuration -> Nortel UEMS-> User Accounts.**

To configure a username globally on several machines (for example, to support OVW client sessions), you must add the username on the NIS server. See your UNIX/Solaris administrator about using NIS services to configure the username globally.

Workstation security

For information on creating user groups, associating command restrictions with user groups, assigning individual user names and passwords, and assigning users to user groups on the uEMS workstation, see the operating system documentation.

Appendix A - Understanding the uEMS

This chapter describes the functionality of the Universal Edge 9000 element management system (uEMS) user interface.

Chapter contents

This chapter contains the following topics:

Terms

This chapter uses terms that may be new to some operating company personnel. The following list describes some of these terms.

Dialog box an interactive message box. A dialog box displays information on a UE9000 component and allows you to change or enter information.

Event a system occurrence that requires user notification. uEMS events are generated using simple network management protocol (SNMP). The following are some conditions that generate uEMS events:

- a threshold limit was exceeded
- the configuration of a node changed
- the status of a node changed
- a warm or cold restart occurred on a node

Object an entry in the uEMS database which is used to represent the attributes of a specific component in the UE9000 network. An object can be a physical entity, such as a hardware device, or a logical entity, such as a group of hardware devices.

Menu a list of items that you select to perform tasks. A menu can be a pull-down or pop-up menu.

Status the operating or administrative condition of the UE9000 component. The status of a UE9000 component is represented by:

- the color of its uEMS GUI symbol
- any annotation text on its uEMS GUI symbol
- any alert bubbles on its uEMS GUI symbol

Submap a view of a specific section of the UE9000 network

Symbol a graphical representation on the uEMS submap screen of a UE9000 component in the uEMS database. A symbol can be an icon or a connection symbol. An icon symbol represents a single UE9000 component in the uEMS database, such as an ATM core card. A connection symbol represents the connection between two UE9000 components, such as the ADSL subscriber circuit connecting a UE9000 customer premise equipment (CPE) modem and an ADSL multi-circuit line card.

Overview

The uEMS GUI provides operation, maintenance, administration, and provisioning (OAM&P) functions. It is based on Hewlett Packard OpenView and operates on a UNIX or Solaris workstation. The uEMS GUI uses symbols and menus to represent components of the UE9000 network.

From the uEMS GUI, you can perform the following operations on the UE9000 network:

- provision, remove, and update UE9000 components
- perform maintenance on and test UE9000 components
- monitor the UE9000 network

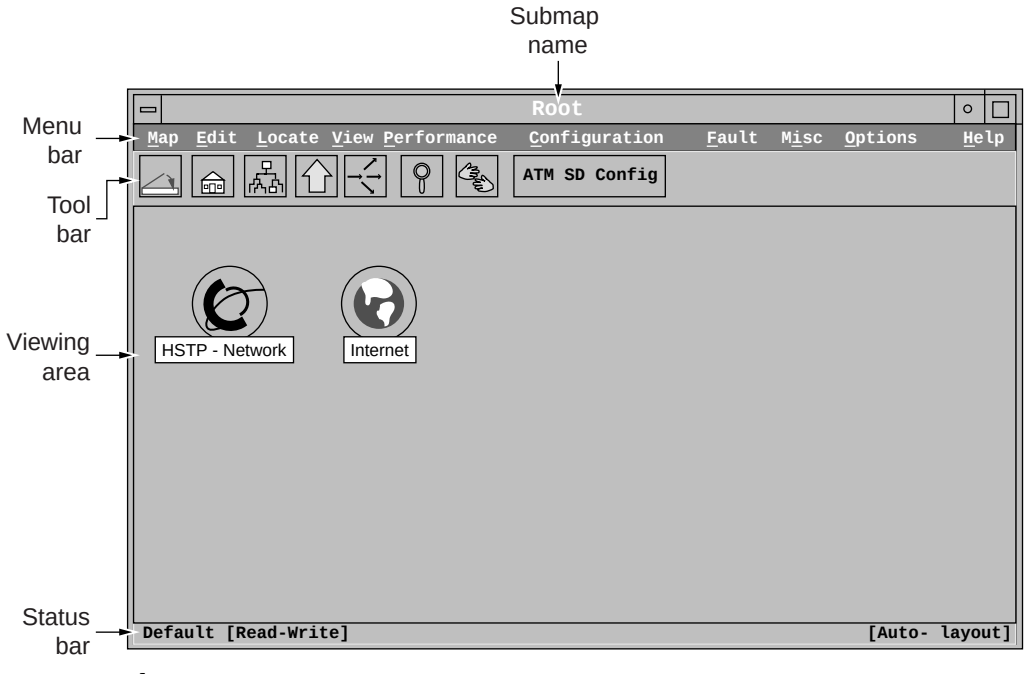
The uEMS also supports a command line user interface (CLUI) as described in Chapter 2, “Bulk provisioning data services.”

uEMS screen

Figure 4-1 shows the components of a uEMS GUI screen.

Figure 4-1
Submap components

UE-1016



Three-button mouse

In order to use uEMS you must have a three-button mouse. See Procedure 1-1 on page 1-7 for an example of how to use the middle button.

Submap name

The name of the submap appears at the top of the submap window. The name of the submap in Figure 4-1 is Root.

Menu bar

Each submap has a menu bar near the top of the submap window. The menu bar contains pull-down menus organized by functionality.

Pull-down menu

To open a pull-down menu, position the cursor over the name of the menu and press the left mouse button.

If a letter is underlined in the name of the menu, you can use the keyboard to open a menu. Press the **Alt** key and the underlined letter to open the menu. For example, press **Alt M** to open the Map menu.

Each pull-down menu displays additional selections. The availability of each selection varies according to the submap. If the uEMS GUI displays the selection in white type, the selection is available for the current submap. If the uEMS displays the selection in gray type, the selection is not available for the current submap.

Tool bar

Each submap has a tool bar below the menu bar. The tool bar contains several buttons with graphic icons. These buttons allow you to perform quick actions.

To perform an action, position the cursor over the tool bar button and press the left mouse button.

For more information on the tool bar buttons and the actions they perform, see the Hewlett Packard OpenView (HPOV) documentation or the HPOV on-line help.

Viewing area

The viewing area contains the symbols for the submap. The Internet and HSTP-Network symbols are in the viewing area of the submap in Figure 4-1 on page 4-4.

Status bar

The status bar displays the following information:

- the name of the open view (map)
- the read access available on the open map
- the status of the automatic layout for the submap (enabled or disabled)
- the status of the submap overlay (on or off)

In Figure 4-1 on page 4-4, the name of the view is default, the read access of the submap is read-write, and automatic layout is enabled.

Pop-up menus

Each symbol in a submap has a pop-up menu that allows you to perform one or more of the following functions:

- display information on the selected UE9000 component represented by the symbol
- configure the selected symbol or UE9000 component
- perform maintenance on the selected UE9000 component
- navigate between submaps
- display inventory information on the selected UE9000 component and its child UE9000 components

Maps and submaps

A map consists of a collection of submaps that are used to view the UE9000 network. A map cannot typically be viewed in its entirety.

A submap is a view of a specific section of the UE9000 network.

You can perform the following activities from most submaps in the uEMS GUI:

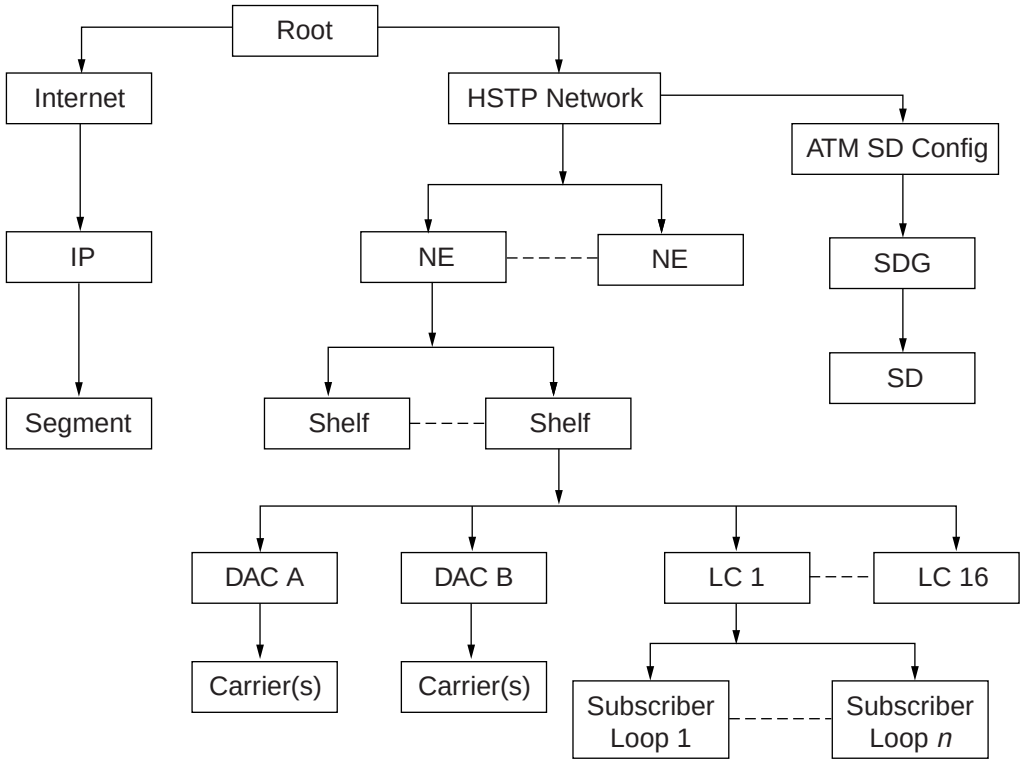
- open the child submap (if any) of symbols on the submap you are in
- monitor the status of UE9000 components
- provision UE9000 components
- unprovision UE9000 components from the UE9000 network
- update the attributes of UE9000 components
- inventory UE9000 components
- perform maintenance and diagnostic activities on UE9000 components
- show faults

Note: Always use a read-write map when changing anything in uEMS. Using a read-only map may yield inaccurate results. A read-write map displays [Read-Write] in the lower left corner. To open a read-write map, see Procedure 1-24, “Opening a temporary read-write map” on page 1-82.

The uEMS arranges submaps in a hierarchy. With this hierarchy, operating system personnel can move between submaps to isolate a component or function. Figure 4-2 shows the submap hierarchy for the uEMS. Also see Figure 1-2 on page 1-6.

Figure 4-2
uEMS submap hierarchy

UE-1014



Root submap

The Root submap is the default submap for the uEMS GUI. The Root submap displays the following symbols:

- the Internet symbol, which provides access to all IP devices on the data network and their respective symbols
- the HSTP-Network symbol, which provides access to all UE9000 components and symbols

You can access all components of the UE9000 network through these symbols. Figure 4-3 shows the Root submap.

Figure 4-3
Root submap

SC-10399

Symbols

This submap uses symbols in the Network symbol class. The HSTP-Network symbol is a default symbol that uEMS creates when the first uEMS map is opened.

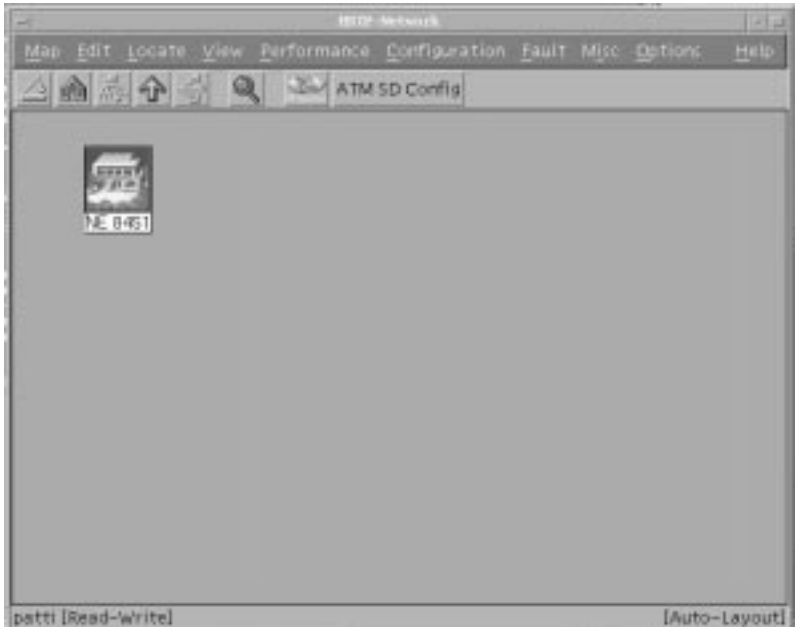
HSTP-Network submap

The HSTP-Network submap displays each network element (NE) in the UE9000 network. Double-click the HSTP-Network symbol at the Root submap to open the HSTP-Network submap.

Figure 4-4 shows the HSTP-Network submap.

Figure 4-4
HSTP-Network submap

SC-10464



Symbols

This submap uses the NE symbol in the UE9000 class.

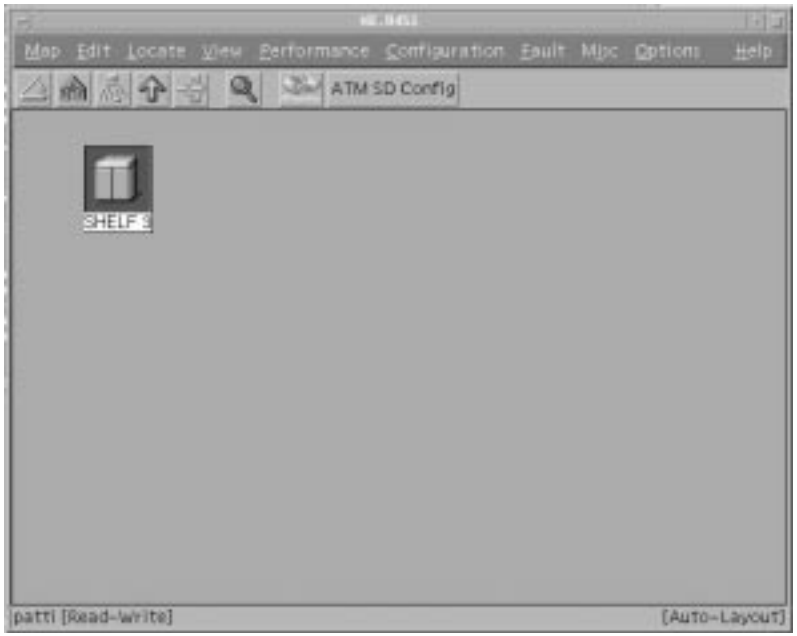
NE submap

The NE submap displays each UE9000 shelf in the selected NE. Double-click an NE symbol at the HSTP-Network submap to open an NE submap.

Figure 4-5 shows the NE submap.

Figure 4-5
NE submap

SC-10465



Symbols

This submap uses the shelf symbol in the UE9000 symbol class.

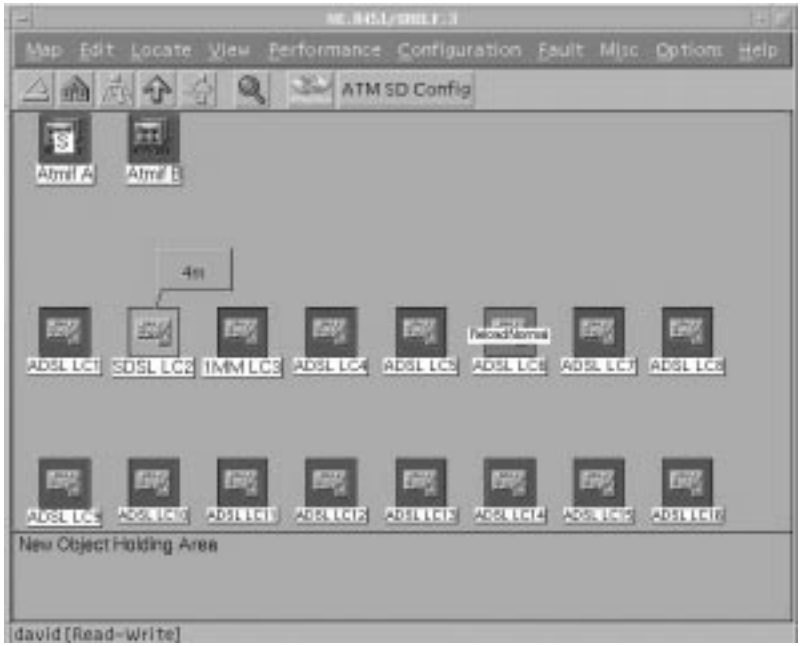
Shelf submap

The shelf submap (see Figure 4-6)displays each ATM core card and line card in the selected shelf. Double click the shelf symbol at the NE submap to open the shelf submap.

> ***Note:*** Although uEMS displays symbols for voice-only line cards, you cannot move, provision, or delete voice-only line cards in uEMS.

Figure 4-6
Shelf submap

SC-10468



Functions

You can perform the following activities from the shelf submap:

- monitor the traffic of each ATM core card and multi-circuit line card
- open the IP submap of each ATM core card
- perform maintenance activities on each ATM core card or line card

Symbols

This submap uses the ATMIF and Line Card symbols in the UE9000 class.

DAC submap

The uEMS has two DAC submaps:

- DS1 DAC submap
- DS3 DAC submap

The DS1 DAC submap displays each DS1 IMA carrier in the selected DS1 IMA ATM core card. Double-click the ATM DS1 core card symbol at the shelf submap to open the DS1 DAC submap.

The DS3 DAC submap displays the DS3 carrier in the selected DS3 ATM core card. Double-click the ATM DS3 core card symbol at the shelf submap to open the DS3 DAC submap.

Figure 4-7 shows the DS1 DAC submap.

Figure 4-7
DS1 DAC submap

SC-10394

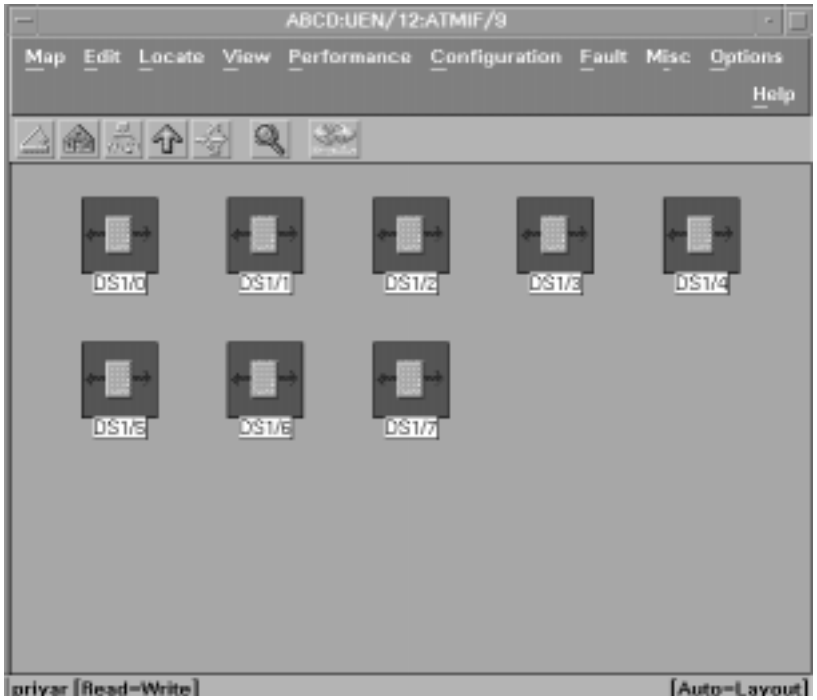
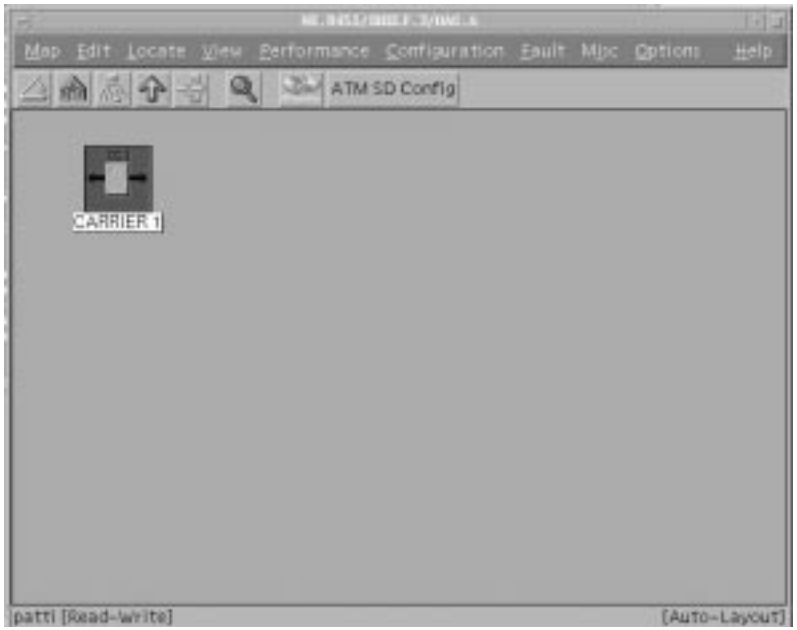


Figure 4-8 shows the DS3 DAC submap.

Figure 4-8
DS3 DAC submap

SC-10463



Functions

You can monitor the state of each DS1 or DS3 carrier from the appropriate DAC submap.

Symbols

The DS1 DAC submap uses the DS1 Link symbol in the UE9000 class. The DS3 DAC submap uses the DS3 Link symbol in the UE9000 class.

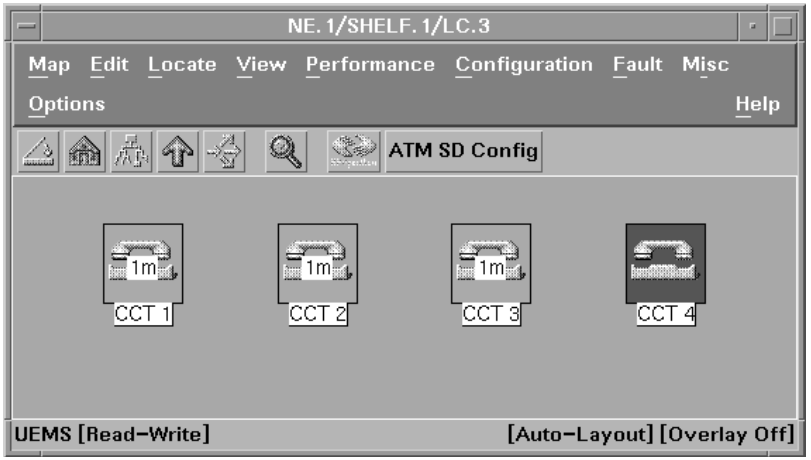
LC submap

The LC submap displays each subscriber circuit in the selected LC. Double-click the LC symbol at the shelf submap to open the LC submap.

Figure 4-9 shows the LC submap for an ADSL line card.

Figure 4-9
LC submap

SC-10397



Functions

You can monitor the traffic of each subscriber circuit from the LC submap.

Symbols

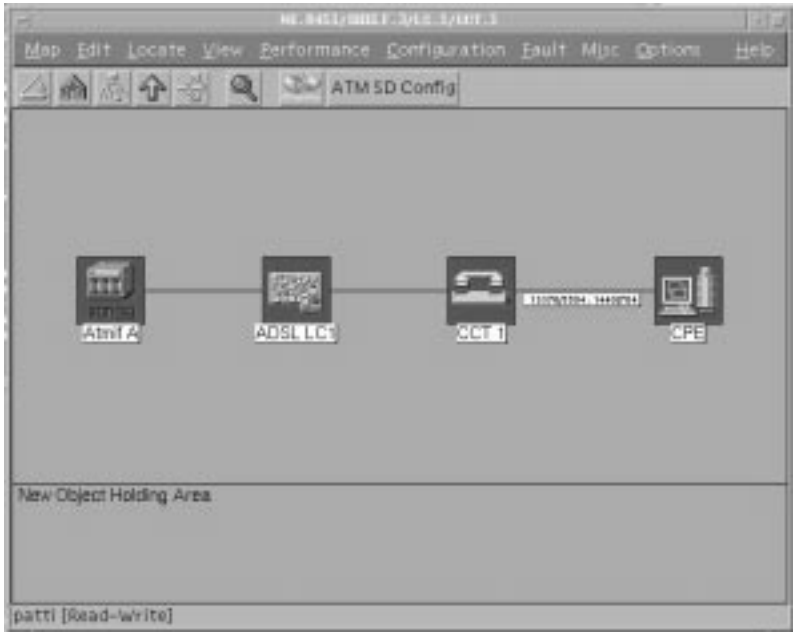
This submap uses the Circuit symbol in the UE9000 class.

Subscriber loop submap

The Subscriber loop submap displays the subscriber loop for the selected subscriber circuit. Double-click the subscriber circuit at the LC submap to open the Subscriber loop submap. Figure 4-10 shows the Subscriber loop submap.

Figure 4-10
Subscriber loop submap

SC-10469



Symbols

This submap uses the ATMIF, Line Card, Circuit, and CPE symbols in the UE9000 symbol class. The submap also shows the data throughput between the circuit and the CPE. The downstream synch rate is the left pair of numbers, and it represents data flow from the central office toward the subscriber. The upstream synch rate is the right pair of numbers, and it represents the data flow from the subscriber to the central office.

The downstream and upstream figures are separated by a colon. Each figure is displayed as: provisioned maximum data rate / actual data rate.

Service descriptor group submap

The service descriptor group submap displays the default service descriptor group and any other service descriptor groups that have been provisioned. Click on the ATM SD Config button to open the service descriptor group submap.

Figure 4-11 shows the service descriptor group submap.

Figure 4-11
Service descriptor group submap

SC-10405

Symbols

This submap uses the service descriptor group symbol in the UE9000 class.

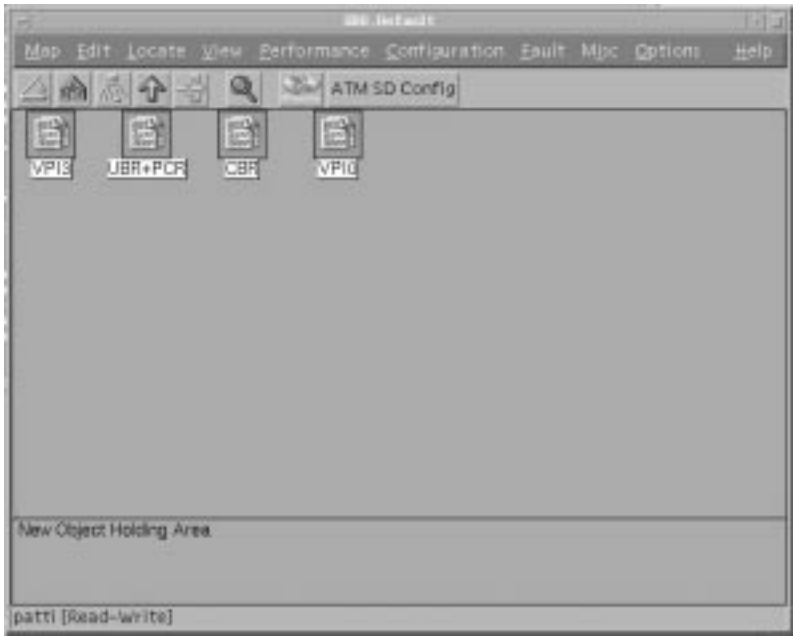
Service descriptor submap

The service descriptor submap displays each service descriptor that has been provisioned for a specific service descriptor group. Double-click a service descriptor group symbol at the service descriptor group submap to open the service descriptor submap.

Figure 4-12 shows the service descriptor submap.

Figure 4-12
Service descriptor submap

SC-10467



Symbols

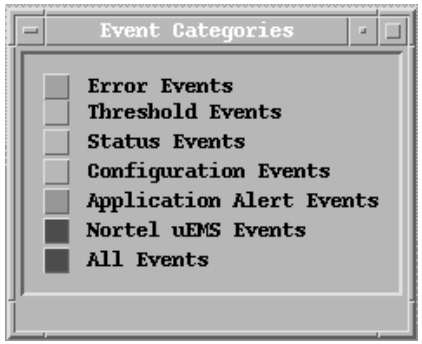
This submap uses the service descriptor symbol in the UE9000 class.

Event Browser

The event browser is where uEMS displays events, which are single-occurrence messages that are usually less important than alarms. To access the event browser, click **Nortel uEMS Events** from the Event Categories window (see Figure 4-13). For more information about events, see the *UE9000 Data Testing and Troubleshooting Guide*.

Figure 4-13
Event Categories window

SC-10402

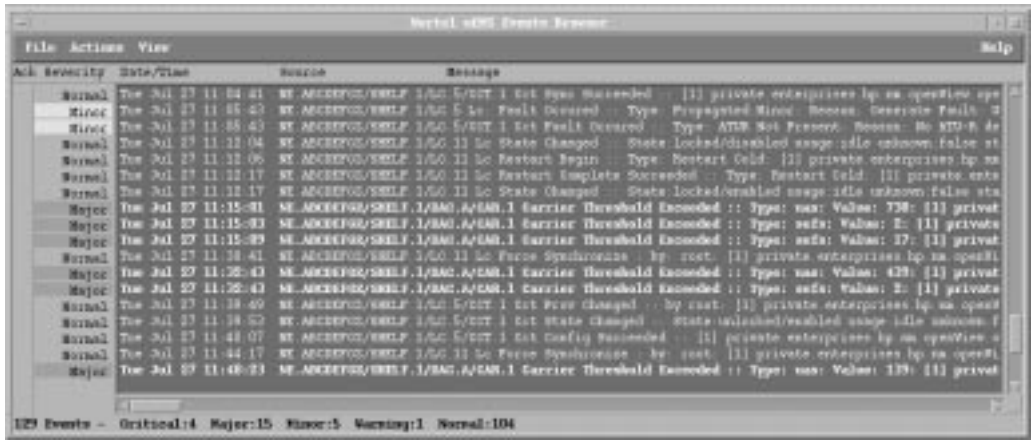


Operating company personnel use the Root submap to perform OAM&P functions on UE9000 components. The Event Categories window provides quick access to event logs that record OAM&P activities performed by the switch and operating company personnel.

Figure 4-14 shows the event browser window.

Figure 4-14
Event browser window

SC-10403



You can perform the following functions on the event browser:

- To display help about an event, click the event and select:

  View -> Describe Event

  The Describe Event window appears, displaying specific information about the selected event.

- To view the entire message for an event, click and hold the right mouse button on the event.

  A pop-up window appears, displaying the entire event message text.

  Release the right mouse to return to the event browser.

Alarm browser

The alarm browser is where uEMS displays alarms, which are messages that occur once when an important problem exists, and again when the problem is cleared. For more information about specific alarms, see the *UE9000 Voice Testing and Troubleshooting Guide*. To access the alarm browser, use one of the following methods.

Table 4-1
Accessing the alarm browser

To see	Then
all alarms managed by the uEMS	press the **Alarm Browser** button on the alarm banner
all alarms for a device and all its subcomponents	double-click an object's alert bubble
	right-click an object's alert bubble, and select **Show alarms for this device** from the pop-up menu **OR** select an object; then select **Show -> Fault**

Note: You must install Java JRE ver. 1.1.8 and Swing ver. 1.1.1 before you can use the alarm browser. See the uEMS CD for installation instructions.

If you are having trouble accessing the alarm browser, or if the alarm counts in the alarm browser do not match the alarm counts displayed on uEMS symbols, use the following command:

Misc -> Nortel uEMS -> Synchronize Alarm Browser

This command synchronizes the alarm database with the uEMS database. If the alarm database is missing, this command causes uEMS to rebuild it.

The alarm browser can be either open or closed when this command is issued. However, if it is open, you must press the refresh button or wait 60 seconds for an automatic refresh to occur.

This command is not service affecting and can be issued at any time.

Figure 4-15 shows the alarm browser window.

Figure 4-15
Alarm browser window

SC-10462

The alarm browser displays the following information about each alarm:

- acknowledgement status
- alarm status
- alarm severity
- raised time
- cleared time
- source
- alarm text/reason

Note: To avoid slow system response time, do not open more than one alarm browser per user.

Acknowledging alarms

You can acknowledge alarms by clicking the box to the extreme left of each alarm entry. If you acknowledge an alarm by mistake, then you can unacknowledged the alarm to correct your error. Symbols reflect the acknowledged and unacknowledged status of alarms as shown in Table 4-11 on page 4-32.

Sorting

You can sort the alarm information by column as described in Table 4-2.

Table 4-2
Sorting alarm information

To sort in	then
descending order	click a column heading
ascending order	press Shift and click a column heading

Refresh mode

You can set the refresh mode for the alarm browser to either automatic refresh or manual refresh, as described in Table 4-3 on page 4-22.

Table 4-3
Alarm browser refresh modes

This refresh mode	refreshes the display
automatic	every 60 seconds
	when you press the **Refresh** button
	when you change the filter settings
manual	when you press the **Refresh** button
	when you change the filter settings

Filter settings

The filters allow you to show or hide alarms from the alarm browser display based on their status. You may set more than one filter at a time. Table 4-4 shows the filters that are available:

Table 4-4
Alarm browser filters

This filter	displays
critical	only alarms of a critical severity
major	only alarms of a major severity
minor	only alarms of a minor severity
warning	only alarms of a warning severity

Table 4-4
Alarm browser filters

This filter	displays
history	all alarms in the database ***Note:*** The alarm browser removes from its database cleared alarms that are older than 30 days. For information on changing this value, see Procedure 5-8 on page 5-11.
acknowledged	only acknowledged alarms with the active alarms
Note: Active, unacknowledged alarms are always displayed unless their severity filter has been disabled.	

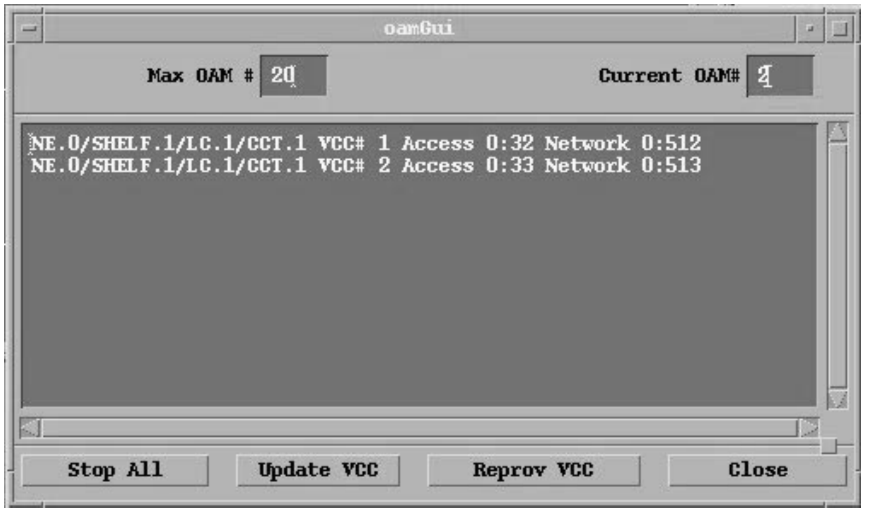
VCC OAM management tool

The VCC OAM management tool is where uEMS displays settings for OAM monitoring parameters (see Table 1-12 on page 1-46). These parameters are used for F5 loopback tests conducted from an ATM edge switch. Buttons on the tool provide functions for managing these parameters in the uEMS database and in the ATM card (see Table 4-5 on page 4-24).

Figure 4-16 shows the VCC OAM management tool:

Figure 4-16
VCC OAM management tool

SC-10466



The VCC OAM management tool has the following buttons:

Table 4-5
VCC OAM management tool buttons

Button	Description
Stop All	clears the OAM monitoring parameters in both the uEMS database and in the ATM card

Table 4-5
VCC OAM management tool buttons

Button	Description
Update VCC	compares the OAM monitoring parameters between the uEMS database and the ATM card. If the number of enabled VCCs does not match, the tool asks if you want to re-sync the parameters in the ATM card. This action clears the OAM bits in the ATM card and then sends to the ATM card provisioning data for circuits with enabled VCCs contained in the uEMS database. ***Note:*** A config failure alarm will prevent a re-sync. See the *UE9000 Data Testing and Troubleshooting Guide* for fault information.
—continued—	
Reprov VCC	clears the OAM bits in the ATM card and then re-syncs the ATM card provisioning data for circuits with enabled VCCs contained in the uEMS database. ***Note:*** A config failure alarm will prevent a re-sync. See the *UE9000 Data Testing and Troubleshooting Guide* for fault information.
Close	closes the tool
—end—	

To launch the VCC OAM management tool, open the ATM card's pop-up menu and select:

Maintenance -> ATM OAM

The oamGUI window appears, displaying a list of all the circuits that are provisioned in the uEMS database with the OAM parameter enabled.

Visual indicators in uEMS

This section explains how uEMS uses visual aids to inform you of the equipment status.

Overview

The uEMS continually monitors and tests UE9000 components. A change in the condition of a component can change the operations of that component and the UE9000.

The uEMS GUI uses several tools to monitor the network and help with troubleshooting. Some of these tools are:

- symbol colors
- annotation text and alert bubbles on a symbol
- events that notify operating company personnel of specific conditions

Color indicators in uEMS

The color of a symbol indicates the status of the symbol's UE9000 component. The color of a symbol also reflects the most severe *unacknowledged* alarm raised by the symbol's UE9000 component. As you acknowledge alarms for a symbol, the following changes occur:

- the symbol color indicates the highest unacknowledged alarm
- the alert bubble text displays a status summary of all the alarms

Note: The tan color overrides previous colors on a symbol, including colors that indicate faults.

Colors can propagate upward to a symbol in the parent submap. The uEMS uses different propagation rules for the shelf symbol than for the HSTP-Network symbols.

The NE symbol and all devices below it use this rule:

- If any of the children devices are red, orange, yellow, or cyan, then uEMS propagates the color for the most critical severity to the parent.

The HSTP-Network and NE symbols use the compound status feature of Hewlett Packard OpenView. The default rule for this feature is shown in Table 4-6 on page 4-27. For more information see the Hewlett Packard OpenView documentation.

Table 4-6
Default compound status

Status of symbols in the child submap	Status propagated to the parent symbol
all normal	normal
one abnormal and all others normal	warning
multiple abnormal and multiple normal	minor
one normal and all others abnormal	major
all abnormal	critical

Color and status legend

Table 4-7 describes each symbol status color. To view this information from the uEMS GUI, select **Display Legend** from the Help pull-down menu of any submap. Use the pull-down menu in the Legend window to select a legend to view.

Note: Other colors are available in Hewlett Packard OpenView, but uEMS does not use them.

Table 4-7
Symbol color legend

Symbol color	Level of severity	Status of UE9000 component	Action
red	critical	• the equipment has failed and no longer supports traffic • a critical event is raised by the equipment	Select **Show -> Fault** to display alarms raised against the object and its children. Resolve the critical alarms immediately.
orange	major	• normal service is affected and performance has degraded • a major event is raised by the equipment • the equipment requires immediate attention	Select **Show -> Fault** to display alarms raised against the object and its children. Resolve the major alarms immediately.

Table 4-7
Symbol color legend (continued)

Symbol color	Level of severity	Status of UE9000 component	Action
yellow	minor	• normal service is not affected, but performance has degraded • a minor event is raised by the equipment • indicates a problem that may escalate	Select **Show -> Fault** to display alarms raised against the object and its children. Resolve the minor alarms at the next opportunity.
light blue (cyan)	warning	• the equipment has a condition that may escalate in severity • normal service is not affected and performance has not yet degraded • a warning event is raised by the equipment	Select **Show -> Fault** to display alarms raised against the object and its children. Resolve the warning alarms at the next opportunity.
green	normal	The equipment is in a normal operational state.	No action is required.
pink	—	All existing alarms have been acknowledged.	Double-click the object's alert bubble to display alarms raised against the object. Resolve the alarms at the next opportunity.
blue	—	The uEMS GUI cannot determine the status of the equipment. The color of the HSTP network and the NE are propagated from the shelves. If all shelves are blue, locked, or none exist, then the NE is blue. If all NEs are blue, the HSTP network is blue. The shelf is blue if the ATM core card is not provisioned.	No action is required.
off-white	—	The equipment represented by the symbol is not provisioned.	Provision the equipment. (No action is required.)

—continued—

Table 4-7
Symbol color legend (continued)

Symbol color	Level of severity	Status of UE9000 component	Action
tan	—	The equipment represented by the symbol has been locked by a craftperson (to perform maintenance, for example). The device has stopped sending subscriber traffic.	Unlock the equipment when the maintenance is complete. ***Note:*** The tan color overrides previous colors on a symbol, including colors that indicate faults.
—end—			

Viewing alarm information

The uEMS GUI provides several methods for viewing alarm-type information, such as events, faults, and alarms. Events are single-occurrence messages of an informational nature. Alarms (and faults), however, are more important and are reported when a problem occurs and when the problem clears.

Table 4-8 describes how to view alarm information in uEMS.

Table 4-8
How uEMS reports alarm information

To view	Then
events	launch the event browser as described in "Event Browser" on page 4-18.
alarms	select an object, then select **Show -> Fault** to display alarms raised against the object and its children **OR** launch the alarm browser as described in "Alarm browser" on page 4-20.

ISO 9000 colors

The uEMS GUI uses the International Standards Organization (ISO) states defined in International Standard ISO10164. Table 4-9 maps uEMS GUI symbol colors to their corresponding ISO states.

Table 4-9
ISO/Symbol color mapping

Symbol Color	ISO state
red	unlocked, disabled
orange	unlocked, enabled
yellow	unlocked, enabled
light blue (cyan)	unlocked, enabled
green	unlocked, enabled
blue	none
off-white	none
tan	locked

Annotation text and alert bubbles

Figure 4-17 shows a subscriber circuit symbol with annotation text and an alert bubble. The alert bubble assumes the same color as the symbol unless the object is locked; then the color is tan.

Figure 4-17
Annotation text and symbol Alert bubble

SC-10461

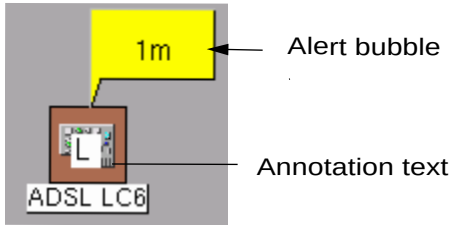


Table 4-10 lists the symbol annotation texts and the conditions each text indicates. For troubleshooting information, see the *UE9000 Data Testing and Troubleshooting Guide*.

Table 4-10
Annotation texts for uEMS GUI symbols

Symbol annotation text	Condition
?	The state of this object is unknown. This is typically shown when uEMS loses communication with the UE9000 shelf.
L	The element is locked (manually busy). The device was explicitly put into this state (e.g. by a craftperson or a program) to stop this device from passing subscriber traffic. The device continues to generate faults with the exception of DS1 and DS3 carriers.
P	The parent symbol for this device is incapable of passing subscriber traffic. The parent device may be locked, for example.
X	The device is incapable of passing subscriber traffic. This is typically preceeded by a critical fault.
S	Designates which ATM core card (in systems with two ATM core cards in the UE9000 shelf) is the “Standby” card.
ATUC download	The line card is downloading dsp firmware to the circuits.
cold restart	The element is performing a cold restart.
config fail	An attempt by uEMS to send information to a device has failed.
configuring	The UE9000 component is in the process of synching with the uEMS database provisioning, OR The uEMS is in the process of unprovisioning the data access card (DAC).
h/w mismatch	The provisioned hardware does not match the existing hardware. For example, a DS1 IMA ATM card is provisioned, but a DS3 ATM card is installed.

—continued—

Table 4-10
Annotation texts for uEMS GUI symbols (continued)

Symbol annotation text	Condition
no comm	uEMS cannot communicate with the ATM. The network or the device is down.
no hw	The UE9000 component's hardware is not present.
not prov	The UE9000 component is not provisioned in the uEMS workstation database.
loopback	The element is performing a loopback test.
reload force	The element is performing a restart reload force.
reload normal	The element is performing a restart reload normal.
restart - No comms	The element is performing a restart reload.
testing	The element is performing a test.
—end—	

Table 4-11 lists the symbol alert bubble texts and a description for each.

Table 4-11
Alert bubble texts for uEMS GUI symbols

Alert bubble	Condition
1M	The number and severity of alarms summary. The summary is described as follows: "C" - critical fault on this device "M" - major fault on this device "m" - minor fault on this device "w" - warning fault on this device "+" - other faults of lower severity exist on this device. For example, "1C+" means there is one critical fault and other faults of lower severity.
Ack:1C	The number and severity of alarms that have been acknowledged.

Appendix B - Using the uEMS GUI

This chapter describes the functionality of the Universal Edge 9000 (UE9000) element management system (uEMS) graphical user interface (GUI).

Chapter contents

This chapter contains the following tasks.

Procedure 5-1
Starting the uEMS graphical user interface

Use this procedure to start the Hewlett Packard OpenView (HPOV) and the UE9000 element management system (uEMS) graphical user interfaces.

Action

Step	Action

1 Do you have an HPOV/uEMS icon on your desktop (as described in Procedure 5-2 on page 5-4)?

If	Then
yes	double-click the icon. You are finished with this procedure.
no	go to step 2.

2 From the UNIX/Solaris workstation, open a terminal window. At the command line type **pwd** and press Enter to see if you are in the /opt/OV/bin directory.

A prompt appears indicating which directory you are in.

If you are	Then
NOT in the /opt/OV/bin directory,	Go to step 3.
in the /opt/OV/bin directory,	Go to step 4.

3 Type **cd /opt/OV/bin** and press Enter to change directories.

4 Type **./ovstatus** and press Enter to see if all processes are running.

If	Then
one or more processes are NOT running,	Go to step 5.
all processes are running,	Go to step 6.

5 Type **./ovstart -v** and press Enter to start all processes.

—continued—

Procedure 5-1 (continued)
Starting the uEMS graphical user interface

Step	Action
6	Type **./ovw &** and press Enter. *The HPOV NNM and uEMS GUIs start. After a moment, the Root submap and Event Categories window appear on the screen.* ***Note:*** You can also launch HPOV/uEMS by clicking on an icon. See Installing the HPOV/uEMS icon on the desktop on page 5-4.
7	Use the Root submap to access UE9000 components (see Figure 1-2 on page 1-6). Use the Event Categories window to display uEMS and HPOV events.

—end—

Procedure 5-2
Installing the HPOV/uEMS icon on the desktop

Use this procedure to install the HPOV/uEMS icon on the desktop. This allows you to launch HPOV/uEMS by clicking on an icon instead of using the UNIX/Solaris command line.

Action

Step	Action
1	Select **Nortel uEMS -> Add DeskTop icon to launch uEMS** from the Configuration pull-down menu. *The system installs the icon on the desktop.* **—end—**

Procedure 5-3
Removing the HPOV/uEMS icon from the desktop

Use this procedure to remove the HPOV/uEMS icon from the desktop.

Action

Step	Action
1	Select **Nortel uEMS -> Remove DeskTop uEMS launcher icon** from the Configuration pull-down menu. *The system removes the icon from the desktop.*

—end—

Procedure 5-4
Opening a pop-up menu

Use this procedure to open a pop-up menu in any UE9000 element management system (uEMS) graphical user interface (GUI) submap.

Action

Step	Action
1	Position the cursor over the symbol whose pop-up menu you want to open.
2	Press and hold the right mouse button. *The pop-up menu for the object appears.*
3	Scroll down the menu to find your selection. To activate a selection, position the cursor over the selection and remove your finger from the right mouse button. ***Note 1:*** If a selection has three dots (...) the selection displays a window with additional information. ***Note 2:*** If a selection has an arrow, move the cursor across the arrow to display options for that selection.

—continued—

Procedure 5-4 (continued)
Opening a pop-up menu

Step	Action
4	Certain selections are common to all uEMS GUI pop-up menus in all submaps. Table 5-1 describes the selections available from all uEMS GUI pop-up menus.

Table 5-1
Pop-up menu selections common to all submaps

Select	To
Open Symbol	open the UE9000 component's submap or executes the action related to the symbol
Describe/Modify Symbol	open the Symbol Description dialog box for the symbol and allows you to change the attributes of the symbol. Use this option only to change the symbol label.
Provision/Edit	open the Object Description dialog box and allows you to view or change the attributes of the selected UE9000 component

Note: Selections appearing below the common selections are specific to uEMS.

—end—

Procedure 5-5
Searching for an object

Use this procedure to search for an object in the Hewlett Packard OpenView (HPOV) Network Node Manager database.

You can search for any object in any submap by the following categories:

- selection name
- attribute
- comment
- symbol status
- symbol type
- symbol label

Note: For a legend of symbol colors, see Table 4-7 on page 4-27. Although other colors are available in Hewlett Packard OpenView, uEMS does not use them. Therefore, search results can be misleading.

Step	Action
1	Select **Objects** from the Locate pull-down menu and select the type of search you want. *The Locate by dialog appears.*
2	In the appropriate field, enter the criteria you want to search for.
3	Click the **Apply** button. *A list of the objects that match the criteria you indicated appears in the Located and Highlighted field.*
4	Double-click the object you want to view in the Located and Highlighted field. *The submap containing the object appears.*
5	To close the Locate by dialog, click the **Close** button.

—end—

Procedure 5-6
Adding a shortcut to a submap

Use this procedure to add a shortcut to a submap in the Quick Navigator.

Action

Step	Action
1	Open the submap you want to make a shortcut to.
2	Select **Add to Quick Navigator** from the Edit pull-down menu. *The shortcut is added.*

—end—

Procedure 5-7
Deleting a shortcut to a submap

Use this procedure to delete a shortcut to a submap from the Quick Navigator.

Action

Step	Action
1	Open the Quick Navigator by clicking on the fifth button from the left in the tool bar. *The Quick Navigator window appears.*
2	Click the submap symbol with the third mouse button. *The symbol pop-up menu appears.*
3	Select **Delete Symbol** from the pop-up menu. *A confirmation dialog appears.*
4	Click the **OK** button. *The shortcut is deleted.*
5	Close the Quick Navigator by selecting **Close submap** from the Map pull-down menu.

—end—

Procedure 5-8
Changing the cleared alarm default

Each night, the alarm browser removes from its database cleared alarms that are older than the default of 30 days. To change this value, use the following procedure.

Action

Step	Action
1	Log in to the UNIX/Solaris workstation with root access.
2	At the prompt, issue the following command to edit the crontab file: **crontab -e**
3	Set the number of days to keep cleared alarms in the database with this command: **03***/opt/OV/bin/Nortel/HSTP/uems/tools/clean_alarmDB [days]** where **[days]** is 0 to 90

Example:

03*/opt/OV/bin/Nortel/HSTP/uems/tools/clean_alarmDB 20**

This example would cause uEMS to remove cleared alarms that are older than 20 days from its database.

4	Log out.

—end—

Procedure 5-9
Viewing equipment details

Use this procedure to view detailed information about the ATM core card, multi-circuit line card (MLC), or customer premises equipment (CPE) in uEMS.

The following details are displayed:

Table 5-2
Viewing equipment details

Equipment	Details
DS1 ATM	• Nortel part number or PEC code • current software load • system up-time for the card • IP address of the ATM core card • MIB instance for the card (IfIndex)
DS3 ATM	• Nortel part number or PEC code • current software load • system up-time for the card • total bandwidth available for transmission or reception of all QoS services • total bandwidth allocated for transmission or reception of constant bit rate services • total bandwidth allocated for transmission or reception of variable bit rate services • total bandwidth allocated for transmission or reception of unspecified bit rate services • IP address of the ATM core card • MIB instance for the card (IfIndex)
—continued—	

—continued—

Procedure 5-9 (continued)
Viewing equipment details

Table 5-2 (continued)
Viewing equipment details

Equipment	Details
MLC	• Nortel part number or PEC code • current software load • card serial number • card vendor ID • IP address of the ATM core card • MIB instance for the card (IfIndex)
CPE	• serial number • vendor number • version number • IP address of the ATM core card • MIB instance for the CPE/circuit (IfIndex)
—end—	

Note: The MIB instance information is included to aid navigation within the MIB browser.

CAUTION
Database corruption
Do not use the MIB browser to change provisioning or state information in uEMS. The MIB browser, which is a part of HP OpenView, can only be used to view MIB information in uEMS.

—continued—

Procedure 5-9 (continued)
Viewing equipment details

Action

Step	Action
1	Position the cursor over the symbol whose details you want to view.
2	Press and hold the right mouse button. *The pop-up menu for the object appears.*
3	Click the following command from the pop-up menu:

For this equipment	Select
ATM, MLC	**Show -> [equipment] Details** where [equipment] is the type of card, such as DS3 ATM, ADSL4 LC, etc.
CPE	**Show Details**

The details screen appears.

4	To restart the equipment, click **Restart**. To close the details window, click **Close**.

—end—

Procedure 5-10
Viewing equipment inventory

Use this procedure to inventory UE9000 components using the UE9000 element management system (uEMS) graphical user interface (GUI).

The inventory command inventories only those components hierarchically beneath the UE9000 component where the inventory command was selected.

For example, if you are in the Root submap and use the HSTP-Network symbol's pop-up menu to select inventory, all UE9000 components in the data network will be inventoried. If you are in the Shelf submap and use the ATM core card symbol's pop-up menu to select inventory, then only the ATM card and the carriers associated with it are inventoried.

Action

Step	Action
1	Go to any uEMS GUI submap (see the *UE9000 Data OAM&P User Guide*). From any symbol's pop-up menu, select **Show** -> **Inventory**, then the UE9000 component you want to inventory. ***Note:*** If you want to inventory all UE9000 components, select **Show** -> **Inventory** -> **All** from the HSTP network symbol pop-up menu. *The Inventory dialog appears listing all UE9000 components.*
2	When you are finished with the Inventory dialog, click the **Close** button. **—end—**

Appendix C - Connecting to the Preside Applications Platform (AP)

This chapter provides the procedure for connecting to the Preside Applications Platform (AP) from the Universal Edge 9000 (UE9000) element management system (uEMS). Connecting to Preside allows the user to access UE9000 voice network elements at the same time the user is accessing UE9000 data network elements.

This chapter also provides procedures to establish a remote connection to the uEMS from the Preside AP.

Procedure 6-1
Connecting to Preside from uEMS

Use this procedure to connect to the Preside Applications Platform (AP) from the uEMS.

Action

Step	Action
1	Close any color-intensive applications (e.g., Netscape) on the uEMS workstation.
2	Open a UNIX/Solaris terminal window.
3	Type **xhost +** and press **Enter** to allow other displays to appear on the uEMS workstation: *A message appears stating that access control is disabled and that clients can connect from any host.* ***Note:*** If the **xhost +** command is not desirable for security reasons, the following command can be used instead: **xhost <Preside IP address>** (for example, xhost 192.1.2.199)
4	Telnet to the Preside AP by typing **telnet <Preside AP address>** and press **Enter** (for example, telnet 192.1.2.199) *The login prompt appears.*
5	Type your **user id** and press **Enter**. *The password prompt appears.*
6	Type your network password and press **Enter**. *A prompt appears.*
7	Type **setenv DISPLAY <uEMS IP Address:0.0>** and press **Enter** (for example, setenv DISPLAY 10.1.2.2:0.0) *A prompt appears.* ***Note:*** If the above command is not found on the workstation, type **export DISPLAY=<uEMS IP address:0.0>** (for example, export DISPLAY=10.1.2.2:0.0.

—continued—

Procedure 6-1 (continued)
Connecting to Preside from uEMS

Step	Action
8	To open the Preside AP Browser, type **gnbrowse** and press **Enter**. Or, to open the Preside AP Editor, type **gnconfig** and press **Enter**. ***Note:*** If an error message appears indicating a problem with the allocation of colors, make sure that all color-intensive applications are closed on the uEMS workstation.

—end—

Procedure 6-2
Connecting to the uEMS from Preside — Remote

Use this procedure to launch a remote login session into the uEMS from the Preside Applications Platform (AP) workstation.

Action

Step	Action
1	Make certain that the graphical network browser is running on your workstation, and that you have a view of the AccessNode NEs with UE9000 shelves. ***Note:*** You must have the IP address of the workstation running the uEMS.
2	Select any AccessNode NE that contains a UE9000 shelf. Left click on the **AccessNode icon.**
3	Select **Login to UEMS:** under Login on the tool menu. This is the menu along the top of the window. *A dialog box appears where you enter the IP address of the uEMS.*
4	Enter the **<IP address>** of the uEMS workstation.
5	Click **OK**. *A terminal window appears with the UEMS IP address along the top; a login prompt appears inside the terminal window.*
6	Enter your user id and password for the uEMS. *A HP OpenView screen appears, followed by the root level window of the uEMS.*

—end—

Procedure 6-3
Connecting to the uEMS from Preside — Manual

Use this procedure to manually launch the uEMS from the Preside Applications Platform (AP) workstation.

Note: This procedure is an alternate procedure to Procedure 6-2.

Action

Step	Action
1	Open a UNIX/Solaris window on the Preside AP workstation.
2	Telnet from Preside to uEMS by typing the following command at the prompt: **telnet <uEMS IP address>** (Example: telnet 10.1.2.2)
3	Provide the proper user id and password to gain access to the uEMS workstation.
4	From the prompt, type the following command: **setenv DISPLAY <Preside IP Address: 0.0>** (for example: setenv DISPLAY 192.1.2.199:0.0) ***Note:*** If you do not find the above command on the workstation you are using, type the following command: **export DISPLAY=<Preside IP address: 0.0>** (for example: export DISPLAY=192.1.2.199:0.0)
5	Start the uEMS database by typing the following command: **/opt/OV/bin/ovstart -v** *Wait until the prompt reappears.*

—continued—

Procedure 6-3 (continued)
Connecting to the uEMS from Preside — Manual

Step	Action
6	Start uEMS by typing the following: **/opt/OV/bin/ovw** ***Note:*** If the client is not authorized to connect to the server, or the client cannot open display, type the following at the Preside workstation: **xhost +** Retype the command: **/opt/OV/bin/ovw**
7	Ensure that the uEMS database is running. To do this, type the following command: **/opt/OV/bin/ovstatus**
8	Is the uEMS database running?

If	Then
No	Repeat steps 5 and 6. If you do this and are still unable to start uEMS, please contact Nortel Technical Assistance.
Yes	You are finished with this procedure.

—end—

Appendix D - MIBs

This chapter provides an overview of MIBs, along with lists of the MIBs that the UE9000 supports.

Overview

The Simple Network Management Protocol (SNMP) is an application-level protocol that is part of the User Datagram Protocol (UDP) suite. The SNMP is a request-and-reply protocol. A network management application, such as uEMS, requests performance data from its server agents. Each server agent replies with the data. The SNMP then stores that data in a management information base (MIB).

The SNMP arranges MIB variables in a tree hierarchy. Each branch of the tree has a unique name and number identifier, following the standard Abstract Syntax Notation One (ASN.1). Each MIB is defined in an ASN.1 file that is delivered with the UE9000 software.

CAUTION
Database corruption
Do not use the MIB browser to change provisioning or state information in uEMS. The MIB browser, which is a part of HP OpenView, can only be used to view MIB information in uEMS.

Supported MIBs

The following tables list the MIB variables that the UE9000 supports:

- adslLineMIBs in Table 7-1 on page 7-4
  The MIB module defining objects for the management of a pair of ADSL modems at each end of the ADSL line.
- adslExtensionMIBs in Table 7-2 on page 7-7
  This MIB defines supplemental ADSL on the UE9000.
- G.LiteExtensionMIBs in Table 7-3 on page 7-7
  This MIB defines enterprise G.Lite on the UE9000.
- sdsl MIBs in Table 7-4 on page 7-8
- ImaMIBs in Table 7-5 on page 7-9
- ue9000AtmMIBs in Table 7-6 on page 7-11
  This enterprise MIB defines extensions to RFC 2515 for ATM OAM&P on the UE9000.
- ue9000CarrierMIBs in Table 7-7 on page 7-14
  This MIB defines Carrier OAM&P on the UE9000.
- ue9000CarrierMIBs in Table 7-8 on page 7-16
  This MIB defines DS3 Carrier OAM&P on the UE9000.
- ue9000CircuitMIBs in Table 7-9 on page 7-17
  This MIB defines Circuit OAM&P on the UE9000. This MIB is intended to augment service specific MIBs such as the ADSL Line MIB, by providing generic circuit OAM&P.
- ue9000FrameworkMIBs in Table 7-10 on page 7-18
  This MIB module defines objects that support the authentication and enhanced trap features of the UE9000 platform.
- ue9000nvStoreMIBs inTable 7-11 on page 7-19
  This MIB module defines objects that support the control and status of Non-Volatile Store.
- IANAifTypeMIB in Table 7-12 on page 7-20
- ifMIBs in Table 7-13 on page 7-20
  The MIB module to describe generic objects for network interface sub-layers. This MIB is an updated version of MIB-IIs ifTable, and incorporates the extensions defined in RFC 1229.
- UE9000LinecardMIBs in Table 7-14 on page 7-21
  This MIB defines Line Card OAM&P on the UE9000.

- ue9000NodeMIBs in Table 7-15 on page 7-22
  This MIB module defines objects that implement the Node OAM&P functionality of the UE9000 platform. A node refers to the UE9000 shelf and its component ATM, TDM, and line cards.
- perfHistTCMIBs in Table 7-16 on page 7-23
  This MIB Module provides Textual Conventions to be used by systems supporting 15-minute based performance history counts.
- RFC1213MIBs in Table 7-17 on page 7-23
  This MIB module uses the extended OBJECT-TYPE macro as defined in [14].
- RFC1406MIBs in Table 7-18 on page 7-27
  This MIB module uses the extended OBJECT-TYPE macro as defined in RFC 1212. This is the MIB module for the DS1 objects.
- atmMIBs in Table 7-19 on page 7-28
- atmTCMIBs in Table 7-20 on page 7-29
- ue9000ModulesMIBs in Table 7-21 on page 7-30
  This MIB module defines objects and textual conventions that are common to all of the OAM&P subsystem MIBs.
- ue9000UnitMIBs in Table 7-22 on page 7-30
  This MIB module defines objects which implement the Unit OAM&P functionality of the UE9000 platform. A unit refers to an ATM controller card.
- snmpFrameworkMIBs in Table 7-23 on page 7-31
- onemeglcMIBs in Table 7-24 on page 7-31
  This MIB module describes the 1-Meg Modem (1MM) UE9000 line card. It contains specific extensions to the line card MIB for managing 1-Meg Modem (1MM) switching functions.
- onemegctMIBs in Table 7-25 on page 7-32
  This MIB module describes the 1-Meg Modem (1MM) line card circuits. It contains a tables for managing each modem port and each CPE on the 1MM line card.

Table 7-1
adslLineMIBs

adslAtucChanConfInterleaveMaxTxRate	adslAtucChanConfInterleaveMinTxRate
adslAtucChanConfMaxInterleaveDelay	adslAtucChanCorrectedBlks
adslAtucChanCrcBlockLength	adslAtucChanCurrTxRate
adslAtucChanInterleaveDelay	adslAtucChanIntervalCorrectedBlks
adslAtucChanIntervalNumber	adslAtucChanIntervalReceivedBlks
adslAtucChanIntervalTransmittedBlks	adslAtucChanIntervalUncorrectBlks
adslAtucChanPerfCurr15MinCorrectedBlks	adslAtucChanPerfCurr15MinReceivedBlks
adslAtucChanPerfCurr15MinTimeElapsed	adslAtucChanPerfCurr15MinTransmittedBlks
adslAtucChanPerfCurr15MinUncorrectBlks	adslAtucChanPerfCurr1DayCorrectedBlks
adslAtucChanPerfCurr1DayReceivedBlks	adslAtucChanPerfCurr1DayTimeElapsed
adslAtucChanPerfCurr1DayTransmittedBlks	adslAtucChanPerfCurr1DayUncorrectBlks
adslAtucChanPerfPrev1DayCorrectedBlks	adslAtucChanPerfPrev1DayMoniSecs
adslAtucChanPerfPrev1DayReceivedBlks	adslAtucChanPerfPrev1DayTransmittedBlks
adslAtucChanPerfPrev1DayUncorrectBlks	adslAtucChanReceivedBlks
adslAtucChanTransmittedBlks	adslAtucChanUncorrectBlks
adslAtucConfRateMode	adslAtucConfTargetSnrMgn
adslAtucCurrAtn	adslAtucCurrAttainableRate
adslAtucCurrOutputPwr	adslAtucCurrSnrMgn
adslAtucCurrStatus	adslAtucInitFailureTrapEnable
adslAtucIntervalESs	adslAtucIntervalInits
adslAtucIntervalLofs	adslAtucIntervalLoss
adslAtucIntervalLprs	adslAtucIntervalNumber
adslAtucInvSerialNumber	adslAtucInvVendorID
adslAtucInvVersionNumber	adslAtucPerfCurr15MinESs
—continued—	

Table 7-1 (continued)
adslLineMIBs

adslAtucPerfCurr15MinInits	adslAtucPerfCurr15MinLofs
adslAtucPerfCurr15MinLoss	adslAtucPerfCurr15MinLprs
adslAtucPerfCurr15MinTimeElapsed	adslAtucPerfCurr1DayESs
adslAtucPerfCurr1DayInits	adslAtucPerfCurr1DayLofs
adslAtucPerfCurr1DayLoss	adslAtucPerfCurr1DayLprs
adslAtucPerfCurr1DayTimeElapsed	adslAtucPerfESs
adslAtucPerfInits	adslAtucPerfLofs
adslAtucPerfPrev1DayESs	adslAtucPerfPrev1DayInits
adslAtucPerfPrev1DayLofs	adslAtucPerfPrev1DayLoss
adslAtucPerfPrev1DayLprs	adslAtucThresh15MinESs
adslAtucThresh15MinLofs	adslAtucThresh15MinLols
adslAtucThresh15MinLoss	adslAtucThresh15MinLprs
adslAtucTraps	adslAturChanConfInterleaveMaxTxRate
adslAturChanConfInterleaveMinTxRate	adslAturChanConfMaxInterleaveDelay
adslAturChanCorrectedBlks	adslAturChanCrcBlockLength
adslAturChanCurrTxRate	adslAturChanInterleaveDelay
adslAturChanIntervalCorrectedBlks	adslAturChanIntervalNumber
adslAturChanIntervalReceivedBlks	adslAturChanIntervalTransmittedBlks
adslAturChanIntervalUncorrectBlks	adslAturChanPerfCurr15MinCorrectedBlks
adslAturChanPerfCurr15MinReceivedBlks	adslAturChanPerfCurr15MinTimeElapsed
adslAturChanPerfCurr15MinTransmittedBlks	adslAturChanPerfCurr15MinUncorrectBlks
adslAturChanPerfCurr1DayCorrectedBlks	adslAturChanPerfCurr1DayReceivedBlks
adslAturChanPerfCurr1DayTimeElapsed	adslAturChanPerfCurr1DayTransmittedBlks
adslAturChanPerfCurr1DayUncorrectBlks	adslAturChanPerfPrev1DayCorrectedBlks
—continued—	

Table 7-1 (continued)
adslLineMIBs

adslAturChanPerfPrev1DayMoniSecs	adslAturChanPerfPrev1DayReceivedBlks
adslAturChanPerfPrev1DayTransmittedBlks	adslAturChanPerfPrev1DayUncorrectBlks
adslAturChanReceivedBlks	adslAturChanTransmittedBlks
adslAturChanUncorrectBlks	adslAturConfRateMode
adslAturConfTargetSnrMgn	adslAturCurrAtn
adslAturCurrAttainableRate	adslAturCurrSnrMgn
adslAturCurrStatus	adslAturIntervalESs
adslAturIntervalLofs	adslAturIntervalLoss
adslAturIntervalLprs	adslAturIntervalNumber
adslAturInvSerialNumber	adslAturInvVendorID
adslAturInvVersionNumber	adslAturPerfCurr15MinESs
adslAturPerfCurr15MinLofs	adslAturPerfCurr15MinLoss
adslAturPerfCurr15MinLprs	adslAturPerfCurr15MinTimeElapsed
adslAturPerfCurr1DayESs	adslAturPerfCurr1DayLofs
adslAturPerfCurr1DayLoss	adslAturPerfCurr1DayLprs
adslAturPerfCurr1DayTimeElapsed	adslAturPerfESs
adslAturPerfLofs	adslAturPerfLoss
adslAturPerfLprs	adslAturPerfPrev1DayESs
adslAturPerfPrev1DayLofs	adslAturPerfPrev1DayLoss
adslAturPerfPrev1DayLprs	adslAturThresh15MinESs
adslAturThresh15MinLofs	adslAturThresh15MinLoss
adslAturThresh15MinLprs	adslCompliances
adslConformance	adslGroups
adslLineAlarmConfProfile	adslLineCoding
—continued—	

Table 7-1 (continued)
adslLineMIBs

adslLineConfProfile	adslLineMib
adslLineMibAturCompliance	adslLineMibCompliance
adslLineProfileName	adslLineSpecific
adslLineType	adslMibObjects
adslTraps	
—end—	

Table 7-2
adslExtensionMIBs

adslAtucPerfCurr15FailedFastR	adslAtucPerfCurr15FastR
adslAtucPerfCurr1DayFailedFastR	adslAtucPerfCurr1DayFastR
adslAtucPerfPrev1DayFailedFastR	adslAtucPerfPrev1DayFastR
adslAtucThreshold15MinFailedFastR	adslLineTransAtucCap
adslLineTransAturCap	

Table 7-3
G.LiteExtensionMIBs

gLiteAtuFastRetrainEnabling	gliteCapacity
gLiteCurrentRxProfile	gLiteCurrentTxProfile
gliteDirectionTxRx	gLiteFastRetrainControl
gLiteFastRetrainSNRMargin	gliteProfile
gliteProfileUse	transmissionModeEnabling

Table 7-4
sdsl MIBs

sdslCircuitAlarmNotif	sdslCircuitAlarmSeverity
sdslCircuitFaultStatus	sdslCircuitFaultType
sdslCircuitId	sdslCircuitTestDescr
sdslCircuitTestErrCode	sdslCircuitTestResult
sdslCircuitTestStatus	sdslCircuitTestTimeStamp
sdslCircuitTestType	sdslLcAlarmNotif
sdslLcAlarmSeverity	sdslLcCircuitDsBufferOvStatus
sdslLcCircuitFaultStatus	sdslLcFaultStatus
sdslLcFaultType	sdslLcId
sdslLineConfProfileName	sdslLineConfProfileRowStatus
sdslPerfCurrAAGCValue	sdslPerfCurrDCLvl
sdslPerfCurrInputSigLvl	sdslPerfCurrSummary
sdslPerfCurrTxGain	sdslPerfIntervalCrc
sdslPerfIntervalErroredSeconds	sdslPerfIntervalFarEndBitErrors
sdslPerfIntervalHec	sdslPerfIntervalNumber
sdslPerfIntervalRecvBlocks	sdslPerfIntervalValidData
sdslPerfIntervalXmitBlocks	sdslStucActualRate
sdslStucCurrAtn	sdslStucCurrSnrMgn
sdslStucCurrStatus	sdslStucDesiredRate
sdslStucInvSerialNumber	sdslStucInvVersionNumber
sdslStucPerfCrc	sdslStucPerfCurr1DayCrc
sdslStucPerfCurr1DayErrSecs	sdslStucPerfCurr1DayFEBE
sdslStucPerfCurr1DayHec	sdslStucPerfCurr1DayRecvBlocks
—continued—	

Table 7-4 (continued)
sdsl MIBs

sdslStucPerfCurr1DayXmitBlocks	sdslStucPerfCurr15MinCrc
sdslStucPerfCurr15MinErrSecs	sdslStucPerfCurr15MinFEBE
sdslStucPerfCurr15MinHec	sdslStucPerfCurr15MinRecvBlocks
sdslStucPerfCurr15MinXmitBlocks	sdslStucPerfErrSecs
sdslStucPerfFEBE	sdslStucPerfHec
sdslStucPerfInvalidInterval	sdslStucPerfPrev1DayCrc
sdslStucPerfPrev1DayErrSecs	sdslStucPerfPrev1DayFEBE
sdslStucPerfPrev1DayHec	sdslStucPerfPrev1DayRecvBlocks
sdslStucPerfPrev1DayXmitBlocks	sdslStucPerfRecvBlocks
sdslStucPerfValidInterval	sdslStucPerfXmitBlocks
sdslSturCurrStatus	
—end—	

Table 7-5
ImaMIBs

atmfImaMib	atmfImaMibObjects
atmForum	atmForumNetworkManagement
imaAlarmStatus	imaAlarmType
imaFrameLength	imaGroupAlphaValue
imaGroupBetaValue	imaGroupDiffDelayMax
imaGroupDiffDelayMaxObs	imaGroupFailureStatus
imaGroupFeNumFailures	imaGroupFeState
imaGroupFeTxClkMode	imaGroupGammaValue
imaGroupIfIndex	imaGroupIndex
—continued—	

Table 7-5 (continued)
ImaMIBs

imaGroupLastChange	imaGroupLeastDelayLink
imaGroupMappingIndex	imaGroupMinNumRxLinks
imaGroupMinNumTxLinks	imaGroupNeNumFailures
imaGroupNeState	imaGroupNeTxClkMode
imaGroupNumRxActLnks	imaGroupNumRxCfgLnks
imaGroupNumTxActLnks	imaGroupNumTxCfgLnks
imaGroupRowStatus	imaGroupRunningSecs
imaGroupRxAvailCellRate	imaGroupRxFrameLength
imaGroupRxImaId	imaGroupRxTimingRefLink
imaGroupState	imaGroupSymmetry
imaGroupTestLinkIfIndex	imaGroupTestPattern
imaGroupTestProcStatus	imaGroupTxAvailCellRate
imaGroupTxClkMode	imaGroupTxFrameLength
imaGroupTxImaId	imaGroupTxTimingRefLink
imaGroupUnavailSecs	imaLinkFailureStatus
imaLinkFeRxFailureStatus	imaLinkFeRxNumFailures
imaLinkFeRxState	imaLinkFeRxUnusableSec
imaLinkFeSevErroredSec	imaLinkFeTxNumFailures
imaLinkFeTxState	imaLinkFeTxUnusableSec
imaLinkFeUnavailSec	imaLinkGroupIndex
imaLinkIfIndex	imaLinkImaViolations
imaLinkNeRxFailureStatus	imaLinkNeRxNumFailures
imaLinkNeRxState	imaLinkNeRxUnusableSec
imaLinkNeSevErroredSec	imaLinkNeTxNumFailures
—continued—	

Table 7-5 (continued)
ImaMIBs

imaLinkNeTxState	imaLinkNeTxUnusableSec
imaLinkNeUnavailSec	imaLinkOifAnomalies
imaLinkRelDelay	imaLinkRowStatus
imaLinkRxLid	imaLinkRxStuffs
imaLinkRxTestPattern	ImaLinkState
imaLinkTestProcStatus	imaLinkTxLid
imaLinkTxStuffs	ImaTestProcStatus
milliSeconds	
—end—	

Table 7-6
ue9000AtmMIBs

atmAlarmEntry	atmAlarmNotify
atmAlarmSeverity	atmAlarmTable
atmAlarmType	atmConfigCurrentOAM
atmConfigEmsInterface	atmConfigEmsVci
atmConfigEmsVpi	atmConfigEpdHi
atmConfigEpdLo	atmConfigIfEntry
atmConfigIfInterface	atmConfigIfSegmentId
atmConfigIfTable	atmConfigMaxOAM
atmConfigPpd	atmConfigStopAllOAM
atmConfigVcContinuityStatus	atmConfigVcControl
atmConfigVcEntry	atmConfigVcFaultStatus
atmConfigVcInterface	atmConfigVcTable
atmConfigVcTestStatus	atmConfigVcVci
—continued—	

Table 7-6 (continued)
ue9000AtmMIBs

atmConfigVcVpi	amtConfigVpEntry
atmConfigVpFaultStatus	atmConfigVpInterface
atmConfigVpTable	atmConfigVpVpi
atmFaultType	atmStatsCounter
atmStatsIfConfigEntry	atmStatsIfConfigHistory
atmStatsIfConfigInterface	atmStatsIfConfigTable
atmStatsIfConfigZero	atmStatsIfDataEntry
atmStatsIfDataInterface	atmStatsIfDataInterval
atmStatsIfDataTable	atmStatsIfInDiscarded
atmStatsIfInDiscardedClp0	atmStatsIfInDiscardedClp1
atmStatsIfInNonCompliant	atmStatsIfInNonCompliantClp0
atmStatsIfInNonCompliantClp1	atmStatsIfInOam
atmStatsIfInProtocolError	atmStatsIfInTagged
atmStatsIfInTotal	atmStatsIfInTotalClp0
atmStatsIfInTotalClp1	atmStatsIfOutOam
atmStatsIfOutTotal	atmStatsIfOutTotalClp0
atmStatsIfOutTotalClp1	atmStatsIfThreshCounter
atmStatsIfThreshEntry	atmStatsIfThreshInterface
atmStatsIfThreshNotify	atmStatsIfThreshTable
atmStatsIfThreshTrap	atmStatsIfThreshValue
atmStatsIfValidity	atmStatsInterval
atmStatsVcConfigEntry	atmStatsVcConfigHistory
atmStatsVcConfigInterface	atmStatsVcConfigTable
atmStatsVcConfigVci	atmStatsVcConfigVpi
—continued—	

Table 7-6 (continued)
ue9000AtmMIBs

atmStatsVcConfigZero	atmStatsVcDataEntry
atmStatsVcDataInterface	atmStatsVcDataInterval
atmStatsVcDataTable	atmStatsVcDataVci
atmStatsVcDataVpi	atmStatsVcInDiscarded
atmStatsVcInDiscardedClp0	atmStatsVcInDiscardedClp1
atmStatsVcInNonCompliant	atmStatsVcInNonCompliantClp0
atmStatsVcInNonCompliantClp1	atmStatsVcInOam
atmStatsVcInProtocolError	atmStatsVcInTagged
atmStatsVcInTotal	atmStatsVcInTotalClp0
atmStatsVcInTotalClp1	atmStatsVcOutOam
atmStatsVcOutTotal	atmStatsVcOutTotalClp0
atmStatsVcOutTotalClp1	atmStatsVcThreshCounter
atmStatsVcThreshEntry	atmStatsVcThreshInterface
atmStatsVcThreshNotify	atmStatsVcThreshTable
atmStatsVcThreshTrap	atmStatsVcThreshValue
atmStatsVcThreshVci	atmStatsVcThreshVpi
atmStatsVcValidity	atmStatsVpConfigEntry
atmStatsVpConfigHistory	atmStatsVpConfigInterface
atmStatsVpConfigTable	atmStatsVpConfigVpi
atmStatsVpConfigZero	atmStatsVpDataEntry
atmStatsVpDataInterface	atmStatsVpDataInterval
atmStatsVpDataTable	atmStatsVpDataVpi
atmStatsVpInDiscarded	atmStatsVpInDiscardedClp0
atmStatsVpInDiscardedClp1	atmStatsVpInNonCompliant
—continued—	

Table 7-6 (continued)
ue9000AtmMIBs

atmStatsVpInNonCompliantClp0	atmStatsVpInNonCompliantClp1
atmStatsVpInOam	atmStatsVpInProtocolError
atmStatsVpInTagged	atmStatsVpInTotal
atmStatsVpInTotalClp0	atmStatsVpInTotalClp1
atmStatsVpOutOam	atmStatsVpOutTotal
atmStatsVpOutTotalClp0	atmStatsVpOutTotalClp1
atmStatsVpThreshCounter	atmStatsVpThreshEntry
atmStatsVpThreshInterface	atmStatsVpThreshNotify
atmStatsVpThreshTable	atmStatsVpThresh
atmStatsVpThreshValue	atmStatsVpThreshVpi
atmStatsVpValidity	atmTestVcContinuityMode
atmTestVcCode	atmTestVcDesc
atmTestVcEntry	atmTestVcInterface
atmTestVcMode	atmTestVcParm
atmTestVcResult	atmTestVcTable
atmTestVcTimeStamp	atmTestVcType
atmTestVcVci	atmTestVcVpi
—end—	

Table 7-7
ue9000CarrierMIBs

carrierAdminState	carrierAlarmEntry
carrierAlarmNotif	carrierAlarmSeverity
carrierAlarmStatus	carrierAlarmTable
carrierAvailStatus	carrierConfigStatus
—continued—	

Table 7-7 (continued)
ue9000CarrierMIBs

carrierControlStatus	carrierCurrentEntry
carrierCurrentFarEndIDF	carrierCurrentNearEndIDF
carrierCurrentTable	carrierEntry
carrierFaultStatus	carrierFaultType
carrierId	carrierIntervalEntry
carrierIntervalFarEndIDF	carrierIntervalNearEndIDF
carrierIntervalTable	carrierName
carrierOperState	carrierPerfMon
carrierProcStatus	carrierProtSwitch
carrierStandbyStatus	carrierTable
carrierTestDescr	carrierTestEntry
carrierTestErrCode	carrierTestResult
carrierTestTable	carrierTestTimeStamp
carrierTestType	carrierThreshold15Min
carrierThreshold24Hr	carrierThresholdEntry
carrierThresholdNotif	carrierThresholdTable
carrierThresholdType	carrierTotalEntry
carrierTotalFarEndIDF	carrierTotalNearEndIDF
carrierTotalTable	carrierUnknownStatus
carrierUsageState	
—end—	

Table 7-8
ue9000CarrDS3MIBs

CarrDS3AdminState	CarrDS3AlarmEntry
CarrDS3AlarmNotif	CarrDS3AlarmSeverity
CarrDS3AlarmStatus	CarrDS3AlarmTable
CarrDS3AvailStatus	CarrDS3CellScrambling
CarrDS3ConfigRowStatus	CarrDS3ConvSublayerMapp
CarrDS3CurrentEntry	CarrDS3CurrentFarEndIDF
CarrDS3CurrentNearEndIDF	CarrDS3rCurrentTable
CarrDS3Entry	CarrDS3FaultStatus
CarrDS3FaultStatusBitMapp	CarrDS3FaultType
CarrDS3Id	CarrDS3IntervalEntry
CarrDS3IntervalFarEndIDF	CarrDS3IntervalNearEndIDF
CarrDS3IntervalTable	CarrDS3Name
CarrDS3OperState	CarrDS3PerfMon
CarrDS3ProcStatus	CarrDS3Table
CarrDS3TestDescr	CarrDS3TestEntry
CarrDS3TestErrCode	CarrDS3TestResult
CarrDS3TestTable	CarrDS3TestTimeStamp
CarrDS3TestType	CarrDS3Threshold15Min
CarrDS3Threshold24Hr	CarrDS3ThresholdEntry
CarrDS3ThresholdNotif	CarrDS3ThresholdTable
CarrDS3ThresholdType	CarrDS3TotalEntry
CarrDS3TotalFarEndIDF	CarrDS3TotalNearEndIDF
CarrDS3TotalTable	

Table 7-9
ue9000CircuitMIBs

circuit15MinThreshold	circuitAdminState
circuitAlarmNotif	circuitAlarmSeverity
circuitAlarmStatus	circuitAtuc15MinThreshCrcI
circuitAtuc15MinThreshFecI	circuitAtuc15MinThreshHecI
circuitAtuc15MinThreshLcdI	circuitAtuc15MinThresholdTable
circuitAtucPerfCrcI	circuitAtucPerfCurr15MinCrcI
circuitAtucPerfCurr15MinFecI	circuitAtucPerfCurr15MinHecI
circuitAtucPerfCurr15MinLcdI	circuitAtucPerfCurr1DayCrcI
circuitAtucPerfCurr1DayFecI	circuitAtucPerfCurr1DayHecI
circuitAtucPerfCurr1DayLcdI	circuitAtucPerfFecI
circuitAtucPerfHecI	circuitAtucPerfLcdI
circuitAtucPerfPrev1DayCrcI	circuitAtucPerfPrev1DayFecI
circuitAtucPerfPrev1DayHecI	circuitAtucPerfPrev1DayLcdI
circuitAturPerfBlockErrorI	circuitAturPerfCurr15MinBlockErrorI
circuitAturPerfCurr15MinFecI	circuitAturPerfCurr15MinHecI
circuitAturPerfCurr15MinLcdI	circuitAturPerfCurr1DayBlockErrorI
circuitAturPerfCurr1DayFecI	circuitAturPerfCurr1DayLcdI
circuitAturPerfFecI	circuitAturPerfHecI
circuitAturPerfInvalidInterval	circuitAturPerfLcdI
circuitAturPerfPrev1DayBlockErrorI	circuitAturPerfPrev1DayFecI
circuitAturPerfPrev1DayHecI	circuitAturPerfPrev1DayLcdI
circuitAturPerfValidInterval	circuitAvailStatus
circuitBin	circuitConfigStatus
circuitControlStatus	circuitFaultStatus

—continued—

Table 7-9 (continued)
ue9000CircuitMIBs

circuitFaultType	circuitId
circuitName	circuitOperState
circuitPower	circuitProcStatus
circuitStandbyStatus	circuitTestDescr
circuitTestErrCode	circuitTestInProgress
circuitTestResult	circuitTestTimeStamp
circuitTestType	circuitUnknownStatus
circuitUsageState	
—end—	

Table 7-10
ue9000FrameworkMIBs

authAdminCommunity	authReadCommunity
authWriteCommunity	trap15MinThreshTrap
trap24HrThreshTrap	trapAdminState
trapAlarmSeverity	trapAlarmStatus
trapAvailStatus	trapBufferOverflow
trapControlStatus	trapDescr
trapDownloadBegin	trapDownloadComplete
trapDownloadType	trapFaultClear
trapFaultOccur	trapFaultStatus
trapFaultType	trapInterfaceId
trapInventoryFlag	trapInventoryPec
trapInventoryShelf	trapInventorySlot
trapLoadBegin	trapOperState
—continued—	

Table 7-10 (continued)
ue9000FrameworkMIBs

trapProcStatus	trapQualifier
trapRestartBegin	trapRestartComplete
trapRestartType	trapSeqNo
trapStandbyStatus	trapStateChange
trapStatusChange	trapTestBegin
trapTestComplete	trapTestDescr
trapTestErrCode	trapTestResult
trapTestType	trapThreshold15Min
trapThreshold24Hr	trapThresholdType
trapTimeStamp	trapUemsInterval
trapUemsIpAddress	trapUemsLastAck
trapUemsMode	trapUemsRowStatus
trapUemsSeqNo	trapUemsTimeout
trapUnknownStatus	trapUsageState
trapVci	trapVpi
—end—	

Table 7-11
ue9000nvStoreMIBs

nvStoreCfgActiveBank	nvStoreCfgCount
nvStoreCfgErrorMessage	nvStoreCfgErrorsDetected
nvStoreCfgFirstErrorDetected	nvStoreCfgFirstErroredOID
nvStoreCfgStatus	nvStoreCfgTIme
nvStoreCfgVersion	nvStoreDldControl
nvStoreDldFile	nvStoreDldResult
—continued—	

Table 7-11 (continued)
ue9000nvStoreMIBs

nvStoreDldSize	nvStoreDldStatus
nvStoreDldVersion	trapNVStoreCfgComplete
trapNVStoreCfgError	trapNVStoreDldComplete
—end—	

Table 7-12
IANAifTypeMIB

IANAifType	

Table 7-13
ifMIBs

ifAdminStatus	ifCompliance
ifConnectorPresent	ifDescr
ifFixedLengthGroup	ifGeneralGroup
ifHCFixedLengthGroup	ifHCInBroadcastPkts
ifHCInMulticastPkts	ifHCInOctets
ifHCInUcastPkts	ifHCOutBroadcastPkts
ifHCOutMulticastPkts	ifHCOutOctets
ifHCOutUcastPkts	ifHCPacketGroup
ifHighSpeed	ifInBroadcastPkts
ifIndex	ifInDiscards
ifInErrors	ifInMulticastPkts
ifInOctets	ifInUcastPkts
ifInUnknownProtos	ifLastChange
ifLinkUpDownTrapEnable	ifMIBObjects
ifMtu	ifName
—continued—	

Table 7-13 (continued)
ifMIBs

ifNumber	ifOperStatus
ifOutBroadcastPkts	ifOutDiscards
ifOutErrors	ifOutMulticastPkts
ifOutOctets	ifOutUcastPkts
ifPacketGroup	ifPhysAddress
ifPromiscuousMode	ifRcvAddressAddress
ifRcvAddressGroup	ifRcvAddressStatus
ifRcvAddressType	ifSpeed
ifStackGroup	ifStackHigherLayer
ifStackLowerLayer	ifStackStatus
ifTestCode	ifTestGroup
ifTestId	ifTestOwner
ifTestResult	ifTestStatus
ifTestType	ifType
ifVHCPacketGroup	interfaceIndex
ownerString	
—end—	

Table 7-14
UE9000LinecardMIBs

lcAdminState	lcAlarmNotif
lcAlarmSeverity	lcAlarmStatus
lcAtucDownload	lcAvailStatus
lcConfigStatus	lcControlStatus
lcFaultStatus	lcFaultType
—continued—	

Table 7-14 (continued)
UE9000LinecardMIBs

lcId	lcName
lcOperState	lcPec
lcProcStatus	lcProvSoftware
lcRestartSoftware	lcRestartTimeStamp
lcRestartType	lcSelector
lcSoftware	lcStandbyStatus
lcTestDescr	lcTestErrCode
lcTestResult	lcTestTimeStamp
lcTestType	lcUnknownStatus
lcUsageState	
—end—	

Table 7-15
ue9000NodeMIBs

nodeAdminState	nodeAlarmCardType
nodeAlarmCritical	nodeAlarmMajor
nodeAlarmMinor	nodeAlarmNone
nodeAlarmStatus	nodeAlarmWarning
nodeAvailStatus	nodeClock
nodeControlStatus	nodeInventoryBitMap
nodeInventoryBitMapShelf	nodeInventoryChangeTrap
nodeInventoryPec	nodeInventoryShelf
nodeInventorySlot	nodeMode
nodeName	nodeOperState
nodeProcStatus	nodeRestartTimeStamp
—continued—	

Table 7-15 (continued)
ue9000NodeMIBs

nodeRestartType	nodeStandbyStatus
nodeUnknownStatus	nodeUsageState
—end—	

Table 7-16
perfHistTCMIBs

perfCurrentCount	perfIntervalCount
perfTotalCount	xyzInvalidIntervals
xyzTimeElapsed	xyzValidIntervals

Table 7-17
RFC1213MIBs

egpAs	egpInErrors
egpInMsgs	egpNeighAddr
egpNeighAs	egpNeighEventTrigger
egpNeighInErrMsgs	egpNeighInErrs
egpNeighInMsgs	egpNeighIntervalHello
egpNeighIntervalPoll	egpNeighMode
egpNeighOutErrMsgs	egpNeighOutErrs
egpNeighOutMsgs	egpNeighState
egpNeighStateDowns	egpNeighStateUps
egpOutErrors	egpOutMsgs
icmpInAddrMaskReps	icmpInAddrMasks
icmpInDestUnreachs	icmpInEchoReps
icmpInEchos	icmpInErrors
icmpInMsgs	icmpInParmProbs
—continued—	

Table 7-17 (continued)
RFC1213MIBs

icmpInRedirects	icmpInSrcQuenchs
icmpInTimeExcds	icmpInTimestampReps
icmpInTimestamps	icmpOutAddrMaskReps
icmpOutAddrMasks	icmpOutDestUnreachs
icmpOutEchoReps	icmpOutEchos
icmpOutErrors	icmpOutMsgs
icmpOutParmProbs	icmpOutRedirects
icmpOutSrcQuenchs	icmpOutTimeExcds
icmpOutTimestampReps	icmpOutTimestamps
ifAdminStatus	ifDescr
ifIndex	ifInDiscards
ifInErrors	ifInNUcastPkts
ifInOctets	ifInUcastPkts
ifInUnknownProtos	ifLastChange
ifMtu	ifNumber
ifOperStatus	ifOutDiscards
ifOutErrors	ifOutNUcastPkts
ifOutOctets	ifOutQLen
ifOutUcastPkts	ifPhysAddress
ifSpecific	ifSpeed
—continued—	
ifType	ipAdEntAddr
ipAdEntBcastAddr	ipAdEntIfIndex
ipAdEntNetMask	ipAdEntReasmMaxSize
ipDefaultTTL	ipForwarding

Table 7-17 (continued)
RFC1213MIBs

ipForwDatagrams	ipFragCreates
ipFragFails	ipFragOKs
ipInAddrErrors	ipInDelivers
ipInDiscards	ipInHdrErrors
ipInReceives	ipInUnknownProtos
ipNetToMediaIfIndex	ipNetToMediaNetAddress
ipNetToMediaPhysAddress	ipNetToMediaType
ipOutDiscards	ipOutNoRoutes
ipOutRequests	ipReasmFails
ipReasmOKs	ipReasmReqds
ipReasmTimeout	ipRouteAge
ipRouteDest	ipRouteIfIndex
ipRouteInfo	ipRouteMask
ipRouteMetric1	ipRouteMetric2
ipRouteMetric3	ipRouteMetric4
ipRouteMetric5	ipRouteNextHop
ipRouteProto	ipRouteType
ipRoutingDiscards	snmpEnableAuthenTraps
snmpInASNParseErrs	snmpInBadCommunityNames
snmpInBadCommunityUses	snmpInBadValues
snmpInBadVersions	snmpInGenErrs
snmpInGetNexts	snmpInGetRequests
snmpInGetResponses	snmpInNoSuchNames
snmpInPkts	snmpInReadOnlys

—continued—

Table 7-17 (continued)
RFC1213MIBs

snmpInSetRequests	snmpInTooBigs
snmpInTotalReqVars	snmpInTotalSetVars
snmpInTraps	snmpOutBadValues
snmpOutGenErrs	snmpOutGetNexts
snmpOutGetRequests	snmpOutGetResponses
snmpOutNoSuchNames	snmpOutPkts
snmpOutSetRequests	snmpOutTooBigs
snmpOutTraps	sysContact
sysDescr	sysLocation
sysName	sysObjectID
sysServices	sysUpTime
tcpActiveOpens	tcpAttemptFails
tcpConnLocalAddress	tcpConnLocalPort
tcpConnRemAddress	tcpConnRemPort
tcpConnState	tcpCurrEstab
tcpEstabResets	tcpInErrs
tcpInSegs	tcpMaxConn
tcpOutSegs	tcpPassiveOpens
tcpRetransSegs	tcpRtoAlgorithm
tcpRtoMax	tcpRtoMin
udpInDatagrams	udpInErrors
udpLocalAddress	udpLocalPort
udpNoPorts	udpOutDatagrams
—end—	

Table 7-18
RFC1406MIBs

dsx1CircuitIdentifier	dsx1CurrentESs
dsx1CurrentIndex	dsx1CurrentLCVs
dsx1CurrentLESs	dsx1CurrentPCVs
dsx1CurrentSEFSs	dsx1CurrentSESs
dsx1CurrentUASs	dsx1FarEndCurrentESs
dsx1FarEndCurrentIndex	dsx1FarEndCurrentLESs
dsx1FarEndCurrentPCVs	dsx1FarEndCurrentSEFSs
dsx1FarEndCurrentSESs	dsx1FarEndCurrentUASs
dsx1FarEndIntervalESs	dsx1FarEndIntervalIndex
dsx1FarEndIntervalLESs	dsx1FarEndIntervalNumber
dsx1FarEndIntervalPCVs	dsx1FarEndIntervalSEFSs
dsx1FarEndIntervalSESs	dsx1FarEndIntervalUASs
dsx1FarEndTimeElapsed	dsx1FarEndTotalESs
dsx1FarEndTotalIndex	dsx1FarEndTotalLESs
dsx1FarEndTotalPCVs	dsx1FarEndTotalSEFSs
dsx1FarEndTotalSESs	dsx1FarEndTotalUASs
dsx1FarEndValidIntervals	dsx1Fdl
dsx1IfIndex	dsx1IntervalESs
dsx1IntervalIndex	dsx1IntervalLCVs
dsx1IntervalLESs	dsx1IntervalNumber
dsx1IntervalPCVs	dsx1IntervalSEFSs
dsx1IntervalSESs	dsx1IntervalUASs
dsx1LineCoding	dsx1LineIndex
dsx1LineStatus	dsx1LineType
—continued—	

Table 7-18 (continued)
RFC1406MIBs

dsx1LoopbackConfig	dsx1SendCode
dsx1TimeElapsed	dsx1TotalESs
dsx1TotalIndex	dsx1TotalLCVs
dsx1TotalLESs	dsx1TotalPCVs
dsx1TotalSEFSs	dsx1TotalSESs
dsx1TotalUASs	dsx1TransmitClockSource
dsx1ValidIntervals	
—end—	

Table 7-19
atmMIBs

atmInterfaceConfVccs	atmInterfaceConfVpcs
atmInterfaceCurrentMaxVciBits	atmInterfaceCurrentMaxVpiBits
atmInterfaceMaxActiveVciBits	atmInterfaceMaxActiveVpiBits
atmInterfaceMaxVccs	atmInterfaceMaxVpcs
atmServiceCategory	atmTrafficDescrParam1
atmTrafficDescrParam2	atmTrafficDescrParamIndex
atmTrafficDescrParamIndexNext	atmTrafficDescrRowStatus
atmTrafficDescrType	atmTrafficFrameDiscard
atmVcCrossConnectAdminStatus	atmVcCrossConnectH2LLastChange
atmVcCrossConnectH2LOperStatus	atmVcCrossConnectHighIfIndex
atmVcCrossConnectHighVci	atmVcCrossConnectHighVpi
atmVcCrossConnectIndex	atmVcCrossConnectIndexNext
atmVcCrossConnectL2HLastChange	atmVcCrossConnectL2HOperStatus
—continued—	

Table 7-19 (continued)
atmMIBs

atmVcCrossConnectLowIfIndex	atmVcCrossConnectLowVci
atmVcCrossConnectLowVpi	atmVcCrossConnectRowStatus
atmVclAdminStatus	atmVclCastType
atmVclConnKind	atmVclCrossConnectIdentifier
atmVclLastChange	atmVclOperStatus
atmVclReceiveTrafficDescrIndex	atmVclRowStatus
atmVclTransmitTrafficDescrIndex	atmVclVci
atmVclVpi	
—end—	

Table 7-20
atmTCMIBs

atmAddr	atmClpNoTaggingMcr
atmClpNoTaggingScr	atmClpNoTaggingScrCdvt
atmClpTaggingScr	atmClpTaggingScrCdvt
atmClpTransparentNoScr	atmClpTransparentScr
atmConnCastType	atmConnKind
atmIlmiNetworkPrefix	atmInterfaceType
atmNoClpNoScr	atmNoClpNoScrCdvt
atmNoClpScr	atmNoClpScrCdvt
atmNoClpTaggingNoScr	atmServiceCategory
atmSigDescrParamIndex	atmTrafficDescriptorTypes
atmTrafficDescrParamIndex	atmVcIdentifier
atmVorXAdminStatus	atmVorXLastChange
atmVorXOperStatus	atmVpIdentifier

Table 7-21
ue9000ModulesMIBs

activity	card
identifier	isoAdministrativeState
isoAlarmStatus	isoAvailabilityStatus
isoControlStatus	isoOperationalState
isoProceduralStatus	isoStandbyStatus
isoUnknownStatus	isoUsageState
notification	qualifier
restart	severity
testResult	

Table 7-22
ue9000UnitMIBs

unitActivity	unitAdminState
unitAlarmNotif	unitAlarmSeverity
unitAlarmStatus	unitAvailStatus
unitConfigStatus	unitControlStatus
unitFaultStatus	unitFaultType
unitId	unitIsolation
unitName	unitOperState
unitPec	unitProcStatus
unitRestartSoftware	unitRestartTimeStamp
unitRestartType	unitSoftware
unitSoftwareLoadTrap	unitStandbyStatus
unitSwactTrap	unitTestDescr
unitTestErrCode	unitTestResult
unitTestTimeStamp	unitTestType
unitUnknownStatus	unitUsageState

Table 7-23
snmpFrameworkMIBs

snmpAdminString	snmpAuthProtocols
snmpEngineBoots	snmpEngineGroup
snmpEngineID	snmpEngineMaxMessageSize
snmpEngineTime	snmpFrameworkAdmin
snmpFrameworkMIBCompliance	snmpFrameworkMIBCompliances
snmpFrameworkMIBConformance	snmpFrameworkMIBGroups
snmpFrameworkMIBObjects	snmpMessageProcessingModel
snmpPrivProtocols	snmpSecurityLevel
snmpSecurityModel	

Table 7-24
onemeglcMIBs

onemeglcConfigTable	onemeglcSwitchingTimeActivated
onemeglcConfigEntry	onemeglcDeviceIndex
onemeglcEthernetLocalSwitching	onemeglcTestTable
onemeglcBroadcastFiltering	onemeglcTestEntry
onemeglcProviderMacLearning	onemeglcTestType
onemeglcSwitchingTableTimeout	onemeglcTestResult
onemeglcArpThroughput	onemeglcTestErrCode
onemeglcCpeDownloadFile	onemeglcTestTimeStamp
onemeglcStatusTable	onemeglcTestTimeStamp
onemeglcStatusEntry	onemeglcTestInProgress
onemeglcDevicesPerInterface	onemeglcSysLogTable
onemeglcDiscardsDS	onemeglcSysLogEntry
onemeglcFilteredARPsDS	onemeglcSysLogPage

—continued—

Table 7-24 (continued)
onemeglcMIBs

onemeglcFilteredARPsUS	onemeglcDatapathLogTable
onemeglcFilteredNUPktsDS	onemeglcDatapathLogEntry
onemeglcFilteredNUPktsUS	onemeglcDatapathLogPage
onemeglcSwitchingTable	onemeglcCurrentLogLine
onemeglcSwitchingEntry	onemeglcLineLogTable
onemeglcLearnedMac	onemeglcLineLogEntry
onemeglcSwitchingValid	onemeglcLineLogPage
onemeglcSwitchingTimeLearned	

Table 7-25
onemegctMIBs

onemegctConfigTable	onemegctEnergyValue
onemegctConfigEntry	onemegctTimePeek
onemegctMaxSpeedDown	onemegctXlBusSyncFound
onemegctMaxSpeedUp	onemegctOffHookStatus
onemegctOffHookControl	onemegctTxPower
onemegctCpeMaxOffHookPowerLevel	onemegctJTag
onemegctLoopDevices	onemegctSpareI
onemegctCpeReset	onemegctCpeStatusTable
onemegctCpeDownloadControl	onemegctCpeStatusEntry
onemegctStatusTable	onemegctCpeIdentification
onemegctStatusEntry	onemegctCpeProductCode
onemegctStatusRx	onemegctCpeState
onemegctStatusTx	onemegctCpeEthInSyncDetect
onemegctSpeedDownstream	onemegctCpeErrorPower
—continued—	

Table 7-25 (continued)
onemegctMIBs

onemegctSpeedUpstream	onemegctCpeLoopback
onemegctProviderValid	onemegctCpeEthInOctets
onemegctLearnedProviderMac	onemegctCpeEthInUcastPkts
onemegctLoopDeviceCount	onemegctCpeEthInErrors
onemegctInOctets	onemegctCpeEthInFCSErrors
onemegctInUcastPkts	onemegctCpeEthInFrameTooLongs
onemegctInNUcastPkts	onemegctCpeEthOutExcessiveCollisions
onemegctInDiscards	onemegctCpeEthOutOctets
onemegctInErrors	onemegctCpeLoopInFrames
onemegctInUnknownProtos	onemegctCpeLoopInCRC8
onemegctOutOctets	onemegctCpeLoopInCRC32
onemegctOutUcastPkts	onemegctCpeLoopInErrors
onemegctOutNUcastPkts	onemegctCpeLoopSyncFound
onemegctOutDiscards	onemegctCpeTxPower
onemegctOutErrors	onemegctCpeRxCorrections
onemegctOutQLen	onemegctCpeLoadFile (not implemented in AD3.0)
onemegctDSLoopErrorRate	onemegctCpeDownloadStatus (not implemented in AD3.0)
onemegctUSLoopErrorRate	onemegctTestTable
onemegctRxCRC8	onemegctTestEntry
onemegctRxCRC32	onemegctTestType
onemegctRxSyncFound	onemegctTestResult
onemegctRxCorrections	onemegctTestErrCode
onemegctRxErrors	onemegctTestTimeStamp
—continued—	

Table 7-25 (continued)
onemegctMIBs

onemegctErrorPower	onemegctTestDescr
onemegctAGCIn	onemegctTestInProgress
—end—	

List of terms

This chapter defines many of the acronyms and terms used in this user guide.

10Base-T

An Ethernet standard that allows Ethernet encoded data to be transported over unshielded twisted pair telephone wire. 10Base-T provides an operating rate of 10 megabits per second.

ADSL

asymmetric digital subscriber line. It is modem technology that enables the UE9000 CPE to send both data and voice over existing twisted pair copper wires to and from the end user. The data and voice signals are sent using different spectrums, which allow both signals to be sent over the same wire simultaneously. ADSL technology is asymmetric, which means more information can be sent one way than the other on the wire.

ARP

address resolution protocol, which is a protocol in the TCP/IP suite of protocols. ARP sends out a broadcast message to all the nodes on a network with a logical address (such as an IP address). The node that matches that logical address responds back with its hardware address (such as a MAC address). In this way, ARP locates the devices on a network.

ATU-C

ADSL transceiver unit, central office end. Traffic from the ATU-R to the ATU-C is considered to be upstream. Traffic from the ATU-C to the ATU-R is considered to be downstream.

ATU-R

ADSL transceiver unit, remote end. Traffic from the ATU-R to the ATU-C is considered to be upstream. Traffic from the ATU-C to the ATU-R is considered to be downstream.

bit

binary digit, which is the smallest unit of information that a computer can process. A bit is either a 0 or 1.

byte

a group of bits of a defined length which is used to represent a value, such as a letter, punctuation mark, symbol, and so on. A byte is usually 8 bits long.

CO

central office

CPE

Universal Edge 9000 customer premise equipment, which is the modem in the end-user's home or office. The UE9000 CPE routes voice traffic from a standard telephone and data traffic from one computer to the ANX and vice-versa.

DAC

data access card. The ATM core card is currently the only type of DAC that uEMS supports.

DLC

digital loop carrier

DMS

digital multiplex switch

event

a system occurrence that requires user notification. uEMS events are generated using SNMP. The following are some conditions that generate uEMS events:

- a threshold limit was exceeded
- the configuration of a node changed
- the status of a node changed
- a warm or cold restart occurred on a node

gateway

a device that connects two separate networks together. A gateway allows devices on one network to access a second network.

GUI

graphical user interface

HEC

header error check

HPOV NNM

Hewlett Packard OpenView Network Node Manager. This is an Internet protocol (IP) network manager application. It is also used to provide a common manager platform for multiple applications such as uEMS.

HSTP

high speed twisted pair

IMA

inverse multiplexing over asynchronous transfer mode

IP

Internet protocol, a protocol in the TCP/IP suite of protocols

LAN

local area network

MAC address

media access control address, used by Ethernet to identify the physical address of a device (such as a circuit card)

map

consists of a collection of submaps that are used to view the UE9000 network. A map cannot typically be viewed in its entirety.

MDF

main distribution frame

MIB

management information base. A MIB is a collection of standard information about a device. Each managed device on the UE9000 network has a MIB that is accessed using SNMP.

MLC

multi-circuit line card

NIC

network interface card

NNM

Network Node Manager

OAM&P

operations, administration, maintenance, & provisioning

object

is an entry in the HPOV NNM database which is used to represent the attributes of a specific entity in the UE9000 network. An object can be a physical entity, such as a hardware device, or a logical entity, such as a group of hardware devices.

octet

a frame of information that is one byte (8 bits long)

OPC

operations controller. A plug-in module for the common-equipment shelf or an operations controller shelf. The OPC provides OAM&P to the access bandwidth manager (ABM) shelves, host digital terminals (HDT), and other network elements in its span of control.

POTS

plain old telephone service

PPP

point-to-point protocol

protocol

a set of rules that enables two machines having similar functions to communicate with each other

PSTN

public switched telephone network

selection name

HP OpenView and uEMS software identify objects by their selection name and unique name. No two objects in the same network can have the same selection name. The selection name must be unique for each object in the uEMS database. The selection name can be sixteen characters long. Do not use spaces. It can consist of alphanumeric and symbol characters.

SNMP

simple network management protocol, a network management service in the TCP/IP protocol suite. SNMP uses four basic commands: GET, GET-NEXT, SET, and TRAP. SNMP is supported by most IP devices and nodes.

- A GET request retrieves information from a device or node.
- A SET request changes a parameter on a device or node.
- A TRAP request contains information that is sent by a device or node to its management station.

submap

a view of a specific section of the UE9000 network

subnet mask

a number used to identify a subnetwork. Subnet masks allow a number of different subnetworks in a LAN to share the same IP address. These subnetworks can be physically independent from each other.

symbol

a graphical representation on the uEMS submap screen of a UE9000 component in the uEMS database. A symbol can be an icon or a connection symbol. An icon symbol represents a single UE9000 component in the uEMS database, such as an ATM interface circuit card. A connection symbol represents the connection between two UE9000 components, such as the ADSL subscriber circuit connecting a Universal Edge 9000 customer premise equipment modem (CPE) and an ADSL multi-circuit line card.

TCP

transmission control protocol, which is a protocol in the TCP/IP suite of protocols. It provides reliable end-to-end data transmission.

TFTP

trivial file transfer protocol

uEMS

Universal Edge 9000 Element Management System, which is a graphical user interface that provides OAM&P for UE9000 data service. uEMS runs on a Hewlett-Packard UNIX workstation or a Sun Microsystems Solaris workstation running HPOV NNM. uEMS communicates with the data processor using SNMP.

VF

voice frequency

VLAN

virtual local area network

xDSL

x digital subscriber line. A generic name for digital subscriber line equipment and services. Digital subscriber line technologies provide high-speed digital bit stream over the same wires used for analog connection. Some DSL technologies are asymmetric DSL, Nortel Networks proprietary 1-Meg Modem, and synchronous DSL. *See also* ADSL.

Procedures and descriptions in this document that refer to xDSL line cards apply to the ADSL 4+4, 1-Meg Modem, and SDSL multi-circuit line cards.

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DMS-100

Universal Edge 9000

Data OAM&P User Guide

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