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Amendment 1

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SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Optical line systems for local and access networks

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ONT management and control interface specification for B-PON

Amendment 1: Omnibus improvements for OMCI

ITU-T Recommendation G.983.2 (2005) – Amendment 1

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ITU-T Recommendation G.983.2

ONT management and control interface specification for B-PON

Amendment 1

Omnibus improvements for OMCI

Summary

This amendment includes assorted improvements and corrections for the ONT management and control interface Recommendation, ITU-T Rec. G.983.2 (2005). The major topics include:

- Voice over Internet Protocol (VoIP) management;
- ONT equipment management;
- ONT power shedding;
- ONT remote debug;
- Test command extensions;
- Video ANI enhancements;
- Protocol Implementation Conformance Statement.

In addition to these items, there are several minor corrections of editorial errors in the Recommendation.

Source

Amendment 1 to ITU-T Recommendation G.983.2 (2005) was approved on 29 March 2006 by ITU-T Study Group 15 (2005-2008) under the ITU-T Recommendation A.8 procedure.

Keywords

B-PON, G-PON, management, optical.

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Omnibus improvements for OMCI

1 Introduction

1.1 Purpose and Scope

This amendment is intended to outline the requirements and recommended implementation of the OMCC management for a variety of new features supported in ONTs, including Voice over IP (VoIP) service, equipment management, power shedding, remote debug, extended test commands, and video ANI enhancements. The primary focus of this amendment is the definition of new standard OMCC managed entity objects and attributes, and expected behaviour of those objects.

2 Modifications and additions to ITU-T Rec. G.983.2 (2005)

2.1 Modifications to clause 3

Add the following new abbreviations alphabetically to clause 3:

AID	Access Identifier
ASCII	American Standard Code for Information Interchange
ASCII string	A sequence of ASCII encoded characters, terminated by the NULL character (0x00)
CID	Customer/Caller Identification
DHCP	Dynamic Host Configuration Protocol
LOS	Loss of Signal
RTCP	RTP Control Protocol
RTP	Real-Time Transport Protocol
SIP	Session Initiation Protocol
TCP	Transmission Control Protocol
TLS	Transport Layer Security
TOS	Type of Service
UDP	User Datagram Protocol
VoIP	Voice over IP

2.2 New clause 4.4

Add the following new clause 4.4:

4.4 Voice over IP management

While OMCI is always used to manage PON service and ONT equipment, VoIP service may optionally be managed by means external to OMCI. This allows operators more flexibility in choosing how to manage their overall VoIP service regardless of the access technology involved. VoIP service on an ONT may be managed via one of two paths:

1) OMCI Path – OMCI has full view and control of all VoIP service attributes.
2) IP Path – OMCI is only used to configure attributes that allow non-OMCI based control of VoIP service attributes.

Specifically, if the OMCI path is used to manage VoIP service, all of the managed entities defined here may be read and/or written.

If the IP path is used to manage SIP VoIP service, only the following MEs may be read and/or written:

- IP Host Config Data;
- IP Host Monitoring Data;
- VoIP Config Data;
- PPTP POTS UNI;
- Call Control PM History Data;
- RTP Monitoring Data;
- SIP Call Initiation Performance Monitoring History Data;
- SIP Agent Monitoring Data;
- SIP Config Portal;
- VoIP Line Status.

If the IP path is used to manage H.248 VoIP service, only the following MEs may be read and/or written:

- IP Host Config Data;
- IP Host Monitoring Data;
- VoIP Config Data;
- PPTP POTS UNI;
- Call Control PM History Data;
- RTP Monitoring Data;
- MGC Monitoring Data;
- H.248 Config Portal;
- VoIP Line Status.

2.3 Modifications to clause 5.2

Modify items b and c, and add new items to the list of MEs as follows:

b) Cardholder (formerly "Subscriber Line Cardholder");

c) Circuit pack (formerly "Subscriber Line Card");

o) Equipment extension package;

p) Physical Path Termination Point Video ANI;

q) Physical Path Termination Point Video UNI;

r) Physical Path Termination Point ISDN UNI;

s) VoIP Config Data;

t) SIP Agent Config Data.

2.4 Modifications to clause 5.3

Add the following new items to the list of MEs in this clause:

z4) IP Host PM History Data;

z5) SIP Agent Monitoring Data;

z6) SIP Call Initiation PM History Data;

z7) RTP Monitoring Data;

z8) Call Control PM History Data;

z9) MGC Monitoring Data.

2.5 Modifications to clause 6.1

Modify the following lines in Table 1 to read as follows:

Managed entity	Required/ Optional	Description	Defined in Section
PON IF Line Card	Deprecated	Used for the PON line card plug-in, only used if PON interface is implemented on a plug-in unit. This managed entity is deprecated in favour of the generalized circuit pack ME.	7.1.6
PON IF Line Cardholder	Deprecated	Used for the PON line card plug-in slot, only used if PON interface is implemented on a plug-in unit. This managed entity is deprecated in favour of the generalized cardholder ME.	7.1.5
Software image	R	Used for the software image of the ONT or its components that contain independently manageable software.	7.1.7
Circuit pack (formerly "Subscriber Line card")	CR (Note)	Used for a plug-in circuit pack module. Can also represent a virtual circuit pack to distinguish types of ports in an integrated ONT.	7.1.4
Cardholder (formerly "Subscriber Line Cardholder")	CR (Note)	Used for a circuit pack plug-in slot. Can also represent a virtual cardholder to distinguish types of ports in an integrated ONT.	7.1.3

Add the following new entries to Table 1 and change the Note at the end of the table as follows:

Managed Entity	Required/ Optional	Description	Defined in Section
IP Host Config Data	CR	Used to define the internet protocol service that may be used with a MAC Bridge Port. Member of IPHostData group.	7.3.98
IP Host PM History Data	O	Used to hold PM counters and alarms for the IP Host. Member of IPHostData group.	7.3.99
TCP/UDP Config Data	CR	Used for the TCP or UDP configuration for a TCP/UDP service. Member of IPHostData group.	7.3.100
Network Address	CR	Used to bind a network address (URI, IP Address) to its associated security method. Member of IPHostData group.	7.3.116
VoIP Config Data	CR	Used to discover VoIP signalling protocols supported and select a VoIP signalling to use. Also used to select a VoIP configuration method. Member of VoIPData group.	7.3.101
VoIP Voice CTP	CR	Used for VoIP voice channel termination point. Member of VoIPData group.	7.3.110
Call Control PM History Data	O	Used for call control performance monitoring history. Member of VoIPData group.	7.3.111
VoIP Line Status	O	Used for VoIP line status that relates to a POTS port. Member of VoIPData group.	7.3.114
VoIP Media Profile	CR	Used to define codec and other media selection criteria. Member of VoIPData group.	7.3.107
RTP Profile Data	CR	Used for RTP configuration for VoIP service.	7.3.108
RTP Monitoring Data	O	Used to hold the last completed 15-minute interval PM data for RTP. Member of VoIPData group.	7.3.109
Network Dial Plan Table	O	Used to support network defined dial plans. Member of VoIPData group.	7.3.112
VoIP Application Service Profile	O	Used for VoIP calling feature services. Member of VoIPData group.	7.3.113
VoIP Feature Access Codes	O	Used to define feature access codes for a POTS port. Member of VoIPData group.	7.3.115
Authentication Security Method	O	Used for the user id/password configuration to associate a session used between the client and destination server.	7.3.117

Managed Entity	Required/ Optional	Description	Defined in Section
SIP Config Portal	CR	Used to view SIP configuration when the IP path is being used to manage SIP. Member of SIPrelatedData group.	7.3.102
SIP Agent Config Data	CR	Used to define a VoIP SIP agent configuration. Member of SIPrelatedData group.	7.3.103
SIP Agent Monitoring Data	O	Used for statistics for the VoIP SIP agent. Member of SIPrelatedData group.	7.3.104
SIP Call Initiation Performance Monitoring History Data	O	Used for statistics for the VoIP SIP agent. Member of SIPrelatedData group.	7.3.105
SIP User Data	CR	Used for user (subscriber) specific SIP data. Member of SIPrelatedData group.	7.3.106
MGC Config Portal	CR	Used to view H.248 configuration when the IP path is being used to manage H.248. Member of H248relatedData group.	7.3.119
MGC Config Data	CR	Used for the configuration data associated with a MGC client. Member of H248relatedData group.	7.3.120
MGC Monitoring Data	O	Used for the runtime attributes and statistics associated with the active MGC client. Member of H248relatedData group.	7.3.121
LargeString	CR	Used to hold a character string larger than 25 bytes and up to 375 bytes. Member of H248relatedData group.	7.3.118
ONT Power Shedding	CR	Used to control the power shedding service.	7.1.12
ONT Remote Debug	CR	Used to allow remote debugging of an ONT.	7.1.13
Equipment protection profile	CR	Defines equipment protection groups	7.1.9
Equipment extension package	O	Used for additional attributes that may be associated with an ONT, ONU or cardholder.	7.1.10
Port mapping package	O	Used to map heterogeneous ports to an equipment entity.	7.1.11
NOTE – The preferred solution is that the circuit pack and cardholder managed entities should always be modelled, regardless of whether or not the ONT has integrated interfaces; however, for reasons of backward compatibility, these managed entities remain as "CR".			

2.6 Modifications to clause 6.2

Replace Figure 14 with the following:

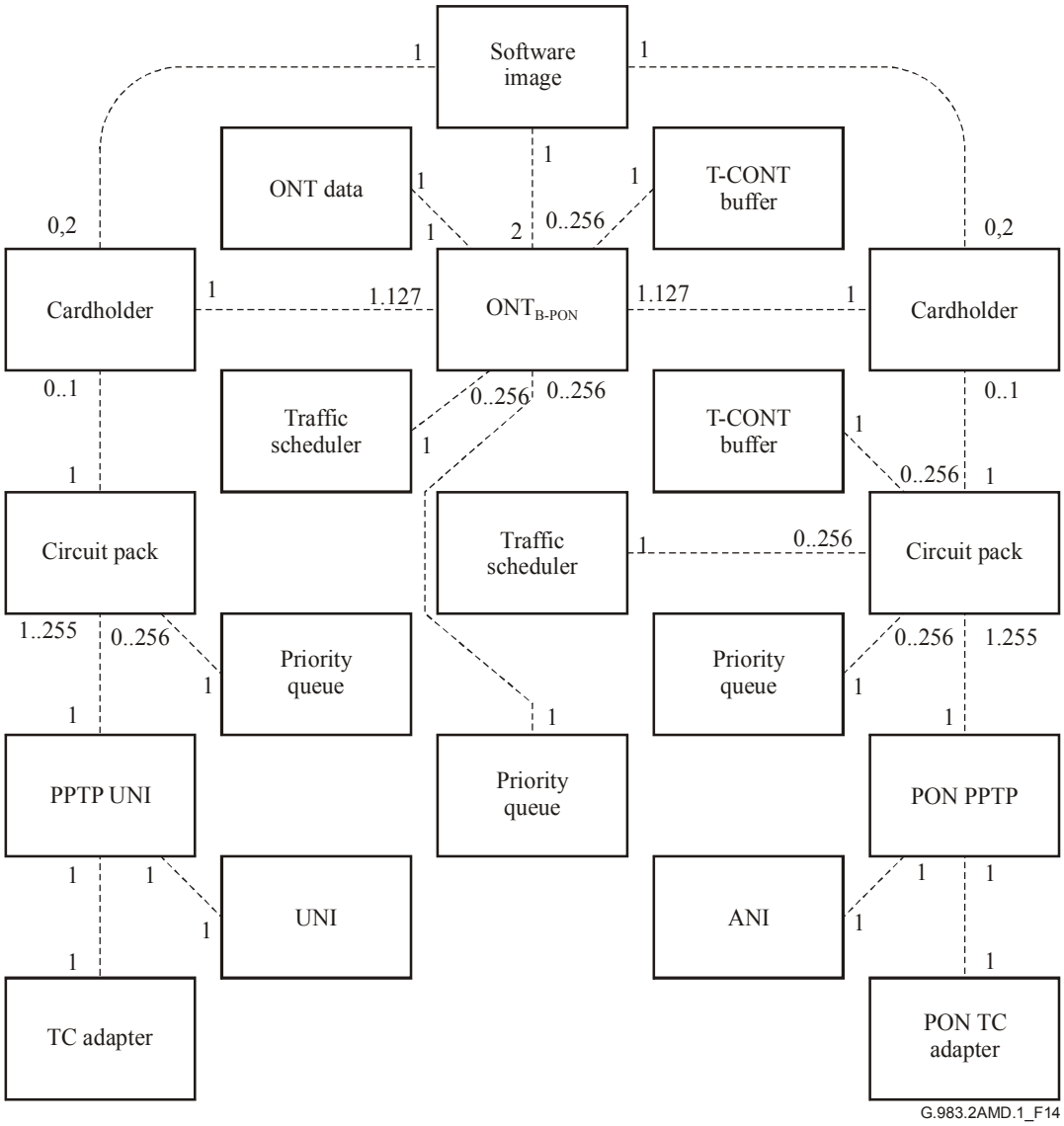


Figure 14/G.983.2 – Managed entity relationship diagram for non-integrated interfaces

In the first paragraph after Figure 14, replace "Subscriber Line Cards" *with* "circuit packs".

Add the following to the end of clause 6.2 after Figure 31:

The host IP service managed entity relationship diagram is shown in Figure 31-a. Note that this is only a partial diagram to simplify the service from the LAN side of the bridge.

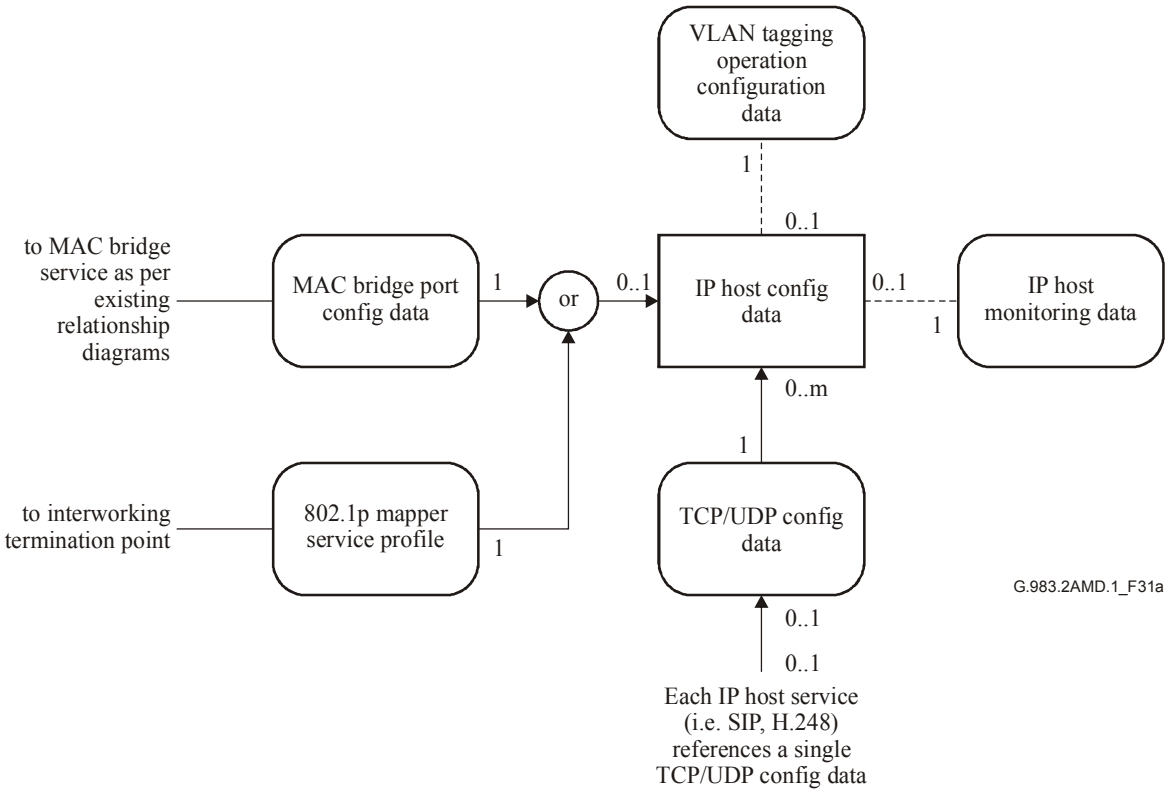


Figure 31-a/G.983.2 – Managed entity relationship diagram, IP host services

The host Network Address managed entity relationship diagram is shown in Figure 31-b.

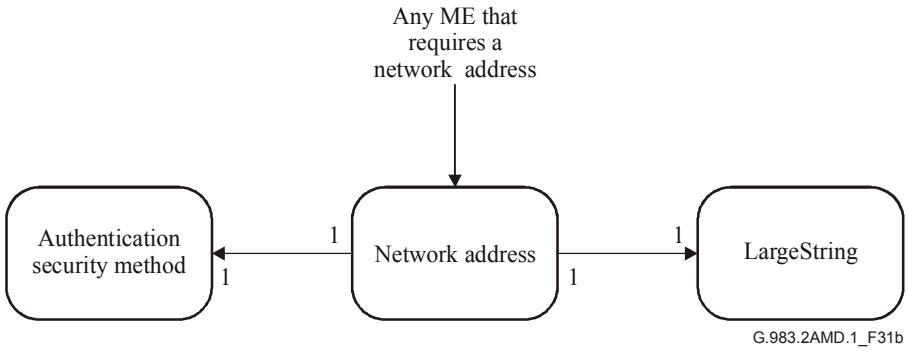
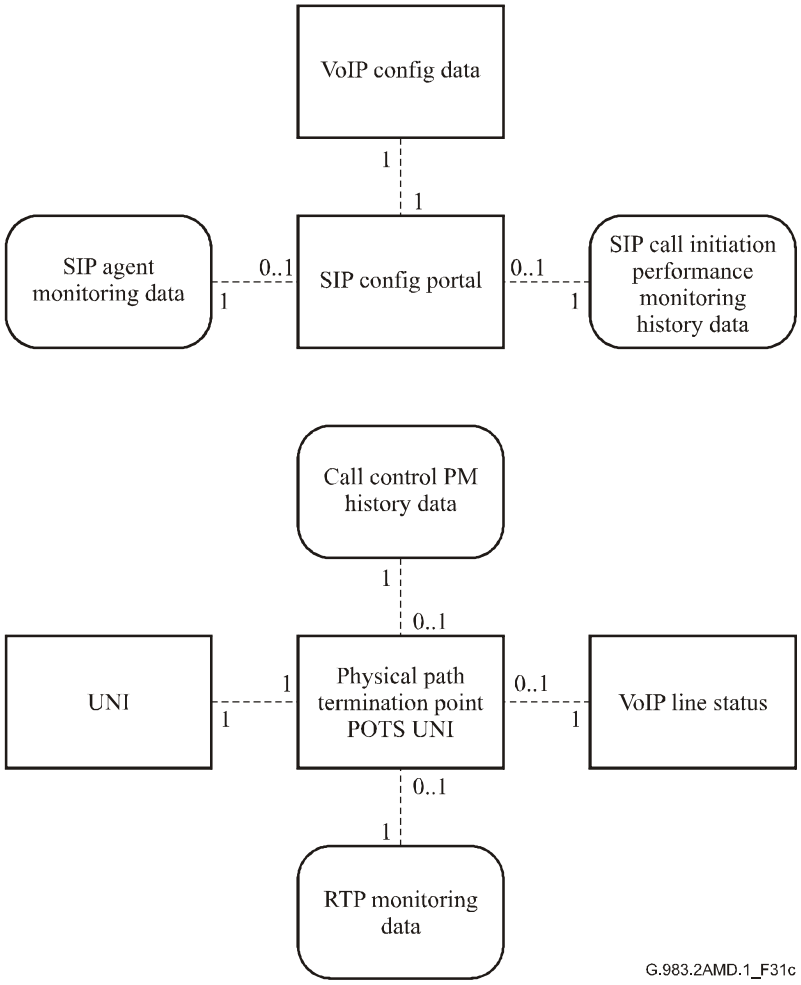


Figure 31-b/G.983.2 – Managed entity relationship diagram, network address

The following managed entity relationship diagrams show how managed entities are associated when the IP path is used to manage VoIP service on an ONT.

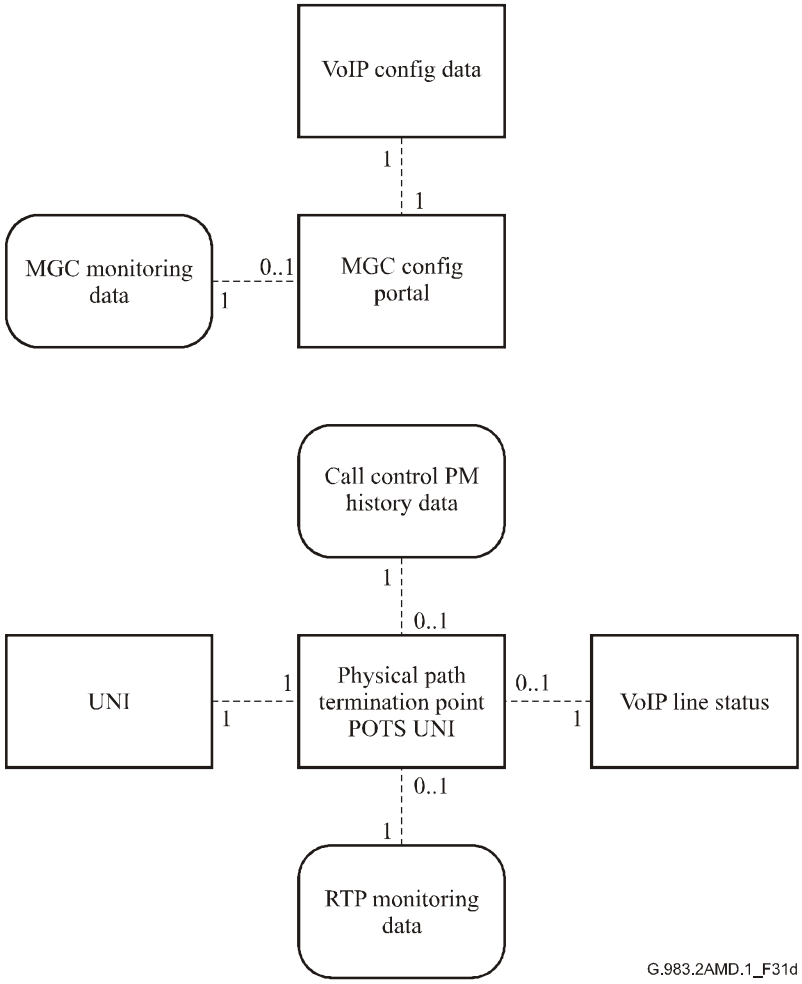
The VoIP managed entity relationship diagram in Figure 31-c shows how managed entities are associated when the IP path is used to manage SIP VoIP service on an ONT.



NOTE 1 – Any ME that requires a large character string can reference a large string ME.
NOTE 2 – Any ME that requires a network address can reference a network address ME.

Figure 31-c/G.983.2 – Managed entity relationship diagram, IP path SIP VoIP management

The VoIP managed entity relationship diagram in Figure 31-d shows how managed entities are associated when the IP path is used to manage H.248 VoIP service on an ONT.

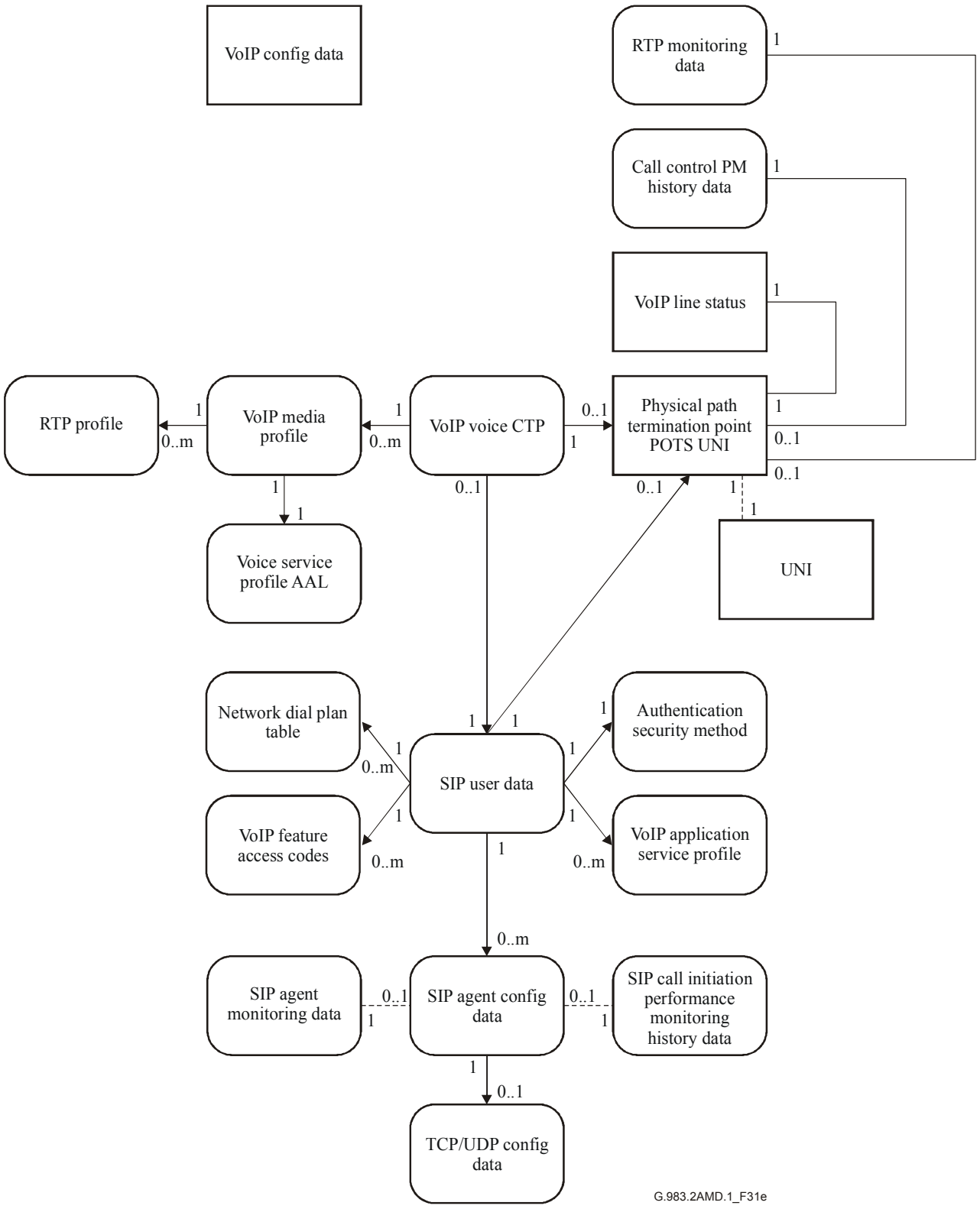


NOTE 1 – Any ME that requires a large character string can reference a large string ME.
NOTE 2 – Any ME that requires a network address can reference a network address ME.

Figure 31-d/G.983.2 – Managed entity relationship diagram, IP path H.248 VoIP management

The following managed entity relationship diagrams show how managed entities are associated when the OMCI path is used to manage VoIP service on an ONT.

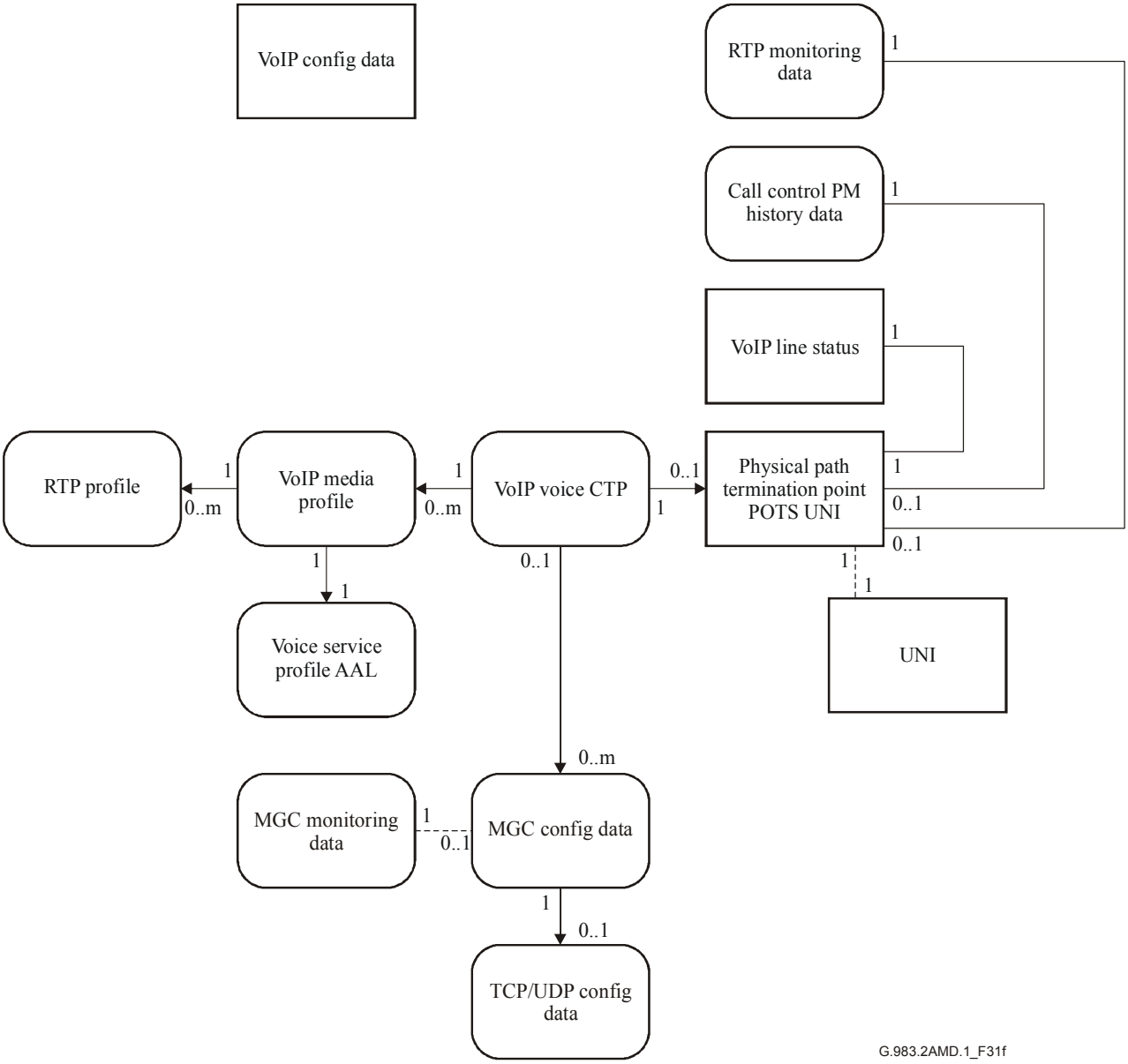
The VoIP managed entity relationship diagram in Figure 31-e shows how managed entities are associated for a SIP-based VoIP service



NOTE 1 – Any ME that requires a large character string can reference a large string ME.
NOTE 2 – Any ME that requires a network address can reference a network address ME.

Figure 31-e/G.983.2 – Managed entity relationship diagram, Voice over IP service in an ONT

The VoIP managed entity relationship diagram in Figure 31-f shows how managed entities are associated for a H.248 based VoIP service.



NOTE 1 – Any ME that requires a large character string can reference a large string ME.
NOTE 2 – Any ME that requires a network address can reference a network address ME.

Figure 31-f/G.983.2 – Managed entity relationship diagram, Voice over IP service using H.248

2.7 Modification to clause 7.1 ONT equipment management

Add the following text under clause 7.1:

An ONT may be physically implemented as a single module or as a shelf containing plug-in field-replaceable units (the latter construction is likely to be called an ONU, but this Recommendation uses ONT generically to refer to both). The ONT automatically instantiates cardholder MEs for each of its slots. A slot can then be populated with a circuit pack. For backward compatibility, a PON IF line card ME can also be installed in a PON IF line cardholder.

2.8 Modifications to clause 7.1.1 $ONT_{B\text{-}PON}$

Change all instances of "PON interface line card" *to* "Circuit Pack".

Modify the "**Test**" *action as follows:*

Test: Test the ONT. The test action can be used either to perform equipment diagnostics or to make measurements of parameters such as received optical power, video output level, battery voltage, etc. Extensions to the test and test response messages are defined for these purposes; refer to Appendix II.

2.9 Modifications to clause 7.1.2 ONT Data

Change "Subscriber Line Cardholder" *to* "Cardholder".

Change "PON interface line card" *to* "Circuit Pack".

2.10 Modifications to clause 7.1.3 Subscriber Line Cardholder

Change heading to read "**Cardholder** (formerly **Subscriber Line Cardholder**)".

Replace the text up to Table 3 with the following:

NOTE 1 – This ME was previously called a subscriber line cardholder. It has been generalized to represent any form of cardholder, regardless of function.

This managed entity represents an equipment slot of the ONT. One or more of these entities are contained in the ONT. Each cardholder can contain 0 or 1 circuit pack.

An instance of this managed entity shall exist for each slot. Instances of this managed entity are created automatically by the ONT after ONT initialization. After the creation of this managed entity, the associated attributes are updated according to the data within the ONT itself.

One or more instances of this managed entity may also be contained in integrated ONTs. They then represent virtual cardholders.

There is potential for conflict in the semantics of the expected plug-in unit type, the expected port count and the expected equipment ID, both when the slot is not populated and when a new circuit pack is inserted. The expected plug-in unit type and the plug-in type mismatch alarm are mandatory, although *plug-and-play/unknown* may be used as a way to minimize their significance. It is recommended that an ONT deny the provisioning of inconsistent combinations of expected equipment attributes.

Relationships

An instance of the cardholder ME may contain an instance of the circuit pack managed entity, or for backward compatibility, the PON IF line card managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The first byte of this two-byte identifier is set to:

- 0x00 if the ONT contains pluggable equipment modules.
- 0x01 if the ONT is a single integrated equipment.

The second byte of this identifier is the slot number. In integrated ONTs, this byte can be used as a virtual slot or set to 0 to indicate a universal pseudo-slot.

Slot numbering schemes differ among vendors. It is only required that slot numbers be unique across the entire ONT. Up to 254 equipment slots are supported in the range 1..254 (Note 2). The value 0 is reserved to indicate a universal pseudo-slot. The value 255 is also reserved. (R) (mandatory) (2 bytes).

NOTE 2 – Some ADSL managed entities use the two MSBs of the slot address for other purposes. An ONT that supports these services may have slot limitations or restrictions.

Actual Plug-in unit Type: This attribute is equal to the type of the circuit pack in the cardholder or equal to 0 if the cardholder is empty. This attribute is then redundant with the "Type" attribute of the circuit pack managed entity. Circuit pack types are defined in Table 3. (R) (mandatory) (1 byte)

Expected Plug-in unit Type: This attribute identifies which type of plug-in unit is provisioned for the slot. For type coding, see Table 3. The value 0 (no circuit pack) means that the cardholder is not provisioned to contain a circuit pack. The value 0xFF (255) means that the cardholder is configured for plug-and-play. Upon autonomous instantiation, this attribute is set to 0. For integrated interfaces, this attribute may be used to represent the type of interface. (R, W) (mandatory) (1 byte)

Expected port count: This attribute permits the OLT to specify the number of ports it expects in a circuit pack. Prior to provisioning by the OLT, the ONU shall initialize this attribute to 0. (R, W) (optional) (1 byte)

Expected equipment ID: This attribute may be used to identify the specific type of expected circuit pack. This attribute applies only to ONTs that do not have integrated interfaces. In North America, this may be used for the expected equipment CLEI code. Upon autonomous instantiation, this attribute comprises all spaces. (R, W) (optional) (20 bytes)

Actual equipment ID: This attribute may be used to identify the specific type of circuit pack, once it is installed. This attribute applies only to ONTs that do not have integrated interfaces. In North America, this may be used for the equipment CLEI code. When the slot is empty or the equipment ID is not known, this attribute should be set to all spaces. (R) (optional) (20 bytes)

Protection profile pointer: This attribute selects an equipment protection profile that may be associated with the cardholder. Its value is the least significant byte of the managed entity ID of the equipment protection profile with which it is associated, or 0 if equipment protection is not selected. (R, W) (optional) (1 byte)

Invoke protection switch: The OLT may use this attribute to control equipment protection switching. Code points have the following meaning when set by the OLT:

- 0x00 Release protection switch
- 0x01 Operate protection switch, protect cardholder unspecified
- 0x02 Operate protection switch, use first protect cardholder
- 0x03 Operate protection switch, use second protect cardholder

The ONT should deny attempts to switch to an unequipped, defective or already active protect cardholder.

Upon get from the OLT, this attribute should return the current value of the actual protection configuration. Code points are as defined above, except that 0x01 will never be returned.

When circuit packs that support a PON IF function are switched, the response should be returned on the same PON that received the command. However, the OLT should also be prepared to accept a response on the redundant PON. (R, W) (optional) (1 byte)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

Attribute Value Change: This notification is used to report autonomous changes of the Actual Plug-in unit type or actual equipment ID. The attribute value change notification shall identify the attribute changed and its new value. The AVCs for this managed entity are listed in Table 4a. For ONTs with integrated interfaces, AVCs are not supported.

NOTE 3 – In the AVC tables, the numbering follows that of the Attribute mask coding found in Table II.1. Accordingly, each AVC table has a maximum of 16 entries. If an existing attribute does not emit AVCs, then "N/A" (not applicable) is listed in the AVC column. "Reserved" is used for numbers that do not correspond to an existing attribute.

Alarm: This notification is used to notify the management system that there is something wrong with the provisioned plug-in unit. Both ONT and OLT should know the alarm list (see Table 4b) used by this entity. If no circuit pack is configured or if the cardholder is configured for plug-and-play with no expected equipment ID, no alarms are raised. If the plugInLIMMissingAlarm is active, none of the mismatch alarms shall be declared. No alarms are defined for ONTs with integrated interfaces.

Add the following entries to Table 3:

Coding	Contents	Description
43	Common equipment	Circuit packs such as removable power supply modules or ONU controllers
44	Combined video UNI and PON interface	Circuit pack that combines both functions
45	Mixed services equipment	Circuit pack with several types of ANI and/or UNI. Suggested for use with the port mapping package managed entity.
46	Reserved	Reserved for future standardization
47-242	Reserved	
243..249	Future PON interfaces	Reserved for future standardization

Replace Table 4a and Table 4b with the following:

Table 4a/G.983.2 – AVC list for cardholder

Number	Attribute value change	Description
1	ActualType	Actual type of circuit pack in cardholder
2..4	N/A	
5	ActualEquipmentId	Actual equipment ID of circuit pack in cardholder
6, 7	N/A	
8-16	Reserved	

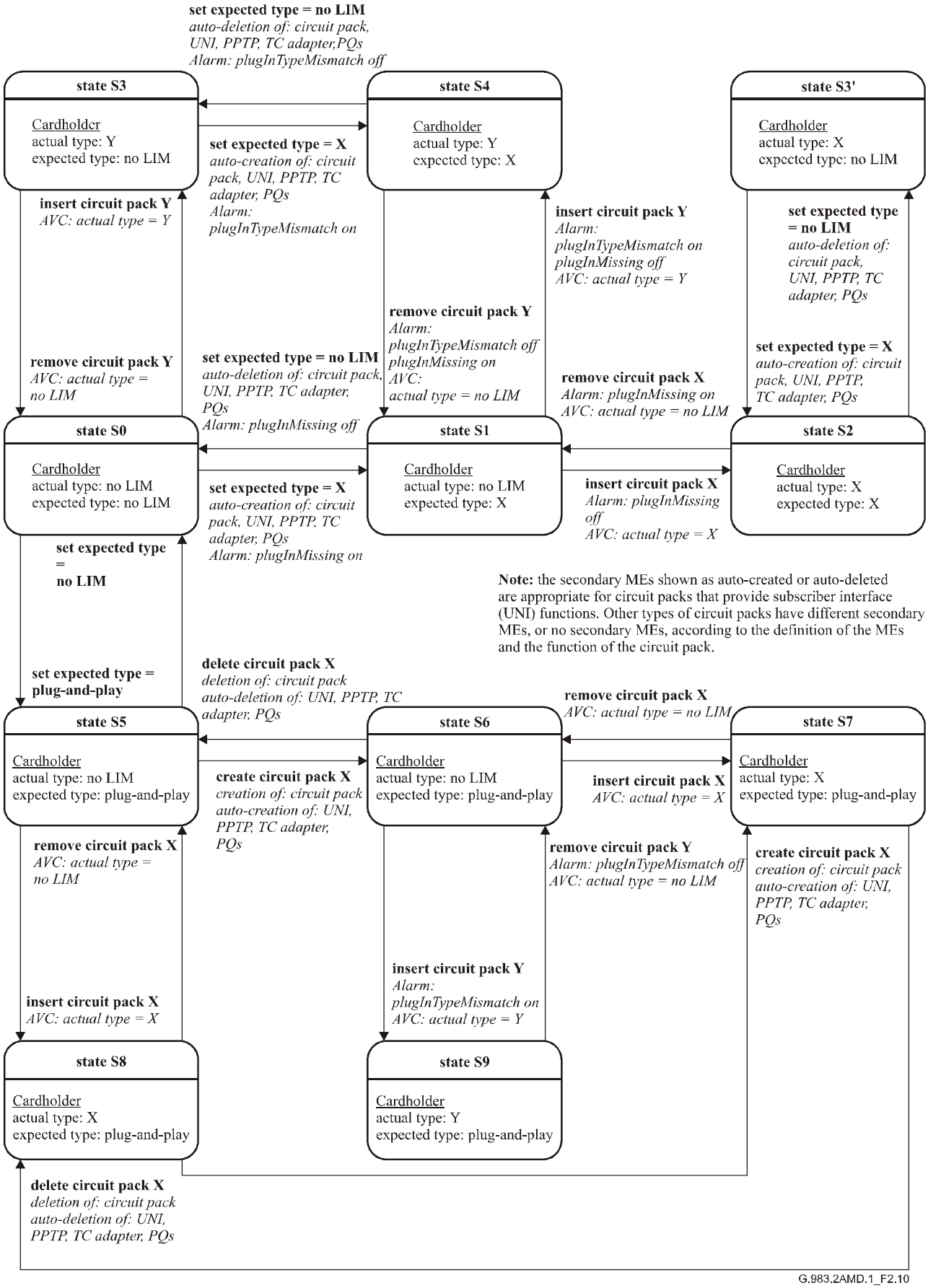
Table 4b/G.983.2 – Alarm list for cardholder

Number	Alarm	Description
0	PlugInLimMissingAlarm	Configured Plug-in circuit pack is not present
1	PlugInTypeMismatchAlarm	Inserted Plug-in circuit pack is wrong type
2	ImproperCardRemoval	Circuit pack has been removed without being deprovisioned. (This is a redundant alarm that helps the OLT distinguish between transitions from state S2 to state S1 and transitions from state S4 to state S1. This alarm is sent only when a transition occurs from state S2 to state S1. See Figure 32 for state diagrams.)
3	PlugInEqptIdMismatchAlarm	Inserted plug-in circuit pack has wrong equipment ID
4	ProtectionSwitch	An autonomous equipment protection switch has occurred. This notification is reported by the protected cardholder.
5-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

Replace the text preceding Figure 32 (and that which follows after Table 4b) to read as follows:

Figure 32 shows a state diagram of the various behaviours of inserting/removing a particular circuit pack into/from a cardholder that is provisioned to a specific type or to plug-and-play.

Replace Figure 32 with the following:



2.11 Modification to clause 7.1.4 Subscriber line card

Change the heading to read "**Circuit pack**"*:*

Revise the beginning of the clause, up to the "*Notifications*" *subheading to read as follows:*

NOTE 1 – This managed entity was previously known as a subscriber line card. It has been generalized in a backward-compatible way to model any plug-in equipment module.

This managed entity represents a circuit pack that is equipped in an ONT slot. For ONTs with integrated interfaces, this managed entity may be used to distinguish available types of interfaces. (The port mapping package is another way.)

An instance of this managed entity shall be automatically created by the ONT when the OLT provisions the cardholder to expect a circuit pack (i.e., when the OLT sets the expected plug-in unit type or equipment ID of the cardholder to a circuit pack type) (see 7.1.3). An instance of this managed entity shall also be created by the ONT when a circuit pack is installed in a cardholder whose expected plug-in unit type is equal to 0xFF (255, plug-and-play), and whose equipment ID is not provisioned. Finally, when the cardholder is provisioned for plug and play, an instance of this managed entity can be created at the request of the OLT. For ONTs with integrated interfaces, the ONT shall automatically create an instance of this managed entity for each instance of the virtual cardholder managed entity.

An instance of this managed entity shall be deleted by the ONT when the OLT de-provisions the circuit pack (i.e., when the OLT sets the expected plug-in unit type or equipment ID of the cardholder to no LIM). An instance of this managed entity shall also be deleted by the ONT on request of the OLT if the attribute "Expected Plug-in Unit Type" of the corresponding cardholder is equal to 0xFF, plug-and-play, and the expected equipment ID is blank (a string of all spaces). For ONTs with integrated interfaces, an instance of this managed entity cannot be deleted by an OLT request.

NOTE 2 – Creation and deletion by the OLT is retained for backward compatibility.

Relationships

An instance of this managed entity is contained by an instance of the cardholder managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The number is the same as the instance number of the cardholder managed entity instance containing this circuit pack instance. (R, Set-by-create (if applicable)) (mandatory) (2 bytes)

Type: This attribute identifies the circuit pack type. This attribute is a code as defined in Table 3. The value 0xFF (255) means unknown or undefined, i.e., the inserted circuit pack is not recognized by the ONT or is not mapped to an entry in Table 3. In the latter case, the equipment ID attribute may contain inventory information. Upon autonomous instantiation, this attribute is set to 0 or to the type of the circuit pack that is physically present. (R, Set-by-create (if applicable)) (mandatory) (1 byte)

Number of ports: This attribute gives the quantity of access ports on the circuit pack. If the port mapping package is supported for this circuit pack, this attribute should be set to the total number of ports of all types. (R) (optional) (1 byte)

Serial Number: The serial number is unique for each circuit pack. Note that the serial number may contain the vendor id and/or version number. For ONTs with integrated interfaces on the UNI side, this value is identical to the value of the serial number attribute of the $ONT_{B\text{-}PON}$ managed entity. Upon instantiation, this attribute consists of all spaces. (R) (mandatory) (8 bytes)

Version: This attribute identifies the version of the circuit pack as defined by the vendor. A value of 0 shall be used when version information is not available or applicable to the ONT being represented. For ONTs with integrated interfaces on the UNI side, this value is identical to the value of the version attribute of the $ONT_{B\text{-}PON}$ managed entity. Upon autonomous instantiation, this attribute consists of all spaces. (R) (mandatory) (14 bytes)

Vendor id: This attribute identifies the vendor of the circuit pack. For ONTs with integrated interfaces, this value is identical to the value of the vendor id attribute of the $ONT_{B\text{-}PON}$ managed entity. Upon instantiation, this attribute consists of all spaces. (R) (optional) (4 bytes)

Administrative State: This attribute is used to "unlock" (value 0) and "lock" (value 1) the functions performed by the circuit pack. When the administrative state is set to "lock," all user traffic to and from this circuit pack is blocked and alarms for this circuit pack and all associated managed entities are no longer generated. Selection of a default value for this attribute is outside the scope of this Recommendation as it is normally handled through supplier-operator negotiations. (R, W, Set-by-create (if applicable)) (mandatory) (1 byte)

Operational State: This attribute indicates whether or not the managed entity is capable of performing its task. Valid values are enabled (0x00), disabled (0x01), and unknown (0x02). Upon instantiation, this attribute is set to (0x02). (R) (optional) (1 byte)

BridgedorIPInd: This attribute indicates whether the Ethernet interface is bridged or derived from an IP router function (Bridged: 0x00; IP router: 0x01; 0x02 Bridged and IP Router). 0x02 means that both bridged and IP router functions are supported by the circuit pack. Upon autonomous instantiation, the value 0x00 is used. (R, W) (optional, only applicable for circuit packs with Ethernet interfaces) (1 byte)

Equipment id: This attribute may be used to identify the vendor's specific type of circuit pack. In North America, this may be used for the CLEI code. Upon instantiation, this attribute comprises all spaces or the equipment ID of the circuit pack that is physically present. (R) (optional) (20 bytes)

CardConfiguration: This attribute is used to select the appropriate configuration on configurable line cards (e.g., T1/E1). Table 3 specifies 3 configurable card types: A45/34 (code 9), C-DS1/E1 (code 16), and C-DS1/E1/J1 (code 17). Values are indicated below for the allowed card types and configurations.

Card Type	Configuration	Value
A45/34	ATM 44.736 Mbit/s	0x00
	ATM 34.368 Mbit/s	0x01
C-DS1/E1	DS1	0x00
	E1	0x01
C-DS1/E1/J1	DS1	0x00
	E1	0x01
	J1	0x02

Upon autonomous instantiation, the value 0x00 is used. (R, W, Set-by-create (if applicable)) (mandatory for configurable line cards) (1 byte)

Total T-CONT buffer number: This attribute provides the total number of T-CONT buffers that are associated with the circuit pack. Upon autonomous instantiation, the value 0 is used. (R) (mandatory for circuit packs that provide a traffic scheduler function) (1 byte)

Total Priority Queue number: This attribute provides the total number of priority queues that are associated with the circuit pack. Upon autonomous instantiation, the value 0 is used. (R) (mandatory for circuit packs that provide a traffic scheduler function) (1 byte)

Total Traffic Scheduler number: This attribute provides the total number of traffic schedulers that are associated with the circuit pack. The ONT supports NULL function, HOL (Head Of the Line) scheduling and WRR (Weighted Round Robin) from the priority control and guarantee of minimum rate control points of view, respectively. If the circuit pack has no traffic scheduler, this attribute should be 0x00. Upon autonomous instantiation, the value 0 is used. (R) (mandatory for circuit packs that provide a traffic scheduler function) (1 byte)

Power Shed Override: This attribute allows ports to be excluded from the power shed control. Order of the bit mask uses port 1 as the MSB, and a bit value of one is used to mark the port as overriding the shed timer. Note for hardware that cannot shed power per port, this attribute is used as a slot override instead of a per port override, with any non-zero value indicating slot overriding power shedding. (R, W) (optional) (4 bytes)

Actions

Create: Create an instance of this managed entity (optional, only when plug-and-play is supported).

Delete: Delete an instance of this managed entity (optional, only when plug-and-play is supported).

Get: Get one or more attributes.

Set: Set one or more attributes.

Reboot: Reboot the circuit pack.

Test: Test the circuit pack (this action is optional). The test action can be used either to perform equipment diagnostics or to make measurements of parameters such as received optical power, video output level, battery voltage, etc. Extensions to the test and test response messages are defined for these purposes; refer to Appendix II.

Change "**Subscriber line card**" *to* "**Circuit pack**" *in the captions to Tables 5a and 5b.*

2.12 Modifications to clause 7.1.5 PON IF line cardholder

Add the following text to the beginning of the clause:

This attribute is deprecated in favour of the general purpose cardholder ME, defined in 7.1.3.

2.13 Modifications to clause 7.1.6 PON IF line card

Add the following text to the beginning of the clause:

This managed entity is deprecated in favour of the general purpose circuit pack managed entity, defined in 7.1.4.

2.14 Modifications to clause 7.1.7 Software image

Modify the text up to the "Actions" sub-heading in this clause to read as follows:

This managed entity represents a program stored in the ONT.

Two instances of this managed entity shall be automatically created by the ONT after the creation of each managed entity that contains independently manageable software. The software image managed entity is used to report to the management system the software currently installed in non-volatile memory. After the creation of the instances of this managed entity, the associated attributes are updated according to the data within the ONT and its circuit packs.

Some pluggable equipments may contain no software. Others may contain software that is intrinsically bound to the ONT's own software image. No software image ME need exist for such equipments, though it may be convenient for the ONT to create them to support software version audit from the OLT. In this case, the dependent MEs would support only the *get* action.

A slot may contain various equipments over its lifetime, and if software image MEs exist, they must automatically be created and deleted by the ONT as the equipage changes.

When controller packs are duplicated, each can be expected to contain two software image MEs, managed through reference to the individual controller packs themselves. When this occurs, the ONT should not have a global pair of software image MEs (instance 0), since an action (download, activate, commit) directed to instance 0 would be ambiguous.

Relationships

Two instances of the software image managed entity are contained in an instance of an ONT or equipment managed entity whose software is independently managed.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The number consists of a two-byte field. The first field (MSB) identifies the ME instance (ONT (value 0x00) or circuit pack slot (value 0x01-0xFF)) containing the associated software image ME. The second field (LSB) distinguishes between the two (redundant) software image ME instances (values 0x00 and 0x01). (R) (mandatory) (2 bytes)

Version: This attribute identifies the version of the software. Upon autonomous instantiation, this attribute consists of all spaces. (R) (mandatory) (14 bytes)

Is committed: This attribute indicates whether the associated software image is "committed" (value 0x01) or "uncommitted" (value 0x00). By definition, the "committed" software image will be loaded and executed upon a reboot of the ONT and/or associated circuit pack. During normal operation, one software image will always be "committed" while the other is "uncommitted". Under no circumstances are both software images allowed to be "committed" at the same time. On the other hand, both software images are only allowed to be non-committed at the same time if both are invalid. Upon autonomous instantiation, this attribute of instance 0 shall be initialized to "committed" and this attribute of instance 1 shall be initialized to "uncommitted". (R) (mandatory) (1 byte)

Is active: This attribute indicates whether the associated software image is "active" (value 0x01) or "inactive" (value 0x00). By definition, the active software image is one that is currently loaded and executing in the ONT (or associated circuit pack). Under normal operation, one software image will always be "active" while the other is "inactive". Under no circumstances are both software images allowed to be "active" at the same time. On the other hand, both software images are only allowed to be inactive at the same time if both are invalid. Upon autonomous instantiation, this attribute of instance 0 shall be initialized to "active" and this attribute of instance 1 shall be initialized to "inactive". (R) (mandatory) (1 byte)

Is valid: This attribute indicates whether the associated software image is "valid" (value 0x01) or "invalid" (value 0x00). By definition, a software image is "valid" if it has been verified to be an executable code image. The verification mechanism is not subject to standardization; however, at a minimum, it must include a data integrity (CRC) check of the entire code image. Upon autonomous instantiation, the associated code image is verified and this attribute is set according to the result of this verification. (R) (mandatory) (1 byte)

2.15 Add new clauses 7.1.9, 7.1.10, 7.1.11, 7.1.12 and 7.1.13

Add the following new clauses:

7.1.9 Equipment protection profile

This managed entity supports equipment protection. There can be as many as two protection slots protecting as many as eight working slots. Each of the working and protect cardholder managed entities should refer to the equipment protection profile that defines its protection group. Instances of this managed entity are created and deleted by the OLT.

An ONT should deny pre-provisioning that would create impossible protection groupings. In the same way, the ONT should deny creation or addition to protection groups that cannot be supported by the current equipage. An inconsistent card type alarm is defined, for example, to cover the case of a plug-and-play circuit pack installed in a protection group that cannot support it.

Relationships

An instance of this object points to the working and protect cardholders, that in turn point back to this managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The first byte is 0. The second byte is assigned by the OLT at creation, and must be unique and non-zero. (R, Set-by-create) (mandatory) (2 bytes)

Protect slot 1, **Protect slot 2**: This list of attributes describes the protecting cardholder entities in an equipment protection group. There can be one or two protecting entities.

0	Undefined entry. This value is appropriate as a place-holder if there are fewer than two protecting entities in the protection group.
1..254	Slot number of the protecting circuit pack.

(R, W, Set-by-create) (at least one entry mandatory) (1 byte × 2 entries)

Working slot 1, **Working slot 2**, **Working slot 3**, **Working slot 4**, **Working slot 5**, **Working slot 6**, **Working slot 7**, **Working slot 8**: This list of attributes describes the working cardholder entities in an equipment protection group. There can be up to eight working entities.

0	Undefined entry. This value is appropriate as a place-holder if there are fewer than eight working entities in the protection group.
1..254	Slot number of the working circuit pack.

(R, W, Set-by-create) (at least one entry mandatory) (1 byte × 8 entries)

Protect status 1, **Protect status 2**: This list of attributes indicates whether each protection cardholder is currently protecting some other cardholder, and if so, which one.

0	Not protecting any other cardholder.
1..254	Slot number of the cardholder currently being protected by this ME.

(R) (mandatory) (1 byte × 2 entries)

Revertive Ind: This attribute specifies whether equipment protection is revertive. The default value 0 indicates revertive switching; any other value indicates non-revertive switching. (R, W, Set-by-create) (optional) (1 byte)

Wait to restore time: This attribute specifies the time, in minutes, during which a working equipment must be free of error before a revertive switch occurs. It defaults to 0. (R, W, Set-by-create) (optional) (1 byte)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Notifications

Alarm: This notification indicates an incompatibility in the proposed protection group. When possible, the ONT should deny provisioning attempts that would create incompatibilities, but, for example in the case of plug-and-play, it may not be possible to forestall the inconsistency.

Table 5c/G.983.2 – Alarm list for equipment protection profile

Number	Alarm	Description
0	inconsistentCardType	The expected or actual circuit pack type in a slot is incapable of participating in the equipment protection group, either because it is not subject to equipment protection or because its type or equipment ID differs from that previously defined for the other cardholders of the group.
1-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

7.1.10 Equipment extension package

This managed entity supports optional extensions to circuit pack managed entities.

Relationships

An equipment extension package may be contained by an $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$ or cardholder.

Attributes

Managed entity id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as that of the $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$ or cardholder with which this instance is associated. (R) (mandatory) (2 bytes)

Environmental sense: This attribute permits an ONT to support external sense points, for example physical security detectors at an enclosure. Each pair of bits is defined as follows:

00 (default) sense point disabled

01 report contact closure

10 report contact open

11 sense point disabled

If the byte is represented in binary as 0B hhgg ffee ddcc bbaa, bits hh correspond to sense point 1, while bits aa correspond to sense point 8. (R) (optional) (2 bytes)

NOTE – Some specific sense point applications are already specifically defined on the ONT/ONU managed entity. It is the vendor's choice how to configure and report sense points that appear both generically and specifically.

Contact closure output: This attribute permits an ONT to support external contact closure points, for example sump pump or air conditioner activation at an ONT enclosure. A contact point is said to be released when it is not energized. Whether this corresponds to an open or a closed external circuit depends on the ONT's wiring options. Upon ONT initialization, all contact points should go to the released state.

If the byte is represented in binary as 0B hhgg ffee ddcc bbaa, bits hh correspond to contact output point 1, while bits aa correspond to contact output point 8.

On write, the bits of this attribute have the following meaning:

0x no change to contact output point state

10 release contact output point

11 operate contact output point

On read, the left bit in each pair should be set to 0 at the ONT and ignored at the OLT. The right bit indicates a released output point with 0 and an operated point with 1. (R, W) (optional) (2 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

Alarm: This notification is used to notify the managed system when a failure has been detected or cleared. Both ONT and OLT should know the alarm list used by this entity. The alarm list for this entity is given in Table 5d.

Table 5d/G.983.2 – Alarm list for equipment extension package

Number	Event	Description
	Alarm	
1	Sense point 1	Environmental sense point 1 active
2	Sense point 2	Environmental sense point 2 active
3	Sense point 3	Environmental sense point 3 active
4	Sense point 4	Environmental sense point 4 active
5	Sense point 5	Environmental sense point 5 active
6	Sense point 6	Environmental sense point 6 active
7	Sense point 7	Environmental sense point 7 active
8	Sense point 8	Environmental sense point 8 active
9-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

7.1.11 Port mapping package

This managed entity provides a way to map a heterogeneous set of physical path termination points (ports) to a parent equipment, which may be a cardholder or the $ONT_{B\text{-}PON}$ itself. It is useful, for example, if a single plug-in circuit pack contains a PON ANI as port 1, a video UNI as port 2, and a craft UNI as port 3. It also provides an option for an integrated ONT to represent its ports without the use of virtual cardholders and virtual circuit packs.

If the port mapping package is supported for the ONT as a whole, it is automatically created by the ONU when the MIB is created. If the port mapping package is supported for plug-in circuit packs, it is automatically created and destroyed by the ONT when the corresponding circuit pack is installed or preprovisioned in a cardholder.

The port list attributes specify ports 1-128 sequentially. The port list contains a sequence of ME code types, as defined in Table 21. The code types define what kind of PPTP or ANI corresponds to the specific port number. If gaps in the PPTP numbering are desired, zero entries can be included within the list. For example, for a circuit pack with 4 POTS ports, 2 VDSL ports, and 1 video port, the attributes could be coded:

MaxPorts: 7

PortList1:53, 53, 53, 53, 117, 117, 82, 0,0,0,0,0,0,0,0

PortList2-8:All zero

Relationships

A port mapping package may be contained by an $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$ or a cardholder.

Attributes

Managed entity id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as that of the $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$ or cardholder with which this instance is associated. (R) (mandatory) (2 bytes)

Max ports: This attribute indicates the largest port number contained in the port list attributes. Ports are numbered from 1 to this maximum, possibly with embedded 0 entries, but no port may exist beyond the maximum. (R) (mandatory) (1 byte)

Port list 1, **Port list 2**, **Port list 3**, **Port list 4**, **Port list 5**, **Port list 6**, **Port list 7**, **Port list 8**: Each of these attributes is a list of 16 ports, in increasing port number sequence.

Each list entry is one byte containing the managed entity identifier of the UNI or ANI corresponding to the port number. Managed entity identifiers are defined in Table 21. Placeholders for unused port numbers are indicated with the value 0. (R) (at least one entry mandatory) (16 bytes per attribute)

Actions

Get: Get one or more attributes.

Notifications

None

7.1.12 ONT power shedding

This managed entity is contained in the ONT managed entity and is used to model the ONT equipment power shedding parameters. This object contains timer values used for the shedding of UNI services when the ONT transitions into a battery operation mode from an AC powered mode. Attributes are used to define shedding classes and may span multiple LIM types. This feature works in conjunction with the power shed override attribute in the Circuit Pack ME, which controls the power shedding of priority ports.

An instance of this managed entity is automatically created by the ONT after initialization if power shedding is supported on an ONT.

The following table outlines the binding of shedding class and UNI PPTP. Note that in the case of hybrid LIM types, multiple shedding classes may impact the port if the hardware is capable of a partial hardware shed.

Shedding Class	PPTP Type	Coding	Contents
ATM	ATM PPTP	1	A1.5
		2	A2
		3	A6.3
		4	A6.3U
		5	A8
		6	A25
		7	A34
		8	A45
		9	A45/34
		10	A150SMF SDH
		11	A150MMF SDH
		12	A150UTP SDH
CES	CES PPTP	13	C1.5 (DS1)
		14	C2.0 (E1)
		15	C6.3 (J2)
		16	C-DS1/E1
		17	C-DS1/E1/J1
		18	C6.3U (J2)
		19	C192k
ATM	ATM PPTP	20	C44.7 (DS3)
		21	C34.3 (E3)
Data	Ethernet PPTP	22	10Base-T
		23	100Base-T
		24	10/100Base-T
Frame	Unspecified	25	Token Ring
	Unspecified	26	FDDI
	Unspecified	27	FR
CES	CES PPTP	28	C1.5 (J1)
Sonet	ATM	29	A150SMF SONET
		30	A150MMF SONET
		31	A150UTP SONET
Voice	POTS PPTP	32	POTS
	ISDN PPTP	33	ISDN-BRI
Data	Ethernet PPTP	34	Gigabit Ethernet
Dsl	ADSL PPTP	35	ADSL
	Unspecified	36	SHDSL
	VDSL PPTP	37	VDSL
Video overlay	Video UNI	38	Video Service
N/A	LCT PPTP	39	LCT

Shedding Class	PPTP Type	Coding	Contents
Data	802.11 PPTP	40	802.11
Voice (Dsl may also apply)	ADSL + POTS	41	ADSL / POTS
	VDSL + POTS	42	VDSL / POTS
N/A	PON PPTP	250	PON1244155
		251	PON1244622
		252	PON622symm
		253	PON155
		254	PON622
Video overlay	Video ANI PPTP		
Video Return	Video RPD		
Data	MOCA PPTP		

Relationships

One instance of this managed entity is contained in the instance of the ONT managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. There is only one instance and it has the number 0x0000. (R) (mandatory) (2 bytes)

Restore Power Timer Reset Interval: Specifies the time delay required before resetting shedding timers to zero after a full power restore, defined in seconds. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Data shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Voice shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Note that this only applies to Voice services that are terminated on the ONT, and does not apply to voice services that may reside in the customer premises served by a Data type port. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Video Overlay shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Video Return shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

DSL shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

ATM shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

CES shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Frame shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

SONET shedding class Interval: Attribute is defined in seconds, with zero defined as no-powershed, and one defined as immediate power shed. Upon autonomous instantiation, this attribute is set to 0x00. (R, W) (mandatory) (2 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

None.

7.1.13 ONT remote debug

This managed entity is used to send debug commands to the ONT and receive data contents back for processing on the OLT. This allows for the remote debugging of an ONT that may not be accessible by any other means. The command format may have two modes, one being text and the other free format. If the format is defined as text, then both the command and reply will be defined in standard ASCII string format. If using free format, the contents and format of both the command and reply are vendor specific. Note that the use of the free format makes interoperability difficult.

An instance of this managed entity is automatically created by the ONT after initialization if remote debugging is supported on an ONT.

Relationships

One instance of this managed entity is contained in the instance of the ONT managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. There is only one instance and it has the number 0x0000. (R) (mandatory) (2 bytes)

Command Format: This attribute defines the format of the command request and reply attributes. Value 0x0 defines the ASCII string format, with value 0x1 used to specify free format. Upon autonomous instantiation, this attribute is set to 0x00. (R) (mandatory) (1 byte)

Command: This attribute is used to send a command to the ONT. The format of the command is defined by the command format. If the format is of ASCII string, the command should be null terminated unless the string size is equal to the attribute size. The action of setting this attribute should trigger the ONT to discard any previously command reply information, and execute the current debugging command. (W) (mandatory) (25 bytes)

Reply: Attribute is used to pass reply information back to the OLT. The contents are defined by the command format attribute. Note that the Get-next sequence must be used with this attribute since the size is assumed to be unspecified. On an action of Get, the size of the reply is returned with a size of 4 bytes (as per the Get-Next usage). If the size of the reply is unknown at the time of the Get, the value 0xFFFF will be returned. The OLT will then attempt to issue Get-next requests until the ONT is exhausted of data, whereupon the ONT will reply with a Command sequence number out of range response. The OLT will then terminate the Get-next process. Upon autonomous instantiation, this attribute is set to 0x00. (R) (mandatory) (N*1 bytes)

Actions

Get: Get one or more attributes. Latch a snapshot (i.e., copy) of the current reply attribute and respond with the size of data (4 bytes) that should be obtained using the Get next command.

Get-Next: Get the latch attribute values of the managed entity within the current snapshot.

Set: Set one or more attributes.

Notifications

None.

2.16 Modification to clause 7.2.1 PON physical path termination point

Modify clause 7.2.1 to read as follows:

7.2.1 PON physical path termination point

An instance of this managed entity represents a point in the ONT where a PON Physical Path terminates and physical path level functions (e.g., path overhead functions) are performed.

An instance of this managed entity is automatically created by the ONT after initialization. However, this instance will not be reported during a MIB upload.

Relationships

One or more instances of this managed entity are contained in an instance of the ONT or Circuit pack managed entities.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. This 2-byte number is directly associated with the physical position of the PON IF. The first byte is the slot id (defined in 7.1.3). The second byte is the port id. It is preferred but not mandatory that the numbering of the port ID should be structured such that 0x01 is used for the leftmost/lowest port on a PON IF Line Card, 0x02 is used for the next right/upper port, and so forth. (R) (mandatory) (2 bytes)

Actions

None.

Notifications

None.

2.17 Modification to clause 7.2.2 ANI

Replace the "Relationships" clause as follows:

Relationships

One or more instances of this managed entity shall be contained in the $ONT_{B\text{-}PON}$ or in an instance of a circuit pack managed entity that supports ANI functions.

2.18 Modification to clause 7.2.4 T-CONT buffer

Modify the description of the ME ID attribute to read as follows:

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. This 2-byte number is associated with the physical capability that realizes the T-CONT buffer. The first byte is the slot id of the circuit pack with which this T-CONT buffer is associated. If the ONT has T-CONT buffers that are not associated with a circuit pack, the first

byte of this attribute is 0xFF. The second byte is the T-CONT id that is numbered by the ONT itself. The T-CONT id is numbered in ascending order with the range of 0x00 to 0xFF in each circuit pack or ONT core. (R) (mandatory) (2 bytes)

2.19 Modification to subclauses within clause 7.3

In any managed entity that contains an "ARC" attribute, add a corresponding entry to the AVC list for that ME to describe the AVC that would be sent when the ARC timer expires and the AVC attribute is reset.

At the beginning of each subclause (i.e., clauses 7.3.1, 7.3.2, 7.3.3, 7.3.4 and 7.3.5), in the creation conditions for any ME that refers to "Subscriber line card" should be modified to refer to "Circuit pack or Port mapping package", and the reference to "card type" should be changed to refer to support of the service in question. For example, in 7.3.1, the initial text reads:

This managed entity represents the point at an ATM UNI in the ONT where physical paths terminate and physical path level functions (e.g., path overhead functions) are performed.

An instance of this managed entity shall be automatically created/deleted by the ONT upon the creation/deletion of a Subscriber Line Card of ATM type.

Relationships

One or more instances of this managed entity shall be contained in an instance of a Subscriber Line Card managed entity classified as ATM type.

Should be changed to read:

This managed entity represents the point at an ATM UNI in the ONT where physical paths terminate and physical path level functions (e.g., path overhead functions) are performed.

The ONT shall automatically create/delete an instance of this managed entity for each port that supports ATM services upon the creation/deletion of a circuit pack or port mapping package managed entity.

Relationships

Instances of this managed entity shall be contained in the $ONT_{B\text{-}PON}$ or in instances of the circuit pack managed entity that support ATM services.

Replace all instances of "PON interface line card" *with* "Circuit Pack".

Replace all instances of "Subscriber line card" *with* "Circuit Pack".

Replace all instances of "Subscriber line Cardholder" *with* "Cardholder".

In any managed entity that is a physical path termination point, the description of the "**Managed Entity ID**" *attribute should be changed as follows:*

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. This 2-byte number is directly associated with the physical position of the UNI. The first byte is the slot ID (defined in 7.1.3). The second byte is the port ID with a value range from 0x01 to 0xFF (1 to 255). It is preferred but not mandatory that the numbering of the port ID should be structured such that 0x01 is used for the leftmost/lowest port on a subscriber line card, 0x02 is used for the next right/upper port, and so forth. (R) (mandatory) (2 bytes)

2.20 Modifications to clause 7.3.26 Physical path termination point POTS UNI

Add the following attribute descriptions to the PPTP POTS UNI ME:

Operational State: This attribute indicates whether or not this managed entity is capable of performing its task. The operational state reflects the perceived ability to receive or to generate a valid signal. Valid values are enabled (0x00) and disabled (0x01). (R) (optional) (1 byte)

Hook State: This attribute indicates the state of the subscriber line: 0x00 = on hook, 0x01 = off hook (R) (Optional) (1 byte)

2.21 Modifications to clause 7.3.29 MAC bridge service profile

Add the following attribute:

Unknown MAC address discard: This Boolean attribute indicates the treatment of MAC frames with unknown destination addresses. The value TRUE means that frames with unknown destination addresses will be discarded. The value FALSE means that such frames will be forwarded to all allowed ports. (R, W, Set-by-create) (mandatory) (1 byte)

2.22 Modifications to clause 7.3.31 MAC bridge port configuration data

Append the following text to the attribute descriptions indicated:

TPType: The value is set to 0x04 if this bridge port is associated with an IP Host Service. The value 0x05 is reserved for future standardization

TPPointer: If the TPType = 0x04, the value of this attribute is the same as that of the associated IP Host Config Data ME

Append the following new attribute to the list:

PortMACAddress: This attribute indicates the Physical MAC address used by the Port as defined by the TPPointer when the TPType is set to LAN. (R) (optional) (6 bytes)

2.23 Modifications to clause 7.3.49 VLAN tagging operation configuration data

Replace the following attribute descriptions as follows:

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the id of the Physical Path Termination Point Ethernet UNI or IP Host Config Data ME with which this VLAN Tagging Operation Configuration Data instance is associated. (R, Set-by-create) (mandatory) (2 bytes)

Upstream VLAN Tagging Operation Mode: This attribute selects how upstream VLAN tagging is sent. Valid values are:

0x00 (upstream frame is sent "as is", regardless of whether or not the received frame is tagged).

0x01 (The upstream frame is sent as tagged whether or not the received frame is tagged. TCI, consisting of VID, CFI and user priority, is attached or overwritten by using the Upstream VLAN Tag TCI Value.).

0x02 (The upstream frame is sent as tagged whether or not the received frame is tagged. If the received frame is tagged, a second tag (Q-n-Q) is added to the frame. If the received frame is not tagged, a tag is attached to the frame. TCI, consisting of VID, CFI and user priority, is attached or added by using the Upstream VLAN Tag TCI Value.).

(R, W, Set-by-create) (mandatory) (1 byte)

2.24 Modifications to clause 7.3.51 MAC bridge port filter preassign table

Add the following to the Actions table:

Get: Get one or more attributes.

2.25 Modifications to clause 7.3.53 Physical path termination point video ANI

Replace the following attribute description as follows:

PilotFrequency: This attribute indicates the frequency of the pilot channel receiver. The unit of this attribute is Hz.

If SignalCapability = 0, 1, 6, or 7, this attribute is undefined;

If SignalCapability = 2 or 3, this attribute is functionally read only;

If SignalCapability = 4 or 5, this attribute is read-write.

(R, W) (optional) (4 bytes)

Add the following attributes:

Video Lower Optical Threshold: This attribute indicates the optical level the ONT uses to declare the Video-OOR Low alarm. When the optical level of the received 1550 nm signal drops below the Video Lower Optical Threshold, the Video-OOR Low alarm is declared. Valid values are –12 dBm to +6 dBm in 0.1 dB increments, represented as a 2's complement integer. (value –120 to +60, 0x00 = 0 dBm, 0x88 = –12.0 dBm, etc.) Upon autonomous instantiation, the value 0xA1 (–9.5 dBm) is used. (R,W) (optional) (1 byte)

Video Upper Optical Threshold: This attribute indicates the optical level the ONT uses to declare the Video-OOR High alarm. When the optical level of the received 1550 nm signal rises above the Video Upper Optical Threshold, the Video-OOR High alarm is declared. Valid values are –12 dB to +6 dBm in 0.1 dBm increments, represented as a 2's complement integer (value –120 to +60, 0x00 = 0 dBm, 0x88 = –12.0 dBm, etc.) Upon autonomous instantiation, the value 0x19 (+2.5 dBm) is used. (R,W) (optional) (1 byte)

Modify the alarm list Table 15p as follows:

Table 15p/G.983.2 – Alarms list for physical path termination point video ANI

Number	Event	Description
0	Video-LOS	No signal at the video ANI
1	Video-OOR Low	Signal strength below lower optical threshold (Optional)
2	Video-OOR High	Signal strength above upper optical threshold (Optional)
3-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

2.26 Modifications to clause 7.3.62 802.11 PHY FHSS DSSS IR tables

Under the "*Actions*" *subheading, delete the* "**Create**" *and* "**Delete**" *actions*.

2.27 Modifications to clauses 7.3.73-7.3.76 and 7.3.94

The clauses in question describe the following MEs:

- ADSL subcarrier masking downstream profile;
- ADSL subcarrier masking upstream profile;
- ADSL downstream PSD mask profile;
- ADSL downstream RFI bands profile;
- Video return path statistics.

In each of these clauses, under the "*Actions*" *sub-heading, add the* "**Create**" *and* "**Delete**" *actions*, *as shown below:*

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

2.28 Modifications to clause 7.3.95 802.1p mapper service profile

Make the following change to the existing description for VoIP support:

PPTP UNI Pointer: An instance identifier of the PPTP UNI or IP Host Service that is associated with this 802.1p Priority Queue Mapper. If the mapper is used for Bridging-mapping, then this attribute is set to 0xFFFF. If TPType is not supported, or TPType is set to 0x01, this attribute contains the ME ID of the associated PPTP Ethernet UNI ME. If TPType is set to 0x02, this attribute contains the ME ID of the IP Host Config Data ME. (R,W) (mandatory) (2 bytes)

Remove "Set-by-create" *from the description of the* "DSCP to P-Bit Mapping" *attribute*.

Add the following new attribute:

TPType: This attribute identifies the type of termination point associated with the mapper. The value is set to 0x0 if the mapper is used for Bridging-mapping. The value is set to 0x01 if the mapper is directly associated with a PPTP Ethernet UNI. The value is set to 0x02 if the mapper is directly associated with an IP Host Service. The value 0x03 is reserved for future standardization. (R,W) (optional) (1 byte)

2.29 New subclauses to clause 7.3

Add the following new subclauses to clause 7.3:

7.3.98 IP host config data

The IP host config data contains the configuration for IP-based services that are offered on the ONT. This entity is conditionally required for ONTs that offer IP services from the ONT itself, and its presence allows additional features to be supported with the ONT.

Instances of this managed entity are automatically created by the ONT after initialization if IP Host services are available.

Relationships

One instance of this managed entity is contained in the instance of the ONT managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The ONT creates as many instances as there are independent IP stacks on the ONT. (R) (mandatory) (2 bytes)

IP Options: This attribute is a bitfield that is used to enable or disable IP related options. A bit value of 1 enables the option and a bit value of 0 disables the option. The options are assigned as follows:

0x1 = Enable DHCP

0x2 = Respond to PINGs

0x4 = Respond to TraceRoute messages.

0x8-0x80 = Reserved for future use.

(R, W) (mandatory) (1 byte)

MAC Address: This attribute indicates the MAC address used by the IP Node (R) (mandatory) (6 bytes)

ONT Identifier: A unique ONT identifier string. This string, if set, is provided as part of the DHCP request to allow an alternative to MAC Address in retrieving the DHCP parameters of the specified ONT. The string may be up to 25 bytes long. If the string length is smaller than 25 bytes, it must be null terminated.

Default value is 25 null bytes. (R, W) (mandatory) (25 bytes)

IP Address: Address used for all IP services hosted by the ONT, and has a default value of 0x0 [not set]. If this value is set, it will override any values returned in DHCP. (R, W) (mandatory) (4 bytes)

Mask: Subnet mask for the IP services hosted by the ONT, and has a default value of 0x0 [not set]. If this value is set, it will override any values returned in DHCP. (R, W) (mandatory) (4 bytes)

Gateway: Default Gateway Address used for all IP services hosted by the ONT, and has a default value of 0x0 [not set]. If this value is set, it will override any values returned in DHCP. (R, W) (mandatory) (4 bytes)

Primary DNS: Address used for the Primary DNS server for the IP service, and has a default value of 0x0 [not set]. If this value is set, it will override any values returned in DHCP. (R, W) (mandatory) (4 bytes)

Secondary DNS: Address used for the Secondary DNS server for the IP service, and has a default value of 0x0 [not set]. If this value is set, it will override any values returned in DHCP. (R, W) (mandatory) (4 bytes)

Current Address: Current address for the IP service hosted by the ONT. This attribute is updated by the ONT if a new address is assigned by DHCP. (R) (optional) (4 bytes)

Current Mask: Current subnet mask for the IP service. This attribute is updated by the ONT if a new mask is assigned by DHCP. (R) (optional) (4 bytes)

Current Gateway: Current default Gateway Address for the IP service. This attribute is updated by the ONT if a new gateway is assigned by DHCP. (R) (optional) (4 bytes)

Current Primary DNS: Current address used for the Primary DNS server for the IP service. This attribute is updated by the ONT if a new address is assigned by DHCP. (R) (optional) (4 bytes)

Current Secondary DNS: Current address used for the Secondary DNS server for the IP service. This attribute is updated by the ONT if a new address is assigned by DHCP. (R) (optional) (4 bytes)

Domain Name: If domain name is indicated by DHCP, it is presented here. If domain name is not indicated, this attribute is set to an empty string.

The string may be up to 25 bytes long. If the string length is smaller than 25 bytes, it must be null terminated.

Default value is 25 null bytes. (R) (mandatory) (25 bytes)

Host Name: If host name is indicated by DHCP, it is presented here. If host name is not indicated, this attribute is set to an empty string.

The string may be up to 25 bytes long. If the string length is smaller than 25 bytes, it must be null terminated.

Default value is 25 null bytes. (R) (mandatory) (25 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

None.

7.3.99 IP host performance monitoring history data

This managed entity contains the last completed 15-minute interval performance monitoring data collected with regard to the IP Node. All the attribute counters are only updated at the end of each period. Instances of this managed entity may be created by the OLT in case an instance of the IP Host Config Data managed entity was created by the ONT. Instances of this managed entity are deleted by the OLT.

Relationships

One instance of this managed entity can exist for each instance of the IP Node managed entity that represents IP functions.

Attributes

Managed Entity Id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the Managed Entity Id of the corresponding IP Host Config Data ME. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data Id: This attribute provides a pointer to an instance of the Threshold Data managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. The value 0xFFFF is interpreted as a Null pointer. (R, W, Set-by-create) (mandatory) (2 bytes)

ICMP Errors: This attribute represents a count of the number of ICMP errors received for any traffic sent by the IP Node. If the actual counter saturates, it remains on its maximum value. Default value is 0x00. (R) (mandatory) (4 bytes)

DNS Errors: This attribute represents a count of the number of DNS errors received for any traffic sent by the IP Node. If the actual counter saturates, it remains on its maximum value. Default value is 0x00. (R) (mandatory) (4 bytes)

Actions

Create: Creates an instance of this managed entity.

Delete: Deletes an instance of this managed entity.

Get: Gets one or more attributes.

Set: Sets one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute values; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36c.

Table 36c/G.983.2 – Alarm list for IP host performance monitoring history data

Number	Event	Description	Threshold Data counter # (Note)
	Threshold Crossing Alert		
0	IPNPM-ICMP-ERROR	IP Node ICMP Error threshold crossing	1
1	IPNPM-DNS-ERROR	IP Node DNS Error threshold crossing	2
2-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold $Data_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

7.3.100 TCP/UDP config data

The TCP/UDP Config Data contains the configuration for TCP- and UDP-based services that are offered from the IP Host. This entity is conditionally required for ONTs that offer TCP/UDP IP services from the ONT itself, and its presence allows additional features to be supported with the ONT.

NOTE – If a Non-OMCI interface is being used for management of an IP service, this ME is not required. The Non-OMCI interface supplies the data contained within this ME.

An instance of this managed entity is created/deleted on request of the OLT.

Relationships

One or more instances of this managed entity are contained in the instance of the IP Host Config Data managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. It is recommended that the entity id be the same as the port number. (R, Set-by-create) (mandatory) (2 bytes)

Port Id: This attribute refers to the port number that offers the TCP/UDP service. (R, Set-by-create) (mandatory) (2 bytes)

Protocol: This attribute defines the protocol types available as defined by IANA. Default value is UDP (0x11) (R, Set-by-Create) (mandatory) (1 byte)

TOS/Diffserv Field: This attribute contains the value for the TOS/Diffserv field of the IPv4 header. The contents of this attribute may contain the Type of Service as per RFC 1349 or the Differentiated Services Code Point (DSCP). Valid values for DSCP are as defined by IANA. Default value is 0x0. (R, W, Set-By-create) (mandatory) (1 byte)

IP Host Pointer: This attribute refers to the IP Host Config Data ME associated with this TCP/UDP Data. This allows for the support of multiple IP addresses to be associated with an ONT. (R, Set-by-create) (mandatory) (2 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create the object.

Delete: Delete the object.

Notifications

None.

7.3.101 VoIP config data

The VoIP Configuration Data defines the configuration for VoIP in the ONT. The OLT uses this ME to discover the VoIP signalling protocols and configuration methods supported by this ONT. The OLT then uses this ME to select the desired signalling protocol and configuration method. The entity is conditionally required for ONTs that offer VoIP services.

An instance of this managed entity is automatically created by the ONT if VoIP services are supported.

Relationships

One instance of the managed entity is contained in an instance of the ONT.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. There is only one instance of this entity and will have an instance of 0x0000. (R) (mandatory) (2 bytes)

Available Signalling Protocols: This attribute defines, using a bitmap, the VoIP Signalling Protocols supported in the ONT. Valid bitmap values are:

0x00 = None, VoIP not supported

0x01 = SIP

0x02 = H.248

0x04 = MGCP

(R) (mandatory) (1 byte)

Signalling Protocol Used: This attribute identifies the type of VoIP signalling protocol used for ONT. Only one type of protocol is allowed. Valid values are:

0x00 = None

0x01 = SIP

0x02 = H.248

0x03 = MGCP

0xFF = Selected by Non-OMCI Management Interface

(R, W) (mandatory) (1 byte)

Available VoIP Configuration Methods: This attribute indicates, using a bitmap, the capabilities of the ONT with regard to VoIP service configuration:

0x0001 indicates that the ONT is capable of using OMCI to configure its VoIP services.

0x0002 indicates that the ONT is capable of working with configuration file retrieval to configure its VoIP services.

0x0004 indicates that the ONT is capable of working with TR-69 to configure its VoIP services.

0x0008 indicates that the ONT is capable of working with IETF sipping config framework to configure its VoIP services.

Bits 5-24 are reserved for future use.

Bits 25-32 are reserved for proprietary vendor configuration capability indications.

Default value is 0x0001. (R) (mandatory) (4 bytes)

VoIP Configuration Method Used: Indicates to the ONT, which method should be used to configure the VoIP Service of the ONT.

0x00 the ONT default – do not configure.

0x01 indicates use of OMCI for VoIP service configuration of the ONT.

0x02 indicates use of configuration file retrieval for VoIP service configuration of the ONT.

0x03 indicates use of TR-69 for VoIP service configuration of the ONT.

0x04 indicates use of IETF sipping config framework for VoIP service configuration of the ONT.

0x05-0xF0 are reserved for future use.

0xF1-0xFF are reserved for proprietary vendor configuration methods.

Default value is 0x00 (R, W) (mandatory) (1 byte)

VoIP Configuration Address Pointer: If this attribute is set to any value other than 0xFFFF, it points to a Network Address managed entity. In this case, the Network Address ME indicates the address of the server to contact using the method indicated in the VoIP Configuration Method

Used attribute of the VoIP Service ME.

If this attribute is set to 0xFFFF, an address is not defined by this attribute. However, the address may be defined by other methods such as deriving the address from the ONT Identifier attribute of the IP Host Config Data ME, and using a well-known URI schema.

Default value is 0xFFFF (R, W) (mandatory) (2 bytes)

VoIP Configuration State: Indicates the VoIP service status of the ONT VoIP Service:

Value of 0x00 indicates inactive – meaning that configuration was not retrieved for the VoIP Service.

Value of 0x01 indicates active – meaning that configuration was retrieved for the VoIP Service.

Value of 0x02 indicates initializing – meaning that configuration is now being retrieved for the VoIP Service.

Value of 0x03 indicates fault – meaning that configuration retrieval process has failed for the VoIP Service.

Values 0x04-0xFF are reserved.

Default value is 0x00 (R) (mandatory) (1 byte)

Retrieve Profile: This attribute provides a means by which the ONT may be notified that a new VoIP profile should be retrieved. The setting of this attribute informs the ONT that a new profile should be retrieved. The actual value being set is ignored, because it is the action of setting that is important. (W) (mandatory) (1 byte)

Profile Version: This attribute is a character string that provides a version identifier for the last retrieved profile. (R) (mandatory) (25 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

Attribute value change: This notification is used to report autonomous changes to the attributes of this managed entity. The attribute value change notification shall identify the attribute changed and its new value. The list of AVCs for this managed entity is given in Table 36d.

Table 36d/G.983.2 – AVCs for VoIP config data ME

Number	Attribute value change	Description
1-7	N/A	
8	Profile Version	Version of last retrieved profile
9-16	Reserved	

Alarm: This notification is used to notify the management system when an alarm has been detected or cleared. The OLT should know the alarm list used by this entity. The alarm list for this entity is given in Table 36e.

Table 36e/G.983.2 – Alarm list for VoIP config data

Number	Alarm	Description
0	VCD-CONFIGSERVER-NAME	Failed to resolve the configuration server name
1	VCD-CONFIGSERVER-REACH	Cannot reach configuration server (The port cannot be reached, ICMP errors)
2	VCD-CONFIGSERVER-CONNECT	Cannot connect to configuration server (due to bad credentials or other fault after the port responded)
3	VCD-CONFIGSERVER-VALIDATE	Cannot validate configuration server
4	VCD-CONFIGSERVER-AUTH	Cannot authenticate configuration session (e.g., missing credentials)
5	VCD-CONFIGSERVER-TIMEOUT	Timeout waiting for response from configuration server
6	VCD-CONFIGSERVER-FAIL	Failure response received from configuration server
7	VCD-CONFIGFILE-ERROR	Configuration file received has an error
8	VCD-SUBSCRIPTION-NAME	Failed to resolve the subscription server name
9	VCD-SUBSCRIPTION-REACH	Cannot reach subscription server (The port cannot be reached, ICMP errors)
10	VCD-SUBSCRIPTION-CONNECT	Cannot connect to subscription server (due to bad credentials or other fault after the port responded)
11	VCD-SUBSCRIPTION-VALIDATE	Cannot validate subscription server
12	VCD-SUBSCRIPTION-AUTH	Cannot authenticate subscription session (e.g., missing credentials)
13	VCD-SUBSCRIPTION-TIMEOUT	Timeout waiting for response from subscription server
14	VCD-SUBSCRIPTION-FAIL	Failure response received from subscription server
15	VCD-REBOOT-REQUEST	A Non-OMCI management interface has requested a reboot of the ONT. NOTE – This alarm is used only to indicate the request and not indicate that a reboot has actually taken place.
16-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

7.3.102 SIP config portal

The SIP Config Portal managed entity is conditionally required for ONTs that support SIP VoIP service and Non-OMCI configuration of that service. The SIP Config Portal ME is used to retrieve VoIP configuration information in textual form when SIP VoIP service is configured by a Non-OMCI mechanism (i.e., TR-069, Sipping Framework, etc.) but is monitored via OMCI.

The format of the text retrieved from this ME is vendor specific and is not required to be understood by the OLT or EMS.

An instance of this managed entity is created by the ONT when SIP VoIP signalling and a Non-OMCI configuration method is selected in the VoIP Config Data ME.

Relationships

One instance of this managed entity is related to the VoIP Config Data ME.

Attributes

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the associated VoIP Config Data ME. (R) (mandatory) (2 bytes)

Configuration Text: This attribute is used to pass a textual representation of the VoIP configuration back to the OLT. The contents are vendor specific. Note that the GET-NEXT sequence must be used with this attribute since the size is assumed to be unspecified. On an action of Get, the size of the reply is returned with a size of 4 bytes (as per the Get-Next usage). Upon autonomous instantiation, this attribute is set to 0x00. (R) (mandatory) (x bytes)

Actions

Get: Get one or more attributes. Latch a snapshot of the current Configuration Text attribute and respond with the size of the data (4 bytes) that should be obtained using the Get-Next command.

Get-Next: Get the latched attribute values of the managed entity within the current snapshot.

Notifications

Attribute value change: This notification is used to report autonomous changes to the attributes of this managed entity. The attribute value change notification shall identify the attribute changed. The list of AVCs for this managed entity is given in Table 36f.

Table 36f/G.983.2 – AVCs for SIP config portal ME

Number	Attribute value change	Description
1	Configuration Text	Used to indicate that a change has been made to the VoIP configuration from a Non-OMCI interface.
2-16	Reserved	

7.3.103 SIP agent config data

The SIP Agent Config Data defines the configuration attributes necessary to establish communication for signalling between a SIP User Agent and SIP Server. This entity is conditionally required for ONTs that offer SIP for VoIP services.

NOTE – If a Non-OMCI interface is being used for management of SIP for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME.

An instance of this managed entity is created/deleted by request of the OLT.

Relationships

One instance of this managed entity is related to a TCP/UDP Config Data object. This managed entity may be referenced by one or more SIP User Data managed entities.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

Proxy Server Address Pointer: This attribute provides a pointer to a LargeString ME that contains the name (IP address or URI) of the SIP Proxy Server for SIP signalling messages. (R, W, Set-by-create) (mandatory) (2 bytes)

Outbound Proxy Address Pointer: This attribute provides a pointer to a LargeString ME that contains the name (IP address or URI) of the SIP outbound Proxy Server for SIP signalling messages. (R, W, Set-by-create) (mandatory) (2 bytes)

Primary SIP DNS: This attribute defines the Primary SIP DNS IP Address. If this value is zero, the Primary SIP DNS should not be used. Default value is 0. (R, W, Set-by-create) (mandatory) (4 bytes)

Secondary SIP DNS: This attribute defines the Secondary SIP DNS IP Address. If this value is zero, the Secondary SIP DNS should not be used. Default value is 0. (R, W, Set-by-create) (mandatory) (4 bytes)

UDP/TCP pointer: This attribute associates the SIP Agent with the TCP/UDP service to be used for communication with the SIP Server. Default value is 0xFFFF. (R, W) (mandatory) (2 bytes)

SIP Reg Exp Time: This attribute defines the SIP Registration Expiration Time in seconds. If this value is zero, the SIP Agent will not add an expiration time to the registration requests, and will not perform re-registration. The default value used at Create shall be 3600 seconds. (R, W) (mandatory) (4 bytes)

SIP ReReg Head Start Time: This attribute provides the time in seconds prior to timeout that the SIP Agent should start the re-registration process. The default value used at Create shall be 360 seconds. (R, W) (mandatory) (4 bytes)

Host Part URI: This attribute provides a pointer to a LargeString ME that contains the host or domain part of the SIP Address of Record for users connected to this ONT. A 0xFFFF indicates the current address in the IP Host Config ME is used. Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

SIP Status: This attribute is used to show the current status of the SIP Agent. Values are as follows: 0: ok/initial, 1: Connected, 2: Failed-ICMP Error, 3: Failed-Malformed-response, 4: Failed-Inadequate Info Response, 5: Failed-Timeout. (R) (mandatory) (1 byte)

SIP Registrar: This attribute provides a pointer to a Network Address ME that contains the name (IP address or resolved name) of the SIP Registrar Server for SIP signalling messages. Examples: "10.10.10.10" and "proxy.voip.net". Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Softswitch: This attribute identifies the SIP Gateway softswitch vendor. The format is four ASCII coded alphabetic characters [A-Z] as defined in ANSI T1.220. All NULL characters indicates no particular vendor. (R,W, Set-by-create) (mandatory) (4 byte)

Actions

Create: Create the object.

Delete: Delete the object.

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

Attribute value change: This notification is used to report autonomous changes of attributes of this managed entity. The notification shall identify the attribute and its new value. The list of AVCs for this managed entity is given in Table 36g.

Alarm: This notification is used to notify the management system when an alarm has been detected or cleared. The OLT should know the alarm list used by this entity. The alarm list for this entity is given in Table 36h.

Table 36g/G.983.2 – AVCs for SIP agent config data

Number	Attribute value change	Description
1-8	N/A	
9	SIP Status	Status code of the SIP Agent
10, 11	N/A	
12-16	Reserved	

Table 36h/G.983.2 – Alarm list for SIP agent config data

Number	Alarm	Description
0	SIPUA-REGISTER-NAME	Failed to resolve the registration server name.
1	SIPUA-REGISTER-REACH	Cannot reach registration server (The port cannot be reached, ICMP errors)
2	SIPUA-REGISTER-CONNECT	Cannot connect to registration server (due to bad credentials or other fault after the port responded)
3	SIPUA-REGISTER-VALIDATE	Cannot validate registration server
4	SIPUA-REGISTER-AUTH	Cannot authenticate registration session (e.g., missing credentials)
5	SIPUA-REGISTER-TIMEOUT	Timeout waiting for response from registration server
6	SIPUA-REGISTER-FAIL	Failure response received from registration server
7-223	Reserved	
224-239	Vendor-specific alarms	Not to be standardized

7.3.104 SIP agent monitoring data

The SIP Agent Monitoring Data contains statistical information for the associated VoIP SIP Agent. This entity is optional for ONTs that offer SIP VoIP services.

An instance of this managed entity is created/deleted by the OLT if SIP Agent Monitoring is required.

Relationships

One instance of this managed entity is related to a SIP Agent Config Data object.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the Managed Entity Id of the corresponding SIP Agent Config Data. If a Non-OMCI configuration method is being used for VoIP, the assigned number is the same as the ME Id of the SIP Config Portal ME. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last

completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data id: This attribute provides a pointer to an instance of the Threshold Data$_{B\text{-}PON}$ managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. (R, W, Set-by-create) (mandatory) (2 bytes)

Transactions: This attribute represents a count of the number of new transactions that were initiated during this interval. If the counter saturates, it remains on its maximum value. (R) (optional) (4 bytes)

Rx Invite Reqs: This attribute defines the Received Invite messages (including retransmission). (R) (optional) (4 bytes)

Rx Invite Retrans: This attribute defines the Received Invite Retransmission messages. (R) (optional) (4 bytes)

Rx NonInvite Reqs: This attribute defines the Received Non-Invite messages (including retransmission). (R) (optional) (4 bytes)

Rx NonInvite Retrans: This attribute defines the Received Non-Invite Retransmission messages. (R) (optional) (4 bytes)

Rx Response: This attribute defines the total Responses received. (R) (optional) (4 bytes)

Rx Response Retransmissions: This attribute defines the total Responses Retransmissions received. (R) (optional) (4 bytes)

Tx Invite Reqs: This attribute defines the Transmitted Invite messages (including retransmission). (R) (optional) (4 bytes)

Tx Invite Retrans: This attribute defines the Transmitted Invite Retransmission messages. (R) (optional) (4 bytes)

Tx NonInvite Reqs: This attribute defines the Transmitted Non-Invite messages (including retransmission). (R) (optional) (4 bytes)

Tx NonInvite Retrans: This attribute defines the Transmitted Non-Invite Retransmission messages. (R) (optional) (4 bytes)

Tx Response: This attribute defines the total Responses sent. (R) (optional) (4 bytes)

Tx Response Retransmissions: This attribute defines the total Responses Retransmissions sent. (R) (optional) (4 bytes)

Actions

Create: Create the monitoring entity.

Delete: Delete the monitoring entity.

Get: Get one or more history attributes.

Set: Set one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute values; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period, since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36i.

Table 36i/G.983.2 – Alarm list for SIP agent monitoring data

Number	Event	Description	Threshold data counter # (Note)
	Threshold Crossing Alert		
0	SIPAMD-RX-INVITE-REQ	Receive Invite Request threshold crossing	1
1	SIPAMD-RX-INVITE-REQ-RET	Receive Invite Request Retransmission threshold crossing	2
2	SIPAMD-RX-NONINVITE-REQ	Receive Non-Invite Request threshold crossing	3
3	SIPAMD-RX-NONINVITE-REQ-RET	Receive Non-Invite Request Retransmission threshold crossing	4
4	SIPAMD-RX-RES	Receive Response threshold crossing	5
5	SIPAMD-RX-RES-RET	Receive Response Retransmission threshold crossing	6
6-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold Data$_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

7.3.105 SIP call initiation performance monitoring history data

This managed entity contains the last completed 15-minute interval performance monitoring data collected with regard to SIP Call Initiations of the VoIP SIP Agent. All the attribute counters are only updated at the end of each period. Instances of this managed entity may be created by the OLT. Instances of this managed entity are deleted by the OLT.

Relationships

One instance of this managed entity can exist for each instance of the SIP Agent Config Data managed entity that represents Call Control channel functions. Alternately, one instance of this ME can exist for each instance of the SIP Config Portal ME.

Attributes

Managed Entity Id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the Managed Entity Id of the corresponding SIP Agent Config Data. If a Non-OMCI configuration method is being used for VoIP, the assigned number is the same as the ME Id of the SIP Config Portal ME. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data Id: This attribute provides a pointer to an instance of the Threshold Data managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. The value 0xFFFF is interpreted as a Null pointer. (R, W, Set-by-create) (mandatory) (2 bytes)

Failed to Connect Counter: This attribute represents a count of the number of times the SIP UA failed to reach/connect its TCP/UDP peer during SIP call initiations. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Failed to Validate Counter: This attribute represents a count of the number of times the SIP UA failed to validate its peer during SIP call initiations. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Timeout Counter: This attribute represents a count of the number of times the SIP UA timed-out during SIP call initiations. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Failure Received Counter: This attribute represents a count of the number of times the SIP UA received a failure error code during SIP call initiations. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Failed to Authenticate Counter: This attribute represents a count of the number of times the SIP UA failed to authenticate itself during SIP call initiations. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute values; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period, since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36j.

Table 36j/G.983.2 – Alarm list for SIP call initiation PM history data

Number	Event	Description	Threshold data counter # (Note)
	Threshold Crossing Alert		
0	SIPCALLPM-FAILED-CONN	Failed to Connect threshold crossing	1
1	SIPCALLPM-FAILED-VALIDATE	Failed to Validate threshold crossing	2
2	SIPCALLPM-TIMEOUT	Timeout threshold crossing	3
3	SIPCALLPM-FAILURE_RECV	Failure Received threshold crossing	4
4	SIPCALLPM-FAILED-AUTH	Failed to Authenticate threshold crossing	5
5-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold Data$_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

7.3.106 SIP user data

The SIP User Data defines the user specific configuration attributes associated with a specific VoIP CTP. This entity is conditionally required for ONTs that offer VoIP SIP services.

An instance of this managed entity is created/deleted on request of the OLT. A SIP User Data instance shall exist for each POTS UNI port using SIP protocol for a VoIP service offering.

NOTE – If a Non-OMCI interface is being used for management of SIP for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME.

Relationships

An instance of this managed entity may be referenced by one VoIP Voice CTP managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

SIP Agent Pointer: Points to the SIP Agent Config Data ME to be used for signalling. (R, W, Set-by-create) (mandatory) (2 bytes)

User Part AOR: This attribute provides a pointer to a LargeString ME that contains the user identification part of the Address of Record. This can take the form of an alphanumeric string or the directory number used to reference the user in the network. 0xFFFF indicates that no user part AOR has been defined. (R, W, Set-by-create) (mandatory) (2 bytes)

SIP Display Name: This attribute defines the Customer ID used for outgoing SIP messages display attribute in ASCII string format. Default value shall be null (all zeros). (R, W) (mandatory) (25 bytes)

Username/Password: A pointer to an Authentication Security Method ME that contains a SIP user name and password used for authentication. 0xFFFF indicates no username/password. (R, W, Set-by-create) (mandatory) (2 bytes)

Voice Mail server SIP URI: This attribute provides a pointer to a Network Address ME that contains the name (IP address or URI) of the SIP Voice Mail Server for SIP signalling messages. A value of 0xFFFF indicates that no Voice Mail subscription is required. Default value is 0xFFFF. (R, W, Set-by-Create) (mandatory) (2 bytes)

Voice Mail Subscript. Exp Time: This attribute defines the Voice Mail server subscription Expiration Time in seconds. If this value is zero, the SIP Agent will use the implementation specific default for this ONT/ONU. The default value used at Create shall be 3600 seconds. (R, W, Set-by-create) (mandatory) (4 bytes)

Network Dial Plan Pointer: Pointer to Network Dial Plan ME. A value of 0xFFFF indicates that no network dial plan is available. Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Application Services Profile Pointer: Pointer to Application Services Profile ME. A value of 0xFFFF indicates that no Application Services Profile is available. Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Feature Code Pointer: This attribute contains a pointer to the Feature Access Codes ME for this subscriber. A value of 0xFFFF indicates that no Feature Access Codes ME is available. Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

PPTP Pointer: Points to the POTS PPTP managed entity that references the physical POTS port for service. A value of 0xFFFF indicates that no POTS PPTP is associated. Default value is 0xFFFF. (R, Set-by-create) (mandatory) (2 bytes)

Release Timer: This attribute contains a release timer defined in seconds. 0x0 = Use internal default. Default value is 10 sec. (R, W) (optional) (1 byte)

ROH Timer: This attribute defines the length of time in seconds for the receiver off hook condition before ROH tone is applied. 0x0 = ROH is disabled. Default value is 15 seconds. (R, W) (optional) (1 byte)

Actions

Set: Set one or more attributes.

Get: Get one or more attributes.

Create: Create the object.

Delete: Delete the object.

Notifications

None.

7.3.107 VoIP media profile

The Voice Media Profile contains information for settings that apply to the voice encoding for the VoIP service. This entity is conditionally required for ONTs that offer VoIP services.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

An instance of this managed entity is created/deleted on request of the OLT. A VoIP Media Profile shall exist for each unique set of profile attributes.

Relationships

An instance of this managed entity may be referenced by one or more VoIP Voice CTP managed entities.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

Fax Mode: Selects the fax mode, values are 0 – passthru, 1 – ITU-T Rec. T.38. Default value is 0. (R, W, Set-by-create) (mandatory) (1 byte)

Voice Service Profile AAL Pointer: Pointer-to-Voice Service Profile AAL ME. This ME is referenced for access to jitter, echo cancellation and PSTN data that is reused by VoIP service. (R, W, Set-by-create) (mandatory) (2 bytes)

Codec Selection (1st order): Specifies the codec selection as defined by RFC 3551. Default Value is 0-PCMU. (R, W, Set-by-create) (mandatory) (1 byte)

Packet Period Selection (1st order): This attribute selects the Packet Period Selection interval in milliseconds. Default value is 10. Valid values are 10-30 ms. (R, W, Set-by-create) (mandatory) (1 byte)

Silence Suppression (1st order): This attribute indicates whether silence suppression is on or off. Valid values are 0 = off and 1 = on. (R, Set-by-create) (mandatory) (1 byte)

Codec Selection (2nd order): Specifies the codec selection as defined by RFC 3551. Default Value is 0-PCMU. (R, W, Set-by-create) (mandatory) (1 byte)

Packet Period Selection (2nd order): This attribute selects the Packet Period Selection interval in milliseconds. Default value is 10. Valid values are 10-30 ms. (R, W, Set-by-create) (mandatory) (1 byte)

Silence Suppression (2nd order): This attribute indicates whether silence suppression is on or off. Valid values are 0 = off and 1 = on. (R, Set-by-create) (mandatory) (1 byte)

Codec Selection (3rd order): Specifies the codec selection as defined by RFC 3551. Default Value is 0-PCMU. (R, W, Set-by-create) (mandatory) (1 byte)

Packet Period Selection (3rd order): This attribute selects the Packet Period Selection interval in milliseconds. Default value is 10. Valid values are 10-30 ms. (R, W, Set-by-create) (mandatory) (1 byte)

Silence Suppression (3rd order): This attribute indicates whether silence suppression is on or off. Valid values are 0 = off and 1 = on. (R, Set-by-create) (mandatory) (1 byte)

Codec Selection (4th order): Specifies the codec selection as defined by RFC 3551. Default Value is 0-PCMU. (R, W, Set-by-create) (mandatory) (1 byte)

Packet Period Selection (4th order): This attribute selects the Packet Period Selection interval in milliseconds. Default value is 10. Valid values are 10-30 ms. (R, W, Set-by-create) (mandatory) (1 byte)

Silence Suppression (4th order): This attribute indicates whether silence suppression is on or off. Valid values are 0 = off and 1 = on. (R, Set-by-create) (mandatory) (1 byte)

OOB DTMF: This attribute defines the Out-of-band DTMF Enable. When enabled (value = 1), DTMF tones are carried out of band via RTP or the associated signalling protocol. When disabled (value = 0), DTMF tones are carried in the PCM. Default value is 1. (R, W, Set-by-create) (mandatory) (1 byte)

RTP Profile Pointer: This attribute provides a pointer to the RTP Profile ME. (R, Set-by-create) (mandatory) (2 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create a VoIP Media Profile.

Delete: Delete a VoIP Media Profile.

7.3.108 RTP profile data

The RTP Profile Data managed entity is conditionally required for ONTs that offer VoIP service. This ME contains information that applies to RTP.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

An instance of this managed entity is created/deleted on request of the OLT. An RTP Profile shall exist for each unique set of attributes needed for the application.

Relationships

An instance of this managed entity may be referenced by one or more VoIP Media Profile managed entities.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

LocalPortMin: This attribute defines the base RTP port that should be used for voice traffic. Default is 50000. (R, W, Set-by-create) (mandatory) (2 bytes)

LocalPortMax: This attribute defines the top end range RTP port used for voice traffic. Default must be greater than LocalPortMin but is determined by vendor application. (R, W, Set-by-create) (optional) (2 bytes)

DSCPMark: Diffserv code point to be used for outgoing RTP packets for this profile. Default value is Expedited Forwarding (EF) = 0x2E (0b00101110). (R, W, Set-by-create) (mandatory) (1 byte)

Piggyback Events: Enables or disables RTP piggyback events. 0x0 = Disabled. 0x1 = Enabled. Default value is Disabled (0x0). (R, W, Set-by-create) (mandatory) (1 byte)

Tone Events: Enables or disables handling of tones via RTP Tone Events per RFC 2833. 0x0 = Disabled. 0x1 = Enabled. Default value is Disabled (0x0). (R, W, Set-by-create) (mandatory) (1 byte)

DTMF Events: Enables or disables handling of DTMF via RTP DTMF Events per RFC 2833. This attribute is ignored unless the OOB DTMF attribute in the VoIP Media Profile ME is set to enabled. 0x0 = Disabled. 0x1 = Enabled. Default value is Disabled (0x0). (R, W, Set-by-create) (mandatory) (1 byte)

CAS Events: Enables or disables handling of CAS via RTP CAS Events per RFC 2833. 0x0 = Disabled. 0x1 = Enabled. Default value is Disabled (0x0). (R, W, Set-by-create) (mandatory) (1 byte)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create an RTP Profile.

Delete: Delete an RTP Profile.

Notifications

None.

7.3.109 RTP monitoring data

This managed entity contains the last completed 15-minute interval performance monitoring data collected with regard to the RTP session. All the attribute counters are only updated at the end of each period. Instances of this managed entity may be created by the OLT whenever an instance of the PPTP POTS UNI managed entity is created that represents a VoIP Line. Instances of this managed entity are deleted by the OLT.

Relationships

One instance of this managed entity can exist for each instance of the PPTP POTS UNI managed entity.

Attributes

Managed Entity Id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the Managed Entity Id of the corresponding PPTP POTS UNI ME. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data Id: This attribute provides a pointer to an instance of the Threshold Data managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. The value 0xFFFF is interpreted as a Null pointer. (R, W, Set-by-create) (mandatory) (2 bytes)

RTP Errors: This attribute represents a count of the number of RTP Packet errors detected. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Packet Loss: This attribute represents the fraction of the packets lost from all packets received by the UA at the calculated interval. The value of 0xFFFF indicates 100% packet loss, and the value 0x0000 indicates 0% packet loss. Zero divided by zero is defined to result in zero. The "get current data" operation is not recommended for this attribute, as it may produce unexpected results. (R) (mandatory) (4 bytes)

Maximum Jitter: This attribute represents a maximum jitter identified during the measured interval expressed in RTP timestamp units. (R) (mandatory) (4 bytes)

Maximum Time between RTCP Packets: This attribute represents a maximum time between RTCP packets during the measured interval in milliseconds. (R) (mandatory) (4 bytes)

Buffer Underflows: This attribute represents a count of the number of times the reassembly buffer underflows. In the case of a continuous underflow caused by a loss of IP Packets, a single buffer underflow should be counted. If the interworking function is implemented with multiple buffers, such as a packet level buffer and a bit level buffer, then either buffer underflow will cause this count to be incremented. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Buffer Overflows: This attribute represents a count of the number of times the reassembly buffer overflows. If the interworking function is implemented with multiple buffers, such as a packet level buffer and a bit level buffer, then either buffer overflow will cause this count to be incremented. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute values; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36k.

Table 36k/G.983.2 – Alarm list for RTP PM history data

Number	Event	Description	Threshold data counter # (Note)
	Threshold Crossing Alert		
0	RTPPM-RTPERRORS	RTP packet loss threshold crossing	1
1	RTPPM-PACKET-LOSS	Packet loss threshold crossing	2
2	RTPPM-PACKET-JITTER	Packet jitter threshold crossing	3
3	RTPPM-NORTCPPACKET	Time between RTCP packets threshold crossing	
4	RTPPM-BUFFER-UNDERFLOWS	Buffer Underflows threshold crossing	5
5	RTPPM-BUFFER-OVERFLOWS	Buffer Overflows threshold crossing	6

Number	Event	Description	Threshold data counter # (Note)
6-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold Data$_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

7.3.110 VoIP voice CTP

The VoIP Voice CTP defines the configuration attributes necessary to associate a specified VoIP service (e.g., SIP, H.248) with a POTS UNI. This entity is conditionally required for ONTs that offer VoIP services.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

An instance of this managed entity is created/deleted on request of the OLT. A VoIP Voice CTP managed object shall exist for each unique set of profile attributes.

Relationships

An instance of this managed entity refers to one PPTP POTS UNI managed entity, one VoIP Media Profile, and one SIP User Data managed entity or MGC Config Data ME.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

UserProtocolPointer: This attribute provides a pointer to the protocol-specific user data. If the Signalling Protocol for this line is SIP, then this attribute is a pointer to the SIP User Data ME. If the Signalling Protocol for this line is H.248, this attribute is a pointer to a MGC Config Data ME. (R, Set-by-create) (mandatory) (2 bytes)

PPTP Pointer: Points to the PPTP POTS UNI managed entity that references the physical POTS port for that service. (R, Set-by-create) (mandatory) (2 bytes)

VoIP Media Profile Pointer: Pointer to VoIP Media Profile. (R, W, Set-by-create) (mandatory) (2 bytes)

SignallingCode: This attribute specifies whether "loop start" (0x01), "ground start" (0x02), "loop reverse battery" (0x03), "coin first" (0x04), "dial tone first" (0x05), or "multi-party" (0x06) signalling is employed. (R, Set-by-create) (mandatory) (1 byte)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create a VoIP Voice CTP.

Delete: Delete a VoIP Voice CTP.

Notifications

None.

7.3.111 Call control PM history data

This managed entity contains the last completed 15-minute interval performance monitoring data collected with regard to the Call Control channel. All the attribute counters are only updated at the end of each period. Instances of this managed entity may be created by the OLT whenever an instance of the POTS PPTP UNI managed entity is created. Instances of this managed entity are deleted by the OLT

Relationships

One instance of this managed entity can exist for each instance of the PPTP POTS UNI managed entity.

Attributes

Managed Entity Id: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the Managed Entity Id of the corresponding PPTP POTS UNI. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data Id: This attribute provides a pointer to an instance of the Threshold Data managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. The value 0xFFFF is interpreted as a Null pointer. (R, W, Set-by-create) (mandatory) (2 bytes)

Call Setup Failures: This attribute represents a count of the number of call setup failures detected. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Call Setup Timer: This attribute represents the longest time period of a single call setup that was detected during this interval. Time is measured in milliseconds from the time an initial setup was requested by the phone user and until the time in which a response was provided to the phone user either in the form of Busy Tone, Ring Back Tone etc. (R) (mandatory) (4 bytes)

Call Terminate Failures: This attribute represents a count of the number of calls that were terminated with cause. If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Analog Port Releases: This attribute represents a count of the number of analog port releases without dialling detected (Abandon calls). If the actual counter saturates, it remains on its maximum value. (R) (mandatory) (4 bytes)

Analog Port Off-Hook Timer: This attribute represents the longest time period of a single off-hook that was detected during this interval with regard to the analog port. Time is measured in milliseconds. (R) (mandatory) (4 bytes)

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute value; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period, since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36l.

Table 36l/G.983.2 – Alarm list for call control PM history data

Number	Event	Description	Threshold data counter # (Note)
	Threshold Crossing Alert		
0	CCPM-CALL-SETUP-FAIL	Call setup failure with cause threshold crossing	1
1	CCPM-SETUP-TIMEOUT	Call setup time threshold crossing	2
2	CCPM-CALL-TERMINATE	Call terminated with cause threshold crossing	3
3	CCPM-PORT-RELEASE	Analog port releases with no dialling threshold crossing	4
4	CCPM-PORT-OFFHOOK-TIMEOUT	Analog port remains off-hook threshold crossing	5
5-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold Data$_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

7.3.112 Network dial plan table

The Network Dial Plan Table ME is optional for ONTs providing VoIP Service. This ME is used to provision dial plans from the OLT. Instances of this managed entity shall be created/deleted by request of the OLT.

NOTE – If a Non-OMCI interface is being used for management of SIP for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME.

Relationships

An instance of this managed entity may be associated with one or more instances of the SIP User Data managed entity.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

Dial Plan Number: This attribute indicates the number of dial plans in the dial plan table. Default value is 0x00. (R) (mandatory) (2 bytes)

Dial Plan Table Max Size: This attribute indicates the maximum number of dial plans that can be stored in the dial plan table. (R, Set-by-create) (mandatory) (2 bytes)

Critical Dial Timeout: This attribute defines the critical dial timeout for digit map processing in milliseconds. Default value is 4000 ms. (R, W, Set-by-create) (mandatory) (2 bytes)

Partial Dial Timeout: This attribute defines the partial dial timeout for digit map processing in milliseconds. Default value is 16000 ms. (R, W, Set-by-create) (mandatory) (2 bytes)

Dial Plan Format: This attribute defines the dial plan format standard that is supported in the ONT for VoIP. Valid values include 0 = not defined, 1 = H.248 format with specific plan (table entries define the dialing plan), 2 = NSC format, 3 = Vendor specific format. Default is 1. (R, W, Set-by-create) (mandatory) (1 byte)

Dial Plan Table: The table contains a dial plan that is used by the VoIP service, and attributes for managing the table. These table attributes are further described below. (R, W) (mandatory) (30*n bytes. N is the number of dial plans)

Dialplan-id: A unique identifier of a dial plan within the dial plan table (1 byte)

Action: Remove (0) or add (1) this plan. When a dial plan is being removed, only Dialplan-id field is used to identify the Dial Plan Token (the remaining 28 bytes are ignored) (1 byte)

Dial Plan Token: Token used by the VoIP service to process dial plans. This ASCII string is typically delimited by ":". (R, W) (conditionally required) (28 bytes)

Actions

Get: Get one or more attributes. Latch a snapshot (i.e., copy) of the current DialPlanTable and respond with the size of data (4 bytes) that should be obtained using the Get Next command.

Get Next: Get the latched attribute values of the managed entity within the current snapshot.

Set: Set one or more attributes.

Create: Create a Network dial plan table.

Delete: Delete a Network dial plan table.

Notifications

None.

7.3.113 VoIP application service profile

The Application Service Profile is optional for ONTs that support VoIP service. This ME defines attributes of calling features used in conjunction with a VoIP line service.

NOTE – If a Non-OMCI interface is being used for management of SIP for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME.

An instance of this managed entity is created/deleted on request of the OLT. A VoIP Application Service managed object may exist for each unique set of profile attributes.

Relationships

An instance of this managed entity is referenced by the SIP User Data ME.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

CID features: This attribute contains a bitmap of caller ID features. Bit clear is disabled and bit set is enabled. The bit position values are:

0x01 Calling Number

0x02 Calling Name

0x04 CID blocking (both number and name)

0x08 CID number – Permanent presentation status for number (0 = Public, 1 = Private)

0x10 CID name – Permanent presentation status for name (0 = Public, 1 = Private)

0x20 Anonymous CID blocking (ACR)

0x40-0x80 not used

The default value shall be disabled (0). (R, W, Set-by-create) (mandatory) (1 byte)

Call Waiting Features: This attribute contains a bitmap of caller waiting features. Bit clear is disabled and bit set is enabled. The bit position values are:

0x01 call waiting

0x02 Caller ID Announcement

0x04-0x80 not used

The default value shall be disabled (0). (R, W, Set-by-create) (mandatory) (1 byte)

Call progress or transfer features: This attribute contains a bitmap of call processing features. Bit clear is disabled and bit set is enabled. The bit position values are:

0x0001 3way

0x0002 call transfer

0x0004 call hold

0x0008 call park

0x0010 do not disturb

0x0020 Flash on Emergency Service call. (Flash is to be processed during an Emergency Service call)

0x0040 Emergency Service originating hold (determines if a call clearing is to be performed on an on-hook during an Emergency Service call)

0x0080 6way

0x0100-0x8000 not used

The default value shall be disabled (0). (R, W, Set-by-create) (mandatory) (2 bytes)

Call presentation features: This attribute contains a bitmap of call presentation features. Bit clear is disabled and bit set is enabled. The bit position values are:

0x0001 Message Waiting Indication Splash Ring

0x0002 Message Waiting Indication Special Dial tone

0x0004 Message Waiting Indication Visual Indication

0x0008 Call Forwarding Indication

0x0010-0x8000 not used

The default value shall be disabled (0). (R, W, Set-by-create) (mandatory) (2 bytes)

Direct connect Feature: This attribute contains a bitmap of characteristics associated with the direct connect feature. Bit clear is disabled and bit set is enabled. The bit position values are:

0x01 direct connect feature enabled

0x02 dial tone feature delay option

The default value shall be disabled (0). (R, W, Set-by-create) (mandatory) (1 byte)

Direct Connect URI Pointer: This attribute points to a Network Address managed entity.

If this attribute is set to 0xFFFF, no URI is defined.

If this attribute is set to any other value, it should point to a Network Address managed entity. Network Address ME indicates the URI of the Direct Connect.

Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Bridged Line Agent URI Pointer: This attribute points to a Network Address managed entity.

If this attribute is set to 0xFFFF, no URI is defined.

If this attribute is set to any other value, it should point to a Network Address managed entity. Network Address ME indicates the URI of the Bridged Line Agent.

Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Conference Factory URI Pointer: This attribute points to a Network Address managed entity.

If this attribute is set to 0xFFFF, no URI is defined.

If this attribute is set to any other value, it should point to a Network Address managed entity. Network Address ME indicates the URI of the Conference Factory.

Default value is 0xFFFF. (R, W, Set-by-create) (mandatory) (2 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create a VoIP Voice Application Services Profile.

Delete: Delete a VoIP Voice Application Services Profile.

Notifications

None.

7.3.114 VoIP line status

The VoIP Line Status managed entity is optional for ONTs that support VoIP service. This managed entity contains Line Status information for POTS UNI ports using VoIP service.

An instance of this managed entity is created/deleted by the ONT on creation/deletion of the PPTP POTS UNI object if the ONT supports VoIP.

Relationships

An instance of this managed entity will be numbered identically with the PPTP POTS UNI.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. This 2-byte number is directly associated with the physical position of the UNI. The first byte is the slot ID (defined in 7.1.3). The second byte is the port ID with a value range from 0x01 to 0xFF (1 to 255). It is preferred but not mandatory that the numbering of the port ID should be structured such that 0x01 is used for the leftmost/lowest port on a subscriber line card, 0x02 is used for the next right/upper port, and so forth. (R) (mandatory) (2 bytes)

voipCodecUsed: Reports on the current codec used for a voip pots port. Valid values are the same as specified in the Codec selection attribute in the VoIP Media Profile that are 0-Auto Select, 1 – G.711 (A law), 2 – G.711 (μ law) , 3 – G.723, 4 – G.722.1, 5 – G.722.2, 6 – G.723.1, 7 – G.726, 8 – G.728, 9 – G.729A, 10 – G.729B, 11 – G.729D, 12 – G.729E, 13 – MELP). The default value is 0-Auto Select. (R) (mandatory) (2 bytes)

voipVoiceServerStatus: Status of the VoIP session for this pots port. Values are 0 – none/initial, 1 – registered, 2 – insession, 3 – failed registration – icmp error, 4 – failed registration – failed tcp, 5 – failed registration – failed authentication, 6 – failed registration – timeout, 7 – failed registration – server fail code, 8 – failed invite – icmp error, 9 – failed invite – failed tcp, 10 – failed invite – failed authentication, 11 – failed invite – timeout, 12 – failed invite – server fail code, 13 – port Not configured, 14 – Config done. (R) (mandatory) (1 byte)

voipPortSessionType: Reports on the current port session used for a voip pots port. Values are defined as 0: idle/none, 1: 2way, 2: 3way, 3: fax, 4: telem, 5: conference. (R) (mandatory) (1 byte)

voipCall1PacketPeriod: Reports on the packet period for the 1st call on the voip pots port. Value is defined in milliseconds. (R) (mandatory) (2 bytes)

voipCall2PacketPeriod: Reports on the packet period for the 2nd call on the voip pots port. Value is defined in milliseconds. (R) (mandatory) (2 bytes)

voipCall1DestAddr: Reports on the destination address for the 1st call on the voip pots port. Value is an ASCII string. (R) (mandatory) (25 bytes)

voipCall2DestAddr: Reports on the destination address for the 2nd call on the voip pots port. Value is in ASCII string. (R) (mandatory) (25 bytes)

Actions

Get: Get one or more attributes.

Notifications

None.

7.3.115 VoIP feature access codes

The VoIP Feature Access Codes managed entity is optional for ONTs that support VoIP service. The Feature Access Codes defines administrable feature access codes for the VoIP subscriber.

NOTE – If a Non-OMCI interface is being used for management of SIP for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME.

An instance of the managed entity is created/deleted on request of the OLT. A VoIP Feature Access Code managed object may exist for each unique set of feature access code attributes.

Relationships

An instance of this managed entity can be referenced by the VoIP Voice CTP object.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

CancelCallWaiting: This attribute defines the feature access code for cancel call waiting. (R, W) (optional) (5 bytes)

CallHold: This attribute defines the feature access code for call hold. (R, W) (optional) (5 bytes)

CallPark: This attribute defines the feature access code for call park. (R, W) (optional) (5 bytes)

CIDSActivate: This attribute defines the feature access code for CIDS activate. (R, W) (optional) (5 bytes)

CIDSDeactivate: This attribute defines the feature access code for CIDS deactivate. (R, W) (optional) (5 bytes)

DoNotDisturbActivation: This attribute defines the feature access code to activate do not disturb. (R, W) (optional) (5 bytes)

DoNotDisturbDeactivation: This attribute defines the feature access code to deactivate do not disturb. (R, W) (optional) (5 bytes)

DoNotDisturbPINChange: This attribute defines the feature access code for do not disturb. (R, W) (optional) (5 bytes)

Emergency Service Number: This attribute defines the emergency service number. Example: 911 (R, W) (optional) (5 bytes)

Intercom Service: This attribute defines the feature access code for in home intercom service. (R, W) (optional) (5 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create a VoIP Feature Access Codes.

Delete: Delete a VoIP Feature Access Codes.

Notifications

None.

7.3.116 Network address

The Network Address managed entity is conditionally required for ONTs that support VoIP service. This managed entity is used to bind a Network Address with associated security methods required to access the server pointed to by the Network Address. The address may take the form of a URI, a fully qualified path or IP address represented as an ACII string.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

Instances of this managed entity are created/deleted at the request of the OLT or the ONT depending on the method used and case.

Relationships

Zero or more instances of this managed entity may exist in an ONT.

Attributes

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. The value of 0xFFFF is not valid and should not be used. Instances of this managed entity created by the ONT are provided IDs in the range 0x0000-0x7FFF.

Instances of this managed entity created at the request of the OLT are provided ID in the range 0x8000-0xFFFE.

(R, Set-by-create) (mandatory) (2 bytes)

Security Pointer: If this attribute is set to 0xFFFF, security attributes are not defined for this network address.

If this attribute is set to any other value, it should point to an Authentication Security Method managed entity. The Authentication Security ME indicates the username and password to be used while retrieving the network address indicated by this ME.

Default value is 0xFFFF (R, W, Set-by-create) (mandatory) (2 bytes)

Address Pointer: This attribute defines the pointer to the LargeString ME that contains the network address. A Network Address ME may contain a fully qualified domain name, URI or IP Address. The URI may also contain an optional port identifier. (e.g., "x.y.z.com[:5060]"). Defaults to 0xFFFF to indicate no network address is defined. (R, W, Set-by-create) (mandatory) (2 bytes).

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

None.

7.3.117 Authentication security method

The Authentication Security Method managed entity is optional for ONTs that support VoIP service. The Authentication Security Method defines the User id/password configuration to associate a session used between the client and destination server. This object may be defined to be used in the role of the client or server.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

An instance of this managed entity is created by the OLT if authenticated communication is necessary.

Relationships

One instance of this management entity is referenced by a Network Address ME. This ME may also be referenced by other MEs that require authentication parameter management.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. Multiple instances of this entity may exist. The value of 0xFFFF is not valid and should not be used. (R, Set-by-create) (mandatory) (2 bytes)

Validation Scheme: This attribute defines the validation scheme used when the ONT validates a challenge. The validation schemes are an enumeration defined as follows:

- 0x00 – Validation is disabled
- 0x01 – Validate using MD5 Digest authentication as defined in RFC 2069 (recommended)
- 0x03 – Validate using Basic authentication as defined in RFC 2617

(R, W) (mandatory) (1 byte)

Username: This attribute includes username of the scheme. If the string length is smaller than 25 bytes, it must be null terminated. (R, W) (mandatory) (25 bytes)

Password: This attribute includes the password of the scheme. If the string length is smaller than 25 bytes, it must be null terminated. (R, W) (mandatory) (25 bytes)

Realm: This attribute contains the Realm string used in digest authentication. If the string length is smaller than 25 bytes, it must be null terminated. (R, W) (mandatory) (25 bytes)

Actions

Get: Get one or more attributes.

Set: Set one or more attributes.

Create: Create the object.

Delete: Delete the object.

Notifications

None.

7.3.118 LargeString

The LargeString ME is conditionally required for ONTs that support services that require string attribute definition. This managed entity is used to hold strings larger than 25 bytes but less than 375 bytes. The LargeString is maintained in up to 15 parts. Each part contains 25 bytes of the LargeString. If the last part includes less than 25 bytes it is terminated by a null byte. For example:

Number of Parts	**3**
Part 1	`sftp://myusername:mypassw`
Part 2	`ord@config.telecom.com:12`
Part 3	`34/path/to/filename\0\0\0\0\0`

Or;

Number of Parts	**3**
Part 1	`sftp://myusername:mypassw`
Part 2	`ord@config.telecom.com:12`
Part 3	`34/path/to/longerfilename`

Instances of this managed entity are created/deleted at the request of the OLT or the ONT depending on the use case. A LargeString ME should not be deleted until all references to that ME have been deleted.

To use this managed entity, the creator instantiates the LargeString ME and then references the created ME in zero or more other ME instances. Systems that maintain the LargeString shall ensure that the LargeString ME is not deleted while it is still referenced within the system.

NOTE – If a Non-OMCI interface is being used for management of VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the SIP Config Portal ME or the MGC Config Portal ME.

Relationships

Zero or more instances of this managed entity may exist in an ONT. Instances of this ME are referenced by any ME that requires a text string longer than 25 bytes.

Attributes

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. The value of 0xFFFF is not valid and should not be used. (R, Set-by-create) (mandatory) (2 bytes)

Number Of Parts: This attribute indicates the number of parts that form the LargeString. Defaults to 0 to indicate no LargeString is defined. (R, W) (mandatory) (1 byte)

Part 1: This attribute includes part number 1 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 2: This attribute includes part number 2 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 3: This attribute includes part number 3 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 4: This attribute includes part number 4 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 5: This attribute includes part number 5 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 6: This attribute includes part number 6 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 7: This attribute includes part number 7 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 8: This attribute includes part number 8 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 9: This attribute includes part number 9 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 10: This attribute includes part number 10 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 11: This attribute includes part number 11 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 12: This attribute includes part number 12 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 13: This attribute includes part number 13 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 14: This attribute includes part number 14 of the LargeString

(R, W) (mandatory) (25 bytes)

Part 15: This attribute includes part number 15 of the LargeString

(R, W) (mandatory) (25 bytes)

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Notifications

None

7.3.119 MGC config portal

The MGC (Media Gateway Controller) Config Portal managed entity is conditionally required for ONTs that support H.248 VoIP service and Non-OMCI configuration of that service. The MGC Config Portal ME is used to retrieve VoIP configuration information in textual form when H.248 VoIP service is configured by a Non-OMCI mechanism (i.e., TR-069, etc.) but is monitored via OMCI.

The format of the text retrieved from this ME is vendor specific and is not required to be understood by the OLT or EMS.

An instance of this managed entity is created by the ONT when H.248 VoIP signalling and a Non-OMCI configuration method is selected in the VoIP Config Data ME.

Relationships

One instance of this managed entity is related to the VoIP Config Data ME.

Attributes

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the associated VoIP Config Data ME. (R) (mandatory) (2 bytes)

Configuration Text: This attribute is used to pass a textual representation of the VoIP configuration back to the OLT. The contents are vendor specific. Note that the GET-NEXT sequence must be used with this attribute since the size is assumed to be unspecified. On an action of Get, the size of the reply is returned with a size of 4 bytes (as per the Get-Next usage). Upon autonomous instantiation, this attribute is set to 0x00. (R) (mandatory) (x bytes)

Actions

Get: Get one or more attributes. Latch a snapshot of the current Configuration Text attribute and respond with the size of the data (4 bytes) that should be obtained using the Get-Next command.

Get-Next: Get the latched attribute values of the managed entity within the current snapshot.

Notifications

Attribute value change: This notification is used to report autonomous changes to the attributes of this managed entity. The attribute value change notification shall identify the attribute changed and its new value. The list of AVCs for this managed entity is given in Table 36m.

Table 36m/G.983.2 – AVCs for MGC config portal ME

Number	Attribute value change	Description
1	Configuration Text	Used to indicate that a change has been made to the VoIP configuration from a Non-OMCI interface.
2-16	Reserved	

7.3.120 MGC config data

The MGC (Media Gateway Controller) Config Data managed entity is conditionally required for ONTs that support H.248 VoIP service. The MGC Config Data ME defines the configuration for the MGC that is associated with the MG User.

NOTE – If a Non-OMCI interface is being used for management of H.248 for VoIP, this ME is not required. In this case, the Non-OMCI interface supplies the data contained within this ME but the data may be read via the MGC Config Portal ME.

An instance of this managed entity is created/deleted by request of the OLT.

Relationships

One instance of this managed entity is related to each MGC in the system. This managed entity may be referenced by one or more VoIP Voice CTP managed entities.

Attributes

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. (R, Set-by-create) (mandatory) (2 bytes)

Primary MGC: This attribute provides a pointer to a Network Address ME that contains the name (IP address or resolved name) of the primary MGC that controls the signalling messages. The port is optional and defaults to 2944 for text message formats and 2955 for binary message formats. (R, W, Set-by-create) (mandatory) (2 bytes)

Secondary MGC: This attribute provides a pointer to a Network Address ME that contains the name (IP address or resolved name) of the secondary or backup MGC that controls the signalling messages. The port is optional and defaults to 2944 for text message formats and 2955 for binary message formats. (R, W, Set-by-create) (mandatory) (2 bytes)

UDP/TCP pointer: This attribute associates the MGC with the TCP/UDP service to be used for communication with the MGC. Default value is 0 unless the IP port is associated. (R, W, Set-by-create) (mandatory) (2 bytes)

Version: This attribute defines the version of the Megaco protocol being used. (example: 1=version 1, 2=version 2) (R, W, Set-by-create) (mandatory) (1 byte)

Message format: This attribute defines the message format. Valid values are 0=Text Long, 1=Text Short, 2=Binary. Default value is 0. (R, W, Set-by-create) (mandatory) (1 byte)

Maximum retry time: This attribute defines the maximum retry time for transaction on associations to the MGC. This attribute is specified in seconds. Default is vendor specific implementation. (R, W) (optional) (2 bytes)

Maximum retry attempts: This attribute defines the maximum number of times a message is retransmitted to the MGC. Default is vendor specific implementation. (R, W, Set-by-create) (optional) (2 bytes)

Service Change Delay: This attribute defines the service status delay time for changes in line service status. This attribute is specified in seconds. Default is 0=no delay. (R, W) (optional) (2 bytes)

Termination ID Base: The attribute defines the base string for the H.248 Physical Termination ID(s) for this ONT. This string is used to uniquely identify an ONT. Vendor specific termination identifiers (i.e., port IDs) are optionally added to this string to uniquely identify a termination on a specific ONT. (R, W) (optional) (25 bytes)

Actions

Set: Set one or more attributes.

Get: Get one or more attributes.

Create: Create the object.

Delete: Delete the object.

Notifications

None.

7.3.121 MGC Monitoring Data

The MGC Monitoring Data managed entity is optional for ONTs that support H.248 VoIP service. This ME provides runtime status and statistics for the active MGC association.

Statistics are the last completed 15-minute interval performance monitoring data collected. All the attribute counters are only updated at the end of each period.

An instance of this managed entity is created/deleted by request of the OLT.

Relationships

One instance of this managed entity is related to one MGC Config Data managed entity. Alternately, one instance of this ME may be related to the MGC Config Portal ME.

Attributes

Managed Entity ID: This attribute provides a unique number for each instance of this managed entity. The assigned number is the same as the associated MGC Config Data ME. If a Non-OMCI configuration method is being used for VoIP, the assigned number is the same as the ME Id of the MGC Config Portal ME. (R, Set-by-create) (mandatory) (2 bytes)

Interval End Time: This attribute identifies the most recently finished 15-minute interval. It is a cyclic counter (modulo 0x100 (256)) that is incremented each time a new interval is finished and the attribute counters are updated. The value of this attribute is 0x00 during the first 15-minute interval that starts with the reception of the "synchronize time" action. The value is 0x01 during the first period after this, and so on. If this managed entity is created after the reception of the "synchronize time" action, the value of this attribute is set equal to the number of the last completed interval. The actual counters of this managed entity start counting directly. The attribute counters are updated at the end of the interval. (R) (mandatory) (1 byte)

Threshold Data Id: This attribute provides a pointer to an instance of the Threshold Data managed entity that contains the threshold values for the performance monitoring data collected by this managed entity. The value 0xFFFF is interpreted as a Null pointer. (R, W, Set-by-create) (mandatory) (2 bytes)

Received Messages: Number of received Megaco messages on this association. This field corresponds to medGwyGatewayNumInMessages in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Received Octets: Total number of octets received on this association. For an MG, this field corresponds to medGwyGatewayNumInOctets in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Sent Messages: Total number of Megaco messages sent over this association. This field corresponds to medGwyGatewayNumOutMessages in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Sent Octets: Total number of octets sent over this association. For an MG, this field corresponds to medGwyGatewayNumOutOctets in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Protocol Errors: Total number of errors detected on this association. This includes:

- syntax errors detected in a given received message;
- outgoing transactions that have failed for protocol reasons.

For an MG, this field corresponds to medGwyGatewayNumErrors in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Transport Losses: Total number of transport losses (for example, sockets problems) detected on this association. A link loss is defined as loss of communication with the remote entity due to hardware/transient problems, or problems in related software. For an MG, this field corresponds to medGwyGatewayTransportNumLosses in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

Last Detected Event: Last Event detected on this association. This includes events such as the link failing or being set up. For an MG, this field corresponds to medGwyGatewayTransportLastEvent in the medGwyStatisticsTable in draft-ietf-megaco-mib. This field is a 1-byte enumeration of the following values.

0x00 NoEvent – No event has been detected as yet.

0xFF OtherEvent – The detected event does not match any in the list.

0x01 LinkUp – The transport link underpinning the association has gone up.

0x02 LinkDown – The transport link underpinning the association has gone down.

0x03 PersistentError – A persistent error has been detected on the link (such as the socket/TCP Connection to the remote node is unable to be set up).

0x04 LocalShutdown – The association has been brought down intentionally by the local application.

0x05 FailoverDown – The association has been brought down as part of failover processing.

(R) (mandatory) (1 byte)

LastDetectedEventTime: Time in seconds since last event on this association was detected. For an MG, this field corresponds to medGwyGatewayTransportLastEventTime in the medGwyStatisticsTable in draft-ietf-megaco-mib. (R) (mandatory) (4 bytes)

LastDetectedResetTime: Time in seconds, since that these statistics were last reset. For an MG, this field corresponds to medGwyGatewayLastStatisticsReset in the medGwyStatisticsTable in draft-ietf-megaco-mib. As the counters are reset every 15 minutes, the range of this attribute is 0..899. (R) (mandatory) (4 bytes)

Actions

Create: Create an instance of this managed entity.

Delete: Delete an instance of this managed entity.

Get: Get one or more attributes.

Set: Set one or more attributes.

Get current data: This action returns the current value of one or more actual counters associated with performance monitoring attributes and the value of the Interval End Time attribute representing the interval in which the request is made. The values in the specific counters are reset at the end of the interval. (NOTE – "Get" returns the statistical data stored in the attribute value; "Get current data" returns the real-time value of the actual counters associated with those attributes.) Support of this action is optional.

Notifications

Threshold Crossing Alert: This notification is used to notify the management system when a Threshold Crossing Alert (TCA) has been detected or cleared. The TCA change notification "on" will be sent at the crossing of the threshold by the actual counter; the TCA change notification "off" will be sent at the end of the 15-minute period since that is when the actual counters are reset to 0x00. The event list for this entity is given in Table 36n.

Table 36n/G.983.2 – Alarm list for MGC monitoring data

Number	Event	Description	Threshold data counter # (Note)
	Threshold Crossing Alert		
0	MGCP_PROTOCOL_ERRORS	Protocol Errors threshold crossing	1
1	MGCP_TRANSPORT_LOSSES	Transport Losses threshold crossing	2
2-223	Reserved		
224-239	Vendor-specific alarms	Not to be standardized	
NOTE – This numbering is used with the associated Threshold Data$_{B\text{-}PON}$ managed entity. Threshold Data counter 1 indicates the 1st thresholded counter, etc.			

2.30 Modifications to clause 7.5.1 Priority Queue$_{B\text{-}PON}$

Modify this clause from the beginning up to the first attribute definition as follows:

This managed entity specifies the priority queue in the ONT that is used for the VP Network CTP$_{B\text{-}PON}$. All the Priority Queues used for the upstream traffic are created by the ONT after initialization. All the Priority Queues used for the downstream traffic are created/deleted by the ONT after the creation/deletion of a circuit pack that supports UNI functions.

The following assumption is made in order to simplify the queue management: the maximum number of priority queues supported by an ONT, circuit pack that supports UNI or PON IF Line Card is 32 (the maximum number is 256 in the case of DBA support). If *N* priority queues reside in the ONT, the circuit pack that supports UNI or PON IF Line Card, *N* Priority Queue$_{B\text{-}PON}$ managed entities will be automatically created by the ONT following the creation of the related equipment. Note that the OLT will find all the queues by reading the Priority Queue$_{B\text{-}PON}$ managed entity instances. If the OLT tries to retrieve a non-existing Priority Queue$_{B\text{-}PON}$, this will be indicated in the response from the ONT to the OLT.

One or more priority queues should be created in the PON IF Linecard, if there is one, in order to guarantee backward compatibility with the G.983.2 ONT.

See also Appendix IV.

Priority queues can exist in the ONT core and circuit packs that support UNIs as well as PON IF Line Cards. Therefore the managed entity id definition is extended for DBA applications.

In order to have a flexible connection and configuration between the priority queues and Traffic Schedulers and T-CONT buffers, new attributes are added for DBA applications.

Relationships

One or more instances of this managed entity shall be contained in the $ONT_{B\text{-}PON}$ managed entity to model the upstream direction if the Traffic Management Option attribute in ONT is 0x00. One or more instances of this managed entity shall be associated with a circuit pack that supports UNIs as downstream Priority $Queue_{B\text{-}PON}$.

Attributes

Managed Entity id: Non-DBA definition: This attribute provides a unique number for each instance of this managed entity. The first byte is the slot id of the circuit pack with which this queue is associated. The second byte is the priority of this queue (0x00 indicates the highest priority, and 0x1F (31) the lowest).

DBA definition: This attribute provides a unique number for each instance of this managed entity. The first byte is the slot id of the circuit pack with which this queue is associated. If the ONT has upstream priority queues that are not associated with a circuit pack at the creation of this instance, the first byte of this priority queue is 0xFF. The second byte is the priority of this queue (0x00 indicates the highest priority, and 0xFF (255) the lowest). The second byte is numbered by the ONT itself.

In either definition, the priority rank of the queues applies on a per-port or per-T-CONT basis. Congestion on one port or T-CONT will not block traffic being delivered to other ports or T-CONTs.

(R) (mandatory) (2 bytes)

2.31 Modifications to clause 7.5.5 Traffic scheduler

Modify the first attribute definition to read as follows:

Managed Entity id: This attribute provides a unique number for each instance of this managed entity. This 2-byte number is associated with the physical capability that realizes the Traffic Scheduler. The first byte is the slot id of the circuit pack with which this Traffic Scheduler is associated. For a traffic scheduler that is not associated with a circuit pack at the creation of this instance, the first byte of this attribute is 0xFF. The second byte is the Traffic Scheduler id that is numbered by the ONT itself. The Traffic Scheduler id is numbered in ascending order with the range of 0x00 to 0xFF in each circuit pack or ONT core. (R) (mandatory) (2 bytes)

2.32 Modifications to clause 9 ONT management and control protocol

In Tables 46 and 47, replace "Subscriber line cardholder" *with* "Cardholder", *and replace* "Subscriber line card" *with* "Circuit Pack".

Add the following new lines to Table 47.

133	ONT Power Shedding
134	IP Host Config Data
135	IP Host performance Monitoring History Data
136	TCP/UDP Config Data
137	Network Address
138	VoIP Config Data
139	VoIP Voice CTP
140	Call Control PM History Data
141	VoIP Line Status
142	VoIP Media Profile
143	RTP Profile Data
144	RTP Monitoring Data
145	Network Dial Plan Table
146	VoIP Application Service Profile
147	VoIP Feature Access Codes
148	Authentication Security Method
149	SIP Config Portal
150	SIP Agent Config Data
151	SIP Agent Monitoring Data
152	SIP Call Initiation Performance Monitoring History Data
153	SIP User Data
154	MGC Config Portal
155	MGC Config Data
156	MGC Monitoring Data
157	LargeString
158	ONT Remote Debug
159	Equipment protection profile
160	Equipment extension package
161	Port mapping package
162	Reserved
163	Reserved
164	Reserved
165..239	Reserved for Future Standardization

2.33 New clause 9.1.10 Test result enumeration

Add the following new clause:

9.1.10 Test result enumeration

Test actions can return measurements of various physical parameters in vendor-specific ways. Table 49 identifies parameters that may be of interest, with enumerated values to represent them in the test response message defined in Appendix II.

The resolution shown in the following descriptions merely indicates the weight attached to the least significant bit, and is not intended to impose requirements for precision or accuracy of the measured value.

Table 49/G.983.2 – Codes to represent measured values

Type	Parameter	Representation
1	Power feed voltage, V	DC voltage, 2's complement, 20 mV resolution
2	Low voltage, V	DC voltage, 2's complement, 100 µV resolution
3	Received optical power, dB	dBµW, 2's complement, 0.002 dB resolution
4	Received optical power, W	Power, unsigned integer, 0.1 µW resolution
5	Transmitted optical power, dB	dBµW, 2's complement, 0.002 dB resolution
6	Transmitted optical power, W	Power, unsigned integer, 0.1 µW resolution
7	Video level, dB	dBmV, 2's complement, .002 dB resolution
8	Video level, V	RF voltage, unsigned integer, 200 µV resolution. May be filtered or weighted in accordance with vendor-specific needs.
9	Laser bias current	Unsigned integer, 2 µA resolution
10	Received signal quality measure Q	Unsigned integer, resolution 0.1
11	Signal-to-noise ratio, dB	Unsigned integer, resolution 0.1 dB
12	Temperature, degrees C	2's complement, 1/256 degree C resolution
13..239	Reserved for future standardization	
240-254	Not to be standardized. Available for vendor use.	
255	Reserved	Indicates an unavailable field in an ordered list of response values.

2.34 Modifications to Appendix I OMCI common mechanisms and services

Replace all instances of "Subscriber line card" *with* "Circuit Pack".

Replace all instances of "Subscriber line Cardholder" *with* "Cardholder".

2.35 Modifications to clause I.2.1 Start-up phase of ONT

Replace the second paragraph with the following:

Here the following scenarios will only show cases a and b, from which the scenarios for cases c and d can be deduced. Additional scenarios can be derived for the cases where an ONT contains common equipment and/or protected equipment.

NOTE – The preferred solution is that cardholder and circuit managed entities should always be modelled, regardless of whether or not the ONT has integrated interfaces. However, the port mapping package provides another way to map heterogeneous ports to a single parent equipment.

2.36 Modifications to clause I.2.3 On-demand equipment provisioning (formerly Subscriber line card provisioning/deprovisioning)

In the second paragraph, change "Sensed" *to* "Actual".

Replace the text in the "**Case 2**" *sub-heading with the following:*

The cardholder or the ONT itself (the latter in case of integrated interfaces) supports interfaces of different types.

In this case, on creation of the Physical Path Termination Point managed entity instance, the attribute "Expected Plug-in Unit type" is set to plug and play (0xFF) and the attribute "Actual Plug-in Unit type" is set to:

- inapplicable or unknown if the interface does not support plug and play or if the plug and play fails (actually, the coding is 0xFF in both cases);
- the sensed type if the interface supports autosensing and the autosensing was successful.

The ONT will send an attribute value change notification with the values of these attributes.

Later on, it will be possible for the OLT to change the value of attribute "Expected Plug-in Unit type" with the "Set" action. The value of attribute "Actual type" will be set equal to the value of attribute "Expected type". Notice, however, that the ONT will only execute the "Set" action if the ONT supports the configured interface type.

2.37 Modifications to Appendix II OMCI message set

Replace all instances of "Subscriber line card" *with* "Circuit Pack".

Replace all instances of "1, 2, ..., 127 = UNI card" *and* "129, 130, ..., 255 = ANI card" *with* "1, 2, ..., 254 = slot number".

2.38 Modifications to clause II.2.1 Create

Insert the following new paragraph after the first paragraph of the clause:

Space for each set-by-create attribute must be allocated in the create message, even if the attribute is optional. When an optional attribute is not to be instantiated, the placeholder value to be entered into this space is specific to the definition of each attribute.

2.39 Modifications to clause II.2.27 Test

In the table labelled "Format for $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$, etc…", *modify the* "**Comments**" *field for* "Byte 13" *to read as follows:*

	13	0	0	0	0	x	x	x	x	xxxx=select test 0000 ~ 0110 Reserved for future use 0111=self test 1000 ~ 1111 Vendor-specific use. See discussion related to the test result message.

2.40 Modifications to clause II.2.45 Test result

Modify the text and table from the beginning of the clause to the end of the first table to read as follows:

The test result message is used to report the result of a test. The transaction identifier of the test result message is identical to the transaction identifier of the test message that initiated the corresponding test.

Three formats are currently defined. The first reports the result of a self test (any ME that supports self test). The second reports the results of vendor-specific tests using a generic structure. The third reports the results of a dial tone draw-break test (PPTP POTS UNI) or an MLT test (PPTP POTS UNI or PPTP ISDN UNI). If a new test for the presently supported entities is defined in the future, the corresponding test results can be reported by extending the test result message layout. If a new test for other managed entity classes is defined in the future, a new test result message layout may be defined.

Format for self-test action invoked against $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$, circuit pack, PON line card entity classes

Field	Byte	8	7	6	5	4	3	2	1	Comments
Transaction identifier	6-7									
Message type	8	0	0	0						DB = 0, AR = 0, AK = 0 bits 5-1: action = test result
Device identifier type	9	0	0	0	0	1	0	1	0	OMCI = 0x0A
Message identifier	10									Entity class. NOTE – This message format pertains to $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$, circuit pack, PON line card entity classes.
	11									MSB entity instance
	12									LSB entity instance
Message contents	13	0	0	0	0	0	0	0	0	Unused
	14	0	0	0	0	0	0	x	x	self test result: xx = 00: failed xx = 01: passed xx = 10: not completed
	15-45	0	0	0	0	0	0	0	0	padding

Format for vendor-specific test actions invoked against $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$, Circuit Pack, PON line card entity classes

Field	Byte	8	7	6	5	4	3	2	1	Comments
Transaction identifier	6-7									
Message type	8	0	0	0						DB = 0, AR = 0, AK = 0 bits 5-1: action = test result
Device identifier type	9	0	0	0	0	1	0	1	0	OMCI = 0x0A
Message identifier	10									Entity class. NOTE – This message format pertains to $ONT_{B\text{-}PON}$, $ONU_{B\text{-}PON}$, circuit pack, PON line card entity classes.
	11									MSB entity instance
	12									LSB entity instance
Message contents	13									Type 1 (Note)
	14-15									Value 1
	16									Type 2
	17-18									Value 2
	19									Type 3
	20-21									Value 3
	22									Type 4
	23-24									Value 4
	25									Type 5
	26-27									Value 5
	28									Type 6
	29-30									Value 6
	31									Type 7
	32-33									Value 7
	34									Type 8
	35-36									Value 8
	37									Type 9
	38-39									Value 9
	40									Type 10
	41-42									Value 10
	43									Type 11
	44-45									Value 11
NOTE – Types are specified in Table 49. Type-value fields are packed in the lowest byte positions. Unused trailing byte positions are filled with 0 values. If more than 11 type-value pairs are to be returned, an additional test type should be defined in the test message. At the vendor's discretion, a test result may include an ordered sequence of repeated type-value pairs to represent, for example, port ordering, or first/second power input. In this case, missing values can be flagged with type = 255.										

2.41 Add new Appendix VII

Appendix VII

PICS (Protocol Implementation Conformance Statement) for ITU-T Rec. G.983.2

VII.1 Scope

This appendix clarifies G.983.2 standard compliance by indicating whether a conformance requirement of particular clauses in the standard is mandatory, optional, or conditional. In the context of ITU-T Rec. G.983.2 this includes ME and their attributes, actions, and notifications, in addition to OMCI mechanisms and services.

VII.2 Definitions

This appendix defines the following terms in PICS tables.

VII.2.1 Req: **Requirement**. This column indicates whether the conformance requirement of a particular clause in the standard is mandatory, optional, or conditional.

VII.2.2 Conf: **Conformance result**. Compliance or not will be indicated.

VII.2.3 M: **Mandatory**. Conformance cannot be approved unless the parameter is implemented as specified.

VII.2.4 O: **Optional**. The parameter may be implemented or not but, if implemented, it must be as stated in the standard.

VII.2.5 CR: **Conditional Requirement**. If an associated major option is implemented, this parameter must be implemented.

VII.3 Abbreviations

This appendix uses the following abbreviation:

PICS Protocol Implementation Conformance Statement

VII.4 Overview of G.983.2 PICS

Areas addressed by the PICS tables of clause VII.5 are summarized in Table VII.1.

Table VII.1/G.983.2 – Protocol summary

Item	Parameter	Clause No. in G.983.2	Req	Conf	Clause No.
1	Reference model and terms	4	O		VII.5.1
2	Requirements of the management interface specification	5	O		VII.5.2
3	Protocol-independent MIB for the OMCI	6	CR, dependent on the ME		VII.5.3
4	MIB description	7	CR, dependent on the ME		VII.5.4
5	ONT management and control channel (OMCC)	8	M		VII.5.5

Table VII.1/G.983.2 – Protocol summary

Item	Parameter	Clause No. in G.983.2	Req	Conf	Clause No.
6	ONT management and control protocol	9	M		VII.5.6
7	Annex A – Transport of video return path service	A	No PICS Criteria		VII.5.7
8	Appendix I – OMCI common mechanisms and services	I	Dependent on the OMCI mechanism or service		VII.5.8
9	Appendix II – OMCI message set	II	No PICS Criteria		VII.5.9
10	Appendix III – Support of F4/F5 maintenance flows in the ONT	III	M		VII.5.10
11	Appendix IV – Traffic management options	IV	No PICS Criteria		VII.5.11
12	Appendix V – MAC addresses and Ether types	V	No PICS Criteria		VII.5.12
13	Appendix VI – Transparent support of video return path service	VI	No PICS Criteria		VII.5.13
14	Bibliography		No PICS Criteria		VII.5.14

While the appendices of this Recommendation are informative, some provide working examples of message formats and message flows. These appendices illustrate how the G.983.2 OMCI "ingredients" (i.e., the MEs, ME attributes, Actions, and Notifications) are utilized in B-PON system implementations. As such, the appendices are included in the PICS tables of clause VII.5. Conformance with appendix-related PICS table material should be deemed in accordance with reasonable engineering judgment. For example, if the appendix states that unrelated Managed Entities "A" and "B" are created in order "A" then "B", but an implementation creates them in order "B" then "A", the implementation should be deemed conformant. On the other hand, related MEs often have a certain required order. A case-by-case analysis may be required to determine implementation conformance with these appendix examples.

VII.5 PICS tables

The terms ONT and ONU are used interchangeably, except in the $ONT_{B\text{-}PON}$ and $ONU_{B\text{-}PON}$ ME descriptions. The "**Reference**" columns in the tables below indicate the G.983.2 clause that most directly relates to PICS item being considered.

VII.5.1 Reference model and terms

VII.5.1.1 OMCI in ITU-T Rec. G.983.1

Item	Parameter	Reference	Value, comment	Req	Conf
1.1-1	Protection, reference model 1	4.1		O	
1.1-2	Protection, reference model 2	4.1		O	
1.1-3	Protection, reference model 3	4.1		O	

VII.5.1.2 ONT functions

VII.5.1.2.1 Protection switching

Item	Parameter	Reference	Value, comment	Req	Conf
1.2.1-1	Protection switching, 1+1	4.2.1		O	
1.2.1-2	Protection switching, 1:1	4.2.1		O	
1.2.1-3	Extra traffic	4.2.1		O	

VII.5.1.2.2 Dynamic bandwidth assignment modelling

Item	Parameter	Reference	Value, comment	Req	Conf
1.2.2-1	DBA	4.2.2		O	
1.2.2-2	Fixed association of priority queues, traffic schedulers, T-CONT buffers	4.2.2		O	
1.2.2-3	Flexible association of priority queues, traffic schedulers, T-CONT buffers	4.2.2		O	

VII.5.2 Requirements of the management interface specification

VII.5.2.1 Configuration management

Item	Parameter				Reference	Value, comment	Req	Conf
	Mode	ATM I/F	Non-ATM I/F					
	Value	TM layer	Cross-conn	ATM layer				
2.1-1	0	VP	no	VP	5.1		O	
2.1-2	1	VP	yes	VP	5.1		O	
2.1-3	2	VP	yes	VC	5.1		O	
2.1-4	3	VP	no	VC	5.1		O	
2.1-5	4	VC	no	VP	5.1		O	
2.1-6	5	VC	yes	VP	5.1		O	
2.1-7	6	VC	yes	VC	5.1		O	
2.1-8	7	VC	no	VC	5.1		O	
2.1-9	Priority-based traffic management				5.1		O	
2.1-10	Cell rate based traffic management				5.1		O	

VII.5.2.2 Fault management

Item	Parameter	Reference	Value, comment	Req	Conf
2.2-1	Selective OAM cell loop-back testing at UNI	5.2		M	

VII.5.3 Protocol-independent MIB for the OMCI

VII.5.3.1 Managed entities

This clause indicates the requirement status of MEs. The requirement status of ME attributes, actions, and notifications are provided in VII.5.4, MIB description. For conditionally required MEs, the Value, comment column indicates when the ME is required (i.e., the condition).

Note that an electronic representation of the MEs and their attributes can be found at http://ties.itu.int/u/tsg15/sg15/Xchange/wp1/q2/OMCIspreadsheet/. This electronic representation is meant to be an informative quick reference guide.

In case of any disagreements between the main body of ITU-T Rec. G.983.2 and this appendix, or between ITU-T Rec. G.983.2 and the electronic representation, the main body of ITU-T Rec. G.983.2 takes precedence.

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-1	802.1p mapper service profile	7.3.95		O	
3.1-2	802.11 counters	7.3.61		O	
3.1-3	802.11 general purpose object	7.3.59	If 802.11 interface supported by ONU	CR	
3.1-4	802.11 MAC&PHY operation and antenna data	7.3.60	If 802.11 interface supported by ONU	CR	
3.1-5	802.11 PHY FHSS DSSS IR tables	7.3.62		O	
3.1-6	802.11 station management data 1	7.3.57	If 802.11 interface supported by ONU	CR	
3.1-7	802.11 station management data 2	7.3.58	If 802.11 interface supported by ONU	CR	
3.1-8	802.1p mapper service profile	7.3.95	For 802.1p priority mapping of data interfaces	CR	
3.1-9	AAL 1 profile$_{B\text{-}PON}$	7.3.8	If ONU supports CES UNIs	CR	
3.1-10	AAL 1 protocol monitoring history data$_{B\text{-}PON}$	7.3.9		O	
3.1-11	AAL 2 CPS protocol monitoring history data$_{B\text{-}PON}$	7.3.20		O	
3.1-12	AAL 2 profile$_{B\text{-}PON}$	7.3.18	If ONU supports AAL 2	CR	
3.1-13	AAL PVC profile$_{B\text{-}PON}$	7.3.19	If ONU supports AAL 2 PVC	CR	
3.1-14	AAL 2 SSCS parameter profile 1	7.3.22	If ONU supports AAL 2 SSCS	CR	
3.1-15	AAL 2 SSCS parameter profile 2	7.3.23	If ONU supports AAL 2 SSCS	CR	
3.1-16	AAL 2 SSCS protocol monitoring history data$_{B\text{-}PON}$	7.3.21	If AAL 2 layer PM is supported	O	
3.1-17	AAL 5 profile$_{B\text{-}PON}$	7.3.10	If ONU supports LAN UNIs	CR	
3.1-18	AAL 5 protocol monitoring history data$_{B\text{-}PON}$	7.3.11		O	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-19	ADSL ATU-C channel PM history data	7.3.79		O	
3.1-20	ADSL ATU-C PM history data	7.3.77		O	
3.1-21	ADSL ATU-R channel PM history data	7.3.80		O	
3.1-22	ADSL ATU-R PM history data	7.3.78		O	
3.1-23	ADSL channel configuration profile	7.3.72	If ONU supports ADSL. Configuration for ADSL channel	CR	
3.1-24	ADSL channel downstream status data	7.3.67	If ONU supports ADSL. Status on downstream channel	CR	
3.1-25	ADSL channel upstream status data	7.3.68	If ONU supports ADSL. Status on upstream channel	CR	
3.1-26	ADSL downstream PSD mask profile	7.3.75	If ONU supports ADSL. Masking information for downstream PSD	CR	
3.1-27	ADSL downstream RFI bands profile	7.3.76	If ONU supports ADSL. Information on downstream RFI bands	CR	
3.1-28	ADSL line configuration profile part 1	7.3.69	If ONU supports ADSL. Line parameters for an ADSL line	CR	
3.1-29	ADSL line configuration profile part 2	7.3.70	If ONU supports ADSL. Line parameters for ADSL line	CR	
3.1-30	ADSL line configuration profile part 3	7.3.71	If ONU supports ADSL. Line parameters for ADSL line	CR	
3.1-31	ADSL line inventory and status data part 1	7.3.65	If ONU supports ADSL. Inventory and status information on ADSL line	CR	
3.1-32	ADSL line inventory and status data part 2	7.3.66	If ONU supports ADSL. Inventory and status information on ADSL line	CR	
3.1-33	ADSL subcarrier masking downstream profile	7.3.73	If ONU supports ADSL. Masking information for downstream subcarriers	CR	
3.1-34	ADSL subcarrier masking upstream profile	7.3.74	If ONU supports ADSL. Masking information for upstream subcarriers	CR	
3.1-35	ANI	7.2.2		R	
3.1-36	ARP configuration data	7.3.47	If IP port supported by ONU	CR	
3.1-37	ARP service profile	7.3.46	If IP port supported by ONU	CR	
3.1-38	ATM VC cross-connection	7.4.5		O	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-39	ATM VP cross-connection	7.4.2	For VP multiplexing with VPI translation in ONU	CR	
3.1-40	CES physical interface monitoring history data	7.3.15		O	
3.1-41	CES service profile$_{B\text{-}PON}$	7.3.12	If CES services supported by ONU	CR	
3.1-42	Ethernet PM history data	7.3.14		O	
3.1-43	Ethernet PM history data 2	7.3.55		O	
3.1-44	ICMP PM history data 1	7.3.42		O	
3.1-45	ICMP PM history data 2	7.3.43		O	
3.1-46	Interworking VCC termination point	7.3.7	For non-ATM UNIs	CR	
3.1-47	IP port configuration data	7.3.37	If IP port supported by ONU	CR	
3.1-48	IP route table	7.3.44	If IP router supported by ONU	CR	
3.1-49	IP router configuration data	7.3.39	If IP router supported by ONU	CR	
3.1-50	IP router PM history data 1	7.3.40		O	
3.1-51	IP router PM history data 2	7.3.41		O	
3.1-52	IP router service profile	7.3.38	If IP router supported by ONU	CR	
3.1-53	IP static routes	7.3.45	If IP router supported by ONU	CR	
3.1-54	LES service profile	7.3.25	If LES services supported by ONU	CR	
3.1-55	Logical N × 64 kbit/s sub-port connection termination point	7.3.4	If ONU supports structured CES. Logical interface for structured CES	CR	
3.1-56	MAC bridge configuration data	7.3.30	If MAC bridge supported by ONU	CR	
3.1-57	MAC bridge PM history data	7.3.35		O	
3.1-58	MAC bridge port bridge table data	7.3.34	If MAC bridge supported by ONU	CR	
3.1-59	MAC bridge port configuration data	7.3.31	If MAC bridge supported by ONU	CR	
3.1-60	MAC bridge port designation data	7.3.32	If MAC bridge supported by ONU	CR	
3.1-61	MAC bridge port filter preassign table	7.3.51		O	
3.1-62	MAC bridge port filter table data	7.3.33	If MAC bridge supported by ONU	CR	
3.1-63	MAC bridge port PM history data	7.3.36		O	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-64	MAC bridge service profile	7.3.29	If MAC bridge supported by ONU	CR	
3.1-65	Multicast interworking VCC termination point	7.3.97	If ONU supports multicasting. To manage multicasting support	CR	
3.1-66	$OLT_{B\text{-}PON}$	7.3.96		O	
3.1-67	ONT data	7.1.2		R	
3.1-68	$ONT_{B\text{-}PON}$	7.1.1		R	
3.1-69	$ONU_{B\text{-}PON}$	7.1.8		O	
3.1-70	PPTP 802.11 UNI	7.3.56	If 802.11 interface supported by the ONU	CR	
3.1-71	PPTP ADSL UNI Part 1	7.3.63	If ONU supports ADSL. For physical path termination point at an ADSL CO modem	CR	
3.1-72	PPTP ADSL UNI Part 2	7.3.64	If ONU supports ADSL. For physical path termination point at an ADSL CO modem	CR	
3.1-73	PPTP ATM UNI	7.3.1	If ONU supports ATM. For physical path termination point at ATM UNI	CR	
3.1-74	PPTP CES UNI	7.3.3	If ONU supports CES. For physical path termination point at CES UNI	CR	
3.1-75	PPTP Ethernet UNI	7.3.2	If ONU supports Ethernet. For physical path termination point at Ethernet UNI	CR	
3.1-76	PPTP ISDN UNI	7.3.48	If ONU supports ISDN.	CR	
3.1-77	PPTP LCT UNI	7.3.54	If ONU supports LCT.	CR	
3.1-78	PPTP POTS UNI	7.3.26	If ONU supports POTS. For physical path trail termination point at POTS UNI	CR	
3.1-79	PPTP VDSL UNI	7.3.82	If ONU supports VDSL. For physical path termination point at a VDSL connection	CR	
3.1-80	PPTP video ANI	7.3.53	If ONU supports overlay video.	CR	
3.1-81	PPTP video UNI	7.3.52	If ONU supports overlay video.	CR	
3.1-82	PON IF line card	7.1.6	PON line card plug-in, only if PON interface implemented on plug-in unit	CR, depre cated	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-83	PON IF line cardholder	7.1.5	PON line card plug-in slot, only if PON interface is implemented on plug-in unit	CR, depre cated	
3.1-84	PON PPTP	7.2.1		O	
3.1-85	PON TC adapter	7.2.3		O	
3.1-86	Priority queue$_{B\text{-}PON}$	7.5.1	For ONUs that support priority queues to multiplex ATM traffic flows	CR	
3.1-87	Software image	7.1.7	Software image of ONU. Software image of subscriber line cards is optional	R	
3.1-88	Circuit pack (formerly Subscriber line card)	7.1.4	For UNI line card plug-in	CR	
3.1-89	Card Holder (formerly Subscriber line cardholder)	7.1.3	For UNI line card plug-in slot	CR	
3.1-90	TC adapter PM history data	7.3.16	When TC layer PM is supported	O	
3.1-91	TC adapter$_{B\text{-}PON}$	7.3.6	For TC layer at UNI side, ATM UNI	CR	
3.1-92	TC adaptor PM history data ADSL	7.3.81		O	
3.1-93	T-CONT buffer	7.2.4	When one or more T-CONT buffers are supported (esp DBA).	CR	
3.1-94	Threshold data$_{B\text{-}PON}$	7.3.17	For set-up of threshold values	CR	
	Traffic descriptors – See next 9 entries	7.5.2	For ONU that supports shaper for ATM layer in accommodating non-ATM UNI. For ATM UNI, may be used for UPC function in ONU, if required.		
3.1-95	DBR/CBR traffic descriptor	7.5.2.1		CR	
3.1-96	UBR traffic descriptor	7.5.2.2		CR	
3.1-97	SBR1/VBR1 traffic descriptor	7.5.2.3		CR	
3.1-98	SBR2/VBR2 traffic descriptor	7.5.2.4		CR	
3.1-99	SBR3/VBR3 traffic descriptor	7.5.2.5		CR	
3.1-100	ABR traffic descriptor	7.5.2.6		CR	
3.1-101	ABT/DT/IT traffic descriptor	7.5.2.7		CR	
3.1-102	GFR traffic descriptor	7.5.2.8		CR	
3.1-103	UBR+ traffic descriptor	7.5.2.9		CR	
3.1-104	Traffic scheduler	7.5.5	When traffic scheduler is used.	CR	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-105	$UNI_{B\text{-}PON}$	7.3.5		R	
3.1-106	UPC disagreement monitoring history $data_{B\text{-}PON}$	7.5.4	For ONU that supports UPC	CR	
3.1-107	VC network $CTP_{B\text{-}PON}$	7.4.4		O	
3.1-108	VC PM history data	7.4.6		O	
3.1-109	VDSL band plan configuration profile	7.3.88	If ONU supports VDSL. Parameters of VDSL band plan configuration profile.	CR	
3.1-110	VDSL channel configuration profile	7.3.87	If ONU supports VDSL. Parameters of VDSL channel configuration profile	CR	
3.1-111	VDSL channel data	7.3.85	If ONU supports VDSL. Parameters of VDSL fast and slow channels	CR	
3.1-112	VDSL line configuration profile	7.3.86	If ONU supports VDSL. Parameters for VDSL line configuration profile	CR	
3.1-113	VDSL VTU-O channel PM history data	7.3.91		O	
3.1-114	VDSL VTU-O physical data	7.3.83	If ONU supports VDSL. Physical layer parameters for VTU-O	CR	
3.1-115	VDSL VTU-O physical interface monitoring history data	7.3.89		O	
3.1-116	VDSL VTU-R channel PM history data	7.3.92		O	
3.1-117	VDSL VTU-R physical data	7.3.84	If ONU supports VDSL. Physical layer parameters for VTU-R	CR	
3.1-118	VDSL VTU-R physical interface monitoring history data	7.3.90		O	
3.1-119	Video return path service profile	7.3.93	For video return path service	CR	
3.1-120	Video return path statistics	7.3.94		O	
3.1-121	VLAN tagging filter data	7.3.50		O	
3.1-122	VLAN tagging operation configuration data	7.3.49		O	
3.1-123	Voice CTP	7.3.27	If voice termination point supported by ONU	CR	
3.1-124	Voice PM history data	7.3.28		O	
3.1-125	Voice service profile AAL	7.3.24	If AAL voice services supported by ONU	CR	
3.1-126	VP network $CTP_{B\text{-}PON}$	7.4.1		R	
3.1-127	VP PM history data	7.4.3		O	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-128	IP Host Config Data	7.3.98	If IP service supported by ONU	CR	
3.1-129	IP Host PM History Data	7.3.99		O	
3.1-130	TCP/UDP Config Data	7.3.100	If IP service supported by ONU	CR	
3.1-131	Network Address	7.3.116	If IP service supported by ONU	CR	
3.1-132	VoIP Config Data	7.3.101	If VoIP service supported by ONU	CR	
3.1-133	VoIP Voice CTP	7.3.110	If VoIP service supported by ONU	CR	
3.1-134	Call Control PM History Data	7.3.111		O	
3.1-135	VoIP Line Status	7.3.114		O	
3.1-136	VoIP Media Profile	7.3.107	If VoIP service supported by ONU	CR	
3.1-137	RTP Profile Data	7.3.108	If VoIP service supported by ONU	CR	
3.1-138	RTP Monitoring Data	7.3.109		O	
3.1-139	Network Dial Plan Table	7.3.112		O	
3.1-140	VoIP Application Service Profile	7.3.113		O	
3.1-141	VoIP Feature Access Codes	7.3.115		O	
3.1-142	Authentication Security Method	7.3.117		O	
3.1-143	SIP Config Portal	7.3.102	If SIP VoIP service supported by ONU	CR	
3.1-144	SIP Agent Config Data	7.3.103	If SIP VoIP service supported by ONU	CR	
3.1-145	SIP Agent Monitoring Data	7.3.104		O	
3.1-146	SIP Call Initiation Performance Monitoring History Data	7.3.105		O	
3.1-147	SIP User Data	7.3.106	If SIP VoIP service supported by ONU	CR	
3.1-148	MGC Config Portal	7.3.119	If MGCP VoIP service supported by ONU	CR	
3.1-149	MGC Config Data	7.3.120	If MGCP VoIP service supported by ONU	CR	
3.1-150	MGC Monitoring Data	7.3.121	If MGCP VoIP service supported by ONU	O	
3.1-151	LargeString	7.3.118	If needed by other MEs supported by ONU	CR	
3.1-152	ONT Power Shedding	7.1.12	If power shedding supported by ONU	CR	
3.1-153	ONT Remote Debug	7.1.13	If remote debug facility supported by ONU	CR	
3.1-154	Equipment protection profile	7.1.9	If equipment protection supported by ONU	CR	

Item	Parameter	Reference	Value, comment	Req	Conf
3.1-155	Equipment extension package	7.1.10		O	
3.1-156	Port mapping package	7.1.11		O	

VII.5.4 MIB description

VII.5.4.1 ONT equipment management

VII.5.4.1.1 $ONT_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.1-1	Automatically created by ONT	7.1.1		M	
4.1.1-2	Associated attributes set per data within ONT	7.1.1		M	
	Attributes				
4.1.1-3	Managed entity id	7.1.1		M	
4.1.1-4	Vendor id	7.1.1		M	
4.1.1-5	Version	7.1.1		M	
4.1.1-6	Serial number	7.1.1		M	
4.1.1-7	Traffic management option	7.1.1		M	
4.1.1-8	0x00 Priority controlled upstream traffic	7.1.1			
4.1.1-9	0x01 Cell rate controlled upstream traffic	7.1.1			
4.1.1-10	VP/VC cross-connection function option	7.1.1	Per Table 0 (see 5.1)	M	
4.1.1-11	Battery backup	7.1.1		M	
4.1.1-12	Administrative state	7.1.1		M	
4.1.1-13	Operational state	7.1.1		O	
4.1.1-14	Equipment id	7.1.1		O	
4.1.1-15	OMCC Version	7.1.1		O	
4.1.1-16	Vendor product code	7.1.1		O	
4.1.1-17	Security capability	7.1.1		O	
4.1.1-18	0: No extra security supported	7.1.1			
4.1.1-19	1: AES downstream encryption supported	7.1.1			
4.1.1-20	SecurityMode	7.1.1		O	
4.1.1-21	0: Churning	7.1.1			
4.1.1-22	1: AES	7.1.1			
4.1.1-23	Total T-CONT buffer number	7.1.1	If DBA supported	CR	
4.1.1-24	Total priority queue number	7.1.1	If DBA supported	CR	
4.1.1-25	Total traffic scheduler number	7.1.1	If DBA supported	CR	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.1.1-26	Get	7.1.1		M	
4.1.1-27	Set	7.1.1		M	
4.1.1-28	Reboot	7.1.1		M	
4.1.1-29	Test	7.1.1		M	
4.1.1-30	Synchronize time	7.1.1		M	
	Notifications – AVC				
4.1.1-31	OpState	7.1.1	If op state supported	CR	
	Notifications – Alarms				
4.1.1-32	EquipmentAlarm	7.1.1		O	
4.1.1-33	PoweringAlarm	7.1.1		O	
4.1.1-34	BatteryMissing	7.1.1		O	
4.1.1-35	BatteryFailure	7.1.1		O	
4.1.1-36	BatteryLow	7.1.1		O	
4.1.1-37	PhysicalIntrusionAlarm	7.1.1		O	
4.1.1-38	ONTSelfTestFailure	7.1.1		O	
4.1.1-39	DyingGasp	7.1.1		O	

VII.5.4.1.2 ONT data

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.2-1	Automatically created by ONT	7.1.2		M	
4.1.2-2	Attributes per data within ONT	7.1.2		M	
	Attributes				
4.1.2-3	Managed entity id	7.1.2		M	
4.1.2-4	MIB data sync	7.1.2		M	
	Actions				
4.1.2-5	Get	7.1.2		M	
4.1.2-6	Set	7.1.2		M	
4.1.2-7	Get all alarms	7.1.2		M	
4.1.2-8	Get all alarms next	7.1.2		M	
4.1.2-9	MIB reset	7.1.2		M	
4.1.2-10	MIB upload	7.1.2		M	
4.1.2-11	MIB upload next	7.1.2		M	

VII.5.4.1.3 Cardholder (formerly Subscriber line cardholder)

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.3-1	Instance for each slot	7.1.3		M	
4.1.3-2	Created automatically by ONT	7.1.3		M	
4.1.3-3	Attributes per data within ONT	7.1.3		M	
4.1.3-4	Virtual cardholders created for ONTs with integrated interfaces on UNI side	7.1.3		M	
	Attributes				
4.1.3-5	Managed entity id	7.1.3		M	
4.1.3-6	Actual plug-in unit type – see below	7.1.3		M	
4.1.3-7	Expected plug-in unit type – see below	7.1.3		M	
4.1.3-7a	Expected port count	7.1.3		O	
4.1.3-7b	Expected equipment ID	7.1.3		O	
4.1.3-7c	Actual equipment ID	7.1.3		O	
4.1.3-7d	Protection profile pointer	7.1.3		O	
4.1.3-7e	Invoke protection switch	7.1.3		O	
	Actions				
4.1.3-8	Get	7.1.3		M	
4.1.3-9	Set	7.1.3		M	
	Notifications – AVC				
4.1.3-10	ActualType	7.1.3	For pluggable LIMs	CR	
4.1.3-10a	ActualEquipmentID	7.1.3	For pluggable LIMs	O	
	Notifications – Alarms				
4.1.3-11	PlugInLimMissingAlarm	7.1.3	For pluggable LIMs	CR	
4.1.3-12	PlugInTypeMismatchAlarm	7.1.3	For pluggable LIMs	CR	
4.1.3-13	ImproperCardRemoval	7.1.3	For pluggable LIMs	CR	
4.1.3-13a	PlugInEqptIdMismatchAlarm	7.1.3	For pluggable LIMs	O	
4.1.3-13b	ProtectionSwitch	7.1.3	For pluggable LIMs	O	
	Sub-circuit pack (line card) type				
4.1.3-14	no LIM	7.1.3		O	
4.1.3-15	ATM 1.544 Mbit/s module	7.1.3		O	
4.1.3-16	ATM 2.048 Mbit/s	7.1.3		O	
4.1.3-17	ATM 6.312 Mbit/s module	7.1.3		O	
4.1.3-18	ATM 6.312 Mbit/s module, remote (U interface)	7.1.3		O	
4.1.3-19	ATM 8.448 Mbit/s	7.1.3		O	
4.1.3-20	ATM 25.6 Mbit/s module	7.1.3		O	
4.1.3-21	ATM 34.368 Mbit/s module	7.1.3		O	
4.1.3-22	ATM 44.736 Mbit/s module	7.1.3		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.3-23	Configurable ATM 44.736/34.368 Mbit/s module	7.1.3		O	
4.1.3-24	ATM STM-1 SMF UNI	7.1.3		O	
4.1.3-25	ATM STM-1 MMF UNI	7.1.3		O	
4.1.3-26	ATM STM-1 UTP UNI	7.1.3		O	
4.1.3-27	1.544 Mbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-28	2.048 Mbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-29	6.312 Mbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-30	Configurable DS1/E1 AAL 1 module	7.1.3		O	
4.1.3-31	Configurable DS1/E1/J1 AAL 1 module	7.1.3		O	
4.1.3-32	6.312 Mbit/s remote (U interface) AAL 1 module	7.1.3		O	
4.1.3-33	192 kbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-34	44.736 Mbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-35	34.368 Mbit/s local (T interface) AAL 1 module	7.1.3		O	
4.1.3-36	10 Base-T Ethernet LAN IF	7.1.3		O	
4.1.3-37	100 Base-T Ethernet LAN IF	7.1.3		O	
4.1.3-38	10/100 Base-Tx Ethernet LAN IF	7.1.3		O	
4.1.3-39	Token Ring LAN IF	7.1.3		O	
4.1.3-40	FDDI LAN IF	7.1.3		O	
4.1.3-41	Frame relay	7.1.3		O	
4.1.3-42	C1.5 (J1) 1.544 Mbit/s local (T interface) AAL 1	7.1.3		O	
4.1.3-43	ATM OC-3 SMF UNI	7.1.3		O	
4.1.3-44	ATM OC-3 MMF UNI	7.1.3		O	
4.1.3-45	ATM OC-3 UTP UNI	7.1.3		O	
4.1.3-46	POTS	7.1.3		O	
4.1.3-47	ISDN BRI	7.1.3		O	
4.1.3-48	Gigabit Ethernet	7.1.3		O	
4.1.3-49	ADSL	7.1.3		O	
4.1.3-50	SHDSL	7.1.3		O	
4.1.3-51	VDSL	7.1.3		O	
4.1.3-52	Video service	7.1.3		O	
4.1.3-53	LCT local craft terminal	7.1.3		O	
4.1.3-54	802.11	7.1.3		O	
4.1.3-55	ADSL / POTS	7.1.3		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.3-56	VDSL / POTS	7.1.3		O	
4.1.3-57	Asymmetric 1244/155 Mbit/s PON IF	7.1.3		O	
4.1.3-58	Asymmetric 1244/622 Mbit/s PON IF	7.1.3		O	
4.1.3-59	Symmetric 622/622 Mbit/s PON IF	7.1.3		O	
4.1.3-60	Symmetric 155/155 Mbit/s PON IF	7.1.3		O	
4.1.3-61	Asymmetric 155/622 Mbit/s PON IF	7.1.3		O	
4.1.3-62	Common equipment	7.1.3		O	
4.1.3-63	Combined video UNI and PON interface	7.1.3		O	
4.1.3-64	Mixed services equipment	7.1.3		O	
4.1.3-65	Reserved	7.1.3		O	
4.1.3-66	Plug-and-play/unknown	7.1.3		O	

VII.5.4.1.4 Circuit pack (formerly Subscriber line card)

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.4-1	Instance is automatically created.	7.1.4	ONU with integrated UNIs	CR	
4.1.4-2	Instance cannot be deleted by OLT.	7.1.4	ONU with integrated UNIs	CR	
	Attributes				
4.1.4-3	Managed entity id	7.1.4		M	
4.1.4-4	Type	7.1.4		M	
4.1.4-5	Number of ports	7.1.4		O	
4.1.4-6	Serial number	7.1.4		M	
4.1.4-7	Version	7.1.4		M	
4.1.4-8	Vendor id	7.1.4		O	
4.1.4-9	Administrative state	7.1.4		M	
4.1.4-10	Operational state	7.1.4		O	
4.1.4-11	BridgedorIPInd	7.1.4	For Ethernet LIMs	CR	
4.1.4-12	0x00 Bridged	7.1.4			
4.1.4-13	0x01 IP router	7.1.4			
4.1.4-14	0x02 Bridged and IP router	7.1.4			
4.1.4-15	Equipment id	7.1.4		O	
4.1.4-16	CardConfiguration	7.1.4	For configurable LIMs	CR	
4.1.4-16a	Total T-CONT buffer number	7.1.4	For traffic scheduling LIMs	CR	
4.1.4-16b	Total Priority Queue number	7.1.4	For traffic scheduling LIMs	CR	

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.4-16c	Total Traffic Scheduler number	7.1.4	For traffic scheduling LIMs	CR	
4.1.4-16d	Power Shed Override	7.1.4		O	
	Actions				
4.1.4-17	Create	7.1.4	If plug and play supported	CR	
4.1.4-18	Delete	7.1.4	If plug and play supported	CR	
4.1.4-19	Get	7.1.4		M	
4.1.4-20	Set	7.1.4		M	
4.1.4-21	Reboot	7.1.4	If LIM has independently manageable software	CR	
4.1.4-22	Test	7.1.4		O	
	Notifications – AVC				
4.1.4-23	OpState	7.1.4		O	
	Notifications – Alarms				
4.1.4-24	EquipmentAlarm	7.1.4		O	
4.1.4-25	PoweringAlarm	7.1.4		O	
	Notifications – Test result				
4.1.4-26	SelfTestFailure	7.1.4		O	

VII.5.4.1.5 PON IF line cardholder (deprecated)

The requirement column of the following table is applicable if this managed entity is supported. In new development, the Cardholder ME is preferred.

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.5-1	Automatically created	7.1.5	If PON ANI pluggable	CR	
	Attributes				
4.1.5-2	Managed entity id	7.1.5		M	
4.1.5-3	Equipment id	7.1.5	NOTE – Attribute appeared in amendment 1/2003, deleted from ITU-T Rec. G.983.2/2005	O	
	Actions				
4.1.5-4	Get	7.1.5		M	

VII.5.4.1.6 PON IF line card (deprecated)

The requirement column of the following table is applicable if this managed entity is supported. In new development, the Cardholder ME is preferred.

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.6-1	Instance automatically created	7.1.6	Pluggable PON ANI	CR	
	Attributes				
4.1.6-2	Managed entity id	7.1.6		M	
4.1.6-3	Serial number	7.1.6		M	
4.1.6-4	Version	7.1.6		M	
4.1.6-5	Vendor id	7.1.6		O	
4.1.6-6	Equipment id	7.1.6		O	
4.1.6-7	Total T-CONT buffer number	7.1.6		M	
4.1.6-8	Total priority queue number	7.1.6		M	
4.1.6-9	Total traffic scheduler number	7.1.6		M	
	Actions				
4.1.6-10	Get	7.1.6		M	
4.1.6-11	Reboot	7.1.6	Pluggable PON ANI	CR	
4.1.6-12	Test	7.1.6		O	

VII.5.4.1.7 Software image

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.7-1	Two instances, created automatically, for each entity with software that is independently managed	7.1.7		M	
4.1.7-1a	Instanced deleted automatically if parent equipment deleted.	7.1.7		M	
	Attributes				
4.1.7-2	Managed entity id	7.1.7		M	
4.1.7-3	Version	7.1.7		M	
4.1.7-4	Is committed	7.1.7		M	
4.1.7-5	Is active	7.1.7		M	
4.1.7-6	Is valid	7.1.7		M	
	Actions				
4.1.7-7	Get	7.1.7		M	
4.1.7-8	Start download	7.1.7		O	
4.1.7-9	Download section	7.1.7		O	
4.1.7-10	End download	7.1.7		O	
4.1.7-11	Activate image	7.1.7		O	
4.1.7-12	Commit image	7.1.7		O	

VII.5.4.1.8 $ONU_{B\text{-}PON}$

The $ONU_{B\text{-}PON}$ managed entity has the same Relationships, Attributes, Actions, and Notifications as the $ONT_{B\text{-}PON}$ managed entity.

VII.5.4.1.9 Equipment protection profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.1.9-1	Managed Entity id	7.1.9		M	
4.1.9-2	Protect slot 1	7.1.9		M	
4.1.9-3	Protect slot 2	7.1.9		O	
4.1.9-4	Working slot 1	7.1.9		M	
4.1.9-5	Working slot 2	7.1.9		O	
4.1.9-6	Working slot 3	7.1.9		O	
4.1.9-7	Working slot 4	7.1.9		O	
4.1.9-8	Working slot 5	7.1.9		O	
4.1.9-9	Working slot 6	7.1.9		O	
4.1.9-10	Working slot 7	7.1.9		O	
4.1.9-11	Working slot 8	7.1.9		O	
4.1.9-12	Protect status 1	7.1.9		M	
4.1.9-13	Protect status 2	7.1.9		O	
4.1.9-14	Revertive Ind			O	
4.1.9-15	Wait to restore time	7.1.9		O	
	Actions				
4.1.9-16	Create	7.1.9		M	
4.1.9-17	Delete	7.1.9		M	
4.1.9-18	Get	7.1.9		M	
4.1.9-19	Set	7.1.9		M	
	Notifications – Alarms				
4.1.9-20	InconsistentCardType	7.1.9		M	

VII.5.4.1.10 Equipment extension package

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.10-1	Automatically created by ONT	7.1.10	If equipment extension supported	CR	
	Attributes				
4.1.10-2	Managed Entity id	7.1.10		M	
4.1.10-3	Environmental sense	7.1.10		O	
4.1.10-4	Contact Closure Output	7.1.10		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.1.10-5	Get	7.1.10		M	
4.1.10-6	Set	7.1.10		M	
	Notifications – Alarms				
4.1.10-7	Sense point 1-8	7.1.10	Only for sense points supported	CR	

VII.5.4.1.11 Port mapping package

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.11-0	Automatically created by ONU	7.1.11	If ONU supports power shedding	CR	
	Attributes				
4.1.11-1	Managed Entity ID	7.1.11		R	
4.1.11-2	Max Ports	7.1.11		M	
4.1.11-3	Port list 1	7.1.11		O	
4.1.11-4	Port list 2	7.1.11		O	
4.1.11-5	Port list 3	7.1.11		O	
4.1.11-6	Port list 4	7.1.11		O	
4.1.11-7	Port list 5	7.1.11		O	
4.1.11-8	Port list 6	7.1.11		O	
4.1.11-9	Port list 7	7.1.11		O	
4.1.11-10	Port list 8	7.1.11		O	
	Actions				
4.1.11-11	Get	7.1.11		M	

VII.5.4.1.12 ONT power shedding

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.12-1	Automatically created by ONU	7.1.12	If ONU supports power shedding	CR	
	Attributes				
4.1.12-2	Managed Entity ID	7.1.12		M	
4.1.12-3	Restore Power Timer Reset Interval	7.1.12		M	
4.1.12-4	Data shedding class Interval	7.1.12		M	
4.1.12-5	Voice shedding class Interval	7.1.12		M	
4.1.12-6	Video Overlay shedding class Interval	7.1.12		M	
4.1.12-7	Video Return shedding class Interval	7.1.12		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.12-8	DSL shedding class Interval	7.1.12		M	
4.1.12-9	ATM shedding class Interval	7.1.12		M	
4.1.12-10	CES shedding class Interval	7.1.12		M	
4.1.12-11	Frame shedding class Interval	7.1.12		M	
4.1.12-12	SONET shedding class Interval	7.1.12		M	
	Actions				
4.1.12-13	Get	7.1.12		M	
4.1.12-14	Set	7.1.12		M	

VII.5.4.1.13 ONT remote debug

Item	Parameter	Reference	Value, comment	Req	Conf
4.1.13-1	Automatically created by ONT	7.1.13	If remote debug supported	CR	
	Attributes				
4.1.13-1a	Managed Entity ID	7.1.13		M	
4.1.13-2	Command Format	7.1.13		M	
4.1.13-3	Command	7.1.13		M	
4.1.13-4	Reply	7.1.13		M	
	Actions				
4.1.13-5	Get	7.1.13		M	
4.1.13-6	Get-Next	7.1.13			
4.1.13-7	Set	7.1.13		M	

VII.5.4.2 ANI management

VII.5.4.2.1 PON physical path termination point

Item	Parameter	Reference	Value, comment	Req	Conf
4.2.1-1	Created automatically by ONT	7.2.1		M	
4.2.1-2	Not reported during MIB upload	7.2.1		M	
	Attributes				
4.2.1-3	Managed entity id	7.2.1		M	

VII.5.4.2.2 ANI

Item	Parameter	Reference	Value, comment	Req	Conf
4.2.2-1	Created automatically by ONT	7.2.2		M	
4.2.2-2	Not reported during MIB upload if DBA not supported	7.2.2		CR	
4.2.2-3	Reported during MIB upload if DBA supported	7.2.2		CR	
	Attributes				
4.2.2-4	Managed entity id	7.2.2		M	
4.2.2-5	SR indication	7.2.2	If DBA supported	CR	
4.2.2-6	Total data grant	7.2.2	If DBA supported	CR	
4.2.2-7	Total DS grant	7.2.2	If DBA supported	CR	
4.2.2-8	T-CONT reporting types	7.2.2		O	
	Actions				
4.2.2-9	Get	7.2.2		M	
	Notifications – AVCs				
4.2.2-10	Total data grant	7.2.2		CR	
4.2.2-11	Total DS grant	7.2.2		CR	
4.2.2-12	T-CONT reporting type	7.2.2		O	

VII.5.4.2.3 PON TC adapter

Item	Parameter	Reference	Value, comment	Req	Conf
4.2.3-1	Created automatically by ONT	7.2.3		M	
4.2.3-2	Not reported during MIB upload if protection not supported	7.2.3		CR	
4.2.3-3	Reported during MIB upload if protection supported	7.2.3		CR	
	Attributes				
4.2.3-4	Managed entity id	7.2.3		M	
4.2.3-5	TC adapter type	7.2.3	If protection supported	CR	
4.2.3-6	Protection pointer	7.2.3	If protection supported	CR	
4.2.3-7	Revertive ind	7.2.3	If protection supported	CR	
4.2.3-8	Wait to restore time	7.2.3	If protection supported	CR	
4.2.3-9	Switching guard time	7.2.3		O	
	Actions				
4.2.3-10	Get	7.2.3		M	
4.2.3-11	Set	7.2.3		M	

VII.5.4.2.4 T-CONT buffer

Item	Parameter	Reference	Value, comment	Req	Conf
4.2.4-1	Created by ONT upon creation of T-CONT	7.2.4	If DBA supported	M	
	Attributes				
4.2.4-2	Managed entity id	7.2.4		M	
4.2.4-3	ANI pointer	7.2.4		M	
4.2.4-4	Policy	7.2.4		M	
	Actions				
4.2.4-5	Get	7.2.4		M	
4.2.4-6	Set	7.2.4		M	

VII.5.4.3 UNI management

VII.5.4.3.1 Physical path termination point ATM UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.1-1	Automatically created/deleted by ONT upon creation/deletion of an ATM circuit pack (formerly subscriber line card)	7.3.1		CR	
	Attributes				
4.3.1-2	Managed entity id	7.3.1		M	
4.3.1-3	Expected type	7.3.1		M	
4.3.1-4	Sensed type	7.3.1	If LIM type is configurable	CR	
4.3.1-5	Cable configuration	7.3.1	If cable is configurable	CR	
4.3.1-6	Loopback configuration	7.3.1		M	
4.3.1-7	0x00: no loopback	7.3.1			
4.3.1-8	0x01: loopback2	7.3.1			
4.3.1-9	Administrative state	7.3.1		M	
4.3.1-10	Operational state	7.3.1		O	
	Actions				
4.3.1-11	Get	7.3.1		M	
4.3.1-12	Set	7.3.1		M	
	Notifications – AVCs				
4.3.1-13	SensedType	7.3.1		CR	
4.3.1-14	OpState	7.3.1		CR	
	Notifications – Alarms				
4.3.1-15	TF (Transmitter failure)	7.3.1		O	
4.3.1-16	LOS	7.3.1		O	
4.3.1-17	LOF	7.3.1		O	
4.3.1-18	OOF	7.3.1		O	
4.3.1-19	RAI	7.3.1		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.1-20	ERR (Block error)	7.3.1		O	
4.3.1-21	OOF (PLCP)	7.3.1		O	
4.3.1-22	RAI (PLCP)	7.3.1		O	
4.3.1-23	ERR (PLCP) (Block error)	7.3.1		O	
4.3.1-24	REI (PLCP)	7.3.1		O	
4.3.1-26	SONET/SDH MS-SD	7.3.1		O	
4.3.1-27	SONET/SDH MS-RDI	7.3.1		O	
4.3.1-28	SONET/SDH MS-ERR	7.3.1		O	
4.3.1-29	SONET/SDH MS-REI	7.3.1		O	
4.3.1-30	SONET/SDH MS-AIS	7.3.1		O	
4.3.1-31	SONET/SDH P-RDI	7.3.1		O	
4.3.1-32	SONET/SDH P-ERR	7.3.1		O	
4.3.1-33	SONET/SDH P-REI	7.3.1		O	
4.3.1-34	SONET/SDH P-AIS	7.3.1		O	
4.3.1-35	SONET/SDH LOP	7.3.1		O	
4.3.1-36	1.5 M REC	7.3.1		O	
4.3.1-37	1.5 AIS	7.3.1		O	
4.3.1-38	1.5 M BAIS	7.3.1		O	
4.3.1-39	6 M REC	7.3.1		O	
4.3.1-40	6 M SEND	7.3.1		O	
4.3.1-41	6 M ERR	7.3.1		O	
4.3.1-42	2 M RDI	7.3.1		O	
4.3.1-43	2 M E-ERR	7.3.1		O	
4.3.1-44	2 M AIS	7.3.1		O	
4.3.1-45	8 M RDI	7.3.1		O	
4.3.1-46	8 M AIS	7.3.1		O	
4.3.1-47	34 M RDI	7.3.1		O	
4.3.1-48	34 M AIS	7.3.1		O	
4.3.1-49	34 M FEBE	7.3.1		O	
4.3.1-50	45 M RDI	7.3.1		O	
4.3.1-51	45 M AIS	7.3.1		O	
4.3.1-52	45 IDLE	7.3.1		O	

VII.5.4.3.2 Physical path termination point Ethernet UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.2-1	Automatically created/deleted by ONT upon creation/deletion of an Ethernet circuit pack (formerly subscriber line card)	7.3.2		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.2-2	Managed entity id	7.3.2		M	
4.3.2-3	Expected type	7.3.2		M	
4.3.2-4	Sensed type	7.3.2	If LIM type is configurable	CR	
4.3.2-5	Autodetection configuration	7.3.2	If auto detection supported	CR	
4.3.2-6	0x00 Auto-sensing	7.3.2			
4.3.2-7	0x01 10BaseT	7.3.2			
4.3.2-8	0x02 100BaseT	7.3.2			
4.3.2-9	0x03 Gigabit Ethernet	7.3.2			
4.3.2-10	0x10 10BaseT auto-sensing	7.3.2			
4.3.2-11	0x11 10BaseT half duplex	7.3.2			
4.3.2-12	0x12 100BaseT half duplex	7.3.2			
4.3.2-13	0x13 Gigabit Ethernet half duplex	7.3.2			
4.3.2-14	0x20 Gigabit Ethernet auto-sensing	7.3.2			
4.3.2-15	Ethernet loopback configuration	7.3.2		M	
4.3.2-16	0x00 No loopback	7.3.2			
4.3.2-17	0x03 Loopback of downstream traffic after PHY transceiver	7.3.2			
4.3.2-18	Administrative state	7.3.2		M	
4.3.2-19	Operational state	7.3.2		O	
4.3.2-20	ConfigurationInd	7.3.2		M	
4.3.2-21	0x01 10BaseT full duplex	7.3.2			
4.3.2-22	0x02 100BaseT full duplex	7.3.2			
4.3.2-23	0x03 Gigabit Ethernet full duplex	7.3.2			
4.3.2-24	0x11 10BaseT half duplex	7.3.2			
4.3.2-25	0x12 100BaseT half duplex	7.3.2			
4.3.2-26	0x13 Gigabit Ethernet half duplex	7.3.2			
4.3.2-27	MaxFrameSize	7.3.2		M	
4.3.2-28	DTEorDCEInd	7.3.2		M	
4.3.2-29	PauseTime	7.3.2		O	
4.3.2-30	BridgedorIPInd	7.3.2		O	
4.3.2-31	ARC	7.3.2		O	
4.3.2-32	ARCInterval	7.3.2		O	
4.3.2-33	PPPoE Filter	7.3.2		O	
4.3.2-34	Power control	7.3.2		O	
	Actions				
4.3.2-35	Get	7.3.2		M	
4.3.2-36	Set	7.3.2		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – AVCs				
4.3.2-37	SensedType	7.3.2		CR	
4.3.2-38	OpState	7.3.2		CR	
4.3.2-38a	ARC expiration	7.3.2		CR	
	Notifications – Alarm				
4.3.2-39	LAN-LOS	7.3.2		M	

VII.5.4.3.3 Physical path termination point CES UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.3-1	Automatically created/deleted by ONT upon creation/deletion of a CES circuit pack (formerly subscriber line card)	7.3.3		M	
	Attributes				
4.3.3-2	Managed entity id	7.3.3		M	
4.3.3-3	Expected type	7.3.3		M	
4.3.3-4	Sensed type	7.3.3	If LIM type is configurable	CR	
4.3.3-5	CES loopback configuration	7.3.3		M	
4.3.3-6	0x00 no loopback	7.3.3			
4.3.3-7	0x01 payload loopback	7.3.3			
4.3.3-8	0x02 line loopback	7.3.3			
4.3.3-9	0x03 OpS-directed loopback1	7.3.3			
4.3.3-10	0x04 OpS-directed loopback2	7.3.3			
4.3.3-11	0x05 OpS-directed loopback3	7.3.3			
4.3.3-12	0x06 Manual button-directed loopback (R/O)	7.3.3			
4.3.3-13	0x07 Network-side code inband-directed loopback (R/O)	7.3.3			
4.3.3-14	0x08 SmartJack-directed loopback (R/O)	7.3.3			
4.3.3-15	0x09 Network-side code inband-directed loopback. (armed) (R/O).	7.3.3			
4.3.3-16	Administrative state	7.3.3		M	
4.3.3-17	Operational state	7.3.3		O	
4.3.3-18	DS1Framing	7.3.3		M	
4.3.3-19	0x00 ExtendedSuperFrame	7.3.3			
4.3.3-20	0x01 SuperFrame	7.3.3			
4.3.3-21	0x02 UnFrame	7.3.3			
	0x03 G.704	7.3.3			
4.3.3-22	0x04 JT-G.704	7.3.3			
4.3.3-23	Encoding	7.3.3		M	
4.3.3-24	0x00 B8ZS	7.3.3			

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.3-25	0x01 AMI	7.3.3			
4.3.3-26	0x02 HDB3	7.3.3			
4.3.3-27	0x03 B3ZS	7.3.3			
4.3.3-28	LineLength	7.3.3		O	
4.3.3-29	0x00 Non-power feed type DS1	7.3.3			
4.3.3-30	0x06 Power feed type DS1	7.3.3			
4.3.3-31	…others…	7.3.3			
4.3.3-32	DS1Mode	7.3.3		O	
4.3.3-33	0x00 DS1-CPE, short haul, no power feed, smart jack	7.3.3			
4.3.3-34	0x01 DS1-CPE, long haul, no power feed, smart jack	7.3.3			
4.3.3-35	0x02 DS1-NIU-CPE, long haul, no power, intelligent office repeater	7.3.3			
4.3.3-36	0x03 DS1-NIU-CPE, long haul, power, intelligent office repeater	7.3.3			
4.3.3-37	ARC	7.3.3		O	
4.3.3-38	ARCInterval	7.3.3		O	
4.3.3-39	LineType	7.3.3	For DS3 and E3	CR	
	Actions				
4.3.3-40	Get	7.3.3		M	
4.3.3-41	Set	7.3.3		M	
	Notifications – AVCs				
4.3.3-42	SensedType	7.3.3		CR	
4.3.3-43	CESLoopbackConfig	7.3.3		M	
4.3.3-44	OpState	7.3.3		CR	
4.3.3-44	ARC Expiration	7.3.3		CR	
	Notifications – Alarms				
4.3.3-45	TF	7.3.3		O	
4.3.3-46	LOS	7.3.3		O	
4.3.3-47	LOF	7.3.3		O	
4.3.3-48	OOF	7.3.3		O	
4.3.3-49	RAI	7.3.3		O	
4.3.3-50	1.5 M BAIS back AIS	7.3.3		O	
4.3.3-51	R-INH Receive alarm – inhibit	7.3.3		O	
4.3.3-52	6M REC receive alarm	7.3.3		O	
4.3.3-53	6M SEND send alarm	7.3.3		O	
4.3.3-54	6M ERR block error	7.3.3		O	
4.3.3-55	6M BERR back error	7.3.3		O	
4.3.3-56	34M REC receive alarm	7.3.3		O	
4.3.3-57	34M AIS	7.3.3		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.3-58	2M REC receive alarm	7.3.3		O	
4.3.3-59	2M AIS	7.3.3		O	
4.3.3-60	1.5M REC receive alarm	7.3.3		O	
4.3.3-61	1.5 AIS	7.3.3		O	
4.3.3-62	INFO0	7.3.3		O	
4.3.3-63	45M RDI	7.3.3		O	
4.3.3-64	45M AIS	7.3.3		O	

VII.5.4.3.4 Logical N × 64 kbit/s sub-port connection termination point

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.4-1	Managed entity id	7.3.4		M	
4.3.4-2	Physical path termination pointer	7.3.4		M	
4.3.4-3	List of time slots	7.3.4		M	
	Actions				
4.3.4-4	Create	7.3.4		M	
4.3.4-5	Delete	7.3.4		M	
4.3.4-6	Get	7.3.4		M	

VII.5.4.3.5 $UNI_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.5-1	Created/deleted by ONU on creation/ deletion of circuit pack (formerly subscriber line card) ME	7.3.5		M	
	Attributes				
4.3.5-2	Managed entity id	7.3.5		M	
4.3.5-3	Local maximum number of supportable VPCs	7.3.5	For ATM interfaces	CR	
4.3.5-4	Local maximum number of allocated VPI bits	7.3.5	For ATM interfaces	CR	
4.3.5-5	Loopback location code	7.3.5	For ATM interfaces	CR	
4.3.5-6	Configuration option status	7.3.5		M	
4.3.5-7	ServerTrailFaultPropagation ATM layer	7.3.5			
4.3.5-8	ServerTrailFaultPropagation TC layer	7.3.5			
4.3.5-9	ServerTrailFaultPropagation PHY layer	7.3.5			
4.3.5-10	ServerTrailFaultPropagation AAL layer	7.3.5			
4.3.5-11	Administrative state	7.3.5		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.5-12	Get	7.3.5		M	
4.3.5-13	Set	7.3.5		M	

VII.5.4.3.6 TC adapter$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.6-1	Managed entity id	7.3.6		M	
4.3.6-2	Framer configuration	7.3.6	If framer is configurable	CR	
4.3.6-3	Cell scrambling control	7.3.6	If scrambling option supported	CR	
4.3.6-4	Cell rate decoupling type	7.3.6	If decoupling option supported	CR	
4.3.6-5	Operational state	7.3.6		O	
	Actions				
4.3.6-6	Get	7.3.6		M	
4.3.6-7	Set	7.3.6		M	
	Notifications – AVC				
4.3.6-8	OpState	7.3.6		CR	
	Notifications – Alarm				
4.3.6-9	LCD	7.3.6		M	

VII.5.4.3.7 Interworking VCC termination point

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.7-1	Managed entity id	7.3.7		M	
4.3.7-2	VCI value	7.3.7		M	
4.3.7-3	VP/VCNetworkCTP connectivity pointer	7.3.7		M	
4.3.7-4	Interworking option	7.3.7		M	
4.3.7-5	0x00 CES	7.3.7			
4.3.7-6	0x01 MAC Bridge LAN	7.3.7			
4.3.7-7	0x02 Voice service	7.3.7			
4.3.7-8	0x03 IP router	7.3.7			
4.3.7-9	0x04 VRP	7.3.7			
4.3.7-10	0x05 802.1p mapper	7.3.7			
4.3.7-11	Service profile pointer	7.3.7		M	
4.3.7-12	AAL profile pointer	7.3.7		M	
4.3.7-13	Interworking termination point pointer	7.3.7	For CES	CR	
4.3.7-14	AAL loopback configuration	7.3.7		M	
4.3.7-15	0x00 No loopback	7.3.7			

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.7-16	0x01 Loopback 1, downstream traffic before FEC of AAL 1	7.3.7			
4.3.7-17	0x02 Loopback 2, downstream traffic after FEC of AAL 1	7.3.7			
4.3.7-18	0x03, loopback of downstream traffic after any AAL	7.3.7			
4.3.7-19	PPTP counter	7.3.7		O	
4.3.7-20	Operational state	7.3.7		O	
	Actions				
4.3.7-21	Create	7.3.7		M	
4.3.7-22	Delete	7.3.7		M	
4.3.7-23	Get	7.3.7		M	
4.3.7-24	Set	7.3.7		M	
	Notifications – AVC				
4.3.7-25	OpState	7.3.7		CR	
	Notifications – Alarms				
4.3.7-26	End-to-end VC-AIS-LMIR	7.3.7		O	
4.3.7-27	End-to-end VC-RDI-LMIR	7.3.7		O	
4.3.7-28	End-to-end VC-AIS-LMIG	7.3.7		O	
4.3.7-29	End-to-end VC-RDI-LMIG	7.3.7		O	
4.3.7-30	Segment loss of continuity	7.3.7		O	
4.3.7-31	End-to-end loss of continuity	7.3.7		O	
4.3.7-32	CSA Cell starvation	7.3.7		O	

VII.5.4.3.8 AAL 1 profile$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.8-1	Managed entity id	7.3.8		M	
4.3.8-2	Subtype	7.3.8		M	
4.3.8-3	0x00 null	7.3.8			
4.3.8-4	0x01 Voice-band based on 64 kbit/s	7.3.8			
4.3.8-5	0x02 Synchronous circuit emulation	7.3.8			
4.3.8-6	0x03 Asynchronous circuit emulation	7.3.8			
4.3.8-7	0x04 High-quality audio	7.3.8			
4.3.8-8	0x05 Video	7.3.8			
4.3.8-9	CBR rate	7.3.8		M	
4.3.8-10	Forward error correction type	7.3.8		O	
4.3.8-11	0x00 no FEC	7.3.8			
4.3.8-12	0x01 FEC for loss sensitive signal transport	7.3.8			

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.8-13	0x02 FEC for delay sensitive signal transport	7.3.8			
4.3.8-14	Structured data transfer	7.3.8		O	
4.3.8-15	Partially filled cells	7.3.8		O	
4.3.8-16	Clock recovery type	7.3.8		M	
4.3.8-17	0x00 synchronous	7.3.8			
4.3.8-18	0x01 SRTS	7.3.8			
4.3.8-19	0x02 ACR	7.3.8			
4.3.8-20	Cell loss integration period	7.3.8		M	
	Actions				
4.3.8-21	Create	7.3.8		M	
4.3.8-22	Delete	7.3.8		M	
4.3.8-23	Get	7.3.8		M	

VII.5.4.3.9 AAL 1 protocol monitoring history data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.9-1	Managed entity id	7.3.9		M	
4.3.9-2	Interval end time	7.3.9		M	
4.3.9-3	Threshold data$_{B\text{-}PON}$ id	7.3.9		M	
4.3.9-4	Header errors	7.3.9		M	
4.3.9-5	Sequence violations	7.3.9		M	
4.3.9-6	Cell loss	7.3.9		M	
4.3.9-7	Cell misinsertion	7.3.9		M	
4.3.9-8	Buffer underflows	7.3.9		M	
4.3.9-9	Buffer overflows	7.3.9		M	
4.3.9-10	SDT pointer reframes	7.3.9		O	
4.3.9-11	SDT pointer parity check failures	7.3.9		O	
	Actions				
4.3.9-12	Create	7.3.9		M	
4.3.9-13	Delete	7.3.9		M	
4.3.9-14	Get	7.3.9		M	
4.3.9-15	Set	7.3.9		M	
4.3.9-16	Get current data	7.3.9		O	
	Notifications – TCAs				
4.3.9-17	Header errors	7.3.9		M	
4.3.9-18	Sequence violation	7.3.9		M	
4.3.9-19	Cell loss	7.3.9		M	
4.3.9-20	Cell misinsertion	7.3.9		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.9-21	Buffer underflows	7.3.9		M	
4.3.9-22	Buffer overflows	7.3.9		M	
4.3.9-23	SDT pointer reframes	7.3.9		O	
4.3.9-24	SDT pointer parity check failures	7.3.9		O	

VII.5.4.3.10 AAL 5 profile$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.10-1	Managed entity id	7.3.10		M	
4.3.10-2	Max CPCS PDU size	7.3.10		M	
4.3.10-3	AAL mode	7.3.10		M	
4.3.10-4	0x00 message assured	7.3.10			
4.3.10-5	0x01 message unassured	7.3.10			
4.3.10-6	0x02 streaming assured	7.3.10			
4.3.10-7	0x03 streaming non-assured	7.3.10			
4.3.10-8	SSCS type	7.3.10		M	
4.3.10-9	0x00 null	7.3.10			
4.3.10-10	0x01 Data SSCS based on SSCOP, assured operation	7.3.10			
4.3.10-11	0x02 Data SSCS based on SSCOP, non-assured operation	7.3.10			
4.3.10-12	0x03 Frame relay SSCS	7.3.10			
	Actions				
4.3.10-13	Create	7.3.10		M	
4.3.10-14	Delete	7.3.10		M	
4.3.10-15	Get	7.3.10		M	

VII.5.4.3.11 AAL 5 protocol monitoring history data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.11-1	Managed entity id	7.3.11		M	
4.3.11-2	Interval end time	7.3.11		M	
4.3.11-3	Threshold data$_{B\text{-}PON}$ id	7.3.11		M	
4.3.11-4	Sum of invalid CS field errors	7.3.11		M	
4.3.11-5	CRC violations	7.3.11		M	
4.3.11-6	Reassembly timer expirations	7.3.11	If reassembly timer supported	CR	
4.3.11-7	BufferOverflows	7.3.11		M	
4.3.11-8	EncapProtocolErrors	7.3.11		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.11-9	Create	7.3.11		M	
4.3.11-10	Delete	7.3.11		M	
4.3.11-11	Get	7.3.11		M	
4.3.11-12	Set	7.3.11		M	
4.3.11-13	Get current data	7.3.11		O	
	Notifications – TCAs				
4.3.11-14	Invalid fields	7.3.11		M	
4.3.11-15	CRC violation	7.3.11		M	
4.3.11-16	Reassembly timer expirations	7.3.11		CR	
4.3.11-17	Buffer overflows	7.3.11		M	
4.3.11-18	Encap protocol errors	7.3.11		M	

VII.5.4.3.12 CES service profile$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.12-1	Managed entity id	7.3.12		M	
4.3.12-2	CES buffered CDV tolerance	7.3.12		M	
4.3.12-3	Channel associated signalling	7.3.12		O	
4.3.12-4	0x00 basic	7.3.12			
4.3.12-5	0x01 e1Cas	7.3.12			
4.3.12-6	0x02 SfCas	7.3.12			
4.3.12-7	0x03 ds1EsfCas	7.3.12			
4.3.12-8	0x04 j2Cas	7.3.12			
	Actions				
4.3.12-9	Create	7.3.12		M	
4.3.12-10	Delete	7.3.12		M	
4.3.12-11	Get	7.3.12		M	
4.3.12-12	Set	7.3.12		M	

VII.5.4.3.13 This clause intentionally left blank

There are no PICS criteria in this clause.

VII.5.4.3.14 Ethernet performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.14-1	Managed entity id	7.3.14		M	
4.3.14-2	Interval end time	7.3.14		M	
4.3.14-3	Threshold data$_{B\text{-}PON}$ id	7.3.14		M	
4.3.14-4	FCS errors	7.3.14		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.14-5	Excessive collision counter	7.3.14		M	
4.3.14-6	Late collision counter	7.3.14		M	
4.3.14-7	FrameTooLongs	7.3.14		M	
4.3.14-8	BufferOverflows on receive	7.3.14		M	
4.3.14-9	BufferOverflows on transmit	7.3.14		M	
4.3.14-10	Single collision frame counter	7.3.14		M	
4.3.14-11	Multiple collisions frame counter	7.3.14		M	
4.3.14-12	SQEcounter	7.3.14		M	
4.3.14-13	Deferred transmission counter	7.3.14		M	
4.3.14-14	InternalMACTransmitErrorCounter	7.3.14		M	
4.3.14-15	CarrierSenseError counter	7.3.14		M	
4.3.14-16	AlignmentError counter	7.3.14		M	
4.3.14-17	InternalMACReceiveErrorCounter	7.3.14		M	
	Actions				
4.3.14-18	Create	7.3.14		M	
4.3.14-19	Delete	7.3.14		M	
4.3.14-20	Get	7.3.14		M	
4.3.14-21	Set	7.3.14		M	
4.3.14-22	Get current data	7.3.14		O	
	Notifications – TCAs				
4.3.14-23	FCS errors	7.3.14		M	
4.3.14-24	Excessive collision counter	7.3.14		M	
4.3.14-25	Late collision counter	7.3.14		M	
4.3.14-26	FrameTooLongs	7.3.14		M	
4.3.14-27	Buffer overflows on receive	7.3.14		M	
4.3.14-28	Buffer overflows on transmit	7.3.14		M	
4.3.14-29	Single collision frame counter	7.3.14		M	
4.3.14-30	Multiple collisions frame counter	7.3.14		M	
4.3.14-31	SQE counter	7.3.14		M	
4.3.14-32	Deferred transmission counter	7.3.14		M	
4.3.14-33	Internal MAC transmit error counter	7.3.14		M	
4.3.14-34	Carrier sense error counter	7.3.14		M	
4.3.14-35	Alignment error counter	7.3.14		M	
4.3.14-36	Internal MAC receive error counter	7.3.14		M	

VII.5.4.3.15 CES physical interface monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.15-1	Managed entity id	7.3.15		M	
4.3.15-2	Interval end time	7.3.15		M	
4.3.15-3	Threshold $data_{B\text{-}PON}$ id	7.3.15		M	
4.3.15-4	Errored seconds	7.3.15		M	
4.3.15-5	Severely errored seconds	7.3.15		M	
4.3.15-6	Bursty errored seconds	7.3.15		O	
4.3.15-7	Unavailable seconds	7.3.15		M	
4.3.15-8	Controlled slip seconds	7.3.15		M	
	Actions				
4.3.15-9	Create	7.3.15		M	
4.3.15-10	Delete	7.3.15		M	
4.3.15-11	Get	7.3.15		M	
4.3.15-12	Set	7.3.15		M	
4.3.15-13	Get current data	7.3.15		O	
	Notifications – TCAs	7.3.15			
4.3.15-14	ES	7.3.15		M	
4.3.15-15	SES	7.3.15		M	
4.3.15-16	BES	7.3.15		O	
4.3.15-17	UAS	7.3.15		M	
4.3.15-18	CSS	7.3.15		M	

VII.5.4.3.16 TC adapter protocol monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.16-1	Managed entity id	7.3.16		M	
4.3.16-2	Interval end time	7.3.16		M	
4.3.16-3	Threshold $data_{B\text{-}PON}$ id	7.3.16		M	
4.3.16-4	Discarded cells due to HEC violations	7.3.16		M	
4.3.16-5	Errored cells due to HEC violations	7.3.16		M	
	Actions				
4.3.16-6	Create	7.3.16		M	
4.3.16-7	Delete	7.3.16		M	
4.3.16-8	Get	7.3.16		M	
4.3.16-9	Set	7.3.16		M	
4.3.16-10	Get current data	7.3.16		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.16-11	Discarded cells due to HEC violations	7.3.16		M	
4.3.16-12	Errored cells due to HEC violations	7.3.16		M	

VII.5.4.3.17 Threshold data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.17-1	Multistep create per I.1.6/G.983.2	7.3.17		M	
	Attributes				
4.3.17-2	Managed entity id	7.3.17		M	
4.3.17-3	Threshold value 1	7.3.17		M	
4.3.17-4	Threshold value 2	7.3.17		M	
4.3.17-5	Threshold value 3	7.3.17		M	
4.3.17-6	Threshold value 4	7.3.17		M	
4.3.17-7	Threshold value 5	7.3.17		M	
4.3.17-8	Threshold value 6	7.3.17		M	
4.3.17-9	Threshold value 7	7.3.17		M	
4.3.17-10	Threshold value 8	7.3.17		M	
4.3.17-11	Threshold value 9	7.3.17		M	
4.3.17-12	Threshold value 10	7.3.17		M	
4.3.17-13	Threshold value 11	7.3.17		M	
4.3.17-14	Threshold value 12	7.3.17		M	
4.3.17-15	Threshold value 13	7.3.17		M	
4.3.17-16	Threshold value 14	7.3.17		M	
	Actions				
4.3.17-17	Create	7.3.17		M	
4.3.17-18	Delete	7.3.17		M	
4.3.17-19	Get	7.3.17		M	
4.3.17-20	Set	7.3.17		M	

VII.5.4.3.18 AAL 2 profile$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.18-1	Managed entity id	7.3.18		M	
4.3.18-2	SSCSParameterProfile1Ptr	7.3.18		M	
4.3.18-3	SSCSParameterProfile2Ptr	7.3.18		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.18-4	Create	7.3.18		M	
4.3.18-5	Delete	7.3.18		M	
4.3.18-6	Get	7.3.18		M	

VII.5.4.3.19 AAL 2 PVC profile$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.19-1	Managed entity id	7.3.19		M	
4.3.19-2	AppId	7.3.19		M	
4.3.19-3	MaximumNumChan	7.3.19		M	
4.3.19-4	MinimumChanIdVal	7.3.19		M	
4.3.19-5	MaximumChanIdVal	7.3.19		M	
4.3.19-6	MaxCPS_SDULen	7.3.19		M	
4.3.19-7	TimerCULen	7.3.19		M	
	Actions				
4.3.19-8	Create	7.3.19		M	
4.3.19-9	Delete	7.3.19		M	
4.3.19-10	Get	7.3.19		M	

VII.5.4.3.20 AAL 2 CPS protocol monitoring history data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.20-1	Managed entity id	7.3.20		M	
4.3.20-2	Interval end time	7.3.20		M	
4.3.20-3	Threshold data$_{B\text{-}PON}$ id	7.3.20		M	
4.3.20-4	CPSInPkts	7.3.20		M	
4.3.20-5	CPSOutPkts	7.3.20		M	
4.3.20-6	ParityErrors	7.3.20		M	
4.3.20-7	SeqNumErrors	7.3.20		M	
4.3.20-8	CPS_OSFMismatchErrors	7.3.20		M	
4.3.20-9	CPS_OSFErrors	7.3.20		M	
4.3.20-10	CPS_HECErrors	7.3.20		M	
4.3.20-11	OversizedSDUErrors	7.3.20		M	
4.3.20-12	ReassemblyErrors	7.3.20		M	
4.3.20-13	HECOverlapErrors	7.3.20		M	
4.3.20-14	UUIErrors	7.3.20		M	
4.3.20-15	CIDErrors	7.3.20		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.20-16	Create	7.3.20		M	
4.3.20-17	Delete	7.3.20		M	
4.3.20-18	Get	7.3.20		M	
4.3.20-19	Set	7.3.20		M	
4.3.20-20	Get current data	7.3.20		O	
	Notifications – TCAs				
4.3.20-21	ParityErrors	7.3.20		M	
4.3.20-22	SeqNumErrors	7.3.20		M	
4.3.20-23	CPS_OSFMismatchErrors	7.3.20		M	
4.3.20-24	CPS_OSFErrors	7.3.20		M	
4.3.20-25	CPS_HECErrors	7.3.20		M	
4.3.20-26	OversizedSDUErrors	7.3.20		M	
4.3.20-27	ReassemblyErrors	7.3.20		M	
4.3.20-28	HECOverlapErrors	7.3.20		M	
4.3.20-29	UUIErrors	7.3.20		M	
4.3.20-30	CIDErrors	7.3.20		M	

VII.5.4.3.21 AAL 2 SSCS protocol monitoring history data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.21-1	Managed entity id	7.3.21		M	
4.3.21-2	Interval end time	7.3.21		M	
4.3.21-3	Threshold data$_{B\text{-}PON}$ id	7.3.21		M	
4.3.21-4	OversizedSSSARSDU errors	7.3.21		CR	
4.3.21-5	RASTimerExpiry errors	7.3.21		CR	
4.3.21-6	UndersizedSSTEDPDUErrors	7.3.21		CR	
4.3.21-7	PDULengthMismatch Errors	7.3.21		CR	
4.3.21-8	CRCMismatchErrors	7.3.21		CR	
	Actions				
4.3.21-9	Create	7.3.21		M	
4.3.21-10	Delete	7.3.21		M	
4.3.21-11	Get	7.3.21		M	
4.3.21-12	Set	7.3.21		M	
4.3.21-13	Get current data	7.3.21		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.21-14	OversizedSSSARSDUErrors	7.3.21		CR	
4.3.21-15	RASTimerExpiryErrors	7.3.21		CR	
4.3.21-16	UndersizedSSTEDPDUErrors	7.3.21		CR	
4.3.21-17	PDULengthMismatchErrors	7.3.21		CR	
4.3.21-18	CRCMismatchErrors	7.3.21		CR	

VII.5.4.3.22 AAL 2 SSCS parameter profile1

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.22-1	Managed Entity id	7.3.22		M	
4.3.22-2	SegmentLength	7.3.22		M	
4.3.22-3	RASTimer	7.3.22		M	
4.3.22-4	MaxSSSARSDULen	7.3.22		M	
4.3.22-5	SSTEDInd	7.3.22		M	
4.3.22-6	SSADTInd	7.3.22		M	
	Actions				
4.3.22-7	Create	7.3.22		M	
4.3.22-8	Delete	7.3.22		M	
4.3.22-9	Get	7.3.22		M	

VII.5.4.3.23 AAL 2 SSCS parameter profile2

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.23-1	Managed entity id	7.3.23		M	
4.3.23-2	ServiceCatType	7.3.23		M	
4.3.23-3	0x01 Audio	7.3.23			
4.3.23-4	0x02 Multirate	7.3.23			
4.3.23-5	EncSrcType	7.3.23		M	
4.3.23-6	0x01 ITU-T	7.3.23			
4.3.23-7	0x02 ATM Forum	7.3.23			
4.3.23-8	EncProfileIndex	7.3.23	See below	M	
4.3.23-9	AudioServInd	7.3.23		M	
4.3.23-10	PCMEncType	7.3.23		M	
4.3.23-11	0x01 mu law	7.3.23			
4.3.23-12	0x02 alpha law	7.3.23			
4.3.23-13	CMDataInd	7.3.23		M	
4.3.23-14	CMMultiplierNum	7.3.23		M	
4.3.23-15	FMDataInd	7.3.23		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.23-16	FMMaxFrameLen	7.3.23		M	
4.3.23-17	CASInd	7.3.23		M	
4.3.23-18	DTMFInd	7.3.23		M	
4.3.23-19	MFR1Ind	7.3.23		M	
4.3.23-20	MFR2Ind	7.3.23		M	
4.3.23-21	RateControlInd	7.3.23		M	
4.3.23-22	SynchChangeInd	7.3.23		M	
4.3.23-23	FaxDemodulationInd	7.3.23		M	
	Actions	7.3.23			
4.3.23-24	Create	7.3.23		M	
4.3.23-25	Delete	7.3.23		M	
4.3.23-26	Get	7.3.23		M	
	EncProfileIndex				
4.3.23-27	PCM-64	I.366.2	EncSrcType = ITU-T predefined		
4.3.23-28	PCM-64 and silence	I.366.2			
4.3.23-29	ADPCM and silence	I.366.2			
4.3.23-30	G.728 with higher efficiency	I.366.2			
4.3.23-31	G.728 with lower delay	I.366.2			
4.3.23-32	G.729 with higher efficiency and G.726 for voiceband data	I.366.2			
4.3.23-33	G.729 with lower delay	I.366.2			
4.3.23-34	G.729 with lower delay and G.726-32 for voiceband data at lower rates.	I.366.2			
4.3.23-35	G.729 with lower delay and G.726-40 for voiceband data at higher rates.	I.366.2			
4.3.23-36	G.729 with full variable bit rates	I.366.2			
4.3.23-37	AMR	I.366.2			
4.3.23-38	G.723	I.366.2			
4.3.23-39	PCM 64 kbits/s and ADPCM 32 kbits/s	I.366.2			
4.3.23-40	LPC-10 (high efficiency)	af-vtoa-0113.000	EncSrcType = ATM Forum predefined		
4.3.23-41	LPC-10 (low delay)	af-vtoa-0113.000			
4.3.23-42	CVSD-32	af-vtoa-0113.000			

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.23-43	CVSD-16	af-vtoa-0113.000			
4.3.23-44	CVSD-12	af-vtoa-0113.000			
4.3.23-45	G.723.1	af-vtoa-0113.000			
4.3.23-46	PCM-64, ADPCM-32, 44 octet packets, and silence.	af-vmoa-0145.000			
4.3.23-47	PCM-64, 44 octet packets, and silence.	af-vmoa-0145.000			
4.3.23-48	PCM-64, 44 octet packets, without silence.	af-vmoa-0145.000			
4.3.23-49	PCM-64 and ADPCM-32, 44 octet packets, without silence.	af-vmoa-0145.000			
4.3.23-50	PCM-64, ADPCM-32, 40 octet packets, without silence.	af-vmoa-0145.000			
4.3.23-51	PCM-64, ADPCM-32, 40 octet packets, with silence.	af-vmoa-0145.000			

VII.5.4.3.24 Voice service profile AAL

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.24-1	Managed Entity id	7.3.24		M	
4.3.24-2	AnnouncementType	7.3.24		M	
4.3.24-3	0x01 silence	7.3.24			
4.3.24-4	0x02 reorderTone	7.3.24			
4.3.24-5	0x03 fastBusy	7.3.24			
4.3.24-6	0x04 voiceAnnouncement	7.3.24			
4.3.24-7	0xFF N/A	7.3.24			
4.3.24-8	JitterTarget	7.3.24	For AAL 2	CR	
4.3.24-9	JitterBufferMax	7.3.24	For AAL 2	CR	
4.3.24-10	EchoCancelInd	7.3.24		M	
4.3.24-11	PSTNProtocolVariant	7.3.24		O	
	Actions				
4.3.24-12	Create	7.3.24		M	
4.3.24-13	Delete	7.3.24		M	
4.3.24-14	Get	7.3.24		M	
4.3.24-15	Set	7.3.24		M	

VII.5.4.3.25 LES service profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.25-1	Managed entity id	7.3.25		M	
4.3.25-2	ELCPInd	7.3.25		M	
4.3.25-3	POTSSignalling	7.3.25		M	
4.3.25-4	0x01 CCS	7.3.25			
4.3.25-5	0x02 CAS	7.3.25			
4.3.25-6	0xFF other	7.3.25			
4.3.25-7	BRISignalling	7.3.25		M	
4.3.25-8	0x01 DSS1	7.3.25			
4.3.25-9	0xFF other	7.3.25			
4.3.25-10	MaxNumCIDs	7.3.25		M	
4.3.25-11	MaxPacketLength	7.3.25		M	
	Actions				
4.3.25-12	Create	7.3.25		M	
4.3.25-13	Delete	7.3.25		M	
4.3.25-14	Get	7.3.25		M	

VII.5.4.3.26 Physical path termination point POTS UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.26-1	Automatically created/deleted by ONT upon creation/deletion of POTS circuit pack (formerly subscriber line card)	7.3.26		M	
	Attributes				
4.3.26-2	Managed entity id	7.3.26		M	
4.3.26-3	Administrative state	7.3.26		M	
4.3.26-4	Interworking VCC pointer	7.3.26		O	
4.3.26-5	ARC	7.3.26		O	
4.3.26-6	ARCInterval	7.3.26		O	
4.3.26-7	Impedance	7.3.26		O	
4.3.26-8	Transmission path	7.3.26		O	
4.3.26-9	Rx gain	7.3.26		O	
4.3.26-10	Tx gain	7.3.26		O	
4.3.26-10a	Operational State	7.3.26		O	
4.3.26-10b	Hook State	7.3.26		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.26-11	Get	7.3.26		M	
4.3.26-12	Set	7.3.26		M	
4.3.26-13	Test	7.3.26		M	
	Notifications – AVCs				
4.3.26-14	ARC expiration	7.3.26		CR	

VII.5.4.3.27 Voice CTP

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.27-1	Managed entity id	7.3.27		M	
4.3.27-2	InterworkingVCCTPPtr	7.3.27		M	
4.3.27-3	InterworkingPPTPPtr	7.3.27		M	
4.3.27-4	ChannelId	7.3.27	For voice over AAL 2	CR	
4.3.27-5	SignallingCode	7.3.27		M	
4.3.27-6	0x01 loop start	7.3.27			
4.3.27-7	0x02 ground start	7.3.27			
4.3.27-8	0x03 loop reverse battery	7.3.27			
4.3.27-9	0x04 coin first	7.3.27			
4.3.27-10	0x05 dial tone first	7.3.27			
4.3.27-11	0x06 multi-party	7.3.27			
4.3.27-12	RobbedBitSignalling	7.3.27		M	
4.3.27-13	0x01 a	7.3.27			
4.3.27-14	0x02 ab	7.3.27			
4.3.27-15	0x03 abcd	7.3.27			
4.3.27-16	0x04 transparent	7.3.27			
4.3.27-17	0xFF other	7.3.27			
4.3.27-18	SilenceSuppressionInd	7.3.27		M	
4.3.27-19	VoiceCompressionType	7.3.27		M	
4.3.27-20	0x01 PCM-64	7.3.27			
4.3.27-21	0x02 ADPCM-32	7.3.27			
4.3.27-22	0x03 LD-CELP16	7.3.27			
4.3.27-23	0x04 CS-ACELP8	7.3.27			
4.3.27-24	0xFF unknown	7.3.27			
	Actions				
4.3.27-25	Create	7.3.27		M	
4.3.27-26	Delete	7.3.27		M	
4.3.27-27	Get	7.3.27		M	

VII.5.4.3.28 Voice PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.28-1	Managed entity id	7.3.28		M	
4.3.28-2	Interval end time	7.3.28		M	
4.3.28-3	Threshold data$_{\text{B-PON}}$ id	7.3.28		M	
4.3.28-4	VoicePortBufferOverflows	7.3.28		M	
4.3.28-5	VoicePortBufferUnderflows	7.3.28		M	
4.3.28-6	ActiveSeconds	7.3.28		M	
4.3.28-7	DchannelBufferOverflows	7.3.28	For BRI	CR	
4.3.28-8	B1ChannelBufferOverflows	7.3.28	…	CR	
4.3.28-9	B2ChannelBufferOverflows	7.3.28		CR	
4.3.28-10	DchannelBufferUnderflows	7.3.28		CR	
4.3.28-11	B1ChannelBufferUnderflows	7.3.28		CR	
4.3.28-12	B2ChannelBufferUnderflows	7.3.28		CR	
4.3.28-13	DchannelActiveSeconds	7.3.28		CR	
4.3.28-14	B1ChannelActiveSeconds	7.3.28		CR	
4.3.28-15	B2ChannelActiveSeconds	7.3.28	For BRI	CR	
	Actions				
4.3.28-16	Create	7.3.28		M	
4.3.28-17	Delete	7.3.28		M	
4.3.28-18	Get	7.3.28		M	
4.3.28-19	Set	7.3.28		M	
4.3.28-20	Get current data	7.3.28		O	
	Notifications – TCAs				
4.3.28-21	VoicePortBufferOverflows	7.3.28		M	
4.3.28-22	VoicePortBufferUnderflows	7.3.28		M	
4.3.28-23	B1ChannelBufferOverflows	7.3.28		CR	
4.3.28-24	B2ChannelBufferOverflows	7.3.28		CR	
4.3.28-25	DchannelBufferUnderflows	7.3.28		CR	
4.3.28-26	B1ChannelBufferUnderflows	7.3.28		CR	
4.3.28-27	B2ChannelBufferUnderflows	7.3.28		CR	

VII.5.4.3.29 MAC bridge service profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.29-1	Managed entity id	7.3.29		M	
4.3.29-2	SpanningTreeInd	7.3.29		M	
4.3.29-3	LearningInd	7.3.29		M	
4.3.29-4	ATMPortBridgingInd	7.3.29		M	
4.3.29-5	Priority	7.3.29		M	
4.3.29-6	MaxAge	7.3.29		M	
4.3.29-7	HelloTime	7.3.29		M	
4.3.29-8	ForwardDelay	7.3.29		M	
4.3.29-8a	Unknown MAC address discard	7.3.29		O	
	Actions				
4.3.29-9	Create	7.3.29		M	
4.3.29-10	Delete	7.3.29		M	
4.3.29-11	Get	7.3.29		M	
4.3.29-12	Set	7.3.29		M	

VII.5.4.3.30 MAC bridge configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.30-1	Created/deleted by ONT upon creation/deletion of MACBridgeServiceProfile	7.3.30		M	
	Attributes				
4.3.30-2	Managed entity id	7.3.30		M	
4.3.30-3	BridgeMACAddress	7.3.30		M	
4.3.30-4	BridgePriority	7.3.30		M	
4.3.30-5	DesignatedRoot	7.3.30		M	
4.3.30-6	RootPathCost	7.3.30		M	
4.3.30-7	BridgePortCount	7.3.30		M	
4.3.30-8	RootPortNum	7.3.30		M	
4.3.30-9	HelloTime	7.3.30		O	
4.3.30-10	ForwardDelay	7.3.30		O	
	Actions				
4.3.30-11	Get	7.3.30		M	
4.3.30-12	Set	7.3.30		M	

VII.5.4.3.31 MAC bridge port configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.31-1	Managed entity id	7.3.31		M	
4.3.31-2	BridgeIdPointer	7.3.31		M	
4.3.31-3	PortNum	7.3.31		M	
4.3.31-4	TPType	7.3.31		M	
4.3.31-5	TPPointer	7.3.31		M	
4.3.31-6	PortPriority	7.3.31		M	
4.3.31-7	PortPathCost	7.3.31		M	
4.3.31-8	PortSpanningTreeInd	7.3.31		M	
4.3.31-9	EncapsulationMethod	7.3.31		M	
4.3.31-10	LANFCSInd	7.3.31		O	
4.3.31-10a	PortMACAddress	7.3.31		O	
	Actions				
4.3.31-11	Create	7.3.31		M	
4.3.31-12	Delete	7.3.31		M	
4.3.31-13	Get	7.3.31		M	
4.3.31-14	Set	7.3.31		M	

VII.5.4.3.32 MAC bridge port designation data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.32-1	Created/ deleted by ONU upon creation/ deletion of MACBridgePortConfigurationData	7.3.32		M	
	Attributes				
4.3.32-2	Managed entity id	7.3.32		M	
4.3.32-3	DesignatedBridgeRootCostPort	7.3.32		M	
4.3.32-4	PortState	7.3.32		M	
	Actions				
4.3.32-5	Get	7.3.32		M	

VII.5.4.3.33 MAC bridge port filter table data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.33-1	Created/deleted by ONT upon creation/deletion of MAC bridge port configuration data ME	7.3.33		M	
	Attributes				
4.3.33-2	Managed entity id	7.3.33		M	
4.3.33-3	MACFilterTable	7.3.33		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.33-4	Get	7.3.33		M	
4.3.33-5	Get next	7.3.33		M	
4.3.33-6	Set	7.3.33		M	

VII.5.4.3.34 MAC bridge port bridge table data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.34-1	Created/deleted by ONT upon creation/deletion of MAC bridge port configuration data ME	7.3.34		M	
	Attributes				
4.3.34-2	Managed entity id	7.3.34		M	
4.3.34-3	BridgeTable	7.3.34		M	
	Actions				
4.3.34-4	Get	7.3.34		M	
4.3.34-5	Get next	7.3.34		M	

VII.5.4.3.35 MAC bridge PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.35-1	Managed entity id	7.3.35		M	
4.3.35-2	Interval end time	7.3.35		M	
4.3.35-3	Threshold $Data_{B\text{-}PON}$ id	7.3.35		M	
4.3.35-4	BridgeLearningEntryDiscardCount	7.3.35		M	
	Actions				
4.3.35-5	Create	7.3.35		M	
4.3.35-6	Delete	7.3.35		M	
4.3.35-7	Get	7.3.35		M	
4.3.35-8	Set	7.3.35		M	
4.3.35-9	Get current data	7.3.35		O	
	Notifications – TCA				
4.3.35-10	BridgeLearningEntryDiscard	7.3.35		M	

VII.5.4.3.36 MAC bridge port PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.36-1	Managed entity id	7.3.36		M	
4.3.36-2	Interval end time	7.3.36		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.36-3	Threshold $Data_{B\text{-}PON}$ id	7.3.36		M	
4.3.36-4	ForwardedFrameCounter	7.3.36		M	
4.3.36-5	DelayExceededDiscardCounter	7.3.36		M	
4.3.36-6	MTUExceededDiscardCounter	7.3.36		M	
4.3.36-7	ReceivedFrameCounter	7.3.36		M	
4.3.36-8	ReceivedAndDiscardedCounter	7.3.36		M	
	Actions				
4.3.36-9	Create	7.3.36		M	
4.3.36-10	Delete	7.3.36		M	
4.3.36-11	Get	7.3.36		M	
4.3.36-12	Set	7.3.36		M	
4.3.36-13	Get current data	7.3.36		O	
	Notifications – TCAs				
4.3.36-14	DelayExceededDiscard	7.3.36		M	
4.3.36-15	MTUExceededDiscard	7.3.36		M	
4.3.36-16	ReceivedAndDiscarded	7.3.36		M	

VII.5.4.3.37 IP port configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.37-1	Managed entity id	7.3.37		M	
4.3.37-2	PortNum	7.3.37		M	
4.3.37-3	TPType	7.3.37		M	
4.3.37-4	TPPointer	7.3.37		M	
4.3.37-5	PortAddress	7.3.37		M	
4.3.37-6	PortMask	7.3.37		M	
4.3.37-7	Unnumbered	7.3.37		M	
4.3.37-8	AdministrativeState	7.3.37		M	
4.3.37-9	PortState	7.3.37		M	
4.3.37-10	AllowRemoteAccess	7.3.37		M	
4.3.37-11	Router Id Pointer	7.3.37		M	
4.3.37-12	ARP Pointer	7.3.37		M	
4.3.37-13	EncapsulationMethod	7.3.37		M	
	Actions				
4.3.37-14	Create	7.3.37		M	
4.3.37-15	Delete	7.3.37		M	
4.3.37-16	Get	7.3.37		M	
4.3.37-17	Set	7.3.37		M	

VII.5.4.3.38 IP router service profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.38-1	Managed entity id	7.3.38		M	
4.3.38-2	ForwardingInd	7.3.38		M	
4.3.38-3	ProxyARPInd	7.3.38		M	
4.3.38-4	DirectedBroadcastInd	7.3.38		M	
4.3.38-5	UpstreamMulticast Filtering	7.3.38		M	
4.3.38-6	DownstreamMulticast Filtering	7.3.38		M	
	Actions				
4.3.38-7	Create	7.3.38		M	
4.3.38-8	Delete	7.3.38		M	
4.3.38-9	Get	7.3.38		M	
4.3.38-10	Set	7.3.38		M	

VII.5.4.3.39 IP router configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.39-1	Created/deleted by ONU upon creation/deletion of IP Router Service Profile	7.3.39		M	
	Attributes				
4.3.39-2	Managed entity id	7.3.39		M	
4.3.39-3	IpReasmTimeout	7.3.39		M	
	Actions				
4.3.39-4	Get	7.3.39		M	

VII.5.4.3.40 IP router PM history data 1

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.40-1	Managed entity id	7.3.40		M	
4.3.40-2	Interval End Time	7.3.40		M	
4.3.40-3	Threshold $Data_{B\text{-}PON}$ id	7.3.40		M	
4.3.40-4	IpInReceivesCounter	7.3.40		M	
4.3.40-5	IpInHdrErrorsCounter	7.3.40		M	
4.3.40-6	IpInAddrErrorsCounter	7.3.40		M	
4.3.40-7	IpForwPacketsCounter	7.3.40		M	
4.3.40-8	IpInUnknownProtos Counter	7.3.40		M	
4.3.40-9	IpInDiscardsCounter	7.3.40		M	
4.3.40-10	IpInDeliversCounter	7.3.40		M	
4.3.40-11	IpOutRequestsCounter	7.3.40		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.40-12	IpOutDiscardsCounter	7.3.40		M	
4.3.40-13	IpOutNoRoutesCounter	7.3.40		M	
	Actions				
4.3.40-14	Create	7.3.40		M	
4.3.40-15	Delete	7.3.40		M	
4.3.40-16	Get	7.3.40		M	
4.3.40-17	Set	7.3.40		M	
4.3.40-18	Get current data	7.3.40		O	
	Notifications – TCAs				
4.3.40-19	IpInReceives	7.3.40		M	
4.3.40-20	IpInHdr	7.3.40		M	
4.3.40-21	IpInAddr	7.3.40		M	
4.3.40-22	IpForwPackets	7.3.40		M	
4.3.40-23	IpInUnknownProtos	7.3.40		M	
4.3.40-24	IpInDiscards	7.3.40		M	
4.3.40-25	IpInDelivers	7.3.40		M	
4.3.40-26	IpOutRequests	7.3.40		M	
4.3.40-27	IpOutDiscards	7.3.40		M	
4.3.40-28	IpOutNoRoutes	7.3.40		M	

VII.5.4.3.41 IP router PM history data 2

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.41-1	Managed entity id	7.3.41		M	
4.3.41-2	Interval End Time	7.3.41		M	
4.3.41-3	Threshold $Data_{B\text{-}PON}$ id	7.3.41		M	
4.3.41-4	IpReasmReqdsCounter	7.3.41		M	
4.3.41-5	IpReasmOKsCounter	7.3.41		M	
4.3.41-6	IpReasmFailsCounter	7.3.41		M	
4.3.41-7	IpFragOKsCounter	7.3.41		M	
4.3.41-8	IpFragFailsCounter	7.3.41		M	
4.3.41-9	IpFragCreatesCounter	7.3.41		M	
	Actions				
4.3.41-10	Create	7.3.41		M	
4.3.41-11	Delete	7.3.41		M	
4.3.41-12	Get	7.3.41		M	
4.3.41-13	Set	7.3.41		M	
4.3.41-14	Get current data	7.3.41		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.41-15	IpReasmReqds	7.3.41		M	
4.3.41-16	IpReasmOKs	7.3.41		M	
4.3.41-17	IpReasmFails	7.3.41		M	
4.3.41-18	IpFragOKs	7.3.41		M	
4.3.41-19	IpFragFails	7.3.41		M	
4.3.41-20	IpFragCreates	7.3.41		M	

VII.5.4.3.42 ICMP PM history data 1

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.42-1	Managed entity id	7.3.42		M	
4.3.42-2	Interval End Time	7.3.42		M	
4.3.42-3	Threshold $Data_{B\text{-}PON}$ id	7.3.42		M	
4.3.42-4	IcmpInMsgsCounter	7.3.42		M	
4.3.42-5	IcmpInErrorsCounter	7.3.42		M	
4.3.42-6	IcmpInDestUnreachsCounter	7.3.42		M	
4.3.42-7	IcmpInTimeExcdsCounter	7.3.42		M	
4.3.42-8	IcmpInParmProbsCounter	7.3.42		M	
4.3.42-9	IcmpInSrcQuenchsCounter	7.3.42		M	
4.3.42-10	IcmpInRedirectsCounter	7.3.42		M	
4.3.42-11	IcmpInEchosCounter	7.3.42		M	
4.3.42-12	IcmpInEchoRepsCounter	7.3.42		M	
4.3.42-13	IcmpInTimestampsCounter	7.3.42		M	
4.3.42-14	IcmpInTimestampRepsCounter	7.3.42		M	
4.3.42-15	IcmpInAddrMasksCounter	7.3.42		M	
4.3.42-16	IcmpInAddrMaskRepsCounter	7.3.42		M	
	Actions				
4.3.42-17	Create	7.3.42		M	
4.3.42-18	Delete	7.3.42		M	
4.3.42-19	Get	7.3.42		M	
4.3.42-20	Set	7.3.42		M	
4.3.42-21	Get current data	7.3.42		O	
	Notifications – TCAs				
4.3.42-22	IcmpInMsgs	7.3.42		M	
4.3.42-23	IcmpInErrors	7.3.42		M	
4.3.42-24	IcmpInDestUnreachs	7.3.42		M	
4.3.42-25	IcmpInTimeExcds	7.3.42		M	
4.3.42-26	IcmpInParmProbs	7.3.42		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.42-27	IcmpInSrcQuenchs	7.3.42		M	
4.3.42-28	IcmpInRedirects	7.3.42		M	
4.3.42-29	IcmpInEchos	7.3.42		M	
4.3.42-30	IcmpInTimestamps	7.3.42		M	
4.3.42-31	IcmpInTimestampReps	7.3.42		M	
4.3.42-32	IcmpInAddrMasks	7.3.42		M	
4.3.42-33	IcmpInAddrMaskReps	7.3.42		M	

VII.5.4.3.43 ICMP PM history data 2

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.43-1	Managed entity id	7.3.43		M	
4.3.43-2	Interval End Time	7.3.43		M	
4.3.43-3	Threshold $Data_{B\text{-}PON}$ id	7.3.43		M	
4.3.43-4	IcmpOutMsgsCounter	7.3.43		M	
4.3.43-5	IcmpOutErrorsCounter	7.3.43		M	
4.3.43-6	IcmpOutDestUnreachsCounter	7.3.43		M	
4.3.43-7	IcmpOutTimeExcdsCounter	7.3.43		M	
4.3.43-8	IcmpOutParmProbsCounter	7.3.43		M	
4.3.43-9	IcmpOutSrcQuenchsCounter	7.3.43		M	
4.3.43-10	IcmpOutRedirectsCounter	7.3.43		M	
4.3.43-11	IcmpOutEchosCounter	7.3.43		M	
4.3.43-12	IcmpOutEchoRepsCounter	7.3.43		M	
4.3.43-13	IcmpOutTimestampsCounter	7.3.43		M	
4.3.43-14	IcmpOutTimestampRepsCounter	7.3.43		M	
4.3.43-15	IcmpOutAddrMasksCounter	7.3.43		M	
4.3.43-16	IcmpOutAddrMaskRepsCounter	7.3.43		M	
	Actions				
4.3.43-17	Create	7.3.43		M	
4.3.43-18	Delete	7.3.43		M	
4.3.43-19	Get	7.3.43		M	
4.3.43-20	Set	7.3.43		M	
4.3.43-21	Get current data	7.3.43		O	
	Notifications – TCAs				
4.3.43-22	IcmpOutMsgs	7.3.43		M	
4.3.43-23	IcmpOutErrors	7.3.43		M	
4.3.43-24	IcmpOutDestUnreachs	7.3.43		M	
4.3.43-25	IcmpOutTimeExcds	7.3.43		M	
4.3.43-26	IcmpOutParmProbs	7.3.43		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.43-27	IcmpOutSrcQuenchs	7.3.43		M	
4.3.43-28	IcmpOutRedirects	7.3.43		M	
4.3.43-29	IcmpOutEchos	7.3.43		M	
4.3.43-30	IcmpOutTimestamps	7.3.43		M	
4.3.43-31	IcmpOutTimestampReps	7.3.43		M	
4.3.43-32	IcmpOutAddrMasks	7.3.43		M	
4.3.43-33	IcmpOutAddrMaskReps	7.3.43		M	

VII.5.4.3.44 IP route table

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.44-1	Created/deleted by ONU upon creation/ deletion of IP router service profile ME	7.3.44		M	
	Attributes				
4.3.44-2	Managed entity id	7.3.44		M	
4.3.44-3	IpRouteNumber	7.3.44		M	
4.3.44-4	IpRouteTableMaxSize	7.3.44		M	
4.3.44-5	IpRouteTable	7.3.44		M	
	Actions				
4.3.44-6	Get	7.3.44		M	
4.3.44-7	Get next	7.3.44		M	

VII.5.4.3.45 IP static routes

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.45-1	Created/deleted by ONU upon creation/ deletion of IP router service profile ME	7.3.45		M	
	Attributes				
4.3.45-2	Managed entity id	7.3.45		M	
4.3.45-3	IpStaticRouteTableMaxSize	7.3.45		M	
4.3.45-4	IpStaticRouteTable	7.3.45		M	
	Actions				
4.3.45-5	Get	7.3.45		M	
4.3.45-6	Set	7.3.45		M	
4.3.45-7	Get next	7.3.45		M	

VII.5.4.3.46 ARP service profile

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.46-1	Created/deleted by ONU upon creation/ deletion of IPPortConfigurationData ME	7.3.46		M	
	Attributes				
4.3.46-2	Managed entity id	7.3.46		M	
4.3.46-3	ARP Timer	7.3.46		M	
4.3.46-4	ARP Cache Clear	7.3.46		M	
	Actions				
4.3.46-5	Create	7.3.46		M	
4.3.46-6	Delete	7.3.46		M	
4.3.46-7	Get	7.3.46		M	
4.3.46-8	Set	7.3.46		M	

VII.5.4.3.47 ARP configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.47-1	Created/deleted by ONU upon creation/ deletion of ARP service profile ME	7.3.47		M	
	Attributes				
4.3.47-2	Managed entity id	7.3.47		M	
4.3.47-3	ARPTableMaxSize	7.3.47		M	
4.3.47-4	ARP Table	7.3.47		M	
	Actions				
4.3.47-5	Get	7.3.47		M	
4.3.47-6	Get next	7.3.47		M	

VII.5.4.3.48 Physical path termination point ISDN UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.48-1	Automatically created/deleted by ONT upon creation/deletion of an ISDN circuit pack (formerly subscriber line card)	7.3.48		M	
	Attributes	7.3.48			
4.3.48-2	Managed entity id	7.3.48		M	
4.3.48-3	Administrative state	7.3.48		M	
4.3.48-4	Interworking VCC pointer	7.3.48		O	
4.3.48-5	DchannelID	7.3.48		M	
4.3.48-6	B1ChannelID	7.3.48		M	
4.3.48-7	B2ChannelID	7.3.48		M	
4.3.48-8	ARC	7.3.48		O	
4.3.48-9	ARCInterval	7.3.48		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.48-10	ISDN loopback configuration	7.3.48		M	
	Actions				
4.3.48-11	Get	7.3.48		M	
4.3.48-12	Set	7.3.48		M	
4.3.48-13	Test	7.3.48		M	
	Notifications – AVCs				
4.3.48-13a	ARC Expiration	7.3.48		CR	
	Notifications – Alarms				
4.3.48-14	AIS	7.3.48		M	
4.3.48-15	RDI	7.3.48		M	

VII.5.4.3.49 VLAN tagging operation configuration data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.49-1	Managed entity id	7.3.49		M	
4.3.49-2	Upstream VLAN tagging operation mode	7.3.49		M	
4.3.49-3	Upstream VLAN tag TCI value	7.3.49		M	
4.3.49-4	Downstream VLAN tagging operation mode	7.3.49		M	
	Actions				
4.3.49-5	Create	7.3.49		M	
4.3.49-6	Delete	7.3.49		M	
4.3.49-7	Get	7.3.49		M	
4.3.49-8	Set	7.3.49		M	

VII.5.4.3.50 VLAN tagging filter data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.50-1	Managed entity id	7.3.50		M	
4.3.50-2	VLAN filter table	7.3.50		M	
4.3.50-3	Forward operation	7.3.50	See below	M	
4.3.50-4	NumberOfEntries	7.3.50		M	
	Actions				
4.3.50-5	Create	7.3.50		M	
4.3.50-6	Delete	7.3.50		M	
4.3.50-7	Get	7.3.50		M	
4.3.50-8	Set	7.3.50		M	

Values of "Forward Operation" attribute. Actions are described in 7.3.50.

Item	Parameter			Reference	Value, comment	Conf
	Value	Type of received frame				
		Tagged	Untagged			
4.3.50-9	0x00	Action a	Action a	7.3.50		
4.3.50-10	0x01	Action c	Action a	7.3.50		
4.3.50-11	0x02	Action a	Action e	7.3.50		
4.3.50-12	0x03	Action f (VID investigation)	Action a	7.3.50		
4.3.50-13	0x04	Action f (VID investigation)	Action e	7.3.50		
4.3.50-14	0x05	Action g (VID investigation)	Action a	7.3.50		
4.3.50-15	0x06	Action g (VID investigation)	Action e	7.3.50		
4.3.50-16	0x07	Action f (user priority investigation)	Action a	7.3.50		
4.3.50-17	0x08	Action f (user priority investigation)	Action e	7.3.50		
4.3.50-18	0x09	Action g (user priority investigation)	Action a	7.3.50		
4.3.50-19	0x0A	Action g (user priority investigation)	Action e	7.3.50		
4.3.50-20	0x0B	Action f (TCI investigation)	Action a	7.3.50		
4.3.50-21	0x0C	Action f (TCI priority investigation)	Action e	7.3.50		
4.3.50-22	0x0D	Action g (TCI investigation)	Action a	7.3.50		
4.3.50-23	0x0E	Action g (TCI investigation)	Action e	7.3.50		

VII.5.4.3.51 MAC bridge port filter preassign table

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.51-1	Created/deleted by ONU after creation/deletion of Ethernet circuit pack (formerly subscriber line card) in which all groups of addresses are preassigned and stored in the card	7.3.51		M	
	Attributes				
4.3.51-2	Managed entity id	7.3.51		M	
4.3.51-3	IPv4MulticastFiltering	7.3.51		M	
4.3.51-4	IPv6MulticastFiltering	7.3.51		M	
4.3.51-5	IPv4BroadcastFiltering	7.3.51		M	
4.3.51-6	RARPFiltering	7.3.51		M	
4.3.51-7	IPXFiltering	7.3.51		M	
4.3.51-8	NetBEUIFiltering	7.3.51		M	
4.3.51-9	AppleTalkFiltering	7.3.51		M	
4.3.51-10	BridgeManagementInformationFiltering	7.3.51		M	
4.3.51-11	ARPFiltering	7.3.51		M	
4.3.51-12	PPPoEFiltering	7.3.51		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.51-13	Set	7.3.51		M	
4.3.51-14	Get	7.3.51		M	

VII.5.4.3.52 Physical path termination point video UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.52-1	Automatically created/deleted by ONT upon creation/deletion of a video circuit pack (formerly subscriber line card)	7.3.52		M	
	Attributes				
4.3.52-2	Managed entity id	7.3.52		M	
4.3.52-3	Administrative state	7.3.52		M	
4.3.52-4	Operational state	7.3.52		O	
4.3.52-5	ARC	7.3.52		O	
4.3.52-6	ARCInterval	7.3.52		O	
4.3.52-7	Power control	7.3.52		O	
	Actions				
4.3.52-8	Get	7.3.52		M	
4.3.52-9	Set	7.3.52		M	
	Notifications – AVC				
4.3.52-10	OpState	7.3.52		CR	
4.3.52-10a	ARC expiration	7.3.52		CR	
	Notifications – Alarm				
4.3.52-11	Video-LOS	7.3.52		O	

VII.5.4.3.53 Physical path termination point video ANI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.53-1	Automatically created/deleted by ONT upon creation/deletion of a video circuit pack (formerly subscriber line card)	7.3.53		M	
	Attributes				
4.3.53-2	Managed entity id	7.3.53		M	
4.3.53-3	Administrative state	7.3.53		M	
4.3.53-4	Operational state	7.3.53		O	
4.3.53-5	ARC	7.3.53		O	
4.3.53-6	ARCInterval	7.3.53		O	
4.3.53-7	FrequencyRangeLow	7.3.53		M	
4.3.53-8	0 – no low band supported	7.3.53			
4.3.53-9	1 – 50-550 MHz supported	7.3.53			

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.53-10	2 – 50-750 MHz supported	7.3.53			
4.3.53-11	3 – 50-870 MHz supported	7.3.53			
4.3.53-12	FrequencyRange high	7.3.53		M	
4.3.53-13	0 – no high band	7.3.53			
4.3.53-14	1 – 550-750 MHz supported	7.3.53			
4.3.53-15	2 – 550-870 MHz supported	7.3.53			
4.3.53-16	3 – 950-2050 MHz supported	7.3.53			
4.3.53-17	4 – 2150-3250 MHz supported	7.3.53			
4.3.53-18	5 – 950-3250 MHz supported	7.3.53			
4.3.53-19	SignalCapability	7.3.53		M	
4.3.53-20	0 – no signal level capability supported	7.3.53			
4.3.53-21	1 – total optical power level supported	7.3.53			
4.3.53-22	2 – fixed frequency pilot tone power level supported	7.3.53			
4.3.53-23	3 – total optical power level and fixed frequency pilot tone power level supported	7.3.53			
4.3.53-24	4 – variable frequency pilot tone power level supported	7.3.53			
4.3.53-25	5 – total optical power level and variable frequency pilot tone power level supported	7.3.53			
4.3.53-26	6 – broadband RF power level supported	7.3.53			
4.3.53-27	7 – total optical power level and broadband RF power level supported	7.3.53			
4.3.53-28	OpticalSignalLevel	7.3.53		O	
4.3.53-29	PilotSignalLevel	7.3.53		O	
4.3.53-30	SignalLevelMin	7.3.53		M	
4.3.53-31	SignalLevelMax	7.3.53		M	
4.3.53-32	PilotFrequency	7.3.53		O	
4.3.53-33	AGCmode	7.3.53		O	
4.3.53-34	AGCsetting	7.3.53		O	
4.3.53-34a	Video Lower Optical Threshold	7.3.53		O	
4.3.53-34b	Video Upper Optical Threshold	7.3.53		O	
	Actions				
4.3.53-35	Get	7.3.53		M	
4.3.53-36	Set	7.3.53		M	
	Notifications – AVC				
4.3.53-37	OpState	7.3.53		CR	
4.3.53-37a	ARC expiration	7.3.53		CR	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – Alarm				
4.3.53-38	Video-LOS	7.3.53		O	
4.3.53-39	Video-OOR Low	7.3.53		O	
4.3.53-40	Video-OOR High	7.3.53		O	

VII.5.4.3.54 Physical path termination point LCT UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.54-1	Automatically created/deleted by ONT upon creation/deletion of an LCT circuit pack (formerly subscriber line card)	7.3.54		M	
4.3.54-2	Not reported during MIB upload	7.3.54		M	
	Attributes				
4.3.54-3	Managed entity id	7.3.54		M	
4.3.54-4	Administrative state	7.3.54		M	
	Actions				
4.3.54-5	Get	7.3.54		M	
4.3.54-6	Set	7.3.54		M	

VII.5.4.3.55 Ethernet performance monitoring history data 2

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.55-1	Managed entity id	7.3.55		M	
4.3.55-2	Interval end time	7.3.55		M	
4.3.55-3	Threshold $data_{B\text{-}PON}$ id	7.3.55		M	
4.3.55-4	PPPoEFilteredFrame counter	7.3.55		M	
	Actions				
4.3.55-5	Create	7.3.55		M	
4.3.55-6	Delete	7.3.55		M	
4.3.55-7	Get	7.3.55		M	
4.3.55-8	Get current data	7.3.55		O	
4.3.55-9	Set	7.3.55		M	
	Notifications – TCA				
4.3.55-10	PPPoEFilteredFrameCounter	7.3.55		M	

VII.5.4.3.56 Physical path termination point 802.11 UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.56-1	Automatically created/deleted by ONT upon creation/deletion of 802.11 circuit pack (formerly subscriber line card)	7.3.56		M	
4.3.56-2	Not reported during MIB upload	7.3.56		M	
	Attributes				
4.3.56-3	Managed entity id	7.3.56		M	
4.3.56-4	Administrative State	7.3.56		M	
4.3.56-5	Operational State	7.3.56		O	
4.3.56-6	dot11SupportedDataRatesTx	7.3.56		M	
4.3.56-7	dot11SupportedDataRatesRx	7.3.56		M	
4.3.56-8	dot11TxPowerLevels	7.3.56		M	
4.3.56-9	ARC	7.3.56		O	
4.3.56-10	ARCInterval	7.3.56		O	
	Actions				
4.3.56-11	Get	7.3.56		M	
4.3.56-12	Set	7.3.56		M	
	Notifications – AVCs				
4.3.55-13	OpState	7.3.56		CR	
4.3.55-14	ARC expiration	7.3.56		CR	

VII.5.4.3.57 UNI 802.11 station management data 1

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.57-1	Created/deleted by ONU upon creation/ deletion of PPTP 802.11 UNI instance	7.3.57		O	
	Attributes				
4.3.57-2	Managed entity id	7.3.57		M	
4.3.57-3	dot11MediumOccupancyLimit	7.3.57		M	
4.3.57-4	dot11CFPollable	7.3.57		M	
4.3.57-5	dot11CFPPeriod	7.3.57		M	
4.3.57-6	dot11CFPMaxDuration	7.3.57		M	
4.3.57-7	dot11AuthenticationResponseTimeOut	7.3.57		M	
4.3.57-8	dot11PrivacyOptionImplemented	7.3.57		M	
4.3.57-9	dot11PowerManagementMode	7.3.57		M	
4.3.57-10	dot11DesiredSSID1	7.3.57		M	
4.3.57-11	dot11DesiredSSID2	7.3.57		M	
4.3.57-12	dot11DesiredBSStype	7.3.57		M	
4.3.57-13	dot11OperationalRateSet	7.3.57		M	
4.3.57-14	dot11BeaconPeriod	7.3.57		M	
4.3.57-15	dot11DTIMPeriod	7.3.57		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.57-16	dot11AssociationResponseTimeOut	7.3.57		M	
4.3.57-17	dot11AuthenticationAlgorithm	7.3.57		M	
4.3.57-18	dot11AuthenticationAlgorithmsEnable	7.3.57		M	
	Actions				
4.3.57-19	Get	7.3.57		M	
4.3.57-20	Set	7.3.57		M	

VII.5.4.3.58 802.11 station management data 2

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.58-1	Created/deleted by ONU upon creation/ deletion of PPTP 802.11 UNI instance	7.3.58		O	
	Attributes				
4.3.58-2	Managed entity id	7.3.58		M	
4.3.58-3	dot11DisassociateReason	7.3.58		M	
4.3.58-4	dot11DisassociateStation	7.3.58		M	
4.3.58-5	dot11DeauthenticateReason	7.3.58		M	
4.3.58-6	dot11DeauthenticateStation	7.3.58		M	
4.3.58-7	dot11AuthenticateFailStatus	7.3.58		M	
4.3.58-8	dot11AuthenticateFailStation	7.3.58		M	
4.3.58-9	dot11WEPDefaultKeyValue1	7.3.58		M	
4.3.58-10	dot11WEPDefaultKeyValue2	7.3.58		M	
4.3.58-11	dot11WEPDefaultKeyValue3	7.3.58		M	
4.3.58-12	dot11WEPDefaultKeyValue4	7.3.58		M	
4.3.58-13	dot11PrivacyInvoked&dot11Exclude Unencrypted	7.3.58		M	
4.3.58-14	dot11WEPDefaultKeyID	7.3.58		M	
4.3.58-15	dot11WEPKeyMappingLength	7.3.58		M	
4.3.58-16	dot11WEPICVErrorCount	7.3.58		M	
4.3.58-17	dot11WEPExcludedCount	7.3.58		M	
	Actions				
4.3.58-18	Get	7.3.58		M	
4.3.58-19	Set	7.3.58		M	
	Notifications – AVCs				
4.3.58-20	dot11DisassociateStation	7.3.58		M	
4.3.58-21	dot11DeauthenticateStation	7.3.58		M	
4.3.58-22	dot11AuthenticateFailStation	7.3.58		M	

VII.5.4.3.59 802.11 General purpose object

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.59-1	Created/deleted by ONU upon creation/deletion of 802.11 UNI as needed to model capabilities	7.3.59	Object type 2, 3	CR	
	Attributes				
4.3.59-2	Managed entity id	7.3.59		M	
4.3.59-3	Object type	7.3.59		M	
4.3.59-4	0: WEP key mapping	7.3.59			
4.3.59-5	1: Group addresses	7.3.59			
4.3.59-6	2: Reg domain supported	7.3.59			
4.3.59-7	3: Antennas list	7.3.59			
4.3.59-8	Physical path termination point 802.11 pointer	7.3.59		M	
4.3.59-9	dot11WEPKeyMappingAddress	7.3.59	Object type 0	CR	
4.3.59-10	dot11WEPKeyMappingWEPOn	7.3.59	Object type 0	CR	
4.3.59-11	dot11WEPKeyMappingValue	7.3.59	Object type 0	CR	
4.3.59-12	dot11Address	7.3.59	Object type 1	CR	
4.3.59-13	dot11Reg DomainsSupportValue	7.3.59	Object type 2	CR	
4.3.59-14	dot11Supported TxAntenna	7.3.59	Object type 3	CR	
4.3.59-15	dot11Supported RxAntenna	7.3.59	Object type 3	CR	
4.3.59-16	dot11DiversitySelectionRx	7.3.59	Object type 3	CR	
	Actions				
4.3.59-17	Create	7.3.59	Object type 0, 1	CR	
4.3.59-18	Delete	7.3.59	Object type 0, 1	CR	
4.3.59-19	Get	7.3.59		M	
4.3.59-20	Set	7.3.59	Object type 0, 1	CR	

VII.5.4.3.60 802.11 MAC&PHY operation and antenna data

According to ITU-T Rec. G.983.2/2005, this ME may be auto-created by the ONU.

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.60-1	Created/deleted by ONU upon creation/ deletion of PPTP 802.11 UNI instance	7.3.60		O	
	Attributes				
4.3.60-2	Managed entity id	7.3.60		M	
4.3.60-3	dot11MACAddress	7.3.60		M	
4.3.60-4	dot11RTSThreshold	7.3.60		M	
4.3.60-5	dot11ShortRetryLimit	7.3.60		M	
4.3.60-6	dot11LongRetryLimit	7.3.60		M	
4.3.60-7	dot11FragmentationThreshold	7.3.60		M	
4.3.60-8	dot11Max transmitMSDULifetime	7.3.60		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.60-9	dot11MaxReceiveLifetime	7.3.60		M	
4.3.60-10	dot11PHYType	7.3.60		M	
4.3.60-11	dot11CurrentRegDomain	7.3.60		M	
4.3.60-12	dot11TempType	7.3.60		M	
4.3.60-13	dot11CurrentTxAntennaPointer	7.3.60		M	
4.3.60-14	dot11DiversitySupport	7.3.60		M	
4.3.60-15	dot11CurrentRxAntennaPointer	7.3.60		M	
4.3.60-16	dot11CurrentTxPowerLevel	7.3.60		M	
	Actions				
4.3.60-17	Get	7.3.60		M	
4.3.60-18	Set	7.3.60		M	

VII.5.4.3.61 802.11 counters

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.61-1	Managed entity id	7.3.61		M	
4.3.61-2	Interval end time	7.3.61		M	
4.3.61-3	Threshold $data_{B\text{-}PON}$ id	7.3.61		M	
4.3.61-4	dot11TransmittedFragmentCount	7.3.61		M	
4.3.61-5	dot11MulticastTransmittedFrameCount	7.3.61		M	
4.3.61-6	dot11FailedCount	7.3.61		M	
4.3.61-7	dot11RetryCount	7.3.61		M	
4.3.61-8	dot11MultipleRetryCount	7.3.61		M	
4.3.61-9	dot11FrameDuplicateCount	7.3.61		M	
4.3.61-10	dot11RTSSuccessCount	7.3.61		M	
4.3.61-11	dot11RTSFailureCount	7.3.61		M	
4.3.61-12	dot11ACKFailureCount	7.3.61		M	
4.3.61-13	dot11ReceivedFragmentCount	7.3.61		M	
4.3.61-14	dot11MulticastReceivedFrameCount	7.3.61		M	
4.3.61-15	dot11FCSErrorCount	7.3.61		M	
4.3.61-16	dot11TransmittedFrameCount	7.3.61		M	
4.3.61-17	dot11WEPUndecryptableCount	7.3.61		M	
	Actions				
4.3.61-18	Create	7.3.61		M	
4.3.61-19	Delete	7.3.61		M	
4.3.61-20	Get	7.3.61		M	
4.3.61-21	Set	7.3.61		M	
4.3.61-22	Get current data	7.3.61		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.61-23	dot11Failed	7.3.61		M	
4.3.61-24	dot11RTSFailure	7.3.61		M	
4.3.61-25	dot11ACKFailure	7.3.61		M	
4.3.61-26	dot11FCSError	7.3.61		M	
4.3.61-27	dot11WEPUndecryptable	7.3.61		M	

VII.5.4.3.62 802.11 PHY FHSS DSSS IR tables

According to ITU-T Rec. G.983.2/2005, this ME may be auto-created by the ONU.

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.62-1	Created/deleted by ONU upon creation/ deletion of PPTP 802.11 UNI instance	7.3.62		O	
	Attributes				
4.3.62-2	Managed entity id	7.3.62		M	
4.3.62-3	dot11HopTime	7.3.62		M	
4.3.62-4	dot11CurrentChannelNumber	7.3.62		M	
4.3.62-5	dot11MaxDwellTime	7.3.62		M	
4.3.62-6	dot11CurrentDwellTime	7.3.62		M	
4.3.62-7	dot11CurrentSet	7.3.62		M	
4.3.62-8	dot11CurrentPattern	7.3.62		M	
4.3.62-9	dot11CurrentIndex	7.3.62		M	
4.3.62-10	dot11CurrentChannel	7.3.62		M	
4.3.62-11	dot11CCAModeSupported	7.3.62		M	
4.3.62-12	dot11CurrentCCAMode	7.3.62		M	
4.3.62-13	dot11EDThreshold	7.3.62		M	
4.3.62-14	dot11CCAWatchdogTimerMax	7.3.62		M	
4.3.62-15	dot11CCAWatchdogCountMax	7.3.62		M	
4.3.62-16	dot11CCAWatchdogTimerMin	7.3.62		M	
4.3.62-17	dot11CCAWatchdogCountMin	7.3.62		M	
	Actions				
4.3.62-18	Get	7.3.62		M	
4.3.62-19	Set	7.3.62		M	

VII.5.4.3.63 Physical path termination point ADSL UNI part 1

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.63-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.63		M	
	Attributes				
4.3.63-2	Managed entity id	7.3.63		M	
4.3.63-3	Loopback configuration	7.3.63		M	
4.3.63-4	Administrative state	7.3.63		M	
4.3.63-5	Operational state	7.3.63		O	
4.3.63-6	ADSL line configuration profile	7.3.63		M	
4.3.63-7	ADSL subcarrier masking downstream profile	7.3.63		M	
4.3.63-8	ADSL subcarrier masking upstream profile	7.3.63		M	
4.3.63-9	ADSL downstream PSD mask profile	7.3.63		M	
4.3.63-10	ADSL downstream RFI bands profile	7.3.63		M	
4.3.63-11	ARC	7.3.63		O	
4.3.63-12	ARCInterval	7.3.63		O	
	Actions				
4.3.63-13	Get	7.3.63		M	
4.3.63-14	Set	7.3.63		M	
	Notifications – AVCs				
4.3.63-15	Op state	7.3.63		CR	
4.3.63-15a	ARC expiration	7.3.63		CR	
	Notifications – Alarms				
4.3.63-16	NE_LOF	7.3.63		M	
4.3.63-17	NE_LOS	7.3.63		M	
4.3.63-18	NE_LOL	7.3.63		M	
4.3.63-19	NE_LPR	7.3.63		M	
4.3.63-20	Card_ALM	7.3.63		M	
4.3.63-21	FE_LOF	7.3.63		M	
4.3.63-22	FE_LOS	7.3.63		M	
4.3.63-23	FE_LOL	7.3.63		M	
4.3.63-24	FE_LPR	7.3.63		M	
4.3.63-25	DRT_UP	7.3.63		M	
4.3.63-26	DRT_DOWN	7.3.63		M	

VII.5.4.3.64 Physical path termination point ADSL UNI part 2

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.64-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.64		M	
	Attributes				
4.3.64-2	Managed entity id	7.3.64		M	
4.3.64-3	ADSL channel configuration profile (for bearer channel 0 downstream)	7.3.64		O	
4.3.64-4	ADSL channel configuration profile (for bearer channel 1 downstream)	7.3.64		O	
4.3.64-5	ADSL channel configuration profile (for bearer channel 2 downstream)	7.3.64		O	
4.3.64-6	ADSL channel configuration profile (for bearer channel 3 downstream)	7.3.64		O	
4.3.64-7	ADSL channel configuration profile (for bearer channel 0 upstream)	7.3.64		O	
4.3.64-8	ADSL channel configuration profile (for bearer channel 1 upstream)	7.3.64		O	
4.3.64-9	ADSL channel configuration profile (for bearer channel 2 upstream)	7.3.64		O	
4.3.64-10	ADSL channel configuration profile (for bearer channel 3 upstream)	7.3.64		O	
	Actions				
4.3.64-11	Get	7.3.64		M	
4.3.64-12	Set	7.3.64		M	

VII.5.4.3.65 ADSL line inventory and status data part 1

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.65-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.65		M	
	Attributes				
4.3.65-2	Managed entity id	7.3.65		M	
4.3.65-3	ATU-C G.994.1 vendor ID	7.3.65		M	
4.3.65-4	ATU-R G.994.1 vendor ID	7.3.65		M	
4.3.65-5	ATU-C system vendor ID	7.3.65		M	
4.3.65-6	ATU-R system vendor ID	7.3.65		M	
4.3.65-7	ATU-C version number	7.3.65		M	
4.3.65-8	ATU-R version number	7.3.65		M	
4.3.65-9	ATU-C serial number part 1	7.3.65		M	
4.3.65-10	ATU-C serial number part 2	7.3.65		M	
4.3.65-11	ATU-R serial number part 1	7.3.65		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.65-12	ATU-R serial number part 2	7.3.65		M	
4.3.65-13	ATU-C self test results	7.3.65		M	
4.3.65-14	ATU-R self test results	7.3.65		M	
4.3.65-15	ATU-C transmission system capability	7.3.65		M	
4.3.65-16	ATU-R transmission system capability	7.3.65		M	
4.3.65-17	Initialization – success/failure cause	7.3.65		M	
	Actions				
4.3.65-18	Get	7.3.65		M	

VII.5.4.3.66 ADSL line inventory and status data part 2

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.66-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.66		M	
	Attributes				
4.3.66-2	Managed entity id	7.3.66		M	
4.3.66-3	ADSL transmission system	7.3.66		M	
4.3.66-4	Line power management state	7.3.66		M	
4.3.66-5	Downstream line attenuation	7.3.66		M	
4.3.66-6	Upstream line attenuation	7.3.66		M	
4.3.66-7	Downstream signal attenuation	7.3.66		M	
4.3.66-8	Upstream signal attenuation	7.3.66		M	
4.3.66-9	Downstream Signal-to-Noise Ratio Margin	7.3.66		M	
4.3.66-10	Upstream Signal-to-Noise Ratio Margin	7.3.66		M	
4.3.66-11	Downstream maximum attainable data rate	7.3.66		M	
4.3.66-12	Upstream maximum attainable data rate	7.3.66		M	
4.3.66-13	Downstream actual power spectrum density	7.3.66		M	
4.3.66-14	Upstream actual power spectrum density	7.3.66		M	
4.3.66-15	Downstream actual aggregate transmit power	7.3.66		M	
4.3.66-16	Upstream actual aggregate transmit power	7.3.66		M	
4.3.66-17	Initialization – last state transmitted downstream	7.3.66			
4.3.66-18	Initialization – last state transmitted upstream	7.3.66		M	
	Actions				
4.3.66-19	Get	7.3.66		M	

VII.5.4.3.67 ADSL channel downstream status data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.67-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.67		M	
	Attributes				
4.3.67-2	Managed entity id	7.3.67		M	
4.3.67-3	Actual interleaving delay	7.3.67		M	
4.3.67-4	Actual data rate	7.3.67		M	
4.3.67-5	Previous data rate	7.3.67		M	
	Actions				
4.3.67-6	Get	7.3.67		M	

VII.5.4.3.68 ADSL channel upstream status data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.68-1	Automatically created/deleted by ONT upon creation/deletion of an ADSL circuit pack (formerly subscriber line card)	7.3.68		M	
	Attributes				
4.3.68-2	Managed entity id	7.3.68		M	
4.3.68-3	Actual interleaving delay	7.3.68		M	
4.3.68-4	Actual data rate	7.3.68		M	
4.3.68-5	Previous data rate	7.3.68		M	
	Actions				
4.3.68-6	Get	7.3.68		M	

VII.5.4.3.69 ADSL line configuration profile part 1

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.69-1	Managed entity id	7.3.69		M	
4.3.69-2	ATU transmission system enabling	7.3.69		M	
4.3.69-3	Power management state forced	7.3.69		M	
4.3.69-4	Power management state enabling	7.3.69		M	
4.3.69-5	Downstream target noise margin	7.3.69		M	
4.3.69-6	Upstream target noise margin	7.3.69		M	
4.3.69-7	Downstream maximum noise margin	7.3.69		M	
4.3.69-8	Upstream maximum noise margin	7.3.69		M	
4.3.69-9	Downstream minimum noise margin	7.3.69		M	
4.3.69-10	Upstream minimum noise margin	7.3.69		M	
4.3.69-11	Downstream rate adaptation mode	7.3.69		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.69-12	Upstream rate adaptation mode	7.3.69		M	
4.3.69-13	Downstream up-shift noise margin	7.3.69		O	
4.3.69-14	Upstream up-shift noise margin	7.3.69		O	
4.3.69-15	Upstream PSD mask selection	7.3.69		M	
4.3.69-16	Minimum overhead rate upstream	7.3.69		O	
4.3.69-17	Minimum overhead rate downstream	7.3.69		O	
	Actions				
4.3.69-18	Create	7.3.69		M	
4.3.69-19	Delete	7.3.69		M	
4.3.69-20	Get	7.3.69		M	
4.3.69-21	Set	7.3.69		M	

VII.5.4.3.70 ADSL line configuration profile part 2

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.70-1	Managed entity id	7.3.70		M	
4.3.70-2	Downstream minimum time interval for up-shift rate adaptation	7.3.70		O	
4.3.70-3	Upstream minimum time interval for up-shift rate adaptation	7.3.70		O	
4.3.70-4	Downstream down-shift noise margin	7.3.70		O	
4.3.70-5	Upstream down-shift noise margin	7.3.70		O	
4.3.70-6	Downstream minimum time interval for downshift rate adaptation	7.3.70		O	
4.3.70-7	Upstream minimum time interval for downshift rate adaptation	7.3.70		O	
4.3.70-8	ATU impedance state forced	7.3.70		M	
4.3.70-9	L0-TIME	7.3.70		M	
4.3.70-10	L2-TIME	7.3.70		M	
4.3.70-11	Downstream maximum nominal power spectral density	7.3.70		M	
4.3.70-12	Upstream maximum nominal power spectral density	7.3.70		M	
4.3.70-13	Downstream maximum nominal aggregate transmit power	7.3.70		M	
4.3.70-14	Upstream maximum nominal aggregate transmit power	7.3.70		M	
4.3.70-15	Upstream maximum aggregate receive power	7.3.70		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions	7.3.70			
4.3.70-16	Create	7.3.70		M	
4.3.70-17	Delete	7.3.70		M	
4.3.70-18	Get	7.3.70		M	
4.3.70-19	Set	7.3.70		M	

VII.5.4.3.71 ADSL line configuration profile part 3

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.71-1	Managed entity id	7.3.71		M	
4.3.71-2	Loop diagnostics mode forced	7.3.71		M	
4.3.71-3	Automode cold start forced	7.3.71		M	
4.3.71-4	L2-ATPR	7.3.71		M	
4.3.71-5	L2-ATPRT	7.3.71		M	
	Actions				
4.3.71-6	Create	7.3.71		M	
4.3.71-7	Delete	7.3.71		M	
4.3.71-8	Get	7.3.71		M	
4.3.71-9	Set	7.3.71		M	

VII.5.4.3.72 ADSL channel configuration profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.72-1	Managed entity id	7.3.72		M	
4.3.72-2	Minimum data rate	7.3.72		M	
4.3.72-3	Maximum data rate	7.3.72		M	
4.3.72-4	Rate adaptation ratio	7.3.72		O	
4.3.72-5	Maximum interleaving delay	7.3.72		M	
4.3.72-6	Data rate threshold up-shift	7.3.72		M	
4.3.72-7	Data rate threshold down-shift	7.3.72		M	
4.3.72-8	Minimum reserved data rate	7.3.72		M	
4.3.72-9	Minimum data rate in low power state	7.3.72		M	
4.3.72-10	Minimum impulse noise protection	7.3.72		M	
4.3.72-11	Maximum bit error ratio	7.3.72		M	
	Actions				
4.3.72-12	Create	7.3.72		M	
4.3.72-13	Delete	7.3.72		M	
4.3.72-14	Get	7.3.72		M	
4.3.72-15	Set	7.3.72		M	

VII.5.4.3.73 ADSL subcarrier masking downstream profile

ITU-T Rec. G.983.2/2005 states that instances of this ME are created and deleted by the OLT, but does not list create and delete as valid actions. They are included below, but pending correction, not marked mandatory.

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.73-1	Managed entity id	7.3.73		M	
4.3.73-2	Downstream subcarrier mask1	7.3.73		M	
4.3.73-3	Downstream subcarrier mask2	7.3.73	>128 NCSDs	CR	
4.3.73-4	Downstream subcarrier mask3	7.3.73	>256 NCSDs	CR	
4.3.73-5	Downstream subcarrier mask4	7.3.73	>384 NCSDs	CR	
4.3.73-6	Table valid	7.3.73		M	
	Actions				
4.3.73-7	Create	7.3.73		M	
4.3.73-8	Delete	7.3.73		M	
4.3.73-9	Get	7.3.73		M	
4.3.73-10	Set	7.3.73		M	

VII.5.4.3.74 ADSL subcarrier masking upstream profile

ITU-T Rec. G.983.2/2005 states that instances of this ME are created and deleted by the OLT, but does not list create and delete as valid actions. They are included below, but pending correction, not marked mandatory.

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.74-1	Managed entity id	7.3.74		M	
4.3.74-2	Upstream subcarrier mask	7.3.74		M	
	Actions				
4.3.74-3	Create	7.3.74		–	
4.3.74-4	Delete	7.3.74		–	
4.3.74-5	Get	7.3.74		M	
4.3.74-6	Set	7.3.74		M	

VII.5.4.3.75 ADSL downstream PSD mask profile

ITU-T Rec. G.983.2/2005 states that instances of this ME are created and deleted by the OLT, but does not list create and delete as valid actions. They are included below, but pending correction, not marked mandatory.

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.75-1	Managed entity id	7.3.75		M	
4.3.75-2	Downstream PSD mask	7.3.75		M	
4.3.75-3	Table valid	7.3.75		M	
	Actions	7.3.75			
4.3.75-4	Create	7.3.75		M	
4.3.75-5	Delete	7.3.75		M	
4.3.75-6	Get	7.3.75		M	
4.3.75-7	Get next	7.3.75		M	
4.3.75-8	Set	7.3.75		M	

VII.5.4.3.76 ADSL downstream RFI bands profile

ITU-T Rec. G.983.2/2005 states that instances of this ME are created and deleted by the OLT, but does not list create and delete as valid actions. They are included below, but pending correction, not marked mandatory.

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.76-1	Managed entity id	7.3.76		M	
4.3.76-2	Downstream RFI bands	7.3.76		M	
4.3.76-3	Table valid	7.3.76		M	
	Actions				
4.3.76-4	Create	7.3.76		M	
4.3.76-5	Delete	7.3.76		M	
4.3.76-6	Get	7.3.76		M	
4.3.76-7	Get next	7.3.76		M	
4.3.76-8	Set	7.3.76		M	

VII.5.4.3.77 ADSL ATU-C performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.77-1	Managed entity id	7.3.77		M	
4.3.77-2	Interval end time	7.3.77		M	
4.3.77-3	Threshold $data_{B\text{-}PON}$ ID	7.3.77		M	
4.3.77-4	Loss of frame seconds	7.3.77		M	
4.3.77-5	Loss of signal seconds	7.3.77		M	
4.3.77-6	Loss of link seconds	7.3.77		M	
4.3.77-7	Loss of power seconds	7.3.77		M	
4.3.77-8	Errored seconds	7.3.77		M	
4.3.77-9	Severely errored seconds	7.3.77		M	
4.3.77-10	Line initializations	7.3.77		M	
4.3.77-11	Failed line initializations	7.3.77		M	
4.3.77-12	Short initialzations	7.3.77		M	
4.3.77-13	Failed short initializations	7.3.77		M	
4.3.77-14	FEC seconds	7.3.77		M	
4.3.77-15	Unavailable seconds	7.3.77		M	
	Actions				
4.3.77-16	Create	7.3.77		M	
4.3.77-17	Delete	7.3.77		M	
4.3.77-18	Get	7.3.77		M	
4.3.77-19	Get current data	7.3.77		O	
4.3.77-20	Set	7.3.77		M	
	Notifications – TCAs				
4.3.77-21	Loss of frame seconds	7.3.77		M	
4.3.77-22	Loss of signal seconds	7.3.77		M	
4.3.77-23	Loss of link seconds	7.3.77		M	
4.3.77-24	Loss of power seconds	7.3.77		M	
4.3.77-25	Errored seconds	7.3.77		M	
4.3.77-26	Severely errored seconds	7.3.77		M	
4.3.77-27	Line initializations	7.3.77		M	
4.3.77-28	Failed line initializations	7.3.77		M	
4.3.77-29	Short initialzations	7.3.77		M	
4.3.77-30	Failed short initializations	7.3.77		M	
4.3.77-31	FEC seconds	7.3.77		M	
4.3.77-32	Unavailable seconds	7.3.77		M	

VII.5.4.3.78 ADSL ATU-R performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.78-1	Managed entity id	7.3.78		M	
4.3.78-2	Interval end time	7.3.78		M	
4.3.78-3	Threshold $data_{B\text{-}PON}$ ID	7.3.78		M	
4.3.78-4	Loss of frame seconds	7.3.78		M	
4.3.78-5	Loss of signal seconds	7.3.78		M	
4.3.78-6	Loss of power seconds	7.3.78		M	
4.3.78-7	Errored seconds	7.3.78		M	
4.3.78-8	Severely errored seconds	7.3.78		M	
4.3.78-9	FEC seconds	7.3.78		M	
4.3.78-10	Unavailable seconds	7.3.78		M	
	Actions				
4.3.78-11	Create	7.3.78		M	
4.3.78-12	Delete	7.3.78		M	
4.3.78-13	Get	7.3.78		M	
4.3.78-14	Get current data	7.3.78		O	
4.3.78-15	Set	7.3.78		M	
	Notifications – TCAs				
4.3.78-16	Loss of frame seconds	7.3.78		M	
4.3.78-17	Loss of signal seconds	7.3.78		M	
4.3.78-18	Loss of power seconds	7.3.78		M	
4.3.78-19	Errored seconds	7.3.78		M	
4.3.78-20	Severely errored seconds	7.3.78		M	
4.3.78-21	FEC seconds	7.3.78		M	
4.3.78-22	Unavailable seconds	7.3.78		M	

VII.5.4.3.79 ADSL ATU-C channel performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.79-1	Managed entity id	7.3.79		M	
4.3.79-2	Interval end time	7.3.79		M	
4.3.79-3	Threshold $data_{B\text{-}PON}$ ID	7.3.79		M	
4.3.79-4	Corrected blocks	7.3.79		M	
4.3.79-5	Uncorrected blocks	7.3.79		M	
4.3.79-6	Transmitted blocks	7.3.79		M	
4.3.79-7	Received blocks	7.3.79		M	
4.3.79-8	Code violations	7.3.79		M	
4.3.79-9	Forward error corrections	7.3.79		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions	7.3.79			
4.3.79-10	Create	7.3.79		M	
4.3.79-11	Delete	7.3.79		M	
4.3.79-12	Get	7.3.79		M	
4.3.79-13	Get current data	7.3.79		O	
4.3.79-14	Set	7.3.79		M	
	Notifications – TCAs				
4.3.79-15	Corrected blocks	7.3.79		M	
4.3.79-16	Uncorrected blocks	7.3.79		M	
4.3.79-17	Code violations	7.3.79		M	
4.3.79-18	Forward error corrections	7.3.79		M	

VII.5.4.3.80 ADSL ATU-R channel performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.80-1	Managed entity id	7.3.80		M	
4.3.80-2	Interval end time	7.3.80		M	
4.3.80-3	Threshold $data_{B\text{-}PON}$ ID	7.3.80		M	
4.3.80-4	Corrected blocks	7.3.80		M	
4.3.80-5	Uncorrected blocks	7.3.80		M	
4.3.80-6	Transmitted blocks	7.3.80		M	
4.3.80-7	Received blocks	7.3.80		M	
4.3.80-8	Code violations	7.3.80		M	
4.3.80-9	Forward error corrections	7.3.80		M	
	Actions				
4.3.80-10	Create	7.3.80		M	
4.3.80-11	Delete	7.3.80		M	
4.3.80-12	Get	7.3.80		M	
4.3.80-13	Get current data	7.3.80		O	
4.3.80-14	Set	7.3.80		M	
	Notifications – TCAs				
4.3.80-15	Corrected blocks	7.3.80		M	
4.3.80-16	Uncorrected blocks	7.3.80		M	
4.3.80-17	Code violations	7.3.80		M	
4.3.80-18	Forward error corrections	7.3.80		M	

VII.5.4.3.81 TC adaptor performance monitoring history data ADSL

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.81-1	Managed entity ID	7.3.81		M	
4.3.81-2	Interval end time	7.3.81		M	
4.3.81-3	Threshold $data_{B\text{-}PON}$ ID	7.3.81		M	
4.3.81-4	Near-end HEC violation count	7.3.81		M	
4.3.81-5	Near-end delineated total cell count (CD-P)	7.3.81		M	
4.3.81-6	Near-end user total cell count	7.3.81		M	
4.3.81-7	Near-end idle cell bit error count	7.3.81		M	
4.3.81-8	Far-end HEC violation count	7.3.81		M	
4.3.81-9	Far-end delineated total cell count	7.3.81		M	
4.3.81-10	Far-end user total cell count	7.3.81		M	
4.3.81-11	Far-end idle cell bit error count	7.3.81		M	
	Actions				
4.3.81-12	Create	7.3.81		M	
4.3.81-13	Delete	7.3.81		M	
4.3.81-14	Get	7.3.81		M	
4.3.81-15	Get current data	7.3.81		O	
4.3.81-16	Set	7.3.81		M	
	Notifications – TCAs				
4.3.81-17	Near-end HEC violation	7.3.81		M	
4.3.81-18	Near-end idle cell bit error count	7.3.81		M	
4.3.81-19	Far-end HEC violation count	7.3.81		M	
4.3.81-20	Far-end idle cell bit error count	7.3.81		M	

VII.5.4.3.82 Physical path termination point VDSL UNI

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.82-1	Automatically created/deleted by ONT upon creation/deletion of a VDSL circuit pack (formerly subscriber line card)	7.3.82		M	
	Attributes				
4.3.82-2	Managed entity ID	7.3.82		M	
4.3.82-3	Loopback configuration	7.3.82		M	
4.3.82-4	Administrative state	7.3.82		M	
4.3.82-5	Operational state	7.3.82		O	
4.3.82-6	Availability state	7.3.82		O	
4.3.82-7	VDSL line coding type	7.3.82		M	
4.3.82-8	VDSL line type	7.3.82		M	
4.3.82-9	ARC	7.3.82		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.82-10	ARCInterval	7.3.82		O	
4.3.82-11	VDSL line configuration profile ID	7.3.82		M	
4.3.82-12	VDSL channel configuration profile ID	7.3.82		M	
4.3.82-13	VDSL band plan configuration profile ID	7.3.82		M	
	Actions				
4.3.82-14	Get	7.3.82		M	
4.3.82-15	Set	7.3.82		M	
	Notifications – AVCs				
4.3.82-16	Op state	7.3.82		CR	
4.3.82-16a	ARC expiration	7.3.82		CR	
	Notifications – Alarms				
4.3.82-17	NE_LOF	7.3.82		M	
4.3.82-18	NE_LOS	7.3.82		M	
4.3.82-19	NE_LOP	7.3.82		M	
4.3.82-20	NE_LOSQ	7.3.82		M	
4.3.82-21	NE_LOL	7.3.82		M	
4.3.82-22	FE_LOF	7.3.82		M	
4.3.82-23	FE_LOS	7.3.82		M	
4.3.82-24	FE_LOP	7.3.82		M	
4.3.82-25	FE_LOSQ	7.3.82		M	

VII.5.4.3.83 VDSL VTU-O physical data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.83-1	Automatically created/deleted by ONT upon creation/deletion of a VDSL circuit pack (formerly subscriber line card)	7.3.83		M	
	Attributes				
4.3.83-2	Managed entity ID	7.3.83		M	
4.3.83-3	Line transmit rate	7.3.83		M	
4.3.83-4	Serial number part 1	7.3.83		M	
4.3.83-5	Serial number part 2	7.3.83		M	
4.3.83-6	Vendor ID	7.3.83		M	
4.3.83-7	Version number	7.3.83		M	
4.3.83-8	Current status	7.3.83		M	
4.3.83-9	Current output power	7.3.83		M	
4.3.83-10	Current SNR margin	7.3.83		M	
4.3.83-11	Current attenuation	7.3.83		M	
4.3.83-12	Current attainable rate	7.3.83		M	
4.3.83-13	Current loop length estimate	7.3.83		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.83-14	Get	7.3.83		M	

VII.5.4.3.84 VDSL VTU-R physical data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.84-1	Automatically created/deleted by ONT upon creation/deletion of a VDSL circuit pack (formerly subscriber line card)	7.3.84		M	
	Attributes				
4.3.84-2	Managed entity ID	7.3.84		M	
4.3.84-3	Line transmit rate	7.3.84		M	
4.3.84-4	Serial number part 1	7.3.84		M	
4.3.84-5	Serial number part 2	7.3.84		M	
4.3.84-6	Vendor ID	7.3.84		M	
4.3.84-7	Version number	7.3.84		M	
4.3.84-8	Current status	7.3.84		M	
4.3.84-9	Current output power	7.3.84		M	
4.3.84-10	Current SNR margin	7.3.84		M	
4.3.84-11	Current attenuation	7.3.84		M	
4.3.84-12	Current attainable rate	7.3.84		M	
	Actions				
4.3.84-13	Get	7.3.84		M	

VII.5.4.3.85 VDSL channel data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.85-1	Automatically created/deleted by ONT upon creation/deletion of a VDSL circuit pack (formerly subscriber line card)	7.3.85		M	
	Attributes				
4.3.85-2	Managed entity ID	7.3.85		M	
4.3.85-3	Current interleave delay down	7.3.85		M	
4.3.85-4	Current fast payload rate down	7.3.85		M	
4.3.85-5	Current slow payload rate down	7.3.85		M	
4.3.85-6	Current fast CRC block length down	7.3.85		M	
4.3.85-7	Current slow CRC block length down	7.3.85		M	
4.3.85-8	Current slow burst protect down	7.3.85		M	
4.3.85-9	Current fast FEC down	7.3.85		M	
4.3.85-10	Current interleave delay up	7.3.85		M	
4.3.85-11	Current fast payload rate up	7.3.85		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.85-12	Current slow payload rate up	7.3.85		M	
4.3.85-13	Current fast CRC block length up	7.3.85		M	
4.3.85-14	Current slow CRC block length up	7.3.85		M	
4.3.85-15	Current slow burst protect up	7.3.85		M	
4.3.85-16	Current fast FEC up	7.3.85		M	
	Actions				
4.3.85-17	Get	7.3.85		M	

VII.5.4.3.86 VDSL line configuration profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.86-1	Managed entity ID	7.3.86		M	
4.3.86-2	Down rate mode	7.3.86			
4.3.86-3	Up rate mode	7.3.86		M	
4.3.86-4	Down max power	7.3.86		M	
4.3.86-5	Up max power	7.3.86		M	
4.3.86-6	Down max SNR margin	7.3.86		M	
4.3.86-7	Down min SNR margin	7.3.86		M	
4.3.86-8	Down target SNR margin	7.3.86		M	
4.3.86-9	Up max SNR margin	7.3.86		M	
4.3.86-10	Up min SNR margin	7.3.86		M	
4.3.86-11	Up target SNR margin	7.3.86		M	
4.3.86-12	Down PBO control	7.3.86		M	
4.3.86-13	Up PBO control	7.3.86		M	
4.3.86-14	Down PBO level	7.3.86		M	
4.3.86-15	Up PBO level	7.3.86		M	
4.3.86-16	Line type	7.3.86		M	
	Actions				
4.3.86-17	Create	7.3.86		M	
4.3.86-18	Delete	7.3.86		M	
4.3.86-19	Get	7.3.86		M	
4.3.86-20	Set	7.3.86		M	

VII.5.4.3.87 VDSL channel configuration profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.87-1	Managed entity ID	7.3.87		M	
4.3.87-2	Down rate ratio	7.3.87		O	
4.3.87-3	Up rate ratio	7.3.87		O	
4.3.87-4	Down slow max data rate	7.3.87		M	
4.3.87-5	Down slow min data rate	7.3.87		M	
4.3.87-6	Up slow max data rate	7.3.87		M	
4.3.87-7	Up slow min data rate	7.3.87		M	
4.3.87-8	Down max interleave delay	7.3.87		M	
4.3.87-9	Up max interleave delay	7.3.87		M	
4.3.87-10	Down target slow burst	7.3.87		M	
4.3.87-11	Up target slow burst	7.3.87		M	
4.3.87-12	Down fast max data rate	7.3.87		M	
4.3.87-13	Down fast min data rate	7.3.87		M	
4.3.87-14	Up fast max data rate	7.3.87		M	
4.3.87-15	Up fast min data rate	7.3.87		M	
4.3.87-16	Down max fast FEC	7.3.87		O	
4.3.87-17	Up max fast FEC	7.3.87		O	
	Actions				
4.3.87-18	Create	7.3.87		M	
4.3.87-19	Delete	7.3.87		M	
4.3.87-20	Get	7.3.87		M	
4.3.87-21	Set	7.3.87		M	

VII.5.4.3.88 VDSL band plan configuration profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.88-1	Managed entity ID	7.3.88		M	
4.3.88-2	Band plan	7.3.88		M	
4.3.88-3	Band plan FX	7.3.88		O	
4.3.88-4	Band opt usage	7.3.88		M	
4.3.88-5	Up PSD template	7.3.88		M	
4.3.88-6	Down PSD template	7.3.88		M	
4.3.88-7	HAM band mask	7.3.88		M	
4.3.88-8	Custom notch 1 start	7.3.88		O	
4.3.88-9	Custom notch 1 stop	7.3.88		O	
4.3.88-10	Custom notch 2 start	7.3.88		O	
4.3.88-11	Custom notch 2 stop	7.3.88		O	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.88-12	Deployment scenario	7.3.88		M	
4.3.88-13	ADSL presence	7.3.88		M	
4.3.88-14	Applicable standard	7.3.88		M	
	Actions				
4.3.88-15	Create	7.3.88		M	
4.3.88-16	Delete	7.3.88		M	
4.3.88-17	Get	7.3.88		M	
4.3.88-18	Set	7.3.88		M	

VII.5.4.3.89 VDSL VTU-O physical interface monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.89-1	Managed entity ID	7.3.89		M	
4.3.89-2	Interval end time	7.3.89		M	
4.3.89-3	Threshold $data_{B\text{-}PON}$ ID	7.3.89		M	
4.3.89-4	Loss of framing seconds	7.3.89		M	
4.3.89-5	Loss of signal seconds	7.3.89		M	
4.3.89-6	Loss of power seconds	7.3.89		M	
4.3.89-7	Loss of link seconds	7.3.89		M	
4.3.89-8	Errored seconds	7.3.89		M	
4.3.89-9	Severely errored seconds	7.3.89		M	
4.3.89-10	Unavailable seconds	7.3.89		M	
4.3.89-11	Line initializations	7.3.89		M	
	Actions				
4.3.89-12	Create	7.3.89		M	
4.3.89-13	Delete	7.3.89		M	
4.3.89-14	Get	7.3.89		M	
4.3.89-15	Get current data	7.3.89		O	
4.3.89-16	Set	7.3.89		M	
	Notifications – TCAs				
4.3.89-17	LOFS	7.3.89		M	
4.3.89-18	LOSS	7.3.89		M	
4.3.89-19	LOLS	7.3.89		M	
4.3.89-20	LOPS	7.3.89		M	
4.3.89-21	ES	7.3.89		M	
4.3.89-22	LI	7.3.89		M	
4.3.89-23	SES	7.3.89		M	
4.3.89-24	UAS	7.3.89		M	

VII.5.4.3.90 VDSL VTU-R physical interface monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.90-1	Managed entity ID	7.3.90		M	
4.3.90-2	Interval end time	7.3.90		M	
4.3.90-3	Threshold $data_{B\text{-}PON}$ ID	7.3.90		M	
4.3.90-4	Loss of framing seconds	7.3.90		M	
4.3.90-5	Loss of signal seconds	7.3.90		M	
4.3.90-6	Loss of power seconds	7.3.90		M	
4.3.90-7	Loss of link seconds	7.3.90		M	
4.3.90-8	Errored seconds	7.3.90		M	
4.3.90-9	Severely errored seconds	7.3.90		M	
4.3.90-10	Unavailable seconds	7.3.90		M	
	Actions				
4.3.90-11	Create	7.3.90		M	
4.3.90-12	Delete	7.3.90		M	
4.3.90-13	Get	7.3.90		M	
4.3.90-14	Get current data	7.3.90		O	
4.3.90-15	Set	7.3.90		M	
	Notifications – TCAs				
4.3.90-16	LOFS	7.3.90		M	
4.3.90-17	LOSS	7.3.90		M	
4.3.90-18	LOLS	7.3.90		M	
4.3.90-19	LOPS	7.3.90		M	
4.3.90-20	ES	7.3.90		M	
4.3.90-21	SES	7.3.90		M	
4.3.90-22	UAS	7.3.90		M	

VII.5.4.3.91 VDSL VTU-O channel performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.91-1	Managed entity ID	7.3.91		M	
4.3.91-2	Interval end time	7.3.91		M	
4.3.91-3	Threshold $data_{B\text{-}PON}$ ID	7.3.91		M	
4.3.91-4	Fast channel corrected blocks	7.3.91		M	
4.3.91-5	Fast channel bad blocks	7.3.91		M	
4.3.91-6	Fast channel transmitted blocks	7.3.91		M	
4.3.91-7	Fast channel received blocks	7.3.91		M	
4.3.91-8	Slow channel corrected blocks	7.3.91		M	
4.3.91-9	Slow channel bad blocks	7.3.91		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.91-10	Slow channel transmitted blocks	7.3.91			
4.3.91-11	Slow channel received blocks	7.3.91		M	
	Actions				
4.3.91-12	Create	7.3.91		M	
4.3.91-13	Delete	7.3.91		M	
4.3.91-14	Get	7.3.91		M	
4.3.91-15	Get current data	7.3.91		O	
4.3.91-16	Set	7.3.91		M	
	Notifications – TCAs				
4.3.91-17	FCCB	7.3.91		M	
4.3.91-18	FCBB	7.3.91		M	
4.3.91-19	SCCB	7.3.91		M	
4.3.91-20	SCBB	7.3.91		M	

VII.5.4.3.92 VDSL VTU-R channel performance monitoring history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.92-1	Managed entity ID	7.3.92		M	
4.3.92-2	Interval end time	7.3.92		M	
4.3.92-3	Threshold $data_{B\text{-}PON}$ ID	7.3.92		M	
4.3.92-4	Fast channel corrected blocks	7.3.92		M	
4.3.92-5	Fast channel bad blocks	7.3.92		M	
4.3.92-6	Fast channel transmitted blocks	7.3.92		M	
4.3.92-7	Fast channel received blocks	7.3.92		M	
4.3.92-8	Slow channel corrected blocks	7.3.92		M	
4.3.92-9	Slow channel bad blocks	7.3.92		M	
4.3.92-10	Slow channel transmitted blocks	7.3.92			
4.3.92-11	Slow channel received blocks	7.3.92		M	
	Actions				
4.3.92-12	Create	7.3.92		M	
4.3.92-13	Delete	7.3.92		M	
4.3.92-14	Get	7.3.92		M	
4.3.92-15	Get current data	7.3.92		O	
4.3.92-16	Set	7.3.92		M	
	Notifications – TCAs				
4.3.92-17	FCCB	7.3.92		M	
4.3.92-18	FCBB	7.3.92		M	
4.3.92-19	SCCB	7.3.92		M	
4.3.92-20	SCBB	7.3.92		M	

VII.5.4.3.93 Video return path service profile

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.93-1	Created by ONU	7.3.93		CR	
	Attributes				
4.3.93-2	Managed entity ID	7.3.93		M	
4.3.93-3	Administrative state	7.3.93		M	
4.3.93-4	Operational state	7.3.93		O	
4.3.93-5	ARC	7.3.93		O	
4.3.93-6	ARCInterval	7.3.93		O	
4.3.93-7	VRP mode	7.3.93		M	
4.3.93-8	VRP frequency lower bound	7.3.93		M	
4.3.93-9	VRP frequency upper bound	7.3.93		M	
4.3.93-10	VRP frequency used	7.3.93		M	
4.3.93-11	Mode 1 physical layer configuration mode	7.3.93		M	
	Actions				
4.3.93-12	Get	7.3.93		M	
4.3.93-13	Set	7.3.93		M	
	Notifications – AVCs				
4.3.93-14	Op state	7.3.93		CR	
4.3.93-14a	ARC expiration	7.3.93		CR	
	Notifications – Alarms				
4.3.93-15	Frequency mismatch	7.3.93		M	

VII.5.4.3.94 Video return path statistics

ITU-T Rec. G.983.2/2005 states that this ME is created by the OLT, but does not list create and delete in the actions it supports. They are listed below, but pending correction, not marked as required.

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.94-1	Managed entity ID	7.3.94		M	
4.3.94-2	Interval end time	7.3.94		M	
4.3.94-3	Threshold $data_{B\text{-}PON}$ ID	7.3.94		M	
4.3.94-4	Rx total bursts	7.3.94		O	
4.3.94-5	Rx good bursts	7.3.94		O	
4.3.94-6	Rx FEC corrected bursts	7.3.94		O	
4.3.94-7	Rx missed bursts	7.3.94		O	
4.3.94-8	Rx min power	7.3.94		O	
4.3.94-9	Rx max power	7.3.94		O	
4.3.94-10	Rx current power	7.3.94		M	
4.3.94-11	Rx FEC corrected symbols	7.3.94		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.94-12	Create	7.3.94		M	
4.3.94-13	Delete	7.3.94		M	
4.3.94-14	Get	7.3.94		M	
4.3.94-15	Get current data	7.3.94		O	
4.3.94-16	Set	7.3.94		M	
	Notifications – TCAs				
4.3.94-17	Rx total bursts	7.3.94		CR	
4.3.94-18	Rx good bursts	7.3.94		CR	
4.3.94-19	Rx FEC corrected bursts	7.3.94		CR	
4.3.94-20	Rx missed bursts	7.3.94		CR	
4.3.94-21	Rx min power	7.3.94		CR	
4.3.94-22	Rx max power	7.3.94		CR	
4.3.94-23	Rx current power	7.3.94		M	
4.3.94-24	Rx FEC corrected symbols	7.3.94		CR	

VII.5.4.3.95 802.1p mapper service profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.95-1	Managed entity ID	7.3.95		M	
4.3.95-2	PPTP UNI pointer	7.3.95		M	
4.3.95-3	Interwork TP pointer (P-bit priority 0)	7.3.95		M	
4.3.95-4	Interwork TP pointer (P-bit priority 1)	7.3.95		M	
4.3.95-5	Interwork TP pointer (P-bit priority 2)	7.3.95		M	
4.3.95-6	Interwork TP pointer (P-bit priority 3)	7.3.95		M	
4.3.95-7	Interwork TP pointer (P-bit priority 4)	7.3.95		M	
4.3.95-8	Interwork TP pointer (P-bit priority 5)	7.3.95		M	
4.3.95-9	Interwork TP pointer (P-bit priority 6)	7.3.95		M	
4.3.95-10	Interwork TP pointer (P-bit priority 7)	7.3.95		M	
4.3.95-11	Unmarked frame option	7.3.95		M	
4.3.95-12	DSCP to P-bit mapping	7.3.95		M	
4.3.95-13	Default P-bit marking	7.3.95		M	
4.3.95-13a	TPtype	7.3.95		O	
	Actions				
4.3.95-14	Create	7.3.95		M	
4.3.95-15	Delete	7.3.95		M	
4.3.95-16	Get	7.3.95		M	
4.3.95-17	Set	7.3.95		M	

VII.5.4.3.96 $OLT_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.96-1	Created by ONU	7.3.96		O	
	Attributes				
4.3.96-2	Managed entity ID	7.3.96		M	
4.3.96-3	OLT vendor id	7.3.96		M	
4.3.96-4	Equipment ID	7.3.96		M	
4.3.96-5	Version	7.3.96		M	
	Actions				
4.3.96-6	Get	7.3.96		M	
4.3.96-7	Set	7.3.96		M	

VII.5.4.3.97 Multicast interworking VCC termination point

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.97-1	Managed entity ID	7.3.97		M	
4.3.97-2	VCI value	7.3.97		M	
4.3.97-3	VP/VC network CTP connectivity pointer	7.3.97		M	
4.3.97-4	Interworking option	7.3.97		M	
4.3.97-5	Service profile pointer	7.3.97		M	
4.3.97-6	AAL profile pointer	7.3.97		M	
4.3.97-7	Interworking termination point pointer	7.3.97		M	
4.3.97-8	AAL loopback configuration	7.3.97		M	
4.3.97-9	PPTP counter	7.3.97		O	
4.3.97-10	Operational state	7.3.97		O	
4.3.97-11	MulticastAddressTable	7.3.97		M	
	Actions				
4.3.97-12	Create	7.3.97		M	
4.3.97-13	Delete	7.3.97		M	
4.3.97-14	Get	7.3.97		M	
4.3.97-15	Get next	7.3.97		M	
4.3.97-16	Set	7.3.97		M	
	Notifications – AVCs				
4.3.97-17	Op state	7.3.97		CR	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – Alarms				
4.3.97-18	End-to-end VC-AIS-LMIR	7.3.97		M	
4.3.97-19	End-to-end VC-RDI-LMIR	7.3.97		M	
4.3.97-20	End-to-end VC-AIS-LMIG	7.3.97		M	
4.3.97-21	End-to-end VC-RDI-LMIG	7.3.97		M	
4.3.97-22	Segment loss of continuity	7.3.97		M	
4.3.97-23	End-to-end loss of continuity	7.3.97		M	
4.3.97-24	CSA	7.3.97		M	

VII.5.4.3.98 IP host config data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.98-1	Created by ONU	7.3.98		O	
	Attributes				
4.3.98-2	Managed entity ID	7.3.98		M	
4.3.98-3	IP Options	7.3.98		M	
4.3.98-4	MAC address	7.3.98		M	
4.3.98-5	ONT Identifier	7.3.98		M	
4.3.98-6	IP Address	7.3.98		M	
4.3.98-7	Mask	7.3.98		M	
4.3.98-8	Gateway	7.3.98		M	
4.3.98-9	Primary DNS	7.3.98		M	
4.3.98-10	Secondary DNS	7.3.98		M	
4.3.98-11	Current Address	7.3.98		O	
4.3.98-12	Current Mask	7.3.98		O	
4.3.98-13	Current Gateway	7.3.98		O	
4.3.98-14	Current Primary DNS	7.3.98		O	
4.3.98-15	Current Secondary DNS	7.3.98		O	
4.3.98-16	Domain Name	7.3.98		M	
4.3.98-17	Host Name	7.3.98		M	
	Actions				
4.3.98-18	Get	7.3.98		M	
4.3.98-19	Set	7.3.98		M	

VII.5.4.3.99 IP host PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.99-1	Managed entity id	7.3.99		M	
4.3.99-2	Interval end time	7.3.99		M	
4.3.99-3	Threshold $data_{B\text{-}PON}$ id	7.3.99		M	
4.3.99-4	ICMP Errors	7.3.99		M	
4.3.99-5	DNS Errors	7.3.99		M	
	Actions				
4.3.99-6	Create	7.3.99		M	
4.3.99-7	Delete	7.3.99		M	
4.3.99-8	Get	7.3.99		M	
4.3.99-9	Set	7.3.99		M	
4.3.99-10	Get current data	7.3.99		O	
	Notifications – TCAs				
4.3.99-11	IPNPM-ICMP-ERROR	7.3.99		M	
4.3.99-12	IPNPM-DNS-ERROR	7.3.99		M	

VII.5.4.3.100 TCP/UDP config data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.100-1	Managed entity id	7.3.100		M	
4.3.100-2	Port ID	7.3.100		M	
4.3.100-3	Protocol	7.3.100		M	
4.3.100-4	TOS/Diffserv field	7.3.100		M	
4.3.100-5	IP Host Pointer	7.3.100		M	
	Actions				
4.3.100-6	Create	7.3.100		M	
4.3.100-7	Delete	7.3.100		M	
4.3.100-8	Get	7.3.100		M	
4.3.100-9	Set	7.3.100		M	

VII.5.4.3.101 VoIP config data

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.101-1	Created by ONU	7.3.101		O	
	Attributes				
4.3.101-2	Managed entity ID	7.3.101		M	
4.3.101-3	Available Signalling Protocols	7.3.101		M	
4.3.101-4	Signalling Protocol Used	7.3.101		M	
4.3.101-5	Available VoIP Configuration Methods	7.3.101		M	
4.3.101-6	VoIP Configurations Method Used	7.3.101		M	
4.3.101-7	VoIP Configuration Address Pointer	7.3.101		M	
4.3.101-8	VoIP Configuration State	7.3.101		M	
4.3.101-9	Retrieve Profile	7.3.101		M	
4.3.101-10	Profile Version	7.3.101		M	
	Actions				
4.3.101-11	Get	7.3.101		M	
4.3.101-12	Set	7.3.101		M	
	Notifications – AVC				
4.3.101-13	Profile Version	7.3.101		M	
	Notifications – Alarms				
4.3.101-14	VCD-CONFIGSERVER-NAME	7.3.101		M	
4.3.101-15	VCD-CONFIGSERVER-REACH	7.3.101		M	
4.3.101-16	VCD-CONFIGSERVER-CONNECT	7.3.101		M	
4.3.101-17	VCD-CONFIGSERVER-VALIDATE	7.3.101		M	
4.3.101-18	VCD-CONFIGSERVER-AUTH	7.3.101		M	
4.3.101-19	VCD-CONFIGSERVER-TIMEOUT	7.3.101		M	
4.3.101-20	VCD-CONFIGSERVER-FAIL	7.3.101		M	
4.3.101-21	VCD-CONFIGFILE-ERROR	7.3.101		M	
4.3.101-22	VCD-SUBSCRIPTION-NAME	7.3.101		M	
4.3.101-23	VCD-SUBSCRIPTION-REACH	7.3.101		M	
4.3.101-24	VCD-SUBSCRIPTION-CONNECT	7.3.101		M	
4.3.101-25	VCD-SUBSCRIPTION-VALIDATE	7.3.101		M	
4.3.101-26	VCD-SUBSCRIPTION-AUTH	7.3.101		M	
4.3.101-27	VCD-SUBSCRIPTION-TIMEOUT	7.3.101		M	
4.3.101-28	VCD-SUBSCRIPTION-FAIL	7.3.101		M	
4.3.101-29	VCD-REBOOT-REQUEST	7.3.101		M	

VII.5.4.3.102 SIP config portal

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.102-1	Created by ONU	7.3.102	If Non-OMCI SIP config	CR	
	Attributes				
4.3.102-2	Managed entity ID	7.3.102		M	
4.3.102-3	Configuration Text	7.3.102		M	
	Actions				
4.3.102-4	Get	7.3.102		M	
4.3.102-5	Get-Next	7.3.102		M	
	Notifications – AVC				
4.3.102-6	Configuration Text	7.3.102		M	

VII.5.4.3.103 SIP agent config data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.103-1	Managed entity ID	7.3.103		M	
4.3.103-2	Proxy Server Address Pointer	7.3.103		M	
4.3.103-3	Outbound Proxy Address Pointer	7.3.103		M	
4.3.103-4	Primary SIP DNS	7.3.103		M	
4.3.103-5	Secondary SIP DNS	7.3.103		M	
4.3.103-6	UDP/TCP pointer	7.3.103		M	
4.3.103-7	SIP Reg. Exp. Time	7.3.103		M	
4.3.103-8	SIP re-reg Head Start Time	7.3.103		M	
4.3.103-9	Host Part URI	7.3.103		M	
4.3.103-10	SIP Status	7.3.103		M	
4.3.103-11	SIP Registrar	7.3.103		M	
4.3.103-12	Softswitch	7.3.103		M	
	Actions				
4.3.103-13	Get	7.3.103		M	
4.3.103-14	Set	7.3.103		M	
4.3.103-15	Delete	7.3.103		M	
4.3.103-16	Create	7.3.103		M	
	Notifications – AVCs				
4.3.103-17	SIP status	7.3.103		M	
	Notifications – Alarms				
4.3.103-18	SIPUA-REGISTER-NAME	7.3.103		M	
4.3.103-19	SIPUA-REGISTER-REACH	7.3.103		M	
4.3.103-20	SIPUA-REGISTER-CONNECT	7.3.103		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.103-21	SIPUA-REGISTER-VALIDATE	7.3.103		M	
4.3.103-22	SIPUA-REGISTER-AUTH	7.3.103		M	
4.3.103-23	SIPUA-REGISTER-TIMEOUT	7.3.103		M	
4.3.103-24	SIPUA-REGISTER-FAIL	7.3.103		M	

VII.5.4.3.104 SIP agent monitoring data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.104-1	Managed entity ID	7.3.104		M	
4.3.104-2	Interval End Time	7.3.104		M	
4.3.104-3	Threshold Data ID	7.3.104		M	
4.3.104-4	Transactions	7.3.104		O	
4.3.104-5	Rx Invite Reqs	7.3.104		O	
4.3.104-6	Rx Invite Retransmissions	7.3.104		O	
4.3.104-7	Rx NonInvite Reqs	7.3.104		O	
4.3.104-8	Rx NonInvite Retransmissions	7.3.104		O	
4.3.104-9	Rx Response	7.3.104		O	
4.3.104-10	Rx Response Retransmissions	7.3.104		O	
4.3.104-11	Tx Invite Reqs	7.3.104		O	
4.3.104-12	Tx Invite Retransmissions	7.3.104		O	
4.3.104-13	Tx NonInvite Reqs	7.3.104		O	
4.3.104-14	Tx NonInvite Retransmissions	7.3.104		O	
4.3.104-15	Tx Response	7.3.104		O	
4.3.104-16	Tx Response Retransmissions	7.3.104		O	
	Actions				
4.3.104-17	Get	7.3.104		M	
4.3.104-18	Set	7.3.104		M	
4.3.104-19	Delete	7.3.104		M	
4.3.104-20	Create	7.3.104		M	
4.3.104-21	Get Current Data	7.3.104		O	
	Notifications – TCAs				
4.3.104-22	SIPAMD-RX-INVITE-REQ	7.3.104		O	
4.3.104-23	SIPAMD-RX-INVITE-REQ-RET	7.3.104		O	
4.3.104-24	SIPAMD-RX-NONINVITE-REQ	7.3.104		O	
4.3.104-25	SIPAMD-RX-NONINVITE-REQ-RET	7.3.104		O	
4.3.104-26	SIPAMD-RX-RES	7.3.104		O	
4.3.104-27	SIPAMD-RX-RES-RET	7.3.104		O	

VII.5.4.3.105 SIP call initiation PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.105-1	Managed entity ID	7.3.105		M	
4.3.105-2	Interval End Time	7.3.105		M	
4.3.105-3	Threshold Data ID	7.3.105		M	
4.3.105-4	Failed to Connect Counter	7.3.105		M	
4.3.105-5	Failed to Validate Counter	7.3.105		M	
4.3.105-6	Timeout Counter	7.3.105		M	
4.3.105-7	Failure Received Counter	7.3.105		M	
4.3.105-8	Failed to Authenticate Counter	7.3.105		M	
	Actions				
4.3.105-9	Get	7.3.105		M	
4.3.105-10	Set	7.3.105		M	
4.3.105-11	Delete	7.3.105		M	
4.3.105-12	Create	7.3.105		M	
4.3.105-13	Get Current Data	7.3.105		O	
	Notifications – TCAs				
4.3.105-14	SIPCALLPM-FAILED-CONN	7.3.105		M	
4.3.105-15	SIPCALLPM-FAILED-VALIDATE	7.3.105		M	
4.3.105-16	SIPCALLPM-TIMEOUT	7.3.105		M	
4.3.105-17	SIPCALLPM-FAILIURE_RECV	7.3.105		M	
4.3.105-18	SIPCALLPM-FAILED-AUTH	7.3.105		M	

VII.5.4.3.106 SIP user data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.106-1	Managed entity ID	7.3.106		M	
4.3.106-2	SIP Agent Pointer	7.3.106		M	
4.3.106-3	User part AOR	7.3.106		M	
4.3.106-4	SIP Display Name	7.3.106		M	
4.3.106-5	Username/Password	7.3.106		M	
4.3.106-6	Voice Mail Server SIP URI	7.3.106		M	
4.3.106-7	Voice Mail Subscript. Exp Time	7.3.106		M	
4.3.106-8	Network Dial Plan Pointer	7.3.106		M	
4.3.106-9	Application Services Profile Pointer	7.3.106		M	
4.3.106-10	Feature Code Pointer	7.3.106		M	
4.3.106-11	PPTP Pointer	7.3.106		M	
4.3.106-12	Release Timer	7.3.106		O	
4.3.106-13	ROH Timer	7.3.106		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.106-14	Get	7.3.106		M	
4.3.106-15	Set	7.3.106		M	
4.3.106-16	Delete	7.3.106		M	
4.3.106-17	Create	7.3.106		M	

VII.5.4.3.107 VoIP media profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.107-1	Managed entity ID	7.3.107		M	
4.3.107-2	Fax Mode	7.3.107		M	
4.3.107-3	Voice Service Profile AAL Pointer	7.3.107		M	
4.3.107-4	Codec Selection (1st Order)	7.3.107		M	
4.3.107-5	Packet Period Selection (1st Order)	7.3.107		M	
4.3.107-6	Silence Suppression (1st Order)	7.3.107		M	
4.3.107-7	Codec Selection (2nd Order)	7.3.107		M	
4.3.107-8	Packet Period Selection (2nd Order)	7.3.107		M	
4.3.107-9	Silence Suppression (2nd Order)	7.3.107		M	
4.3.107-10	Codec Selection (3rd Order)	7.3.107		M	
4.3.107-11	Packet Period Selection (3rd Order)	7.3.107		M	
4.3.107-12	Silence Suppression (3rd Order)	7.3.107		M	
4.3.107-13	Codec Selection (4th Order)	7.3.107		M	
4.3.107-14	Packet Period Selection (4th Order)	7.3.107		M	
4.3.107-15	Silence Suppression (4th Order)	7.3.107		M	
4.3.107-16	OOB DTMF	7.3.107		M	
4.3.107-17	RTP Profile Pointer	7.3.107		M	
	Actions				
4.3.107-18	Get	7.3.107		M	
4.3.107-19	Set	7.3.107		M	
4.3.107-20	Delete	7.3.107		M	
4.3.107-21	Create	7.3.107		M	

VII.5.4.3.108 RTP profile data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.108-1	Managed entity ID	7.3.108		M	
4.3.108-2	LocalPortMin	7.3.108		M	
4.3.108-3	LocalPortMax	7.3.108		M	
4.3.108-4	DSCPMark	7.3.108		M	
4.3.108-5	Piggyback Events	7.3.108		M	
4.3.108-6	Tone Events	7.3.108		M	
4.3.108-7	DTMF Events	7.3.108		M	
4.3.108-8	CAS Events	7.3.108		M	
	Actions				
4.3.108-9	Get	7.3.108		M	
4.3.108-10	Set	7.3.108		M	
4.3.108-11	Delete	7.3.108		M	
4.3.108-12	Create	7.3.108		M	

VII.5.4.3.109 RTP monitoring data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.109-1	Managed entity ID	7.3.109		M	
4.3.109-2	Interval End Time	7.3.109		M	
4.3.109-3	Threshold Data ID	7.3.109		M	
4.3.109-4	RTP Errors	7.3.109		M	
4.3.109-5	Packet Loss	7.3.109		M	
4.3.109-6	Maximum Jitter	7.3.109		M	
4.3.109-7	Maximum Time Between RTCP Packets	7.3.109		M	
4.3.109-8	Buffer Underflows	7.3.109		M	
4.3.109-9	Buffer Overflows	7.3.109		M	
	Actions				
4.3.109-10	Get	7.3.109		M	
4.3.109-11	Set	7.3.109		M	
4.3.109-12	Delete	7.3.109		M	
4.3.109-13	Create	7.3.109		M	
4.3.109-14	Get Current Data	7.3.109		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.109-15	RTPPM-RTPERRORS	7.3.109		M	
4.3.109-16	RTPPM-PACKET-LOSS	7.3.109		M	
4.3.109-17	RTPPM-PACKET-JITTER	7.3.109		M	
4.3.109-18	RTPPM-NORTCPPACKET	7.3.109		M	
4.3.109-19	RTPPM-BUFFER-UNDERFLOWS	7.3.109		M	
4.3.109-20	RTPPM-BUFFER-OVERFLOWS	7.3.109		M	

VII.5.4.3.110 VoIP voice CTP

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.110-1	Managed entity ID	7.3.110		M	
4.3.110-2	UserProtocolPointer	7.3.110		M	
4.3.110-3	PPTP Pointer	7.3.110		M	
4.3.110-4	VoIP Media Profile Pointer	7.3.110		M	
4.3.110-5	Signalling Code	7.3.110		M	
	Actions				
4.3.110-6	Get	7.3.110		M	
4.3.110-7	Set	7.3.110		M	
4.3.110-8	Delete	7.3.110		M	
4.3.110-9	Create	7.3.110		M	

VII.5.4.3.111 Call control PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.111-1	Managed entity ID	7.3.111		M	
4.3.111-2	Interval End Time	7.3.111		M	
4.3.111-3	Threshold Data ID	7.3.111		M	
4.3.111-4	Call Setup Failures	7.3.111		M	
4.3.111-5	Call Setup Timer	7.3.111		M	
4.3.111-6	Call Terminate Failures	7.3.111		M	
4.3.111-7	Analog Port Releases	7.3.111		M	
4.3.111-8	Analog Port Off-Hook Timer	7.3.111		M	
	Actions				
4.3.111-9	Get	7.3.111		M	
4.3.111-10	Set	7.3.111		M	
4.3.111-11	Delete	7.3.111		M	
4.3.111-12	Create	7.3.111		M	
4.3.111-13	Get Current Data	7.3.111		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.111-14	CCPM-CALL-SETUP-FAIL	7.3.111		M	
4.3.111-15	CCPM-SETUP-TIMEOUT	7.3.111		M	
4.3.111-16	CCPM-CALL-TERMINATE	7.3.111		M	
4.3.111-17	CCPM-PORT-RELEASE	7.3.111		M	
4.3.111-18	CCPM-PORT-OFFHOOK-TIMEOUT	7.3.111		M	

VII.5.4.3.112 Network dial plan table

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.112-1	Managed entity ID	7.3.112		M	
4.3.112-2	Dial Plan Number	7.3.112		M	
4.3.112-3	Dial Plan Table Max Size	7.3.112		M	
4.3.112-4	Critical Dial Timeout	7.3.112		M	
4.3.112-5	Partial Dial Timeout	7.3.112		M	
4.3.112-6	Dial Plan Format	7.3.112		M	
4.3.112-7	Dial Plan Table	7.3.112		M	
	Actions				
4.3.112-8	Get	7.3.112		M	
4.3.112-9	Set	7.3.112		M	
4.3.112-10	Delete	7.3.112		M	
4.3.112-11	Create	7.3.112		M	
4.3.112-12	Get Next	7.3.112		M	

VII.5.4.3.113 VoIP application service profile

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.113-1	Managed entity ID	7.3.113		M	
4.3.113-2	CID Features	7.3.113		M	
4.3.113-3	Call Waiting Features	7.3.113		M	
4.3.113-4	Call progress of Transfer Features	7.3.113		M	
4.3.113-5	Call Presentation Features	7.3.113		M	
4.3.113-6	Direct Connect Features	7.3.113		M	
4.3.113-7	Direct Connect URI pointer	7.3.113		M	
4.3.113-8	Bridged Line Agent URI Pointer	7.3.113		M	
4.3.113-9	Conference Factory URI Pointer	7.3.113		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.113-10	Get	7.3.113		M	
4.3.113-11	Set	7.3.113		M	
4.3.113-12	Delete	7.3.113		M	
4.3.113-13	Create	7.3.113		M	

VII.5.4.3.114 VoIP line status

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.114-1	Created by ONU	7.3.114			
	Attributes				
4.3.114-2	Managed entity ID	7.3.114		M	
4.3.114-3	VoIPCodecUsed	7.3.114		M	
4.3.114-4	VoIPVoiceServerStatus	7.3.114		M	
4.3.114-5	VoIPPortSessionType	7.3.114		M	
4.3.114-6	VoIPCall1PacketPeriod	7.3.114		M	
4.3.114-7	VoIPCall2PacketPeriod	7.3.114		M	
4.3.114-8	VoIPCall1DestAddr	7.3.114		M	
4.3.114-9	VoIPCall1DestAddr	7.3.114		M	
	Actions				
4.3.114-10	Get	7.3.114		M	

VII.5.4.3.115 VoIP feature access codes

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.115-1	Managed entity ID	7.3.115		M	
4.3.115-2	CancelCallWaiting	7.3.115		O	
4.3.115-3	CallHold	7.3.115		O	
4.3.115-4	CallPark	7.3.115		O	
4.3.115-5	CIDSActivate	7.3.115		O	
4.3.115-6	CIDSDeactivate	7.3.115		O	
4.3.115-7	DoNotDisturbActivation	7.3.115		O	
4.3.115-8	DoNotDisturbDeactivation	7.3.115		O	
4.3.115-9	DoNotDisturbPIN Change	7.3.115		O	
4.3.115-10	Emergency Service Number	7.3.115		O	
4.3.115-11	Intercom Service	7.3.115		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.3.115-12	Get	7.3.115		M	
4.3.115-13	Set	7.3.115		M	
4.3.115-14	Delete	7.3.115		M	
4.3.115-15	Create	7.3.115		M	

VII.5.4.3.116 Network address

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.116-1	Managed entity ID	7.3.116		M	
4.3.116-2	Security Pointer	7.3.116		M	
4.3.116-3	Address Pointer	7.3.116		M	
	Actions				
4.3.116-4	Get	7.3.116		M	
4.3.116-5	Set	7.3.116		M	
4.3.116-6	Delete	7.3.116		M	
4.3.116-7	Create	7.3.116		M	

VII.5.4.3.117 Authentication security method

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.117-1	Managed entity ID	7.3.117		M	
4.3.117-2	Validation Scheme	7.3.117		M	
4.3.117-3	Username	7.3.117		M	
4.3.117-4	Password	7.3.117		M	
4.3.117-5	Realm	7.3.117		M	
	Actions				
4.3.117-6	Get	7.3.117		M	
4.3.117-7	Set	7.3.117		M	
4.3.117-8	Delete	7.3.117		M	
4.3.117-9	Create	7.3.117		M	

VII.5.4.3.118 LargeString

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.118-1	Managed entity ID	7.3.118		M	
4.3.118-2	Number Of Parts	7.3.118		M	
4.3.118-3	Part 1	7.3.118		M	
4.3.118-4	Part 2	7.3.118		M	
4.3.118-5	Part 3	7.3.118		M	
4.3.118-6	Part 4	7.3.118		M	
4.3.118-7	Part 5	7.3.118		M	
4.3.118-8	Part 6	7.3.118		M	
4.3.118-9	Part 7	7.3.118		M	
4.3.118-10	Part 8	7.3.118		M	
4.3.118-11	Part 9	7.3.118		M	
4.3.118-12	Part 10	7.3.118		M	
4.3.118-13	Part 11	7.3.118		M	
4.3.118-14	Part 12	7.3.118		M	
4.3.118-15	Part 13	7.3.118		M	
4.3.118-16	Part 14	7.3.118		M	
4.3.118-17	Part 15	7.3.118		M	
	Actions				
4.3.118-18	Get	7.3.118		M	
4.3.118-19	Set	7.3.118		M	
4.3.118-20	Delete	7.3.118		M	
4.3.118-21	Create	7.3.118		M	

VII.5.4.3.119 MGC config portal

Item	Parameter	Reference	Value, comment	Req	Conf
4.3.119-1	Created by ONU	7.3.119	If Non-OMCI MGCP config	CR	
	Attributes				
4.3.119-2	Managed entity ID	7.3.119		M	
4.3.119-3	Configuration Text	7.3.119		M	
	Actions				
4.3.119-4	Get	7.3.119		M	
4.3.119-5	Get-Next	7.3.119		M	
	Notifications – AVC				
4.3.119-6	Configuration Text	7.3.119		M	

VII.5.4.3.120 MGC config data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.120-1	Managed entity ID	7.3.120		M	
4.3.120-2	Primary MGC	7.3.120		M	
4.3.120-3	Secondary MGC	7.3.120		M	
4.3.120-4	UDP/TCP Pointer	7.3.120		M	
4.3.120-5	Version	7.3.120		M	
4.3.120-6	Message Format	7.3.120		M	
4.3.120-7	Maximum retry time	7.3.120		O	
4.3.120-8	Maximum retry attempts	7.3.120		O	
4.3.120-9	Service Change Delay	7.3.120		O	
4.3.120-10	Termination ID Base	7.3.120		O	
	Actions				
4.3.120-11	Get	7.3.120		M	
4.3.120-12	Set	7.3.120		M	
4.3.120-13	Delete	7.3.120		M	
4.3.120-14	Create	7.3.120		M	

VII.5.4.3.121 MCG monitoring data

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.3.121-1	Managed entity ID	7.3.121		M	
4.3.121-2	Interval End Time	7.3.121		M	
4.3.121-3	Threshold Data ID	7.3.121		M	
4.3.121-4	Received Messages	7.3.121		M	
4.3.121-5	Received Octets	7.3.121		M	
4.3.121-6	Sent Messages	7.3.121		M	
4.3.121-7	Sent Octets	7.3.121		M	
4.3.121-8	Protocol Errors	7.3.121		M	
4.3.121-9	Transport Losses	7.3.121		M	
4.3.121-10	LastDetectedEvent	7.3.121		M	
4.3.121-11	LastDetectedEventTime	7.3.121		M	
4.3.121-12	LastDetectedResetTime	7.3.121		M	
	Actions				
4.3.121-13	Get	7.3.121		M	
4.3.121-14	Set	7.3.121		M	
4.3.121-15	Delete	7.3.121		M	
4.3.121-16	Create	7.3.121		M	
4.3.121-17	Get Current Data	7.3.121		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.3.121-18	MGCP_PROTOCOL_ERRORS	7.3.121		M	
4.3.121-19	MGCP_TRANSPORT_LOSSES	7.3.121		M	

VII.5.4.4 VP and VC MUX management

VII.5.4.4.1 VP network $CTP_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.4.1-1	Managed entity id	7.4.1		M	
4.4.1-2	VPI value	7.4.1		M	
	UNI/ANI pointer	7.4.1		M	
4.4.1-3	0x00XX for pseudo slotIDs	7.4.1			
4.4.1-4	0xXX00 for pseudo portIDs	7.4.1			
4.4.1-5	0x0000 for integrated type ONT with multiple AAL 2 functions	7.4.1			
4.4.1-6	Direction	7.4.1		M	
4.4.1-7	Priority queue pointer for downstream	7.4.1		M	
4.4.1-8	Traffic management pointer for upstream	7.4.1		M	
4.4.1-9	Traffic descriptor profile pointer	7.4.1		O	
4.4.1-10	UNI counter	7.4.1		O	
	Actions				
4.4.1-11	Create	7.4.1		M	
4.4.1-12	Delete	7.4.1		M	
4.4.1-13	Get	7.4.1		M	
4.4.1-14	Set	7.4.1		M	
	Notifications – Alarms				
4.4.1-15	VP-AIS-LMIR	7.4.1		M	
4.4.1-16	VP-RDI-LMIR	7.4.1		M	
4.4.1-17	VP-AIS-LMIG	7.4.1		M	
4.4.1-18	VP-RDI-LMIG	7.4.1		M	
4.4.1-19	Segment loss of continuity	7.4.1		M	
4.4.1-20	End-to-end loss of continuity	7.4.1		M	

VII.5.4.4.2 ATM VP cross-connection

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.4.2-1	Managed entity id	7.4.2		M	
4.4.2-2	Termination point ANI side	7.4.2		M	
4.4.2-3	Termination point UNI side	7.4.2		M	
4.4.2-4	Operational state	7.4.2		O	
4.4.2-5	Administrative state	7.4.2		M	
	Actions				
4.4.2-6	Create	7.4.2		M	
4.4.2-7	Delete	7.4.2		M	
4.4.2-8	Create complete connection	7.4.2		M	
4.4.2-9	Delete complete connection	7.4.2		M	
4.4.2-10	Get	7.4.2		M	
4.4.2-11	Get complete connection	7.4.2		M	
4.4.2-12	Set	7.4.2		M	
	Notifications – AVCs				
4.4.2-13	Op state	7.4.2		CR	

VII.5.4.4.3 VP PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
4.4.3-1	If associated with ANI-side VP CTP, monitors performance of downstream ATM flows	7.4.3		M	
4.4.3-2	If associated with UNI-side VP CTP, monitors performance of upstream ATM flows	7.4.3		M	
	Attributes				
4.4.3-3	Managed entity id	7.4.3		M	
4.4.3-4	Interval end time	7.4.3		M	
4.4.3-5	Threshold $data_{B\text{-}PON}$ id	7.4.3		M	
4.4.3-6	Lost C=0+1 cells	7.4.3		M	
4.4.3-7	Lost C=0 cells	7.4.3		M	
4.4.3-8	Misinserted cells	7.4.3		M	
4.4.3-9	Transmitted C=0+1 cells	7.4.3		M	
4.4.3-10	Transmitted C=0 cells	7.4.3		M	
4.4.3-11	Impaired block	7.4.3		M	
	Actions				
4.4.3-12	Create	7.4.3		M	
4.4.3-13	Delete	7.4.3		M	
4.4.3-14	Get	7.4.3		M	
4.4.3-15	Set	7.4.3		M	
4.4.3-16	Get current data	7.4.3		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Notifications – TCAs				
4.4.3-17	Lost CLP=0+1 cells	7.4.3		M	
4.4.3-18	Lost CLP=0 cells	7.4.3		M	
4.4.3-19	Misinserted cells	7.4.3		M	
4.4.3-20	Impaired blocks	7.4.3		M	

VII.5.4.4.4 VC network $CTP_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.4.4-1	Managed entity ID	7.4.4		M	
4.4.4-2	VPI value	7.4.4		M	
4.4.4-3	VCI value	7.4.4		M	
4.4.4-4	UNI/ANI pointer	7.4.4		M	
4.4.4-5	Direction	7.4.4		M	
4.4.4-6	Priority queue pointer for downstream	7.4.4		M	
4.4.4-7	Traffic management pointer for upstream	7.4.4		M	
4.4.4-8	Traffic descriptor profile pointer	7.4.4		O	
	Actions				
4.4.4-9	Create	7.4.4		M	
4.4.4-10	Delete	7.4.4		M	
4.4.4-11	Get	7.4.4		M	
4.4.4-12	Set	7.4.4		M	
	Notifications – Alarms				
4.4.4-13	VC-AIS-LMIR	7.4.4		M	
4.4.4-14	VC-RDI-LMIR	7.4.4		M	
4.4.4-15	VC-AIS-LMIG	7.4.4		M	
4.4.4-16	VC-RDI-LMIG	7.4.4		M	
4.4.4-17	Segment loss of continuity	7.4.4		M	
4.4.4-18	End-to-end loss of continuity	7.4.4		M	

VII.5.4.4.5 ATM VC cross-connection

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.4.5-1	Managed entity id	7.4.5		M	
4.4.5-2	Termination point ANI side	7.4.5		M	
4.4.5-3	Termination point UNI side	7.4.5		M	
4.4.5-4	Operational state	7.4.5		O	
4.4.5-5	Administrative state	7.4.5		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions				
4.4.5-6	Create	7.4.5		M	
4.4.5-7	Delete	7.4.5		M	
4.4.5-8	Create complete connection	7.4.5		M	
4.4.5-9	Delete complete connection	7.4.5		M	
4.4.5-10	Get	7.4.5		M	
4.4.5-11	Get complete connection	7.4.5		M	
4.4.5-12	Set	7.4.5		M	
	Notifications – AVCs				
4.4.5-13	Op state	7.4.5		CR	

VII.5.4.4.6 VC PM history data

Item	Parameter	Reference	Value, comment	Req	Conf
4.4.6-1	If associated with ANI-side VP CTP, monitors performance of downstream ATM flows	7.4.6		M	
4.4.6-2	If associated with UNI-side VP CTP, monitors performance of upstream ATM flows	7.4.6		M	
	Attributes				
4.4.6-3	Managed entity id	7.4.6		M	
4.4.6-4	Interval end time	7.4.6		M	
4.4.6-5	Threshold $data_{B\text{-}PON}$ id	7.4.6		M	
4.4.6-6	Lost C=0+1 cells	7.4.6		M	
4.4.6-7	Lost C=0 cells	7.4.6		M	
4.4.6-8	Misinserted cells	7.4.6		M	
4.4.6-9	Transmitted C=0+1 cells	7.4.6		M	
4.4.6-10	Transmitted C=0 cells	7.4.6		M	
4.4.6-11	Impaired block	7.4.6		M	
	Actions				
4.4.6-12	Create	7.4.6		M	
4.4.6-13	Delete	7.4.6		M	
4.4.6-14	Get	7.4.6		M	
4.4.6-15	Set	7.4.6		M	
4.4.6-16	Get current data	7.4.6		O	
	Notifications – TCAs				
4.4.6-17	Lost CLP=0+ 1 cells	7.4.6		M	
4.4.6-18	Lost CLP=0 cells	7.4.6		M	
4.4.6-19	Misinserted cells	7.4.6		M	
4.4.6-20	Impaired blocks	7.4.6		M	

VII.5.4.5 Traffic management

VII.5.4.5.1 Priority queue$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
4.5.1-1	Queues automatically created by ONT	7.5.1		M	
4.5.1-2	One or more queues for circuit pack (formerly PON IF linecard)	7.5.1		O	
4.5.1-3	One or more upstream queues	7.5.1		CR	
4.5.1-4	One or more downstream queues for circuit pack (formerly subscriber line card)	7.5.1		M	
	Attributes				
4.5.1-5	Managed entity id	7.5.1		M	
4.5.1-6	Queue configuration option	7.5.1		M	
4.5.1-7	Maximum queue size	7.5.1		M	
4.5.1-8	Allocated queue size	7.5.1		M	
4.5.1-9	Discard-cell-counter reset interval	7.5.1		O	
4.5.1-10	Threshold value for discarded cells due to buffer overflow	7.5.1		O	
4.5.1-11	Back pressure operation	7.5.1	If back pressure supported	CR	
4.5.1-12	Back pressure time	7.5.1	If back pressure supported	CR	
4.5.1-13	Back pressure occur queue threshold	7.5.1	If back pressure supported	CR	
4.5.1-14	Back pressure clear queue threshold	7.5.1	If back pressure supported	CR	
4.5.1-15	T-CONT buffer pointer	7.5.1	If DBA supported	CR	
4.5.1-16	Traffic scheduler pointer	7.5.1	If DBA supported	CR	
4.5.1-17	Weight	7.5.1	If DBA supported	CR	
	Actions				
4.5.1-18	Get	7.5.1		M	
4.5.1-19	Set	7.5.1		M	
	Notifications – Alarm				
4.5.1-20	Cell loss	7.5.1		O	

VII.5.4.5.2 Traffic descriptors

VII.5.4.5.2.1 DBR/CBR traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.1-1	Managed entity id	7.5.2.1		M	
4.5.2.1-2	Service category/ATC	7.5.2.1		M	
4.5.2.1-3	Peak cell rate	7.5.2.1		M	

Item	Parameter	Reference	Value, comment	Req	Conf
4.5.2.1-4	Cell delay variation tolerance in relation to PCR	7.5.2.1		M	
4.5.2.1-5	CLR	7.5.2.1		M	
	Actions				
4.5.2.1-6	Create	7.5.2.1		M	
4.5.2.1-7	Delete	7.5.2.1		M	
4.5.2.1-8	Get	7.5.2.1		M	

VII.5.4.5.2.2 UBR traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.2-1	Managed entity id	7.5.2.2		M	
4.5.2.2-2	Service category/ATC	7.5.2.2		M	
4.5.2.2-3	Peak cell rate	7.5.2.2		M	
4.5.2.2-4	Cell delay variation tolerance in relation to PCR	7.5.2.2		M	
4.5.2.2-5	FrameDiscard	7.5.2.2		O	
	Actions				
4.5.2.2-6	Create	7.5.2.2		M	
4.5.2.2-7	Delete	7.5.2.2		M	
4.5.2.2-8	Get	7.5.2.2		M	

VII.5.4.5.2.3 SBR1/VBR1 traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.3-1	Managed entity id	7.5.2.3		M	
4.5.2.3-2	Service category/ATC	7.5.2.3		M	
4.5.2.3-3	Peak cell rate	7.5.2.3		M	
4.5.2.3-4	Sustainable cell rate	7.5.2.3		M	
4.5.2.3-5	Maximum burst size	7.5.2.3		M	
4.5.2.3-6	Cell delay variation tolerance in relation to PCR	7.5.2.3		M	
4.5.2.3-7	Cell delay variation tolerance in relation to SCR	7.5.2.3		M	
4.5.2.3-8	CLR	7.5.2.3		M	
4.5.2.3-9	FrameDiscard	7.5.2.3		O	
	Actions				
4.5.2.3-10	Create	7.5.2.3		M	
4.5.2.3-11	Delete	7.5.2.3		M	
4.5.2.3-12	Get	7.5.2.3		M	

VII.5.4.5.2.4 SBR2/VBR2 traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.4-1	Managed entity id	7.5.2.4		M	
4.5.2.4-2	Service category/ATC	7.5.2.4		M	
4.5.2.4-3	Peak cell rate	7.5.2.4		M	
4.5.2.4-4	Sustainable cell rate	7.5.2.4		M	
4.5.2.4-5	Maximum burst size	7.5.2.4		M	
4.5.2.4-6	Cell delay variation tolerance in relation to PCR	7.5.2.4		M	
4.5.2.4-7	Cell delay variation tolerance in relation to SCR	7.5.2.4		M	
4.5.2.4-8	CLR	7.5.2.4		M	
4.5.2.4-9	FrameDiscard	7.5.2.4		O	
	Actions				
4.5.2.4-10	Create	7.5.2.4		M	
4.5.2.4-11	Delete	7.5.2.4		M	
4.5.2.4-12	Get	7.5.2.4		M	

VII.5.4.5.2.5 SBR3/VBR3 traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.5-1	Managed entity id	7.5.2.5		M	
4.5.2.5-2	Service category/ATC	7.5.2.5		M	
4.5.2.5-3	Peak cell rate	7.5.2.5		M	
4.5.2.5-4	Sustainable cell rate	7.5.2.5		M	
4.5.2.5-5	Maximum burst size	7.5.2.5		M	
4.5.2.5-6	Cell delay variation tolerance in relation to PCR	7.5.2.5		M	
4.5.2.5-7	Cell delay variation tolerance in relation to SCR	7.5.2.5		M	
4.5.2.5-8	CLR	7.5.2.5		M	
4.5.2.5-9	FrameDiscard	7.5.2.5		O	
	Actions	7.5.2.5			
4.5.2.5-10	Create	7.5.2.5		M	
4.5.2.5-11	Delete	7.5.2.5		M	
4.5.2.5-12	Get	7.5.2.5		M	

VII.5.4.5.2.6 ABR traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.6-1	Managed entity id	7.5.2.6		M	
4.5.2.6-2	Service category/ATC	7.5.2.6		M	
4.5.2.6-3	Peak cell rate	7.5.2.6		M	
4.5.2.6-4	Cell delay variation tolerance in relation to PCR	7.5.2.6		M	
4.5.2.6-5	Minimum cell rate	7.5.2.6		M	
4.5.2.6-6	Initial cell rate	7.5.2.6		O	
4.5.2.6-7	Transient buffer exposure	7.5.2.6		O	
4.5.2.6-8	Rate decrease factor	7.5.2.6		O	
4.5.2.6-9	Rate increase factor	7.5.2.6		O	
4.5.2.6-10	Fixed round trip time	7.5.2.6		O	
4.5.2.6-11	Number RM	7.5.2.6		O	
4.5.2.6-12	Time RM	7.5.2.6		O	
4.5.2.6-13	Cut-off decrease factor	7.5.2.6		O	
4.5.2.6-14	ACR decrease time factor	7.5.2.6		O	
4.5.2.6-15	FrameDiscard	7.5.2.6		O	
	Actions				
4.5.2.6-16	Create	7.5.2.6		M	
4.5.2.6-17	Delete	7.5.2.6		M	
4.5.2.6-18	Get	7.5.2.6		M	

VII.5.4.5.2.7 ABT/DT/IT traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.7-1	Managed entity id	7.5.2.7		M	
4.5.2.7-2	Service category/ATC	7.5.2.7		M	
4.5.2.7-3	Peak cell rate	7.5.2.7		M	
4.5.2.7-4	Sustainable cell rate	7.5.2.7		O	
4.5.2.7-5	Maximum burst size	7.5.2.7		O	
4.5.2.7-6	Cell delay variation tolerance in relation to PCR	7.5.2.7		M	
4.5.2.7-7	Cell delay variation tolerance in relation to SCR	7.5.2.7		O	
4.5.2.7-8	Number RM	7.5.2.7		O	
4.5.2.7-9	Time RM	7.5.2.7		O	
4.5.2.7-10	FrameDiscard	7.5.2.7		O	

Item	Parameter	Reference	Value, comment	Req	Conf
	Actions	7.5.2.7			
4.5.2.7-11	Create	7.5.2.7		M	
4.5.2.7-12	Delete	7.5.2.7		M	
4.5.2.7-13	Get	7.5.2.7		M	

VII.5.4.5.2.8 GFR traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.8-1	Managed entity id	7.5.2.8		M	
4.5.2.8-2	Service category/ATC	7.5.2.8		M	
4.5.2.8-3	Peak cell rate	7.5.2.8		M	
4.5.2.8-4	Sustainable cell rate	7.5.2.8		O	
4.5.2.8-5	Maximum burst size	7.5.2.8		O	
4.5.2.8-6	Cell delay variation tolerance in relation to PCR	7.5.2.8		M	
4.5.2.8-7	Cell delay variation tolerance in relation to SCR	7.5.2.8		O	
4.5.2.8-8	Maximum frame size	7.5.2.8		O	
4.5.2.8-9	Minimum cell rate	7.5.2.8		M	
4.5.2.8-10	FrameDiscard	7.5.2.8		O	
	Actions				
4.5.2.8-11	Create	7.5.2.8		M	
4.5.2.8-12	Delete	7.5.2.8		M	
4.5.2.8-13	Get	7.5.2.8		M	

VII.5.4.5.2.9 UBR+ traffic descriptor

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.2.9-1	Managed entity id	7.5.2.9		M	
4.5.2.9-2	Service category/ATC	7.5.2.9		M	
4.5.2.9-3	Peak cell rate	7.5.2.9		M	
4.5.2.9-4	Minimum cell rate	7.5.2.9		M	
4.5.2.9-5	Cell delay variation tolerance in relation to PCR	7.5.2.9		M	
4.5.2.9-6	FrameDiscard	7.5.2.9		O	
	Actions				
4.5.2.9-7	Create	7.5.2.9		M	
4.5.2.9-8	Delete	7.5.2.9		M	
4.5.2.9-9	Get	7.5.2.9		M	

VII.5.4.5.3 This clause intentionally left blank

There are no PICS criteria in this clause.

VII.5.4.5.4 UPC disagreement monitoring history data$_{B\text{-}PON}$

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.4-1	Managed entity id	7.5.4		M	
4.5.4-2	Interval end time	7.5.4		M	
4.5.4-3	Threshold data$_{B\text{-}PON}$ id	7.5.4		M	
4.5.4-4	Discarded cells due to UPC	7.5.4		M	
4.5.4-5	Discarded CLP = 0 cells due to UPC	7.5.4		M	
4.5.4-6	Tagged CLP = 0 cells	7.5.4		M	
4.5.4-7	Successfully passed cells	7.5.4		M	
4.5.4-8	Successfully passed CLP = 0 cells	7.5.4		M	
	Actions				
4.5.4-9	Create	7.5.4		M	
4.5.4-10	Delete	7.5.4		M	
4.5.4-11	Get	7.5.4		M	
4.5.4-12	Set	7.5.4		M	
4.5.4-13	Get current data	7.5.4		O	
	Notifications – TCAs				
4.5.4-14	Discarded cells due to UPC	7.5.4		M	
4.5.4-15	Discarded CLP = 0 cells due to UPC	7.5.4		M	

VII.5.4.5.5 Traffic scheduler

Item	Parameter	Reference	Value, comment	Req	Conf
	Attributes				
4.5.5-1	Managed entity id	7.5.5		M	
4.5.5-2	T-CONT buffer pointer	7.5.5		M	
4.5.5-3	Traffic scheduler pointer	7.5.5		M	
4.5.5-4	Policy	7.5.5		M	
4.5.5-5	Priority/weight	7.5.5		M	
	Actions				
4.5.5-6	Get	7.5.5		M	
4.5.5-7	Set	7.5.5		M	
	Notifications – AVCs				
4.5.5-8	Autonomous change of any attribute	7.5.5		M	

VII.5.5 ONT management and control channel (OMCC)

The OMCC performance criteria listed below are considered objectives, pending further study and operator input.

Item	Parameter	Reference	Value, comment	Req	Conf
5-1	OMCC ATM Connection (per ITU-T Rec. G.983.1)	8		M	
5-2	The cells carrying ONT management messages should be sent with cell loss priority CLP = 0.	8		O	
5-3	An upstream OMCC cell should always be put in the high priority queue or be modeled with the CBR service category.	8		O	
5-4	Message Response Time: The system should support response times that do not exceed 1 s for the high priority protocol handling messages and 3 s for the low priority protocol handling messages.	8		O	

VII.5.6 ONT management and control protocol

VII.5.6.1 ONT management and control protocol cell format

VII.5.6.1.1 Introduction

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.1-1	OMCC packet format per Figure 41.	9.1.1		M	

VII.5.6.1.2 ATM header

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.2-1	Header contains VPI/VCI of OMCC for addressed ONT.	9.1.2		M	
6.1.2-2	Header PTI should equal 001; CLP bit should be 0	9.1.2		O	
6.1.2-3	HEC calculated using normal ATM CRC-8 polynomial	9.1.2		O	

VII.5.6.1.3 Transaction correlation identifier

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.3-1	Response message carries transaction identifier of message to which it is responding	9.1.3		M	
6.1.3-2	Transaction identifier of event messages is 0x0000	9.1.3		M	

VII.5.6.1.4 Message type

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.4-1	AR bit supported	9.1.4		M	
6.1.4-2	AK bit supported	9.1.4		M	
	Message types supported				
6.1.4-3	4 Create	9.1.4		M	
6.1.4-4	5 Create complete connection	9.1.4		M	
6.1.4-5	6 Delete	9.1.4		M	
6.1.4-6	7 Delete complete connection	9.1.4		M	
6.1.4-7	8 Set	9.1.4		M	
6.1.4-8	9 Get	9.1.4		M	
6.1.4-9	10 Get complete connection	9.1.4		M	
6.1.4-10	11 Get all alarms	9.1.4		M	
6.1.4-11	12 Get all alarms next	9.1.4		M	
6.1.4-12	13 MIB upload	9.1.4		M	
6.1.4-13	14 MIB upload next	9.1.4		M	
6.1.4-14	15 MIB reset	9.1.4		M	
6.1.4-15	16 Alarm	9.1.4		M	
6.1.4-16	17 Attribute value change	9.1.4		M	
6.1.4-17	18 Test	9.1.4		M	
6.1.4-18	19 Start software download	9.1.4		M	
6.1.4-19	20 Download section	9.1.4		M	
6.1.4-20	21 End software download	9.1.4		M	
6.1.4-21	22 Activate software	9.1.4		M	
6.1.4-22	23 Commit software	9.1.4		M	
6.1.4-23	24 Synchronize Time	9.1.4		M	
6.1.4-24	25 Reboot	9.1.4		M	
6.1.4-25	26 Get next	9.1.4		M	
6.1.4-26	27 Test result	9.1.4		M	
6.1.4-27	28 Get current data	9.1.4		M	
	Message types required to increment data sync				
6.1.4-28	4 Create	9.1.4		M	
6.1.4-29	5 Create complete connection	9.1.4		M	
6.1.4-30	6 Delete	9.1.4		M	
6.1.4-31	7 Delete complete connection	9.1.4		M	
6.1.4-32	8 Set	9.1.4		M	
6.1.4-33	19 Start software download	9.1.4		M	
6.1.4-34	21 End software download	9.1.4		M	
6.1.4-35	22 Activate software	9.1.4		M	
6.1.4-36	23 Commit software	9.1.4		M	

Item	Parameter	Reference	Value, comment	Req	Conf
	Message types required not to increment data sync				
6.1.4-37	9 Get	9.1.4		M	
6.1.4-38	10 Get complete connection	9.1.4		M	
6.1.4-39	11 Get all alarms	9.1.4		M	
6.1.4-40	12 Get all alarms next	9.1.4		M	
6.1.4-41	13 MIB upload	9.1.4		M	
6.1.4-42	14 MIB upload next	9.1.4		M	
6.1.4-43	15 MIB reset	9.1.4		M	
6.1.4-44	16 Alarm	9.1.4		M	
6.1.4-45	17 Attribute value change	9.1.4		M	
6.1.4-46	18 Test	9.1.4		M	
6.1.4-47	20 Download section	9.1.4		M	
6.1.4-48	24 Synchronize Time	9.1.4		M	
6.1.4-49	25 Reboot	9.1.4		M	
6.1.4-50	26 Get next	9.1.4		M	
6.1.4-51	27 Test result	9.1.4		M	
6.1.4-52	28 Get current data	9.1.4		M	

VII.5.6.1.5 Device identifier

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.5-1	Field defined as 0x0A	9.1.5		M	

VII.5.6.1.6 Message identifier

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.6-1	Supported ME class values comply with Table 47/G.983.2.	9.1.6		M	

VII.5.6.1.7 Message contents

There are no PICS criteria in this clause.

VII.5.6.1.8 AAL 5-trailer

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.8-1	CPCS-user-to-user-indication (CPCS-UU) field set to 0x00 at transmitter and ignored at receiver	9.1.8		M	
6.1.8-2	CPCS common part indication (CPCS-CPI) field set to 0x00 at transmitter and ignored at receiver	9.1.8		M	

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.8-3	Length of CPCS-SDU field set to 0x0028	9.1.8		M	
6.1.8-4	32-bit CRC per ITU-T Rec. I.363.5	9.1.8		M	

VII.5.6.1.9 OMCI protocol limitations

Item	Parameter	Reference	Value, comment	Req	Conf
6.1.9-1	When OLT asks for too many attributes, it gets an attribute mask that clarifies what is being sent	9.1.9		CR	
6.1.9-2	Or… ONT returns a parameter error code when it receives a Get that does not fit in the Get Response	9.1.9		CR	

VII.5.6.2 Message flow control and error recovery

There are no PICS criteria in this clause.

VII.5.6.3 OMCI handling within the ONT

VII.5.6.3.1 Prioritized protocol entities

Item	Parameter	Reference	Value, comment	Req	Conf
6.3.1-1	Discard received message if CRC mismatches	9.3.1		M	
6.3.1-2	Two priority queues for message processing	9.3.1		M	
6.3.1-3	Discard message if incoming queue full	9.3.1		M	
6.3.1-4	Block if outgoing queue full	9.3.1		M	
6.3.1-5	If transaction correlation identifier matches previous message, do not execute message but return previous ACK instead.	9.3.1		M	
6.3.1-6	Serve outgoing low priority queue only when high priority queue is empty.	9.3.1		M	

VII.5.6.3.2 Restrictions on the actions in relation to the protocol entities

Item	Parameter	Reference	Value, comment	Req	Conf
6.3.2-1	ONT rejects MIB upload or software download of one priority while same command is executing at other priority.	9.3.2		M	

VII.5.7 Annex A – Transport of video return path service

There are no PICS criteria in this clause.

VII.5.8 Appendix I – OMCI common mechanisms and services

VII.5.8.1 Common mechanisms

VII.5.8.1.1 MIB data sync increase

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.1-1	MIB sync increments only in response to OLT commands	I.1.1		M	
8.1.1-2	MIB sync increments from 255 to 1, skipping 0	I.1.1		M	
8.1.1-3	MIB sync = 0 when shipped from factory	I.1.1		M	
8.1.1-4	ONT sets MIB sync to 0 when MIB invalid	I.1.1		M	

VII.5.8.1.2 MIB audit and resynchronization

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.2-1	MIB upload copy discarded after not less than 1 minute	I.1.2		O	

VII.5.8.1.3 Alarm sequence number increase

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.3-1	Alarm sequence number reset to 1 on initialization	I.1.3		M	
8.1.3-2	Sequence number increments from 255 to 1, skipping 0	I.1.3		M	

VII.5.8.1.4 Alarm audit and resynchronization

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.4-1	Alarm sequence number reset to 1 by get all active alarms request	I.1.4		M	
8.1.4-2	Copy of alarm table discarded after not less than 1 minute	I.1.4		O	

VII.5.8.1.5 Get an attribute that is larger than the OMCI message contents field

There are no PICS criteria in this clause.

VII.5.8.1.6 Create an instance of a managed entity with an attribute that is larger than the OMCI message contents field

There are no PICS criteria in this clause.

VII.5.8.1.7 Report test result

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.7-1	ONT autonomously generates report test result message after accepting test command from OLT	I.1.7		M	

VII.5.8.1.8 Alarm reporting control

Item	Parameter	Reference	Value, comment	Req	Conf
8.1.8-1	ARC enabled corresponds to M.3100 NALM-QI state	I.1.8		O	
8.1.8-2	ARC interval = 255 never expires, corresponding to NALM state	I.1.8		O	

VII.5.8.2 Common services

There are no PICS criteria in this clause.

VII.5.8.3 Common services with PON protection

There are no PICS criteria in this clause.

VII.5.8.4 Common services with DBA support

There are no PICS criteria in this clause.

VII.5.9 Appendix II – OMCI message set

There are no PICS criteria in this clause.

VII.5.10 Appendix III – Support of F4/F5 maintenance flows in the ONT

VII.5.10.1 General principle

There are no PICS criteria in this clause.

VII.5.10.2 Definition of the F4/F5 segment and end-to-end applicability

VII.5.10.2.1 Support of F4/F5 maintenance flows with respect to ATM-UNIs

There are no PICS criteria in this clause.

VII.5.10.2.2 Support of F4/F5 maintenance flows with respect to non-ATM-UNIs

Item	Parameter	Reference	Value, comment	Req	Conf
10.2.2-1	Segment end point for F4 segment and end-to-end maintenance flow towards OLT	III.2.2		M	
10.2.2-2	VP network $CTP_{B\text{-}PON}$ that supports interworking VCC termination point is by default the segment end point	III.2.2		M	
10.2.2-3	Segment end point for F5 segment and end-to-end maintenance flow towards OLT	III.2.2		M	
10.2.2-4	Interworking VCC termination point is by default a segment and end-to-end point	III.2.2		M	

VII.5.11 Appendix IV – Traffic management options

There are no PICS criteria in this clause.

VII.5.12 Appendix V – MAC addresses and Ether types

There are no PICS criteria in this clause.

VII.5.13 Appendix VI – Transparent support of video return path service

There are no PICS criteria in this clause.

VII.5.14 Bibliography

There are no PICS criteria in this clause.

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