



**The ATM Forum  
Technical Committee**

**CMIP Specification for the  
M4 Interface:  
ATM Network Element View,  
Version 2**

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# 1 Introduction

This document specifies an ATM information model that provides a formal representation of the information exchanged between a managed system (e.g., an ATM NE) and a managing system using Guidelines for the Definition of Managed Objects (GDMO) templates, Abstract Syntax Notation One (ASN.1) syntax, and the Common Management Information Service Element (CMISE) services and protocol. This information model was specifically designed to meet the criteria defined in af-nm-0020.001<sup>[1]</sup> (Version 2 of the ATM Forum's *M4 Interface Requirements and Logical MIB ATM Network Element View*). It replaces the information model previously specified in af-nm-0027.000 (Version 1.0 of this specification). The deprecated parts of the Version 1.0 model are contained in Annex B, *Deprecated Information Model Entities*, and may continue to be used for backward compatibility with existing implementations.

The model presented in this document reuses current ITU-T Recommendations and other standards on information modeling where applicable.

The ITU-T Recommendations referenced in this model are as follows:

- ITU-T Recommendation G.774 and G.774-01<sup>[2]</sup>
- ITU-T Recommendation I.751<sup>[4]</sup>
- ITU-T Recommendation M.3100<sup>[11]</sup>
- ITU-T Recommendation Q.751.1<sup>[5]</sup>
- ITU-T Recommendation Q.822<sup>[6]</sup>
- ITU-T Recommendation Q.824.0<sup>[7]</sup>
- ITU-T Recommendation Q.824.2<sup>[8]</sup>
- ITU-T Recommendation Q.824.6<sup>[9]</sup>
- ITU-T Recommendation Q.2751.1<sup>[10]</sup>
- ITU-T Recommendation X.721<sup>[12]</sup>
- ITU-T Recommendation X.739<sup>[13]</sup>

Also, the following other standards are referenced:

- ANSI T1 247<sup>[14]</sup>
- ETS 300 371<sup>[15]</sup>

Other information modeling documents such as Bellcore's GR-836-IMD<sup>[16]</sup> have been applied here for specific objects that have not yet been addressed in ITU-T.

The information model presented in this document was defined specifically to meet the functional requirements of the M4 Interface as set forth by the ATM Forum in af-nm-020.001<sup>[1]</sup>. When possible, the ATM Forum drew upon existing ATM CMIP modeling work in this area. In particular, Bellcore's GR-1114 -CORE<sup>[17]</sup>, *Generic Operations Interface Requirements: ATM Information Mode* served as a significant source of input.

The focus of this specification is on the definition of a Management Information Base (MIB) for CMIP implementations of the M4 Interface. See Annex A for recommended communication stacks to support the CMIP-based M4 Interface.





## 2 ATM NE Management Information Model

This document defines an information model that provides a formal representation of the information exchanged across the CMIP-based interface used to manage ATM Network Elements (NEs).

Note that the terminology used in the information modeling community to describe ATM/SDH based networks is not always the same as the terminology used by the broader range of ATM/SDH subject matter experts. Table 2-1 has been provided to assist the reader in understanding the mapping between these terms.

**Table 2-1: Mapping of Equivalent Terms**

<b>Information Modeling Term</b>	<b>Commonly Used Equivalent</b>
ATM Virtual Channel (VC) Connection	ATM Virtual Channel Link (VCL)
ATM Virtual Channel (VC) Trail	ATM Virtual Channel Connection (VCC)
ATM Virtual Path (VP) Connection	ATM Virtual Path Link (VPL)
ATM Virtual Path (VP) Trail	ATM Virtual Path Connection (VPC)
Inter-NNI	Broadband Inter Carrier Interface (BICI)
Intra-NNI	Broadband Inter Switching System Interface (BISSI)
SDH Administrative Unit Group (aug)	SONET STS-3 Group
SDH Administrative Unit 4 (au4) Connection	SONET STS-3c Channel
SDH Regenerator Section (rs) Connection	SONET Section
SDH Multiplex Section (ms) Connection	SONET Line
SDH Virtual Container 4 (vc4) Trail	SONET STS-3c Path

The similarity in the two sets of terminology can be a source of confusion for the first time reader, especially the terminology used to describe ATM VPs and VCs. While the commonly used terms have been used in af-nm-0020.01, information modeling terms are used in the present document. The reader is urged to become familiar with the above mapping before delving into the details of the information model presented here.

### 2.1 Summary and Sources of Required Object Classes

The entire set of instantiable object classes that are needed to meet the requirements specified in the ATM Forum Interface Requirements and Logical MIB: ATM Network Element View, Version 2 (af-nm-0020.001) is summarized in Table 2-2. The managed entities from af-test-nm-0094.000 have also been included in Table 2-2. The first column of this table lists the logical managed entities defined in af-nm-0020.001. The second column lists the managed object class name that corresponds to the logical managed entity. The third column indicates the source document where the object class is defined. If the object class is defined in this document, its section number is listed in the third column.

Also, a small number of object classes that are not instantiable for ATM NEs but are inherited by one or more instantiable object classes are defined in Section 0. These classes, which are not listed in Table 2-2, are the following:

- ds3PLCPPathCTPSink
- ds3PLCPPathCTPSource
- ds3PLCPPathTTPSink
- ds3PLCPPathTTPSource
- j2CTPSink
- j2CTPSource
- j2LineTTPSink
- j2LineTTPSource
- j2PathTTPSink
- j2PathTTPSource

Table 2-2 Summary of Object Classes and Sources

Logical MIB Managed Entity	CMISE Object Class	Source
Object Classes Outside the Scope of the Logical MIB	ds1LineTTPSinkCurrentData	ANSI T1.247
	ds1LineTTPSinkHistoryData	ANSI T1.247
	ds1PathTTPSinkCurrentData	ANSI T1.247
	ds1PathTTPSinkHistoryData	ANSI T1.247
	ds3LineTTPSinkCurrentData	ANSI T1.247
	ds3LineTTPSinkHistoryData	ANSI T1.247
	ds3PathTTPSinkCurrentData	ANSI T1.247
	ds3PathTTPSinkHistoryData	ANSI T1.247
	electricalSourceSPICurrentData	ITU-T Rec. G774-01
	electricalSPIHistoryData	ITU-T Rec. G774-01
	j2LineTTPSinkCurrentData	Section 2.3.34
	j2LineTTPSinkHistoryData	Section 2.3.35
	j2PathTTPSinkCurrentData	Section 2.3.39
	j2PathTTPSinkHistoryData	Section 2.3.40
	msAdaptationCurrentData	ITU-T Rec. G774-01
	msAdaptationHistoryData	ITU-T Rec. G774-01
	opticalSourceSPICurrentData	ITU-T Rec. G774-01
	opticalSPIHistoryCurrentData	ITU-T Rec. G774-01
	pathTerminationCurrentData	ITU-T Rec. G774-01
	pathTerminationHistoryData	ITU-T Rec. G774-01
rsCurrentData	ITU-T Rec. G774-01	
rsHistoryData	ITU-T Rec. G774-01	

Logical MIB Managed Entity	CMISE Object Class	Source
AAL1 Profile	aalProfile	ITU-T Q.824.6 <sup>1</sup>
AAL3/4 Profile		
AAL 5 Profile		
AAL1 Protocol Current Data	aalProtocolCurrentData	ITU-T Q.824.6 <sup>1</sup>
AAL3/4 Protocol Current Data		
AAL5 Protocol Current Data		
AAL1 Protocol History Data	aaProtocolHistoryData	ITU-T Q.824.6 <sup>1</sup>
AAL3/4 Protocol History Data		
AAL5 Protocol History Data		
ABR	abr	ITU-T Q.824.6
ABR Feedback Control	abrFeedbackControl	Section 2.3.1
Abstract Destination	abstractDestination	ITU-T Q.824.6
Alarm Record	alarmRecord	ITU-T Rec. X.721
Alarm Severity Assignment Profile	alarmSeverityAssignmentProfile	ITU-T Rec. M.3100
Analysis Criteria	analysisCriteria	ITU-T Rec. Q.824.6
ATAF <sup>2</sup>	atmTestAccessFunction	Section 2.3.10
ATM Access Profile	atmAccessProfileR1	Section 2.3.2
ATM Cell Protocol Monitoring Current Data	cellLevelProtocolCurrentData	ITU-T I.751 <sup>1</sup>
ATM Cell Protocol Monitoring History Data	cellLevelProtocolHistoryData	ITU-T I.751 <sup>1</sup>
ATM Cell Protocol Monitoring Log Record	cellHeaderAbnormality LogRecord	Section 2.3.15
ATM Cross Connection	atmCrossConnectionR1	Section 2.3.3

Logical MIB Managed Entity	CMISE Object Class	Source
ATM Cross Connection Control	atmFabricR1	Section 2.3.4
	atmMpFabricR1	Section 2.3.2
ATM MTP Signaling Point	atmMtpSignPoint	Section 2.3.3
ATM NE	managedElementR1	ITU-T M.3100
ATM Signaling Link Set Termination Point	atmSignLinkSetTp	Section 2.3.8
ATM Signaling Link Termination Point	atmSignLinkTp	Section 2.3.9
ATM Traffic Load Current Data	atmTrafficLoadCurrentData	ITU-T I.751 <sup>1</sup>
ATM Traffic Load History Data	atmTrafficLoadHistoryData	ITU-T I.751 <sup>1</sup>
Attribute Value Change Record	attributeValueChangeRecord	ITU-T X.721
BICI	interNniR1	Section 2.3.27
BISSI	intraNniR1	Section 2.3.28
BISUP Access Point	bisupAccessPoint	Section 2.3.11
BISUP Signaling Point	bisupSignPoint	Section 2.3.13
BISUP Timers Profile	bisupTimersProfile	Section 2.3.14
Call Routing Office Data	callRoutingOfficeData	ITU-T Q.824.6
Calling Line Identification Presentation Dependent	clipDepBb	ITU-T Q.824.6
Calling Line Identification Restriction Dependent	clirDepBb	ITU-T Q.824.6
Calling Number Screening	callingNumberScreeningBb	ITU-T Q.824.6
Carrier Data	carrierData	ITU-T Q.824.6
CBR	dbr	ITU-T Q.824.6
CES Service Profile	cesServiceProfile	ITU-T Q.824.6 <sup>1</sup>
Congestion Discard Current Data	congestionDiscardCurrentData	Section 2.3.16

Logical MIB Managed Entity	CMISE Object Class	Source
Congestion Discard History Data	congestionDiscardHistoryData	Section 2.3.17
Connected Line Identification Presentation Dependent	colpDepBb	ITU-T Q.824.6
Connected Line Identification Restriction Dependent	colrDepBb	ITU-T Q.824.6
Connected Number Screening	connectedNumberScreeningBb	ITU-T Q.824.6
Continuity Monitor	bidirectionalContinuityMonitor	ITU-T I.751
CUG Independent	cugIndBb	ITU-T Q.824.6
CUG Subscription Option Dependent	cubSubscriptionOptionDepBb	ITU-T Q.824.6
Customer Profile	customerProfileBb	ITU-T Q.824.6
Customized Resource	customizedResourceBb	ITU-T Q.824.6
Diagnostic Control	diagnosticControl	Section 2.3.18
Digit Manipulation	digitManip	ITU-T Q.824.6
Direct Dialing In Independent	directDialingInIndBb	ITU-T Q.824.6
Directory Number E.164	directoryNumberE164	ITU-T Q.824.6
Directory Number AESA	directoryNumberAesa	Section 2.3.19
DSS2 Access Signaling Channel Termination Point	dss2SignChannelTp	Section 2.3.26
Equipment	equipmentR1	ITU-T M.3100
Equipment Holder	equipmentHolder	ITU-T M.3100
Event Forwarding Discriminator	eventForwardingDiscriminator	ITU-T X.721
Group Combination	xtpsgComb	ITU-T Q.824.6
Interworking VCC Termination Point	interworkingVcTtpBidirectional	ITU-T Q.824.6 <sup>1</sup>
Latest Occurrence Log	latestOccurrenceLog	Section 2.3.42
List of Route TPs	listOfRouteTps	ITU-T Q.824.6

Logical MIB Managed Entity	CMISE Object Class	Source
Local Destination	localDestination	ITU-T Q.824.6
Log	log	ITU-T X.721
Managed Entity Creation Log Record	objectCreationRecord	ITU-T X.721
Managed Entity Deletion Log Record	objectDeletionRecord	ITU-T X.721
MTP3b Access Point	mtpAccessPointR1	Section 2.3.43
Multiple Subscriber Number Independent	multipleSubscriberNumberIndBb	ITU-T Q.824.6
Multipoint Bridge	multipointBridge	Section 2.3.44
NNI Access	nniAccess	ITU Q.824.6
PDU Log Record <sup>2</sup>	pduLogRecord	Section 2.3.45
Physical Path Termination Point	au4CTPBidirectional	ITU-T G.774
	augBidirectional	ITU-T G.774
	ds1CTPBidirectional	Bellcore GR-836-IMD
	ds1LineTTPBidirectional	Bellcore GR-836-IMD
	ds1PathTTPBidirectional	Bellcore GR-836-IMD
	ds3CTPBidirectional	Bellcore GR-836-IMD
	ds3LineTTPBidirectional	Bellcore GR-836-IMD
	ds3PathTTPBidirectional	Bellcore GR-836-IMD
	ds3PLCPPathCTPBidirectional	Section 2.3.20
	ds3PLCPPathCTPSinl	Section 2.3.21
	ds3PLCPPathCTPSource	Section 2.3.22
	ds3PLCPPathTTPBidirectional	Section 2.3.23
	ds3PLCPPathTTPSink	Section 2.3.24
	ds3PLCPPathTTPSource	Section 2.3.25

Logical MIB Managed Entity	CMISE Object Class	Source
Physical Path Termination Point (Continued)	electricalSourceSPITTP Bidirectional	ITU-T G.774
	e1CTPBidirectional	ETS 300-371
	e1ATTPBidirectional	ETS 300-371
	e2TTPBidirectional	ETS 300-371
	e3CTPBidirectional	ETS 300-371
	e3IntTTPBidirectional	ETS 300-371
	e4TTPBidirectional	ETS 300-371
	ePDHCTPBidirectional	ETS 300-371
	ePDHIntTTPBidirectional	ETS 300-371
	j2CTPBidirectional	Section 2.3.29
	j2LineTTPBidirectional	Section 2.3.32
	j2PathTTPBidirectional	Section 2.3.37
	msCTPBidirectional	ITU-T G.774
	msTTPBidirectional	ITU-T G.774
	opticalSPITTPBidirectional	ITU-T G.774
	pPITTPBidirectional	ETS 300-371
	rsCTPBidirectional	ITU-T G.774
	rsTTPBidirectional	ITU-T G.774
	vc4TTPBidirectionalR1	ITU-T I G.774
	Plug-in Units	circuitPack
Post Analysis Evaluation	postAnalysisEvaluation	ITU-T Q.824.6
Performance Monitor	bidirectionalPerformanceMonitor	ITU-T I.751
Route Data	routeData	ITU-T Q.824.6

Logical MIB Managed Entity	CMISE Object Class	Source
SAAL NNI Protocol Profile	atmSaalNniProtocolProfile	Section 2.3.7
SAAL UNI Protocol Profile	saalUniProtocolProfile	ITU-T Q.824.6
Signaling Route Set NE Part	signRouteSetNePart	ITU-T Q.751.1
Signaling Route NE Part	signRouteNePart	ITU-T Q.751.1
Signaling VCC Termination Point	signVcTTPBidirectional	Section 2.3.46
Software	softwareR1	ITU-T M.3100
SSCOP Current Data	sscopReceiveCurrentData	Section 2.3.47
SSCOP History Data	sscopReceiveHistoryData	Section 2.3.48
State Change Record	stateChangeRecord	ITU-T X.721
TAP-PP Termination <sup>2</sup>	tapPP	Section 2.3.49
TAP-VC Termination <sup>2</sup>	tapVC	Section 2.3.50
TC Adaptor	tcAdaptorTTPBidirectional	ITU-T I.751 <sup>1</sup>
TC Adaptor Protocol Monitoring Current Data	tcAdaptorCurrentData	ITU-T I.751 <sup>1</sup>
TC Adaptor Protocol Monitoring History Data	tcAdaptorHistoryData	ITU-T I.751 <sup>1</sup>
Threshold Data	thresholdData	ITU-T Q.822
Timer Expiration Log Record <sup>2</sup>	timerExpirationLogRecord	Section 2.3.51
Traffic Descriptor	atmTrafficDescriptor	Section 2.3.11
UBR	ubr	ITU-T Q.824.6
UNI	uni	ITU-T I.751 <sup>1</sup>
UNI Info	uniInfo	Section 2.3.52
UPC/NPC Disagreement Monitoring Current Data	upcNpcCurrentData	ITU-T I.751 <sup>1</sup>
UPC/NPC Disagreement Monitoring History Data	upcNpcCurrentData	ITU-T I.751 <sup>1</sup>



Logical MIB Managed Entity	CMISE Object Class	Source
User Data	userData	ITU-T Q.824.6
User To User Signaling Dependent	userToUserSignallingDepBb	ITU-T Q.824.6
VBR	sbr	ITU-T Q.824.6
VCC Termination Point	vcTTPBidirectional	ITU-T I.751 <sup>1</sup>
VCL Termination Point	vcCTPBidirectionalR1	Section 2.3.53
Virtual Path Group	virtualPathGroup	ITU-T Q.824.6
VPC Termination Point	vpTTPBidirectionalR1	Section 2.3.56
VPCI Termination Point	vpciTp	Section 2.3.54
VPL Termination Point	vpCTPBidirectionalR1	Section 2.3.55
Vp-Vc Current Data	vpVcPMCurrentData	ITU-T I.751
Vp-Vc History Data	vpVcPMHistoryData	ITU-T I.751

1. Replaces equivalent object class defined in af-nm-0027.000, af-0071.000 or af-nm-0072.000. See Annex B for the definitions of the deprecated managed object classes.
2. Managed entity is defined in af-test-nm-0094.000.

## 2.2 Containment and Inheritance Diagrams

### 2.2.1 Containment Diagrams

Figure 2-1 to Figure 2-8 illustrate the containment (naming) relationships among the instantiable managed object classes defined in this specification. Other relationships that are defined by name bindings in this specification are also included. Also illustrated are relationships with object classes defined elsewhere (e.g., in ITU-T Recommendation I.751). These other relationships are illustrated in cases where there is a containment relationship between an object classes defined here and a class defined elsewhere. Note that name bindings may refer to superclasses of the illustrated object classes and include the "AND SUBCLASSES" clause. This is done usually to allow reuse. The object classes illustrated here and listed in Table 2-2 are the only object classes that are recommended for instantiation.

If an object class or name binding is defined in this document, the entire branch of the naming tree (from managedElementR1 downward) is illustrated. Branches consisting entirely of object classes and name bindings defined elsewhere generally are not shown. However, in a few cases, they are included to make the diagrams more complete or more understandable. For object classes that are not shown, the source documents listed in Table 2-2 should be consulted for information on naming relationships.

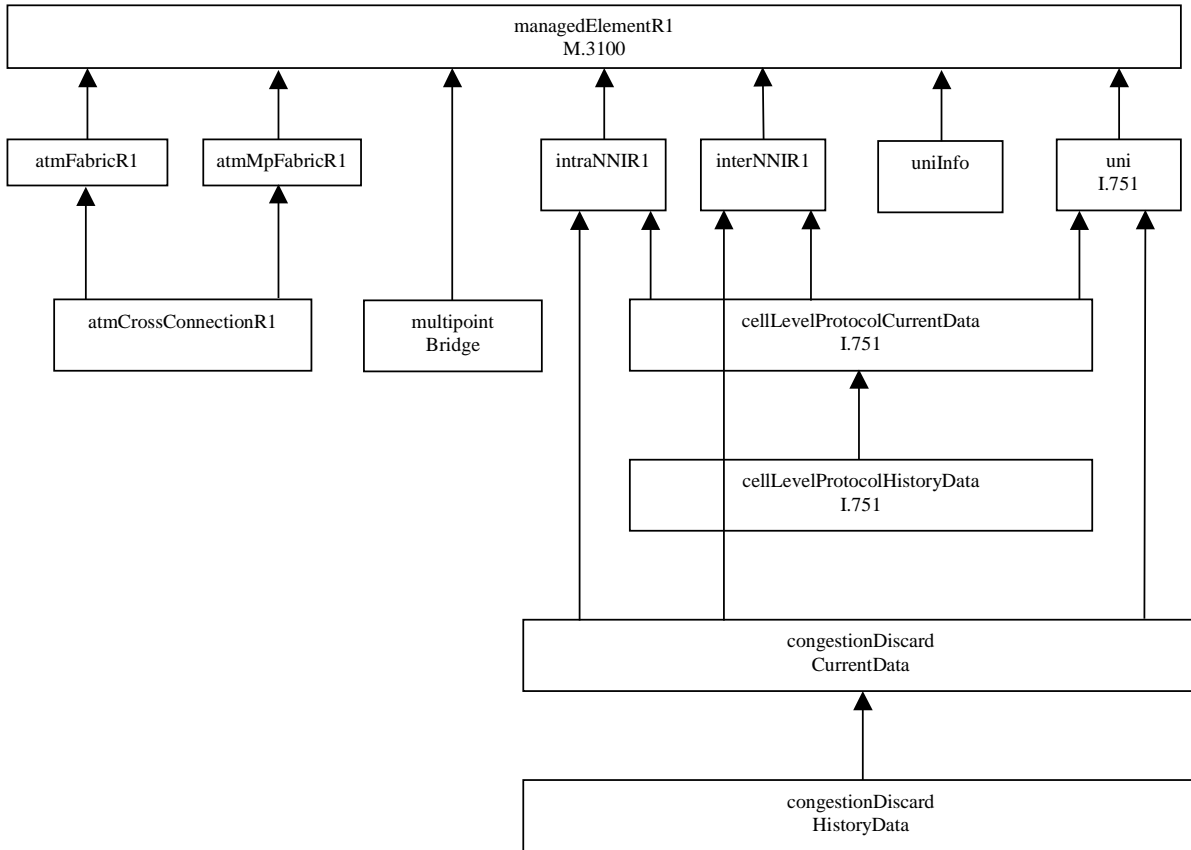


Figure 2-1 Containment Tree Diagram (1 of 8)

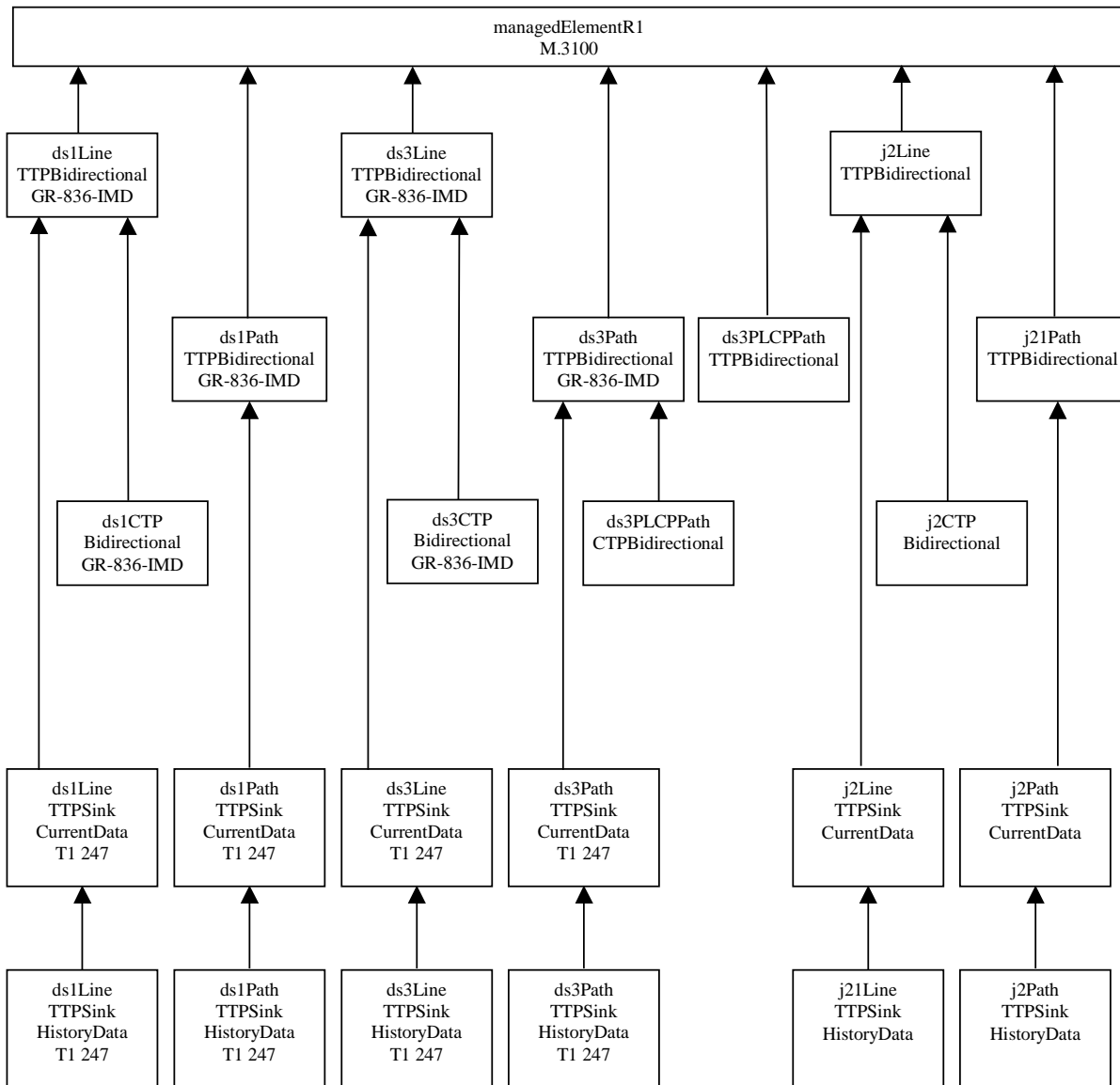


Figure 2-2 Containment Tree Diagram (2 of 8)

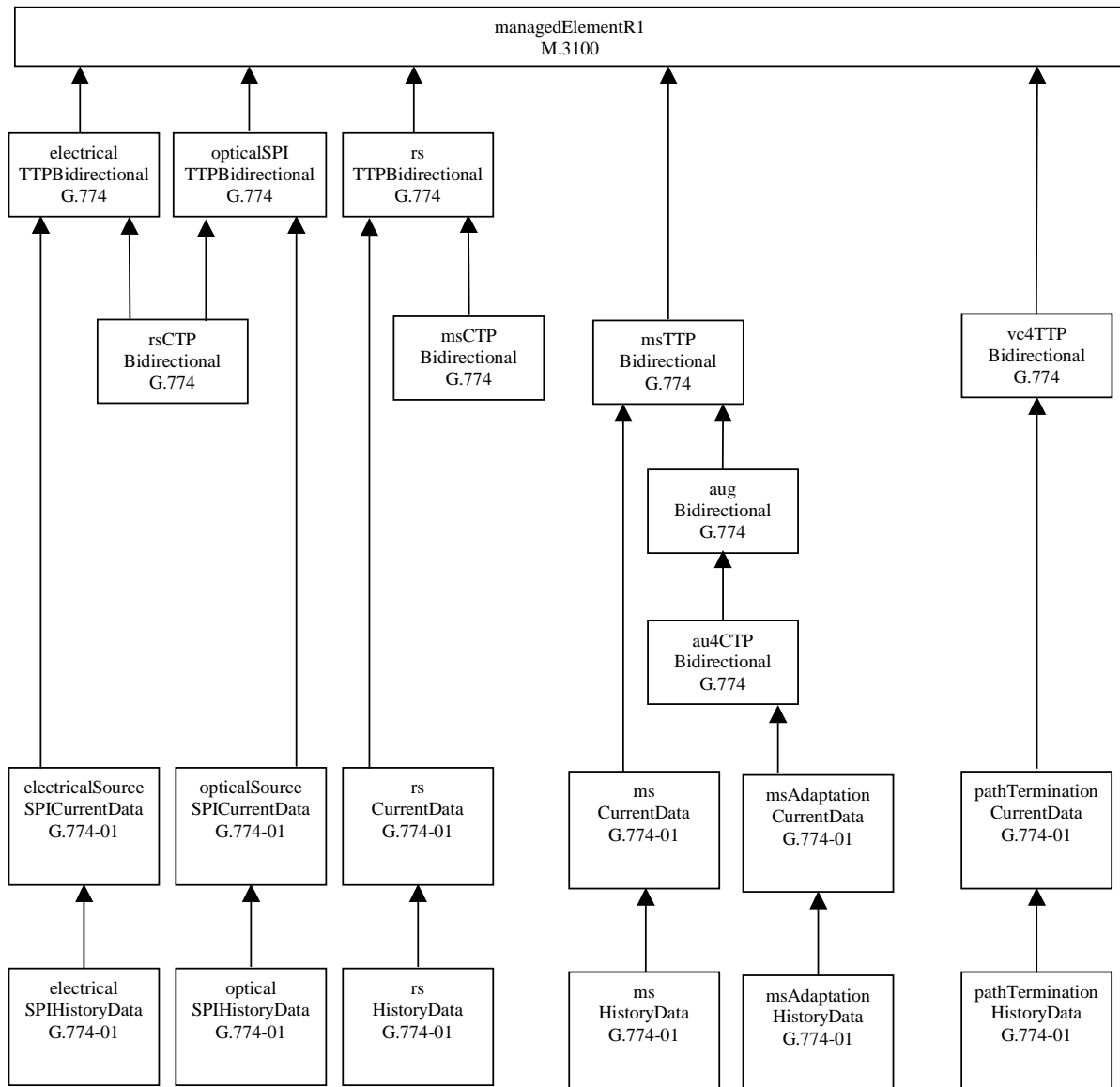


Figure 2-3 Containment Tree Diagram (3 of 8)

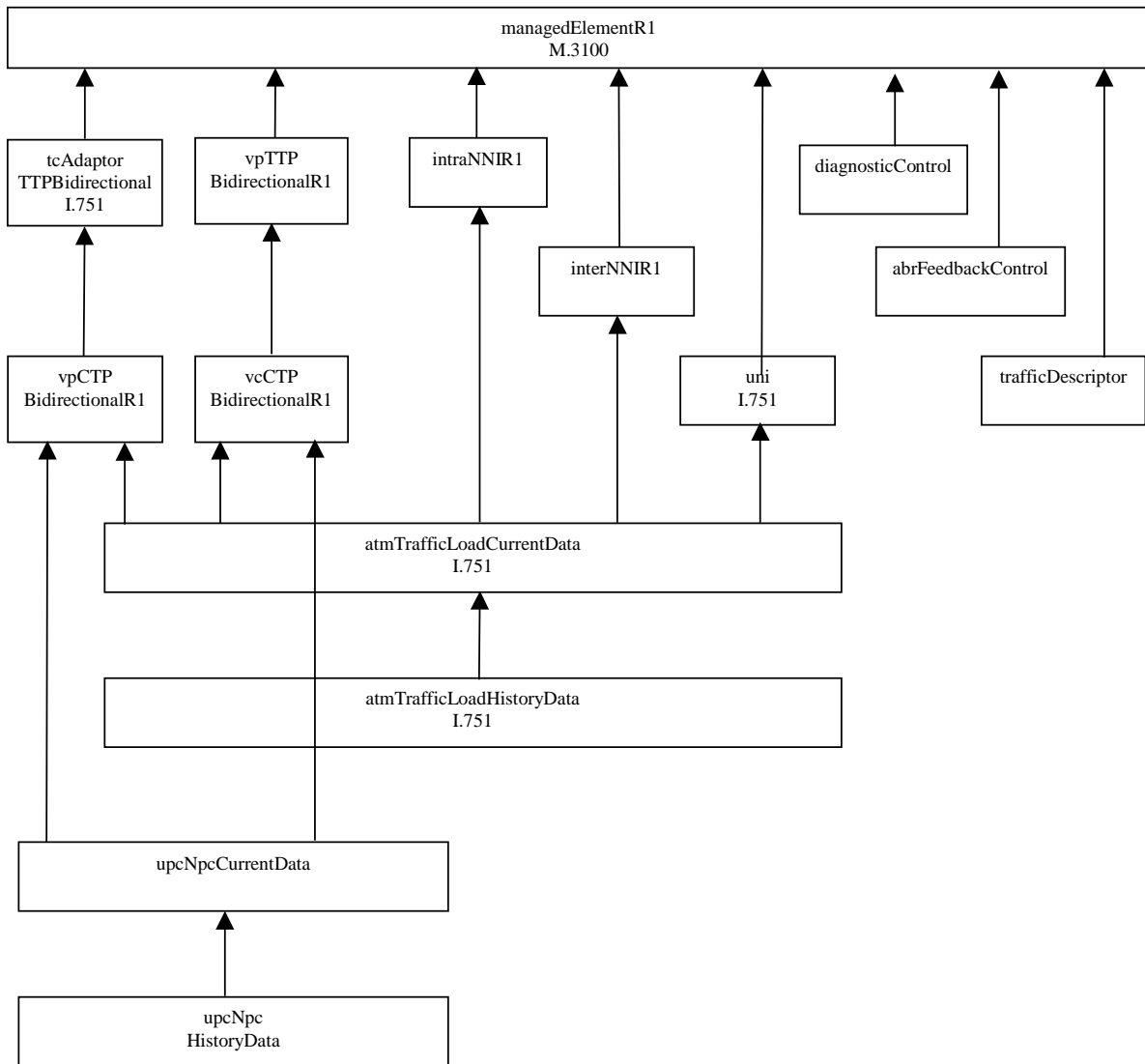


Figure 2-4 Containment Tree Diagram (4 of 8)

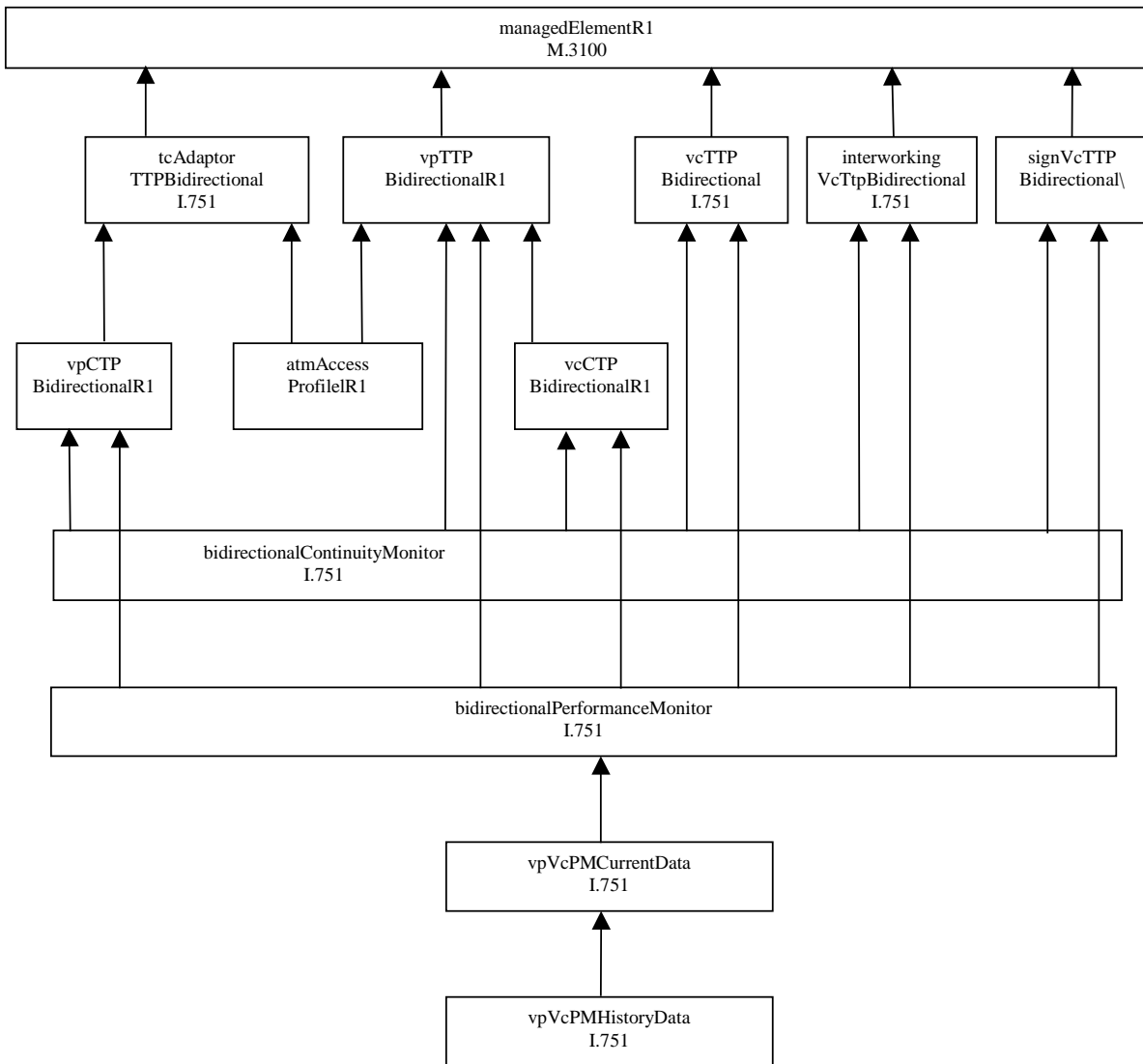


Figure 2-5 Containment Tree Diagram (5 of 8)

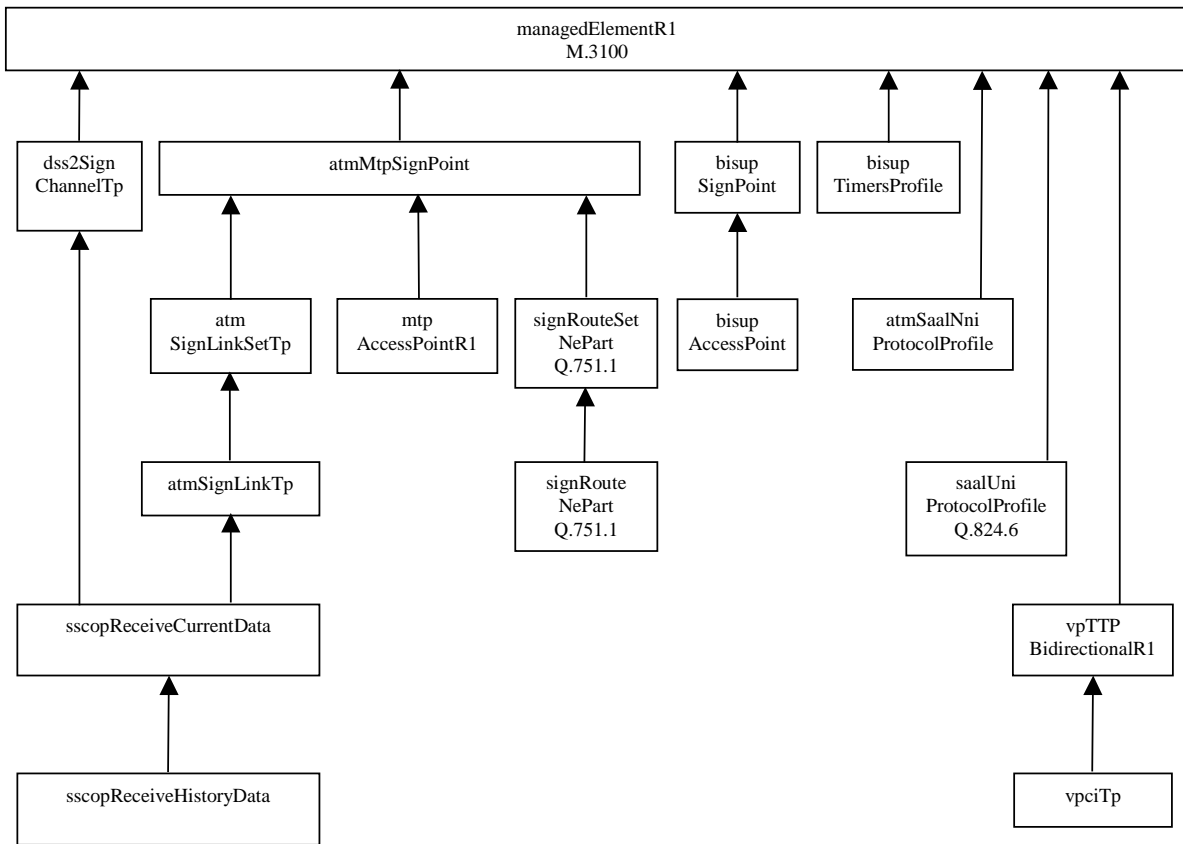


Figure 2-6 Containment Tree Diagram (6 of 8)

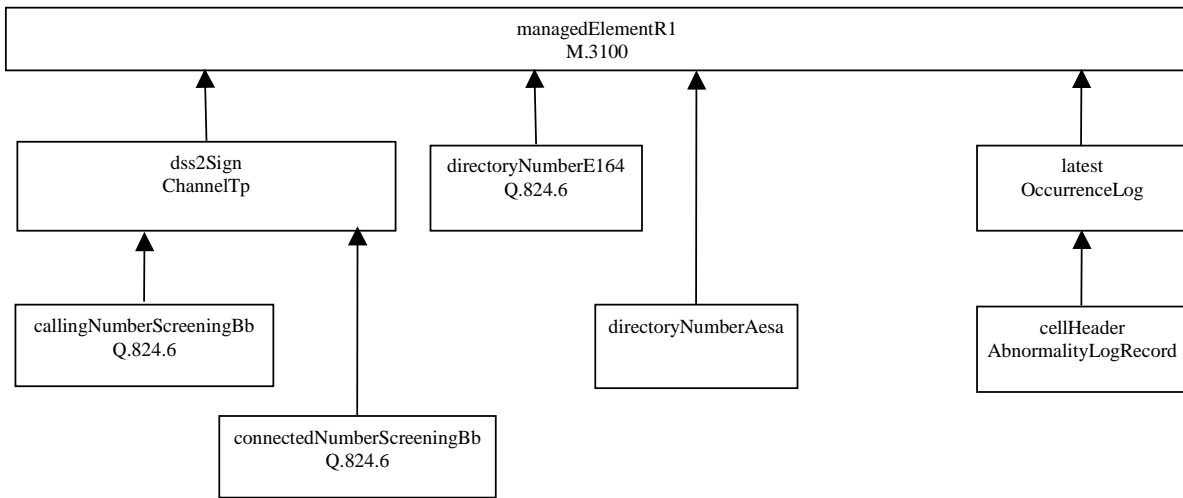


Figure 2-7 Containment Tree Diagram (7 of 8)

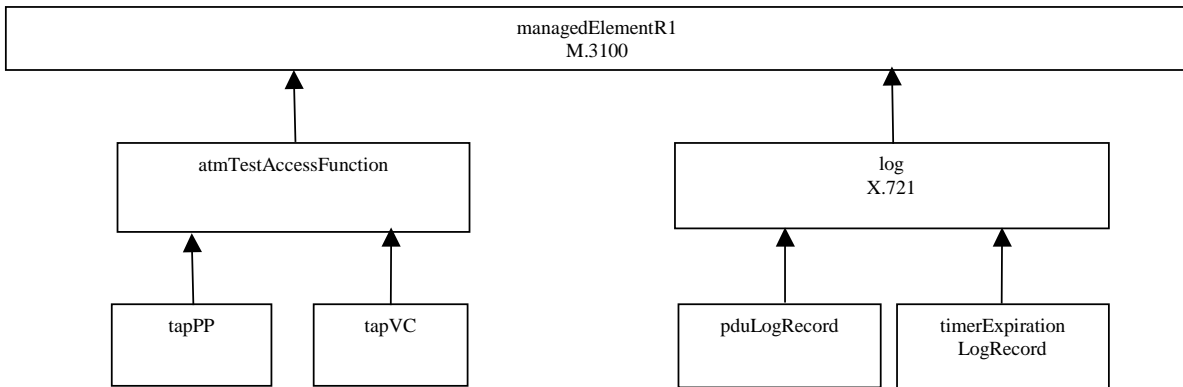


Figure 2-8 Containment Tree Diagram (8 of 8)



2.2.2 Inheritance Diagrams

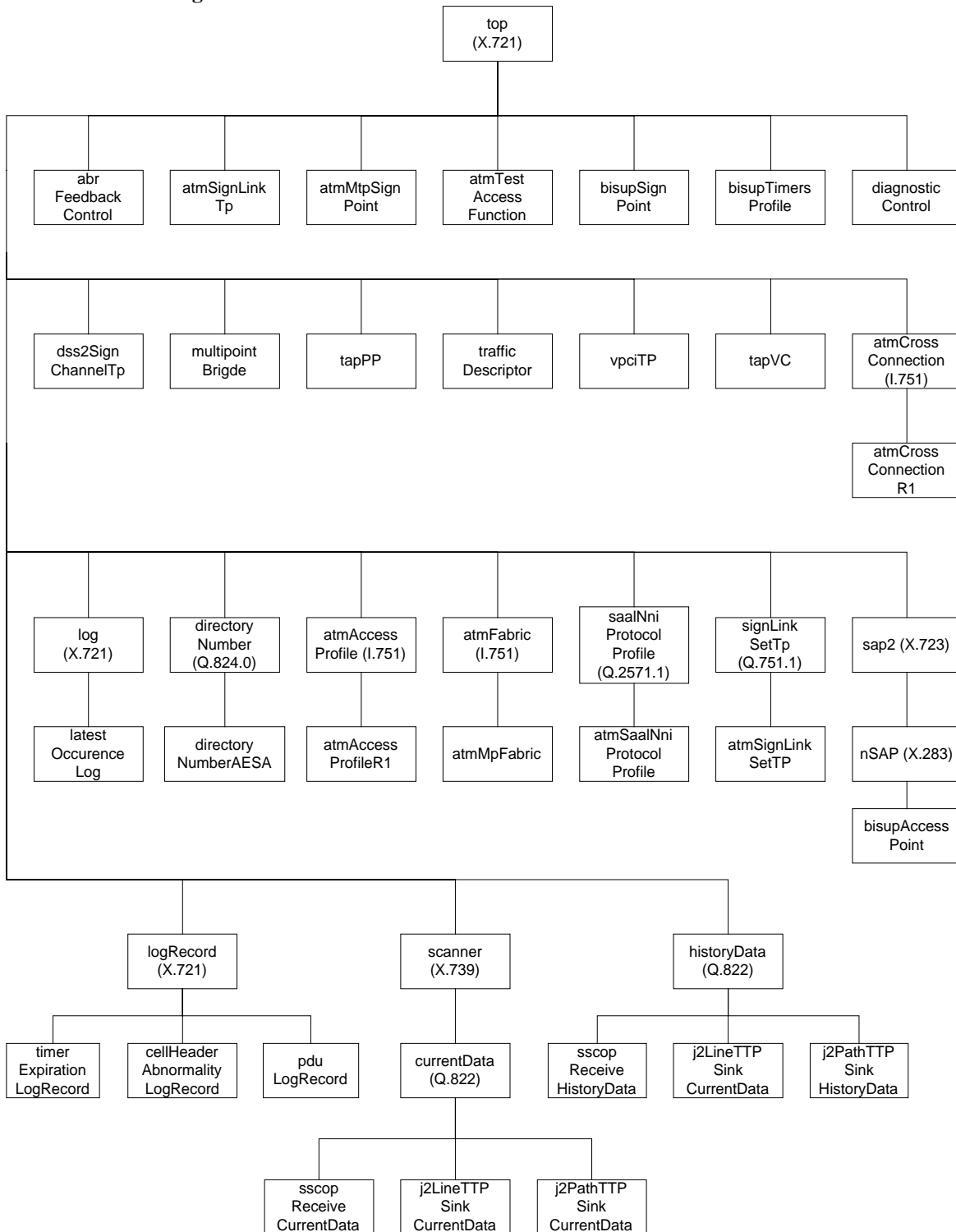


Figure 2-9 Inheritance Tree Diagram (1 of 4)

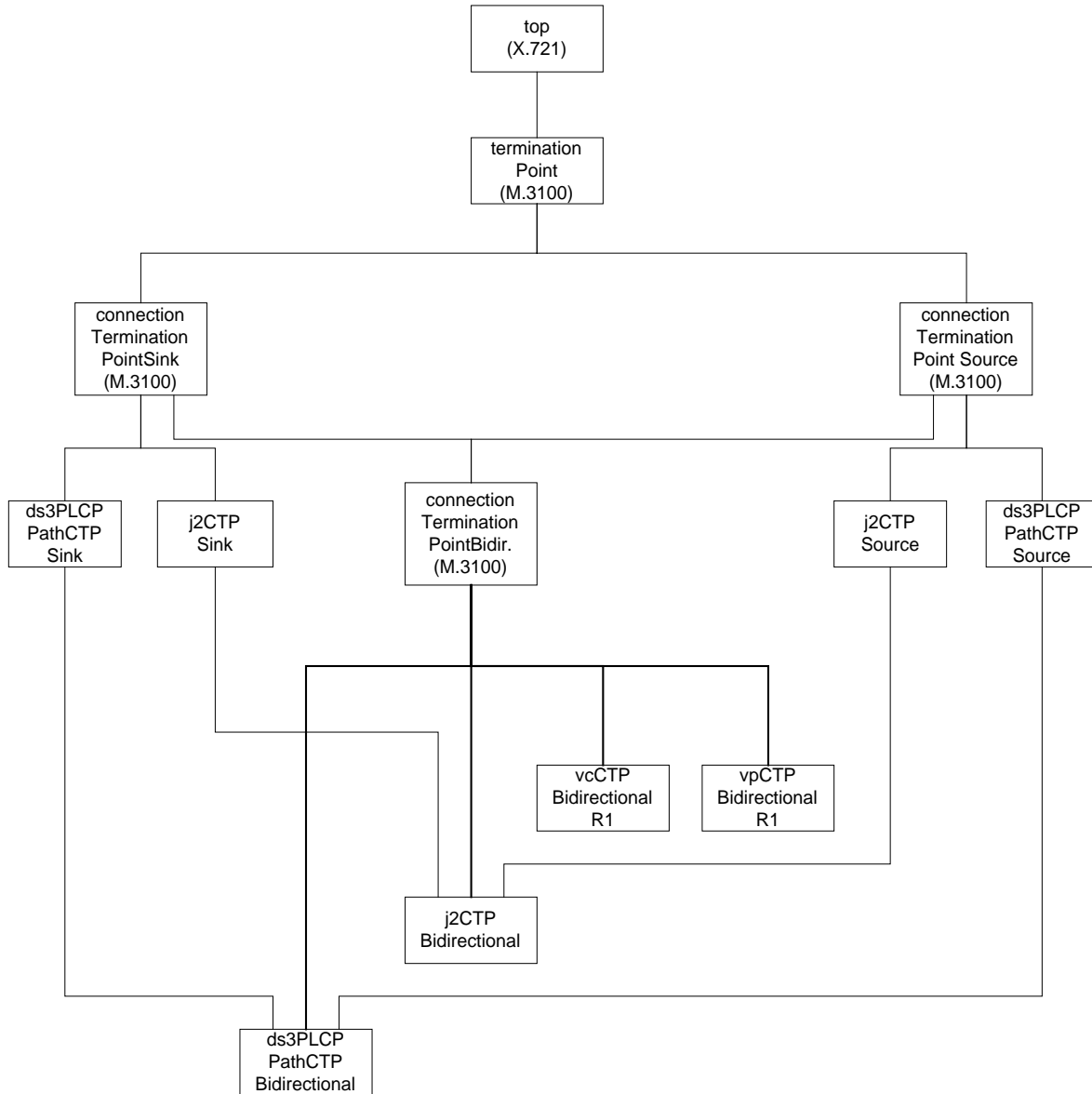


Figure 2-10 Inheritance Tree Diagram (2 of 4)

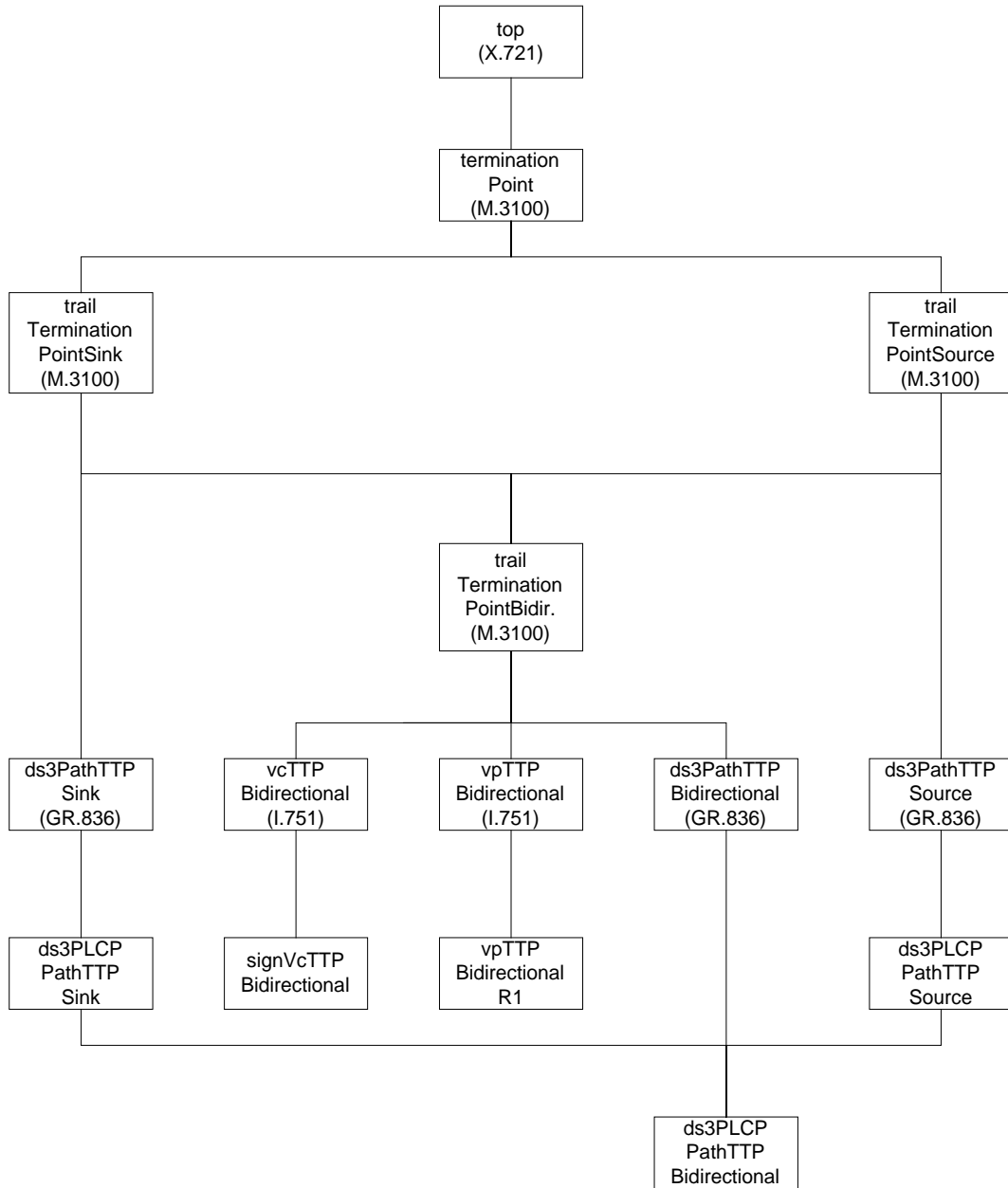


Figure 2-11 Inheritance Tree Diagram (3 of 4)

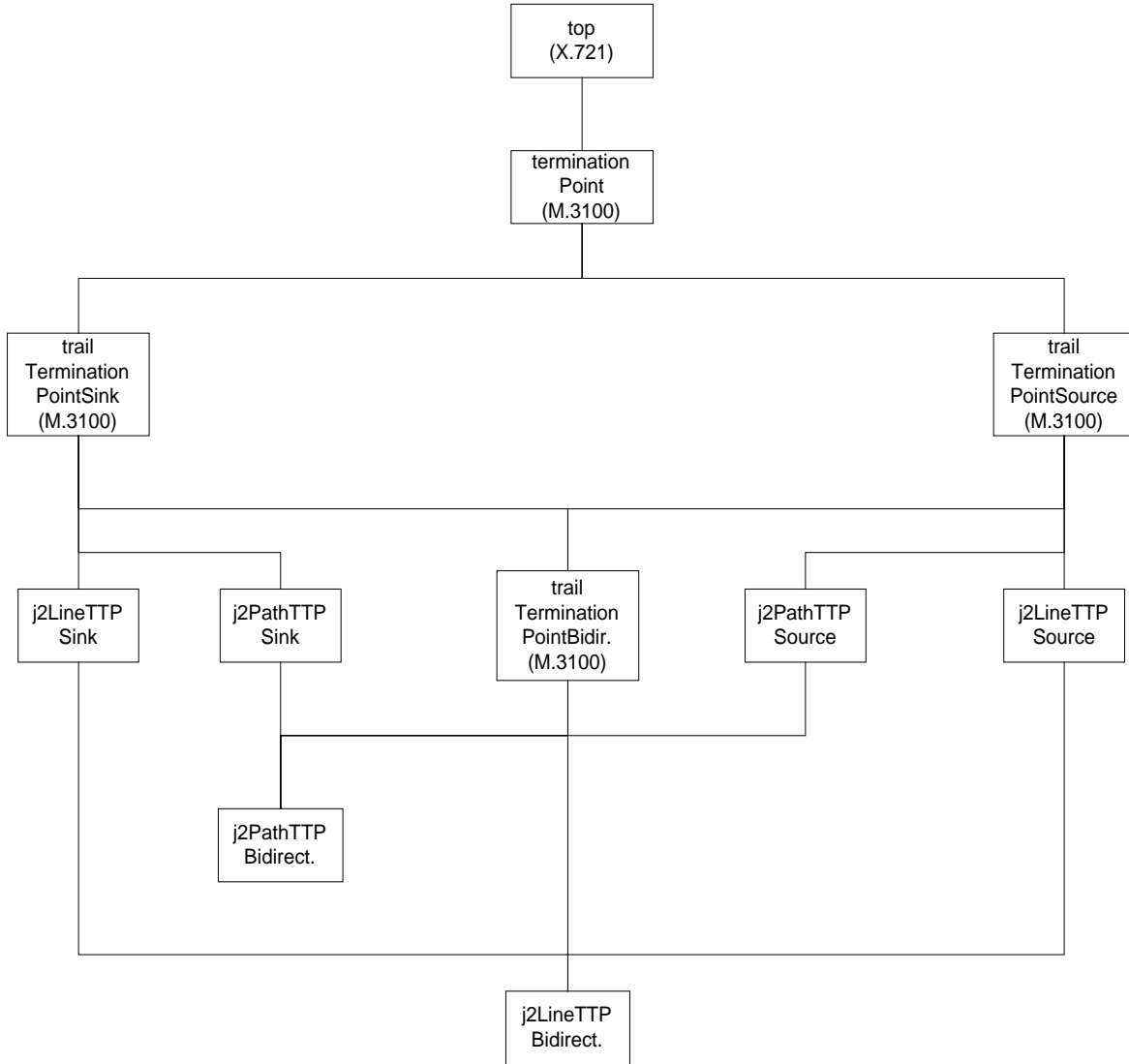


Figure 2-12 Inheritance Tree Diagram (4 of 4)

## 2.3 Managed Object Classes

### 2.3.1 abrFeedbackControl

abrFeedbackControl MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

abrFeedbackControlPkg PACKAGE

BEHAVIOUR

abrFeedbackControlBeh BEHAVIOUR

DEFINED AS

"This managed object class contains information on the configuration of congestion control mechanisms for the ABR service category in the NE. It is possible to support more than one mechanism at the same time; at least one congestion control mechanisms should always be supported. Instances of this class are created automatically and deleted by the ATM NE. The managed system may or may not support REPLACE for the activeOperationMode attribute.";;

ATTRIBUTES

abrFeedbackControlId

GET SET-BY-CREATE,

supportedFeedbackModes

GET;;;

CONDITIONAL PACKAGES

activeFeedbackModesPkg

PRESENT IF "an instance supports it.",

activeOperationModePkg

PRESENT IF "an instance supports it.",

supportedOperationModesPkg

PRESENT IF "managed system is an intermediate network element.",

useItOrLoseItPkg

PRESENT IF "an instance supports it.;"

REGISTERED AS {atmfM4ObjectClass abrFeedbackControl (38)};

### 2.3.2 atmAccessProfileR1

atmAccessProfileR1 MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. I.751":atmAccessProfile;

CHARACTERIZED BY

atmAccessProfileR1Pkg PACKAGE

BEHAVIOUR

atmAccessProfileR1Beh BEHAVIOUR

DEFINED AS

"At most one object of this class shall be contained within a superior managed object. The value of the attribute 'upcNpc' determines whether policing shall be performed for all connections at the interface or VP. 'vpTTPBidirectional' objects that have not been configured with their own 'policingPkg' information, would make use of the policingPkg information configured for the supporting 'tcAdaptorTTPBidirectional' object.

If objects are not profiled the default value for interfaces of the type 'uni' and 'interNNI' is true and for interfaces of the type 'intraNNI' is false.

The bandwidthPkg may be used to determine ingress and egress bandwidth (in cells

per second) supported by the interface. The attributes in the bandwidthPkg can be used to restrict the bandwidth supported at the interface. The attribute values are limited by the underlying physical bandwidth.

If ILMI is active on a UNI interface profiled by an atmAccessProfileR1, the values of the inherited attributes 'maxNumVCCsAllowed', 'maxNumActiveVPCsAllowed', 'maxNumVCIBitsSupported', 'maxNumVPIBitsSupported' are calculated by the ILMI as the smaller of the locally supported values at each end of the UNI.";;;

#### CONDITIONAL PACKAGES

bandwidthPkg

PRESENT IF

"supplied by the managing system and object instance is contained in a 'cAdaptorTTPBidirectional' object.",

policingPkg

PRESENT IF

"supplied by the managing system.",

vsVdActivePkg

PRESENT IF

"Virtual Source /Virtual Destination Control for ABR is supported at the interface.",

vsVdSupportPkg

PRESENT IF

"supported by the managed system and supplied by the managing system.";

REGISTERED AS {atmfM4ObjectClass atmAccessProfileR1(39)};

### 2.3.3 atmCrossConnectionR1

atmCrossConnectionR1 MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. I.751": atmCrossConnection;

CHARACTERIZED BY

atmCrossConnectionR1Pkg PACKAGE

BEHAVIOUR

atmCrossConnectionBeh BEHAVIOUR

DEFINED AS

"This object class adds support for multipoint cross connections and the recoveryType attribute to the inherited ITU-T Rec. I.751 atmCrossConnection object class.

For multipoint ATM VP and VC cross-connections, this managed object identifies the cross-connect relationship between an instance of the vpCTPBidirectionalR1 object class or vcCTPBidirectionalR1 object class and an instance of the multipointBridge object class. For multipoint ATM VP and VC cross-connections, each vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object instance connected to the multipointBridge object is identified by the fromTermination attribute of the atmCrossConnection object, while the instance of the multipointBridge object class is identified by the toTermination attribute. Note that multipoint ATM cross-connections are established by cross-connecting multiple instances of the vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object class (each with its own atmCrossConnection object) to a single instance of the multipointBridge object class.

The recoveryType attribute identifies whether the ATM cross-connection is recoverable (default) or non-recoverable. Recoverable cross-connections remain intact regardless of the operational state of the cross-connection. Non-recoverable ATM cross-connections are cross-connections that are automatically released by the managed system upon detection of a service affecting failure.";

ATTRIBUTES

recoveryType

GET-REPLACE;;;

REGISTERED AS {atmfM4ObjectClass atmCrossConnectionR1(40)};

### 2.3.4 atmFabricR1

atmFabricR1 MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

"ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,

atmFabricR1Package PACKAGE

BEHAVIOUR

atmFabricR1Beh BEHAVIOUR

DEFINED AS

"This object class represents the function of managing the establishment and release of ATM cross-connections.

Administrative State:

- Unlocked: The atmFabricR1 is allowed to perform its normal functions. ACTIONS will be accepted to set-up, rearrange or remove cross-connections.
- Locked: The atmFabricR1 is not allowed to perform its normal functions. No ACTIONS will be accepted. No new cross-connections can be set-up or removed.

Operational State:

- Enabled: When the atmFabricR1 is in the enabled operational state, it may be fully operational or partially operational (partially operational is indicated by the availability status attribute).
- Disabled: The atmFabricR1 is incapable of performing its normal function. For instance, the managing system will not be able to setup or remove any cross-connections.

Availability Status:

The supported values for this attribute are:

- Degraded: The atmFabricR1 is degraded in some respect. For instance, the atmFabricR1 cannot perform the function of establishing new cross-connections while it can still accept ACTIONS to disconnect existing connections. The atmFabricR1 remains available for service (i.e. its operational state is enabled) while it is degraded.
- Empty SET (none of the availableStatus conditions exist).

One instance of the atmFabricR1 object class shall be automatically created by the managed system upon completion of system initialization.";;

ATTRIBUTES

"ITU-T Rec. I.751":atmFabricId

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState

GET-REPLACE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatus

GET;

## ACTIONS

connectR1,

"ITU-T Rec. I.751":disconnect;;

REGISTERED AS {atmfM4ObjectClass atmFabricR1(41)};

**2.3.5 atmMpFabricR1**

atmMpFabricR1 MANAGED OBJECT CLASS

DERIVED FROM atmFabricR1;

CHARACTERIZED BY

atmMpFabricR1Package PACKAGE

BEHAVIOUR

atmMpFabricR1Beh BEHAVIOUR

DEFINED AS

"This object class is derived from the atmFabricR1 object class. In addition to all the functionality supported by the super classes, this object class manages the establishment and release of multipoint ATM cross connections.

Administrative State:

- Unlocked: The atmMpFabricR1 is allowed to perform its normal functions. ACTIONS will be accepted to setup or remove multipoint cross-connections, or to rearrange multipoint cross-connections.
- Locked: The atmMpFabricR1 is not allowed to perform its normal functions. No ACTIONS will be accepted. No new multipoint cross-connection can be setup or removed and no multipoint connections may be rearranged.

Operational State:

- Enabled: When the atmMpFabricR1 is in the enabled operational state, it may be fully operational or partially operational (partially operational is indicated by the availability status attribute).
- Disabled: The atmMpFabricR1 is incapable of performing its normal function. For instance, the managing system will not be able to setup or remove any multipoint cross-connection.

Availability Status, the supported values for this attribute are:

- Degraded: The atmMpFabricR1 is degraded in some respect. For instance, the atmMpFabricR1 cannot perform the function of establishing new cross-connections while it can still accept ACTIONS to rearrange existing connections. The atmMpFabricR1 remains available for service (i.e. its operational state is enabled) while it is degraded.
- Empty SET (none of the availableStatus conditions exist).";

## ACTIONS

connectMultipointBridgeR1,

disconnectMultipointBridge,

addTpsToMultipointBridgeR1,

removeTpsFromMultipointBridge;;

REGISTERED AS {atmfM4ObjectClass atmMpFabricR1(42)};



### 2.3.6 atmMtpSignPoint

atmMtpSignPoint MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": top;  
CHARACTERIZED BY

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
atmMtpSignPointPkg PACKAGE

BEHAVIOUR

atmMtpSignPointBeh BEHAVIOUR

DEFINED AS

"The atmMtpSignPoint object class represents the MTP level functions of an ATM signaling entity. Instances of this object are created and deleted by a managing system.

One instance of the atmMtpSignPoint object class is provided for each ATM signaling entity within the ATM NE.. Up to four atmMtpSignPoint object instances may exist for an ATM NE, but only one may be associated with a bisupSignPoint object instance designated as primary.";;

ATTRIBUTES

atmMtpSignPointId GET SET-BY-CREATE,

"ITU-T Rec. Q.751.1 : 1995": pointCode GET SET-BY-CREATE,

"ITU-T Rec. Q.751.1 : 1995": spType GET SET-BY-CREATE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": operationalState GET;

NOTIFICATIONS

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": stateChange;;;

CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage PRESENT IF "An instance supports it",

networkIndicatorPkg PRESENT IF "Multiple signaling networks are supported";

REGISTERED AS {atmfM4ObjectClass atmMtpSignPoint(43)};

### 2.3.7 atmSaalNniProtocolProfile

atmSaalNniProtocolProfile MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.2751.1": saalNniProtocolProfile;  
CHARACTERIZED BY

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
atmSaalNniProtocolProfilePkg PACKAGE

BEHAVIOUR

atmSaalNniProtocolProfileBeh BEHAVIOUR

DEFINED AS

"Instances of this object class are used to control the SSCOP and SSCF-NNI protocol configuration for ATM signaling links. An instance of this object would apply to one or more interoffice signaling links. Instances of this object may be created by a managing system or by the managed system, but they may only be deleted by a managing system. Deletion should be denied if the profile is associated with any active signaling links.";;

ATTRIBUTES

signMode GET SET-BY-CREATE,

tSup

DEFAULT VALUE AtmMIBModV2.tSupNniDefault

GET SET-BY-CREATE,

```

tLoss
  DEFAULT VALUE AtmMIBModV2.tLossNniDefault
  GET SET-BY-CREATE,
alpha
  DEFAULT VALUE AtmMIBModV2.alphaNniDefault
  GET SET-BY-CREATE,
thres
  DEFAULT VALUE AtmMIBModV2.thresNniDefault
  GET SET-BY-CREATE,
tau
  DEFAULT VALUE AtmMIBModV2.tauNniDefault
  GET SET-BY-CREATE,
nDelay
  DEFAULT VALUE AtmMIBModV2.nDelayNniDefault
  GET SET-BY-CREATE,
nBlk
  DEFAULT VALUE AtmMIBModV2.nBlkNniDefault
  GET SET-BY-CREATE,
provingInfo
  DEFAULT VALUE AtmMIBModV2.provingInfoDefault
  GET SET-BY-CREATE;;;
REGISTERED AS {atmM4ObjectClass atmSaalNniProtocolProfilex(44)};

```

### 2.3.8 atmSignLinkSetTp

-- Note that the following class deviates from af-nm-0020.001 in that operationalState is a mandatory attribute  
-- instead of being optional

atmSignLinkSetTp MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.751.1 : 1995": signLinkSetTp;

CHARACTERIZED BY

atmSignLinkSetTpPkg PACKAGE

BEHAVIOUR

atmSignLinkSetTpBeh BEHAVIOUR

DEFINED AS

"Instances of this object class are used to manage a set of interoffice signaling links between an Originating Point Code (OPC) tht is determined by the superior atmMtpSignPoint object and an Adjacent Point Code (ADJ PC) pair. One or more instances of this object class exists for each OPC/ADJ PC pair. An ATM signaling link set is composed of individual signaling links. All signaling links in a link set have the same bandwidth which is determined by the traffic characteristics of the ATM VCC used for signaling. Instances of this object class are created and deleted by the managing system. Instances of this object should not be deleted unless all the contained atmSignLinkTp objects have been deleted.

If present, setting the inherited administrativeState attribute to unlocked allows the link set to be used. Setting this attribute to locked, prevents all the links in the link set from being used except for testing, and it immediately terminates any calls using the link set. Setting this attribute to shutting down, prevents new calls from using the link set and

automatically locks the link set after it is no longer being used for active calls.

The `vpcisAllowedPkg` and `vpisAllowedPkg` are used where it is necessary to restrict the set of VPCs or VPCs that can be used for bearer channels.";;

#### NOTIFICATIONS

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": `communicationsAlarm`;;;

#### CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995": `tmnCommunicationsAlarmInformationPackage`

PRESENT IF "an instance supports it",

`vpcisAllowedPkg` PRESENT IF "an instance supports it",

`vpisAllowedPkg` PRESENT IF "an instance supports it";

REGISTERED AS {`atmM4ObjectClass atmSignLinkSetTp(45)`};

### 2.3.9 atmSignLinkTp

`atmSignLinkTp` MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": `top`;

CHARACTERIZED BY

`atmSignLinkTpPkg` PACKAGE

BEHAVIOUR

`atmSignLinkTpBeh` BEHAVIOUR

DEFINED AS

"Instances of this object class each provide information for management of one ATM VCC as an interoffice signaling channel. Instances of this object class are created and deleted by a managing system.

The `protocolPointer` attribute points to an instance of the `saalNNIProtocolProfile` object that provides information on the SSCOP and SSF protocol parameter settings for the signaling link. The `signDataLink` attribute points to the object instance which represents common AAL5 functions for the signaling data link. The `administrativeState` attribute allows individual signaling links to be activated (unlocked), deactivated (locked), or inhibited (`shuttingDown`). `Inhibit` allows all calls in progress to complete before the link is deactivated.

The `tpAndVpciPtrList` attribute lists the `vpcis` and associated `vpTTPBidirectional` objects for the VPCs that carry bearer channels controlled by this signaling link. If desired, this attribute could be used, for example, to select signaling links in the same VPC as the bearer channel.

A `communicationsAlarm` notification is emitted (optionally) when a False Link Congestion condition is detected (Probable Cause `'falseLinkCongestion'`), a Near End Force Link Unavailable condition occurs (Probable Cause `'nearEndForcedLinkUnavailable'`), or when Link Failure is detected at the MPT3 level (Probable Cause `'mtp3LinkFailure'`). A `communicationsAlarm` notification is emitted (mandatory) when an SSCOP Failure occurs (Probable Cause `'sscopFailure'`).

A `communications alarm` is also emitted when a reported condition is

cleared. State change notifications emitted by this object class should include the SourceIndicator parameter, which indicates if the state changes were made by a management system or by internal NE activities.";;

#### ATTRIBUTES

atmSignLinkTpId GET SET-BY-CREATE,  
 protocolPointer GET SET-BY-CREATE,  
 signDataLink GET SET-BY-CREATE,  
 "ITU-T Rec. Q.751.1 : 1995": linkTPStatus GET,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": administrativeState GET-REPLACE,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": operationalState GET,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": usageState GET,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": proceduralStatus GET;

#### NOTIFICATIONS

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": communicationsAlarm,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": stateChange;;;

#### CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995": alarmSeverityAssignmentPointerPackage  
 PRESENT IF "an instance supports it",  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage  
 PRESENT IF "An instance supports it",  
 "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage  
 PRESENT IF "An instance supports it",  
 "ITU-T Rec. M.3100 : 1995":tmnCommunicationsAlarmInformationPackage  
 PRESENT IF "an instance supports it",  
 tpAndVpciPtrListPkg PRESENT IF "an instance supports it";  
 REGISTERED AS {atmfM4ObjectClass atmSignLinkTp(46)};

### 2.3.10 atmTestAccessFunction

atmTestAccessFunction MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
 CHARACTERIZED BY "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
 "ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,

atmTestAccessFunctionPkg PACKAGE

#### BEHAVIOUR

atmTestAccessFunctionBeh BEHAVIOUR

#### DEFINED AS

" Instances of this object class are used to manage an ATM Test Access Function (ATAF) within the ATM NE. An instance of this object represents either a Physical Port Mirroring (PP) or a Virtual Connection Access (VC) type of ATAF. A single instance of type VC will be present in all ATM NEs that support virtual connection test access. A second instance of type PP will be present only if the ATM NE supports a control link interface for physical port mirroring access. Instances of this object class are inherently created and deleted by the ATM NE. The type of test access function being managed, PP or VC, is identified by the value of the testAccessFunctionType attribute. An instance of this object class will contain one or more instances of the tapPP or tap VC object class depending on the value of the atmTestAccessFunctionType attribute. Valid values of the administrativeState attribute are unlocked, locked, and shuttingDown. If locked, all test access functions of the type represented (PP or VC) are disabled in the ATM NE. If set to shutting down, no new connectTap actions may be invoked, and the state will automatically change to locked when all associated TAPs are disconnected.";;

#### ATTRIBUTES

atmTestAccessFunctionId  
 GET  
 SET-BY-CREATE,

```

atmTestAccessFunctionType
  GET
  SET-BY-CREATE,
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState
  GET-REPLACE,
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState
  GET,
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":usageState
  GET;
ACTIONS
  connectTap;;;
REGISTERED AS {atmfM4ObjectClass atmTestAccessFunction(33)};

```

### 2.3.11 atmTrafficDescriptor

```

atmTrafficDescriptor MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;
CHARACTERIZED BY
  "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
  atmTrafficDescriptorPkg PACKAGE
  BEHAVIOUR
  atmTrafficDescriptorBeh BEHAVIOUR
  DEFINED AS
    "An instance of the traffic descriptor object specifies traffic and QoS
    parameters for one or more virtual channel or virtual path connections.
    Instances of this object class may be created automatically upon ATM NE initialization and shall be created
    and deleted by management system request.";
  ;
ATTRIBUTES
  atmTrafficDescriptorId GET SET-BY-CREATE,
  serviceCategory GET SET-BY-CREATE,
  conformanceDefinition GET SET-BY-CREATE,
  "ITU-T Rec. I.751":egressPeakCellRate GET SET-BY-CREATE,
  "ITU-T Rec. I.751":ingressPeakCellRate GET SET-BY-CREATE;;;
CONDITIONAL PACKAGES
  "ITU-T Rec. M.3100": userLabelPackage PRESENT IF "an instance supports it",
  aBRPkg PRESENT IF "service category is ABR",
  aBROptSigPkg PRESENT IF "an instance supports it",
  cBRPkg PRESENT IF "service category is CBR",
  cDVTolerancePCRpkg PRESENT IF "policing is performed on the
  connection",
  vBRPkg PRESENT IF "service category is realtime or non-realtime
  VBR";
REGISTERED AS {atmfM4ObjectClass atmTrafficDescriptor(74)};

```

### 2.3.12 bisupAccessPoint

```

bisupAccessPoint MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. X.283 | ISO/IEC 10733 : 1993": nSAP;
CHARACTERIZED BY
  bisupAccessPointPkg PACKAGE
  BEHAVIOUR
  bisupAccessPointBeh BEHAVIOUR
  DEFINED AS

```

"This object class represent the user part signaling functions associated with a single signaling relationship that is identified by the value of the pointCode attribute(originating point code) in the superior bisupSignPoint object and the value of the dpc attribute (destination point code). Instances of this object class are created and deleted by a managing system. The BISUP timer configuration is specified by the bisupProtocolProfile object pointed to by the protocolPointer attribute.

The inherited userEntityNames attribute will be equal to the empty set, and the inherited providerEntityNames attribute will point to the related mtpAccessPoint object.

The atmOnOccEvent notifications will report the following events: Reset timer expiration ProbableCause 'timerExpiry', Reset blocked ProbableCause 'atmNeResetOfBlockedVpci', and Remotely initiated consistency check results ProbableCause 'remotelyInitiatedConsistencyCheck'. The Reset timer expiration notification will include the VPCI, OPC, DPC, VCI (if needed), and SID (if needed) in the additionalInformation parameter. The reset blocked notification will include the VPCI in the additionalInformation parameter. For the Consistency check results notification, the test pass or fail results will be included in the additionalInformation parameter of the notification.

The reset action is used to return controlled VPCI resources to an idle state. The signaling reset function will report a failure to reset but will continue attempting to perform the reset until a cancelReset is received.

The value of the version attribute will identify the version of the BISUP protocol that is being used.";;

#### ATTRIBUTES

"ITU-T Rec. Q.751.1 : 1995": dpc GET SET-BY-CREATE,  
protocolPointer GET SET-BY-CREATE,  
signMode GET SET-BY-CREATE,  
"ITU-T Rec. M.3100 : 1995": version GET-REPLACE;

#### ACTIONS

reset,  
cancelReset;

#### NOTIFICATIONS

atmOnOccEvent;;;

#### CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage  
PRESENT IF "An instance supports it",  
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage  
PRESENT IF "An instance supports it",  
nniAccessPointerPkg PRESENT IF "If there is an associated nniAccess object instance",  
bisupInterNniFeaturesPkg PRESENT IF "Destination Point Code is for an interconnecting carrier",  
iscPtCodePkg PRESENT IF "ATM NE supports ISC Point Codes";  
REGISTERED AS {atmfM4ObjectClass bisupAccessPoint(47)};

**2.3.13 bisupSignPoint**

bisupSignPoint MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": top;  
 CHARACTERIZED BY  
 bisupSignPointPkg PACKAGE  
 BEHAVIOUR  
 bisupSignPointBeh BEHAVIOUR  
 DEFINED AS  
 "Instances of this object class provide information for management of BISUP functions within one ATM signaling entity. An ATM NE may contain one or more ATM signaling entities, but only one may be designated as primary. Each ATM signaling entity is assigned a signaling point code (SPC). Instances of this object are created and deleted by the managing system.";;  
 ATTRIBUTES  
 bisupSignPointId GET SET-BY-CREATE,  
 "ITU-T Rec. Q.751.1 : 1995": pointCode GET SET-BY-CREATE,  
 primary GET-REPLACE;;  
 CONDITIONAL PACKAGES  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage  
 PRESENT IF "An instance supports it",  
 "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage  
 PRESENT IF "An instance supports it",  
 automaticCongestionControlPkg PRESENT IF "an instance supports it";  
 REGISTERED AS {atmfM4ObjectClass bisupSignPoint(48)};

**2.3.14 bisupTimersProfile**

bisupTimersProfile MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": top;  
 CHARACTERIZED BY  
 bisupTimersProfilePkg PACKAGE  
 BEHAVIOUR  
 bisupTimersProfileBeh BEHAVIOUR  
 DEFINED AS  
 "Instances of this object class are used to set the values of timers used in the BISUP layer protocol. Instances of this object may be created by either a managing system or the ATM NE. Instances may be deleted only by the managing system, and only if the timer profile is not being referenced by a bisupAccessPoint object. One instance of this object class is created for each combination of BISUP timer values that is to be used within an ATM NE.";;  
 ATTRIBUTES  
 bisupTimersProfileId GET SET-BY-CREATE,  
 t1b GET SET-BY-CREATE,  
 t4b GET SET-BY-CREATE,  
 t7b GET SET-BY-CREATE,  
 t12b GET SET-BY-CREATE,  
 t14b GET SET-BY-CREATE,  
 t16b GET SET-BY-CREATE,  
 t17b GET SET-BY-CREATE,  
 t34b GET SET-BY-CREATE,  
 t40b GET SET-BY-CREATE,

```

t41b GET SET-BY-CREATE,
t42b GET SET-BY-CREATE;;;
CONDITIONAL PACKAGES
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage
PRESENT IF "An instance supports it";
REGISTERED AS {atmfM4ObjectClass bisupTimersProfile(49)};

```

### 2.3.15 cellHeaderAbnormalityLogRecord

```

cellHeaderAbnormalityLogRecord MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":logRecord;
CHARACTERIZED BY
  cellHeaderAbnormalityLogRecordPkg PACKAGE
  BEHAVIOUR
  cellHeaderAbnormalityLogRecordBeh BEHAVIOUR
  DEFINED AS
  " The cellHeaderAbnormalityLogRecord object class is a class of managed support objects used to log
  information that describes ATM cell header protocol abnormality events detected by the managed
  system.

```

Attributes have been defined so that each record of the log conveys the following information:

- Abnormality Type (Unassigned VPI/VCI Value, or Out-of-Range VPI/VCI Value)
- VPI/VCI Value
- ATM Interface (i.e., pointer to the associated uni, interNNI, or intraNNI object)
- Date and Time of Log Entry

The latestOccurrenceLog containing this managed object class shall have the keyAttributeList attribute set to include cellHeaderAbnormalityType and interfacePointer.

Instances of this managed object class shall exist to record the latest occurrence of each abnormality type per UNI, Inter-NNI, and Intra-NNI. Therefore, the maximum number of instances of this object class that can exist in the managed system is equal to twice the number of interfaces supported by the managed system. As new instances of this managed object class are created by the managed system, previous instances with the same cellHeaderAbnormalityType and interfacePointer attribute values shall be automatically deleted.";;

```

ATTRIBUTES
  cellHeaderAbnormalityType
  GET,
  interfacePointer
  GET,
  vpiValue
  GET,
  vciValue
  GET;;;
REGISTERED AS {atmfM4ObjectClass 5};

```

### 2.3.16 congestionDiscardCurrentData

```

congestionDiscardCurrentData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.822":currentData;
CHARACTERIZED BY

```



```

congestionDiscardCurrentDataPkg PACKAGE
BEHAVIOUR
congestionDiscardCurrentDataBeh BEHAVIOUR
DEFINED AS
  "Each instance of this object class allows monitoring congestion-based cell discards.
  One instance of this object class is provided for each uni, interNniR1, and intraNniR1 object that is to
  be monitored. Instances of this object may be created and deleted by either the managed or managing
  system.";;
ATTRIBUTES
allCellsDiscarded
  REPLACE-WITH-DEFAULT
  DEFAULT VALUE AtmMIBModV2.integerZero
GET,
priorityCellsDiscarded
  REPLACE-WITH-DEFAULT
  DEFAULT VALUE AtmMIBModV2.integerZero
GET;;;
REGISTERED AS {atmfM4ObjectClass congestionDiscardCurrentData(50)};

```

### 2.3.17 congestionDiscardHistoryData

```

congestionDiscardHistoryData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.822": historyData;
CHARACTERIZED BY
congestionDiscardHistoryDataPkg PACKAGE
BEHAVIOUR
congestionDiscardHistoryDataBeh BEHAVIOUR
DEFINED AS
  "Each instance of this object class contains the past performance
  monitoring data on congestion discards collected by a
  congestionDiscardCurrentData object. Instances of this object class are
  created and deleted by the managed system according to the value of
  the historyRetention attribute specified in the associated
  congestionDiscardCurrentData object.";;
ATTRIBUTES
allCellsDiscarded GET,
priorityCellsDiscarded GET;;;
REGISTERED AS {atmfM4ObjectClass congestionDiscardHistoryData(51)};

```

### 2.3.18 diagnosticControl

```

diagnosticControl MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": top;
CHARACTERIZED BY
diagnosticControlPkg PACKAGE
BEHAVIOUR
diagnosticControlBeh BEHAVIOUR
DEFINED AS
  " The diagnosticControl object class is a class of
  support objects that specify the type of diagnostic
  routine (by the diagnosticType attribute) to be
  performed on a set of managed objects (by the
  diagnosticObjectList attribute), for example, of object
  class equipment (or its subclasses).

```

Instances of this object class are created and deleted by the managing system, but they must refer to a type of diagnostic supported by the ATM NE.

The schedule of the diagnostic routine may be specified by an instance of the ITU-T Rec. Q.821 managementOperationsSchedule object class. The managementOperationsSchedule object references the diagnosticControl object by using the affectedObjectInstances attribute. At the completion of each scheduled diagnostic, a scheduledDiagnosticReport notification will be emitted from the diagnosticControl object to report the result of the diagnostic to the system that is identified in the destinationAddress attribute of the associated managementOperationsSchedule object. In the scheduledDiagnosticReport notification, result of each diagnosed instance shall be reported. ";;

#### ATTRIBUTES

diagnosticControlId GET SET-BY-CREATE,  
 diagnosticType GET-REPLACE,  
 diagnosticObjectList GET-REPLACE ADD-REMOVE,  
 diagnosticTerminateMode GET-REPLACE,  
 diagnosticReportMode GET-REPLACE;

#### ACTIONS

invokeDiagnosticControl;

#### NOTIFICATIONS

diagnosticReport;;;

#### CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage

PRESENT IF "An instance supports it",

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage

PRESENT IF "An instance supports it",

reportDiagnosticStatusPkg PRESENT IF "an instance supports the capability of reporting the status of diagnostic tests in-progress.",

abortDiagnosticPkg PRESENT IF "an instance supports the capability of terminating outstanding diagnosis.";

REGISTERED AS {atmfM4ObjectClass diagnosticControl(52)};

### 2.3.19 directoryNumberAESA

directoryNumberAESA MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.824.0":directoryNumber;

CHARACTERIZED BY

"ITU-T Rec. Q.824.6":customerProfilePointersBehPkg,

directoryNumberAESAPkg PACKAGE

BEHAVIOUR

directoryNumberAESABeh BEHAVIOUR

DEFINED AS

"This managed object class represents an ATM endsystem address (AESA) based on ISO NSAP according to the ATM Forum UNI 4.0 Signalling Specification. A complete AESA directory number comprises 40 digits. However the aesaDirectoryNumber attribute may comprise less than 40 digits if and only if it is used in the context of DDI. The AESA Directory Number is updated implicitly if the attribute values of the referenced localDestination object are modified. The routingBlockPtrPkg inherited from the

directoryNumber object class shall not be present. At most one entry shall be contained in the customizedResourcePtrList. ";;

ATTRIBUTES

aesaDirectoryNumber  
 GET SET-BY-CREATE,  
 "ITU-T Rec. Q.824.6":localDestinationPtr  
 GET SET-BY-CREATE; ; ;

REGISTERED AS {atmfM4ObjectClass directoryNumberAESA(53)};

### 2.3.20 ds3PLCPPathCTPBidirectional

ds3PLCPPathCTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM ds3PLCPPathCTPSink,  
 ds3PLCPPathCTPSource,  
 "ITU-T Rec. M.3100 : 1995": connectionTerminationPointBidirectional;

CHARACTERIZED BY

ds3PLCPPathCTPBidirectionalPkg PACKAGE

BEHAVIOUR

ds3PLCPPathCTPBidirectionalBeh BEHAVIOUR

DEFINED AS

"This object class represents a termination point where a DS3 PLCP link connection is both originated and terminated.

The downstreamConnectivityPointer and upstreamConnectivityPointer attributes point to an instance of the ds3PLCPPathTTPBidirectional object class.

The supportedByObjectList attribute, inherited from the terminationPoint object class, shall be set equal to the empty set.";;;

REGISTERED AS {atmfM4ObjectClass 8};

### 2.3.21 ds3PLCPPathCTPSink

ds3PLCPPathCTPSink MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. M.3100 : 1995": connectionTerminationPointSink;

CHARACTERIZED BY

ds3PLCPPathCTPSinkPkgPACKAGE

BEHAVIOUR

ds3PLCPPathCTPSinkBeh BEHAVIOUR

DEFINED AS

"This object class represents a termination point where a DS3 PLCP link connection is terminated.

This object class is used for inheritance purposes only.";;

ATTRIBUTES

ds3PLCPPathCTPID

GET;;;

REGISTERED AS {atmfM4ObjectClass 9};

### 2.3.22 ds3PLCPPathCTPSource

ds3PLCPPathCTPSource MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. M.3100 : 1995": connectionTerminationPointSource;

CHARACTERIZED BY

```

ds3PLCPPathCTPSourcePkg PACKAGE
  BEHAVIOUR
  ds3PLCPPathCTPSourceBeh BEHAVIOUR
  DEFINED AS
  "This object class represents a termination point where a DS3 PLCP link connection is originated.

```

This object class is used for inheritance purposes only.";;;

```

  ATTRIBUTES
    ds3PLCPPathCTPId
    GET;;;

```

```

REGISTERED AS {atmfM4ObjectClass 10};

```

### 2.3.23 ds3PLCPPathTTPBidirectional

```

ds3PLCPPathTTPBidirectional MANAGED OBJECT CLASS
  DERIVED FROM ds3PLCPPathTTPSink,
                ds3PLCPPathTTPSource,
                "Bellcore GR-836":ds3PathTTPBidirectional;

```

CHARACTERIZED BY

```

ds3PLCPPathTTPBidirectionalPkg PACKAGE
  BEHAVIOUR
  ds3PLCPPathTTPBidirectionalBeh BEHAVIOUR
  DEFINED AS

```

"This object class represents a termination point where a DS3 PLCP trail is both originated and terminated.

The downstreamConnectivityPointer and upstreamConnectivityPointer attributes point to an instance of the ds3PLCPPathCTPBidirectional object class.

The supportedByObjectList attribute, inherited from the terminationPoint object class, shall point to the supporting instance of the ds3PathTTPBidirectional object class. This attribute may also point to the equipment object that supports the DS3 PLCP trail termination point.

The tmnCommunicationsAlarmInformationPackage shall be used to report loss-of-frame events and the clearing of these events.";;;

```

REGISTERED AS {atmfM4ObjectClass 11};

```

### 2.3.24 ds3PLCPPathTTPSink

```

ds3PLCPPathTTPSink MANAGED OBJECT CLASS
  DERIVED FROM "Bellcore GR-836":ds3PathTTPSink;
  CHARACTERIZED BY

```

```

  ds3PLCPPathTTPSinkPkg PACKAGE
  BEHAVIOUR
  ds3PLCPPathTTPSinkBeh BEHAVIOUR
  DEFINED AS

```

"This object class represents a termination point where a DS3 PLCP trail is terminated.

This object class is used for inheritance purposes only.";;;

```

REGISTERED AS {atmfM4ObjectClass 12};

```

**2.3.25 ds3PLCPPathTTPSource**

ds3PLCPPathTTPSource MANAGED OBJECT CLASS

DERIVED FROM "Bellcore GR-836":ds3PathTTPSource;  
CHARACTERIZED BY

ds3PLCPPathTTPSourcePkg PACKAGE

BEHAVIOUR

ds3PLCPPathTTPSourceBeh BEHAVIOUR

DEFINED AS

"This object class represents a termination point where a DS3 PLCP trail is originated.

This object class is used for inheritance purposes only.";;;

REGISTERED AS {atmM4ObjectClass 13};

**2.3.26 dss2SignChannelTp**

dss2SignChannelTp MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage,

"ITU-T Rec. Q.824.6":signallingChannelPtrPkg,

"ITU-T Rec. M.3100 : 1995":tmnCommunicationsAlarmInformationPackage,

"ITU-T Rec. M.3100 : 1995":alarmSeverityAssignmentPointerPackage,

"ITU-T Rec. Q.824.6":customerProfilePointersBehPkg,

dss2SignChannelTpPkg PACKAGE

BEHAVIOUR

dss2SignChannelTpBeh BEHAVIOUR

DEFINED AS

"This managed object class provides information about the configuration of an ATM VCC as an access signalling channel, and provides notifications needed for management of the signalling channel.

The 'operationalState' attribute indicates if SSCOP, SSCF, and DSS2 functions of the access signalling channel are enabled (available for service) or disabled (not available for service).";

ATTRIBUTES

dss2SignChannelTpId

GET SET-BY-CREATE,

addrPresentationFormat

DEFAULT VALUE AtmMIBModV2.addrPresentationFormatDefault

GET-REPLACE

ADD-REMOVE,

"ITU-T Rec. Q.824.6":connectionIdOffering

DEFAULT VALUE AtmMIBModV2.connectionIdOfferingDefault

GET-REPLACE,

"ITU-T Rec. Q.824.6":customerProfilePtr

DEFAULT VALUE AtmMIBModV2.defaultNULL

GET-REPLACE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState

GET,

"ITU-T Rec. Q.824.6":signallingStandard

GET-REPLACE,

"ITU-T Rec. Q.824.6":tpAndVpciPtrList

GET-REPLACE

ADD-REMOVE;

ACTIONS  
 restartSvcs;  
 NOTIFICATIONS  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": stateChange,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": attributeValueChange,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": objectCreation,  
 "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": objectDeletion;;;  
 CONDITIONAL PACKAGES  
 accessSignallingFeaturesPkg  
 PRESENT IF "supported by the managed system and supplied by the managing system.";  
 REGISTERED AS {atmfM4ObjectClass dss2SignChannelTp(54)};

### 2.3.27 interNNIR1

interNNIR1 MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. I.751": interNNI;  
 CHARACTERIZED BY  
 interNNIR1Pkg PACKAGE  
 BEHAVIOUR  
 interNNIR1Beh BEHAVIOUR  
 DEFINED AS  
 "The interNNIR1 object class adds the optional farEndCarrierNetwork attribute and optional attribute value change notification to the ITU-T Rec. I.751 interNNI object class.";;;  
 CONDITIONAL PACKAGES  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage PRESENT IF "An instance supports it",  
 farEndCarrierNetworkPkg PRESENT IF "call processing functions supporting SVC exchange access service over the Inter-NNI are performed in the managed system";  
 REGISTERED AS {atmfM4ObjectClass interNNIR1(55)};

### 2.3.28 intraNNIR1

intraNNIR1 MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. I.751": intraNNI;  
 CHARACTERIZED BY  
 intraNNIR1Pkg PACKAGE  
 BEHAVIOUR  
 intraNNIR1Beh BEHAVIOUR  
 DEFINED AS  
 "The intraNNIR1 object class adds the optional attribute value change notification to the ITU-T Rec. I.751 intraNNI object class.";;;  
 CONDITIONAL PACKAGES  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage PRESENT IF "An instance supports it";  
 REGISTERED AS {atmfM4ObjectClass intraNNIR1(56)};

### 2.3.29 j2CTPBidirectional

j2CTPBidirectional MANAGED OBJECT CLASS  
 DERIVED FROM  
 "ITU-T Rec. M.3100 : 1995":connectionTerminationPointBidirectional,

```
j2CTPSink,
j2CTPSource;
REGISTERED AS {atmfM4ObjectClass j2CTPBidirectional(57) };
```

### 2.3.30 j2CTPSink

```
j2CTPSink MANAGED OBJECT CLASS
DERIVED FROM
"ITU-T Rec. M.3100 : 1995":connectionTerminationPointSink;
CHARACTERIZED BY
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,
j2CTPSinkPkg PACKAGE
BEHAVIOUR
j2CTPSinkBeh BEHAVIOUR
DEFINED AS "
```

This managed object represents a termination point where the J2 link connection is terminated.

A change in the value of the operationalState attribute in the inherited operationalStatePackage shall cause a stateChange notification if this attribute is present.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

```
supportedByObjectList (inherited)
downstreamConnectivityPointer (inherited)
alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)
currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)
alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)
channelNumber (in the inherited channelNumberPackage);
```

#### ATTRIBUTES

```
j2CTPId
```

```
GET;;;
```

```
REGISTERED AS {atmfM4ObjectClass j2CTPSink(58) };
```

### 2.3.31 j2CTPSource

```
j2CTPSource MANAGED OBJECT CLASS
DERIVED FROM
"ITU-T Rec. M.3100 : 1995":connectionTerminationPointSource;
CHARACTERIZED BY
"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatusPackage, -- Additional Package
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,
j2CTPSourcePkg PACKAGE
BEHAVIOUR
j2CTPSourceBeh BEHAVIOUR
DEFINED AS "
```

This managed object represents a termination point where the J2 link connection is originated.

A change in the value of the operationalState attribute in the inherited operationalStatePackage shall cause a stateChange notification if this attribute is present.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

supportedByObjectList (inherited)  
 upstreamConnectivityPointer (inherited)  
 alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)  
 currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)  
 alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)  
 channelNumber (in the inherited channelNumberPackage);

#### ATTRIBUTES

j2CTPId

GET;;;

REGISTERED AS {atmfM4ObjectClass j2CTPSource(59)};

### 2.3.32 j2LineTTPBidirectional

j2LineTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

"ITU-T Rec. M.3100 : 1995":trailTerminationPointBidirectional,

j2LineTTPSink,

j2LineTTPSource;

CONDITIONAL PACKAGES

"Bellcore GR-836":loopbackPkg PRESENT IF "an instance is used as a Facility Access Digroup (FAD) or a Test Access Digroup (TAD)",

"Bellcore GR-836":loopbackEnablePkg PRESENT IF "the loopbackPkg package is present and an instance supports it";

REGISTERED AS {atmfM4ObjectClass j2LineTTPBidirectional(60)};

### 2.3.33 j2LineTTPSink

j2LineTTPSink MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. M.3100 : 1995":trailTerminationPointSink;

CHARACTERIZED BY

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatusPackage, -- Additional Package

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,

"ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,

"ITU-T Rec. M.3100 : 1995":tmnCommunicationsAlarmInformationPackage,

j2LineTTPSinkPkg PACKAGE

BEHAVIOUR

j2LineTTPSinkBeh BEHAVIOUR

DEFINED AS "

This managed object represents a termination point where the digital J2 signal (6.312 Mbps) is terminated.

A communicationsAlarm notification shall be emitted if a loss of signal (LOS) condition is detected. The probableCause parameter of the notification shall indicate M.3100: lossOfSignal.

A communicationsAlarm notification shall be emitted if a physical layer Alarm Indication Signal(AIS) condition is detected.

The probableCause parameter of the notification shall indicate M.3100: aIS.



A change in the value of the administrativeState attribute (in the administrativeStatePackage, which is defined in the system object class in Rec. X.721 | ISO/IEC 10165-2) shall cause a stateChange notification.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

supportedByObjectList (inherited)  
networkLevelPointer (in the inherited networkLevelPackage)  
alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)  
currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)  
alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)  
supportableClientList (in the inherited supportableClientListPackage)  
lineBuildOut (in the lineBuildOutPkg)

The termination point should be placed in the locked administrativeState before the change.";;

ATTRIBUTES

j2LineTTPId

GET;;;

CONDITIONAL PACKAGES

"Bellcore GR-836":lineCircuitAddressPkg PRESENT IF "the supporting equipment object (identified by the inherited supportedByObjectList attribute) supports multiple instances of this object class";

REGISTERED AS {atmfM4ObjectClass j2LineTTPSink(61)};

### 2.3.34 j2LineTTPSinkCurrentData

j2LineTTPSinkCurrentData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.822":currentData;

CHARACTERIZED BY

"ANSI T1.247 : 1995":eSPkg,

j2LineTTPSinkCurrentDataPkg PACKAGE

BEHAVIOUR

j2LineTTPSinkCurrentDataBehaviour BEHAVIOUR

DEFINED AS

"The j2LineTTPSinkCurrentData object class is a class of managed support object that is used to monitor performance parameter aspects of J2 LineTTPs.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the J2 rate.";;;

CONDITIONAL PACKAGES

"ANSI T1.247 : 1995":cVPkg

PRESENT IF "an instance supports it.",

"ANSI T1.247 : 1995":sESPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {atmfM4ObjectClass j2LineTTPSinkCurrentData(62)};

### 2.3.35 j2LineTTPSinkHistoryData

j2LineTTPSinkHistoryData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.822":historyData;

CHARACTERIZED BY

"ANSI T1.247 : 1995":eSHistoryPkg,

```

j2LineTTPSinkHistoryDataPkg PACKAGE
BEHAVIOUR
j2LineTTPSinkHistoryDataBehaviour BEHAVIOUR
DEFINED AS
"Instance of this object class are used to store the observed
measurements of the superior j2LineTTPSinkCurrentData object
at the end of an observation interval.";;;
CONDITIONAL PACKAGES
"ANSI T1.247 : 1995":cVHistoryPkg
    PRESENT IF "an instance supports it.",
"ANSI T1.247 : 1995":sESHHistoryPkg
    PRESENT IF "an instance supports it.";
REGISTERED AS {atmfM4ObjectClass j2LineTTPSinkHistoryData(63)};

```

### 2.3.36 j2LineTTPSource

```

j2LineTTPSource MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. M.3100 : 1995":trailTerminationPointSource;
CHARACTERIZED BY
"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage,
"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatusPackage, -- Additional Package
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,
"ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,
j2LineTTPSourcePkg PACKAGE
BEHAVIOUR
j2LineTTPSourceBeh BEHAVIOUR
DEFINED AS "
    This managed object represents a termination point where the digital J2 signal (6.312 Mbps) is originated.

```

The inherited downstreamConnectivityPointer attribute shall have the value NULL for this managed object.

A change in the value of the administrativeState attribute (in the administrativeStatePackage, which is defined in the system object class in Rec. X.721 | ISO/IEC 10165-2) shall cause a stateChange notification.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

- supportedByObjectList (inherited)
- alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)
- currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)
- alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)
- supportableClientList (in the inherited supportableClientListPackage)
- lineBuildOut (in the lineBuildOutPkg)
- tPTimingSource (in the tPTimingSourcePkg)

The termination point should be placed in the locked administrativeState before the change." ;

```

ATTRIBUTES
j2LineTTPId
    GET;;;
CONDITIONAL PACKAGES
"Bellcore GR-836":lineCircuitAddressPkg PRESENT IF "the supporting

```

equipment object (identified by the inherited supportedByObjectList attribute) supports multiple instances of this object class",

```
"Bellcore GR-836":tPTimingSourcePkg PRESENT IF "an instance supports it",
"Bellcore GR-836":lineBuildOutPkg PRESENT IF "an instance supports it";
REGISTERED AS {atmfM4ObjectClass j2LineTTPSource(64)};
```

### 2.3.37 j2PathTTPBidirectional

```
j2PathTTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
  "ITU-T Rec. M.3100 : 1995":trailTerminationPointBidirectional,
  j2PathTTPSink,
  j2PathTTPSource;
REGISTERED AS {atmfM4ObjectClass j2PathTTPBidirectional(65)};
```

### 2.3.38 j2PathTTPSink

```
j2PathTTPSink MANAGED OBJECT CLASS
DERIVED FROM      "ITU-T Rec. M.3100 : 1995":trailTerminationPointSink;
CHARACTERIZED BY
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatusPackage, -- Additional Package
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage,
  "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
  "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,
  "ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,
  "ITU-T Rec. M.3100 : 1995":tmnCommunicationsAlarmInformationPackage,
j2PathTTPSinkPkg PACKAGE
BEHAVIOUR
j2PathTTPSinkBeh BEHAVIOUR
DEFINED AS "
  This managed object represents a termination point where the J2 framed path trail (6.312 Mbps) is terminated, i.e.,
  the J2 path overhead is removed from the incoming signal and processed.
```

A communicationsAlarm notification shall be emitted if a loss of frame (LOF) condition is detected.  
The probableCause parameter of the notification shall indicate M.3100: lossOfFrame.

A communicationsAlarm notification shall be emitted if a J2 path alarm indication signal (AIS) condition is detected.  
The probableCause parameter of the notification shall indicate M.3100:aIS.

A communicationsAlarm notification shall be emitted if a yellow-alarm signal condition is detected.  
The probableCause parameter of the notification shall indicate M.3100:transmissionError.

A change in the value of the administrativeState attribute (in the administrativeStatePackage, which is defined in the system object class in Rec. X.721 | ISO/IEC 10165-2) shall cause a stateChange notification.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

```
supportedByObjectList (inherited)
upstreamConnectivityPointer (inherited)
```

alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)  
 currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)  
 alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)  
 supportableClientList (in the inherited supportableClientListPackage)  
 The termination point should be placed in the locked administrativeState  
 before the change."; ;  
 ATTRIBUTES  
 j2PathTTPId  
 GET;;;  
 REGISTERED AS {atmfM4ObjectClass j2PathTTPSink(66)};

### 2.3.39 j2PathTTPSinkCurrent Data

j2PathTTPSinkCurrentData MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. Q.822":currentData;  
 CHARACTERIZED BY  
 "ANSI T1.247 : 1995":cVPkg,  
 "ANSI T1.247 : 1995":eSPkg,  
 "ANSI T1.247 : 1995":sESPkg,  
 "ANSI T1.247 : 1995":uASPkg,  
 fCPkg, -- added package  
 j2PathTTPSinkCurrentDataPkg PACKAGE  
 BEHAVIOUR j2PathTTPSinkCurrentDataBehaviour BEHAVIOUR  
 DEFINED AS  
 "The j2PathTTPSinkCurrentData object class is a class of managed support object  
 that is used to monitor performance aspects of J2 path TTPs.  
 Instances of this object class may be created either by a managing system or  
 automatically by a managed system. These are contained in the observed trail  
 termination point object at the J2 rate.";;;;  
 REGISTERED AS {atmfM4ObjectClass j2PathTTPSinkCurrentData(67)};

### 2.3.40 j2PathTTPSinkHistoryData

j2PathTTPSinkHistoryData MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. Q.822":historyData;  
 CHARACTERIZED BY  
 "ANSI T1.247 : 1995":cVHistoryPkg,  
 "ANSI T1.247 : 1995":eSHistoryPkg,  
 "ANSI T1.247 : 1995":sESHHistoryPkg,  
 "ANSI T1.247 : 1995":uASHHistoryPkg,  
 fCHistoryPkg,  
 j2PathTTPSinkHistoryDataPkg PACKAGE  
 BEHAVIOUR  
 j2PathTTPSinkHistoryDataBehaviour BEHAVIOUR  
 DEFINED AS  
 "Instances of this object class are used to store the observed measurements of the  
 observed J2PathTTPSinkCurrentData object at the end of an observation interval.";;;;  
 REGISTERED AS {atmfM4ObjectClass j2PathTTPHistoryData(68)};

### 2.3.41 j2PathTTPSource

j2PathTTPSource MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. M.3100 : 1995":trailTerminationPointSource;  
 CHARACTERIZED BY

```

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatusPackage, -- Additional Package
"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage,
"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,
"ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,
j2PathTTPSourcePkg PACKAGE
BEHAVIOUR
j2PathTTPSourceBeh BEHAVIOUR
DEFINED AS "

```

This managed object represents a termination point where the J2 framed path trail is originated, i.e., the J2 path overhead is generated and added to the outgoing signal.

A change in the value of the administrativeState attribute (in the administrativeStatePackage, which is defined in the system object class in Rec. X.721 | ISO/IEC 10165-2) shall cause a stateChange notification.

A change in the value of any of the following attributes, provided the attribute is present in the managed object, shall cause an attributeValueChange notification:

```

supportedByObjectList (inherited)
downstreamConnectivityPointer (inherited)
alarmStatus (in the inherited tmnCommunicationsAlarmInformationPackage)
currentProblemList (in the inherited tmnCommunicationsAlarmInformationPackage)
alarmSeverityAssignmentProfilePointer (in the inherited alarmSeverityAssignmentPointerPackage)
supportableClientList (in the inherited supportableClientListPackage)";

```

ATTRIBUTES

```
j2PathTTPId
```

```
GET;;;
```

```
REGISTERED AS {atmfM4ObjectClass j2PathTTPSource(69)};
```

### 2.3.42 latestOccurrenceLog

latestOccurrenceLog MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":log;

CHARACTERIZED BY

```
latestOccurrenceLogPkg PACKAGE
```

```
BEHAVIOUR
```

```
latestOccurrenceLogBeh BEHAVIOUR
```

```
DEFINED AS
```

"The latestOccurrenceLog object class is a specialization of the log object class. New behaviour introduced in this object class includes the ability to store log records based on the keyAttributeList attribute. Specifically, log records shall be automatically created and deleted such that for each keyAttributeList value, only the latest log record exists.

The inherited maxLogSize attribute of an instance of the latestOccurrenceLog object must be large enough to contain all possible combinations of values that can be placed on the attributes identified by the keyAttributeList attribute.";;

ATTRIBUTES

```
keyAttributeList
```

```
GET;;;
```

```
REGISTERED AS {atmfM4ObjectClass latestOccurrenceLog(16)};
```

### 2.3.43 mtpAccessPointR1

mtpAccessPointR1 MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. Q.2751.1": mtpAccessPoint;  
 CHARACTERIZED BY  
 mtpAccessPointR1Pkg PACKAGE  
 BEHAVIOUR  
 mtpAccessPointR1Beh BEHAVIOUR  
 DEFINED AS  
 "This object class provides information on an MTP signaling entity. It adds an optional  
 attributeValueChange notification. The inherited providerEntityNames  
 attribute may be used to identify associated atmSignLinkSetTp objects.";;;;  
 CONDITIONAL PACKAGES  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage  
 PRESENT IF "An instance supports it";  
 REGISTERED AS {atmM4ObjectClass mtpAccessPointR1(70)};

### 2.3.44 multipointBridge

multipointBridge MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
 CHARACTERIZED BY  
 "ITU-T Rec. M.3100 : 1995": createDeleteNotificationsPackage,  
 "ITU-T Rec. M.3100 : 1995": attributeValueChangeNotificationPackage,  
 "ITU-T Rec. M.3100 : 1995": stateChangeNotificationPackage,  
 multipointBridgePkg PACKAGE  
 BEHAVIOUR  
 multipointBridgeBeh BEHAVIOUR  
 DEFINED AS  
 " The multipointBridge object class is a class of managed objects that represent the multipoint bridging  
 function used to support multipoint VP/VC cross-connections. An instance of this object class shall  
 exist for each multipoint VP/VC cross-connection supported by the managed system.

Instances of this object class shall be explicitly created and deleted by the managing system using the  
 CMIS M-CREATE and M-DELETE services, respectively. Instances of this object class shall not be  
 deleted until all associated instances of the atmCrossConnection object class are also deleted. When  
 explicitly created by a managing system, the primaryCTP and multipointConnectionType attributes  
 shall be set to NULL and the commonCTPs attribute shall be set to the EMPTY SET.

This object class is used to support four types of multipoint VP/VC connections. They are as follows:

- broadcast
- merge
- composite
- full multipoint

The primaryCTP attribute identifies the vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object that  
 generates traffic to broadcast and/or receives merged traffic for broadcast, merge, or composite  
 multipoint cross-connection types. For full multipoint connections (i.e., all legs communicate with all  
 other legs), the value of this attribute shall be set to NULL. The primaryCTP attribute value shall  
 remain fixed during the life of the multipoint cross-connection.

The commonCTPs attribute identifies all legs of the multipoint connection except the leg identified via  
 the primaryCTP attribute. This attribute provides a pointer to one or more instances of the  
 vpCTPBidirectionalR1 object class or vcCTPBidirectionalR1 object class. For full multipoint cross-  
 connections, all the legs of the multipoint cross-connection shall be identified by this attribute. The legs

represented by the commonCTPs attribute may be added or removed from an existing multipoint connection by performing the addTpsToMultipointBridge and removeTpsFromMultipointBridge operations, respectively, on the appropriate instance of the atmMpFabric object class.

The administrativeState attribute may be used by the management system to inhibit (lock) and allow (unlock) ATM cell flow through all multipoint cross-connections supported by the multipointBridge.";;

ATTRIBUTES

    multipointBridgeId

        GET,

    "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": administrativeState

        GET-REPLACE,

    primaryCTP

        GET,

    commonCTPs

        GET,

    multipointConnectionType

        GET;;;

REGISTERED AS {atmfM4ObjectClass multipointBridge(17)};

### 2.3.45 pduLogRecord

pduLogRecord MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":logRecord;

CHARACTERIZED BY pduLogRecordPkg PACKAGE

BEHAVIOUR

pduLogRecordBeh BEHAVIOUR

DEFINED AS

" Instances of this object class are used to capture transmitted and received protocol data units (PDUs), e.g., SSCOP received and transmitted PDUs. These log records are used to provide information about PDUs for fault and performance trouble analysis. Instances of this object class are created and deleted by the ATM NE. An instance of this record is created by the managed system for each PDU that is to be logged. A separate instance of the superior log object class shall be created for each monitored entity, e.g., a signaling channel. A single log should be used for received PDUs, transmitted PDUs, and any associated timerExpirationLogRecord objects. When the log becomes full, the newest log record should replace the oldest one regardless of type. The inherited loggingTime attribute identifies the time that the record was entered into the log. It shall be accurate to the nearest millisecond. This time must preserve the actual sequence of events. The sourceEntity attribute is a pointer to a managed object that represents the source of the PDU being logged, e.g., a signaling channel. The eventType attribute identifies the type of event or abnormality, if any, that caused logging of the PDU. The pduOctets attribute contains the entire contents of the received or transmitted PDU.";;

ATTRIBUTES

    sourceEntity

        GET,

    eventType

        GET,

    pduOctets

        GET;;;

REGISTERED AS {atmfM4ObjectClass pduLogRecord(34)};

### 2.3.46 signVcTTPBidirectional

signVCTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. I.751": vcTTPBidirectional;

CHARACTERIZED BY

```

signVCTTPBidirectionalPkg PACKAGE
BEHAVIOUR
signVCTTPBidirectionalBeh BEHAVIOUR
DEFINED AS
  "An instance of this object class represents a virtual channel trail
  termination points where AAL5 interworking functions for a
  signalingchannel occur. At this point ATM cells are generated from
  signaling messages or signaling messages are recovered from ATM
  cells. Instances of this object class are explicitly created and
  deleted by the managing system.";;
ATTRIBUTES
signLink GET-REPLACE;;;
REGISTERED AS {atmfM4ObjectClass signVCTTPBidirectional(71)};

```

### 2.3.47 sscopReceiveCurrentData

```

sscopReceiveCurrentData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.822": currentData;
CHARACTERIZED BY
sscopReceiveCurrentDataPkg PACKAGE
BEHAVIOUR
sscopReceiveCurrentDataBeh BEHAVIOUR
DEFINED AS
  "Each instance of this object class allows monitoring the SSCOP
  protocol layer of the receive side of one access or interoffice
  signaling channel. One instance of this object class is provided for
  each dss2SignChannelTp or atmSignLinkTp object that is to be monitored.
  Instances of this object may be created and deleted by either the
  managed or managing system. At least ten percent of the total number
  of access signaling channels and all interoffice signaling links
  should be capable of being monitored simultaneously.";;
ATTRIBUTES
sscopConnectionMonitoring
  REPLACE-WITH-DEFAULT
  DEFAULT VALUE AtmMIBModV2.integerZero
GET,
sscopErroredPdus
  REPLACE-WITH-DEFAULT
  DEFAULT VALUE AtmMIBModV2.integerZero
GET;;;
CONDITIONAL PACKAGES
sscopNNIPkg PRESENT IF "an instance is monitoring an interoffice
signaling link";
REGISTERED AS {atmfM4ObjectClass sscopReceiveCurrentData(72)};

```

### 2.3.48 sscopReceiveHistoryData

```

sscopReceiveHistoryData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.822": historyData;
CHARACTERIZED BY
sscopReceiveHistoryDataPkg PACKAGE
BEHAVIOUR
sscopReceiveHistoryDataBeh BEHAVIOUR
DEFINED AS

```



"Each instance of this object class contains the past performance monitoring data on the SSCOP protocol level for the receive side of an individual signaling channel collected by a sscopReceiveCurrentData object. Instances of this object class are created and deleted by the managed system according to the value of the historyRetention attribute specified in the associated sscopReceiveCurrentData object.";;

ATTRIBUTES

sscopConnectionMonitoring GET,  
sscopErroredPdus GET;;;

CONDITIONAL PACKAGES

sscopNNIHistoryPkg PRESENT IF "an instance is monitoring an interoffice signaling link";

REGISTERED AS {atmfM4ObjectClass sscopReceiveHistoryData(73)};

### 2.3.49 tapPP

tapPP MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,

"ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,

tapPPPkg PACKAGE

BEHAVIOUR

tapPPBeh BEHAVIOUR

DEFINED AS

" Instances of this object class are used to manage the physical Test Access Path (TAP) that is used between the ATM NE and a test system. This object class is used with the Physical Port Mirroring (PP) test access function. Instances are of this object class inherently created by the ATM NE. They may be deleted by either the ATM NE or a managing system. The resourceUnderTest attribute is a pointer to an instance of the tcAdaptorTTPBidirectional object class that represents the ATM cell stream to be monitored. The supportedByObject attribute is a pointer to a physical path termination point object that represents the physical port on the ATM NE that is providing access to the TAP PP. The accessMode attribute indicates the direction of traffic being mirrored by the TAP PP (relative to the tcAdaptorTTPBidirectional under test). For this object class the valid values of accessMode are monitor egress traffic, monitor ingress traffic, and NULL (not in use). Valid values of the administrativeState attribute are locked and unlocked. If the administrativeState attribute is set to locked, then the TAP may not be used for test access until it is set to unlocked. The shuttingDown state does not apply to instances of this object class. An attributeValueChange notification is generated for changes in the value of the resourceUnderTest, accessMode, or supportedByObject attribute.";;

ATTRIBUTES

tapPPId

GET,

resourceUnderTest

GET,

accessMode

GET,

supportedByObject

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState

GET-REPLACE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState

GET;

ACTIONS

disconnectTap;;;

REGISTERED AS {atmfM4ObjectClass tapPP(35)};

### 2.3.50 tapVC

tapVC MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
 CHARACTERIZED BY "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,  
 "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
 "ITU-T Rec. M.3100 : 1995":stateChangeNotificationPackage,

tapVCPkg PACKAGE

BEHAVIOUR

tapVCBeh BEHAVIOUR

DEFINED AS

" Instances of this object class are used to manage the physical Test Access Path (TAP) that is used between the ATM NE and a test system. This object class is used with the Virtual Connection Access (VC) test access function. Instances of this object class are inherently created by the ATM NE. They may be deleted by the ATM NE or a managing system. The resourceUnderTest attribute is a pointer to an instance of a tcAdaptorTTPBidirectional object class, a VPI value, and , if necessary, a VCI value that identify the ATM connection to be monitored. The supportedByObject attribute points to a vcCTPBidirectionalR1 or vpCTPBidirectionalR1 object that represents the path to a remote test system, i.e., the TAP. The accessMode attribute indicates if the TAP VC is performing a monitor of ingress traffic, a monitor of egress traffic, a split toward the NE, or a split out from the NE test access function. If the tap is not in use it is set to NULL. Valid values of the administrativeState attribute are locked and unlocked. If the administrativeState attribute is set to locked, then the TAP may not be used for test access until it is unlocked. The shuttingDown state does not apply to instances of this object class. An attributeValueChange notification is generated for changes in the value of the resourceUnderTest, accessMode, or supportedByObject attribute.";

ATTRIBUTES

tapVCId

GET,

resourceUnderTest

GET,

accessMode

GET,

supportedByObject

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState

GET-REPLACE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState

GET;

ACTIONS

disconnectTap;;;

CONDITIONAL PACKAGES

changeAccessModePkg

PRESENT IF "an instance supports it";

REGISTERED AS {atmfM4ObjectClass tapVC(36)};

### 2.3.51 timerExpirationLogRecord

timerExpirationLogRecord MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":logRecord;

CHARACTERIZED BY timerExpirationLogRecordPkg PACKAGE

BEHAVIOUR

timerExpirationLogRecordBeh BEHAVIOUR

## DEFINED AS

" Instances of this object class are used to record timer expiration events. These log records are used to provide information about timer expirations for fault and performance trouble analysis. Instances of this object class are created and deleted by the ATM NE. An instance of this object class is created by the managed system for each timer expiry that is to be logged. A separate instance of the log object class shall be created for each monitored entity, e.g., a signaling channel. A single log should be used for timerExpirationLogRecord objects, and any associated pduLogRecordObjects. When the log becomes full, the newest log record should replace the oldest one regardless of type. The inherited loggingTime attribute identifies the time that the record was entered into the log. It shall be accurate to the nearest millisecond. This time must preserve the actual sequence of events. The sourceEntity attribute is a pointer to a managed object that represents the source of the timer expiry being logged, e.g., a signaling channel. In the case of BISUP or DSS2 timer expirations additional information about the source of the timer expiry is given in the conditional signalingIdentifier or callReference attribute. The timerType and timerValue attributes identify the type of timer that expired and its value at the time it expired.";;

## ATTRIBUTES

sourceEntity  
GET,  
timerType  
GET,  
timerValue  
GET;;;

## CONDITIONAL PACKAGES

signalingIdentifierPkg  
PRESENT IF "the instance is logging a BISUP timer expiry",  
callReferencePkg  
PRESENT IF "the instance is logging a DSS2 timer expiry";  
REGISTERED AS {atmfM4ObjectClass timerExpirationLogRecord(37)};

**2.3.52 uniInfo**

## uniInfo MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
CHARACTERIZED BY

"ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
uniInfoPkg PACKAGE

## BEHAVIOUR

uniInfoBeh BEHAVIOUR

## DEFINED AS

"This managed object class represents individual UNI users. It may be associated with a single-user UNI interface, or with one Virtual UNI from a multiple-user UNI interface.

If ILMI is active on the individual user interface, the values of maxNumActiveVCCsAllowed, maxNumVciBitsSupported, maxNumActiveVPCsAllowed, maxNumVpiBitsSupported, actualMaxSvccVpi, and actualMinSvccVci are calculated by ILMI functions.

Instances of this object class shall be explicitly created and deleted by a management system.";;

## ATTRIBUTES

uniInfoId GET SET-BY-CREATE,  
atmTermPointer GET-REPLACE ADD-REMOVE;;;

## CONDITIONAL PACKAGES

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage PRESENT IF "an instance supports it",  
vcLevelUniInfoPkg PRESENT IF "Associated UNI represents multiple

users and ILMI is active for the individual user, or if the associated UNI represent multiple users, ILMI is not active for the individual user and an instance supports it",  
 vpLevelUniInfoPkg PRESENT IF "Associated UNI represents multiple users and ILMI is active for the individual user, or if the associated UNI represent multiple users, ILMI is not active for the individual user and an instance supports it",  
 svcUniInfoPkg PRESENT IF "SVC service is supported and ILMI is active for the individual user, or it an instance supports it.",  
 ilmiPkg PRESENT IF "ILMI is active for the individual user",  
 ilmiConnectivityPkg PRESENT IF "ILMI is active for the individual user and an instance supports it",  
 signChannelPointerPkg PRESENT IF "SVC service is supported for the individual user",  
 chargeNumberPkg PRESENT IF "Required to support SVC service for the individual user",  
 originatingLineInfoPkg PRESENT IF "required to support SVC service for the individual user";  
 REGISTERED AS { atmM4ObjectClass uniInfo(75)};

### 2.3.53 vcCTPBidirectionalR1

vcCTPBidirectionalR1 MANAGED OBJECT CLASS  
 DERIVED FROM "ITU-T Rec. M.3100 : 1995":connectionTerminationPointBidirectional;  
 CHARACTERIZED BY  
 "ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,  
 "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
 "ITU-T Rec. M.3100 : 1995":crossConnectionPointerPackage,  
 vcCTPBidirectionalR1Pkg PACKAGE  
 BEHAVIOUR  
 vcCTPBidirectionalR1Beh BEHAVIOUR  
 DEFINED AS  
 "The vcCTPBidirectionalR1 object class is a class of managed objects that delimit Virtual Channel (VC) links. From a configuration management perspective, instances of this object class represent VC link terminations that are (1) cross-connected to other VC link terminations, or are available for such cross-connection, or (2) associated to a vcTTPBidirectional instance or are available for such an association.

Note that the vcCTPId attribute value identifies the VCI value for the VCL being terminated and is also used as the RDN for naming instances of this object class. The vcCTPId attribute value may be provided by the managing system upon creation of this managed object instance or it may be absent in the M-CREATE message and thus selected by the managed system. When selected by the managed system, the value chosen shall be reported to the managing system as a parameter in the response to the successfully carried out M-CREATE request.

From a performance and fault management perspective, instances of this object class represent logical points along VCCs at which various maintenance and network traffic management functions may be performed.

When an instance of this object is configured as a segment end-point (i.e., segmentEndPoint is TRUE), it represents a logical point in the managed system where the segment F5 flow (i.e., OAM cells with PTI=4) for the VC terminates.

In the event that the related vcTTPBidirectional is created, this instance points to the vcTTPBidirectional and its crossConnectionPointer points to the atmFabricR1 or atmMpFabricR1 instance.

The conditional package loopbackOAMCellPkg provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

Note that, when configured as a segment end-point, all Segment F5 Loopback cells with a default Loopback Location field value of all ones would be looped-back at this point.

When a VC-AIS or VC-RDI failure is detected, the vcCTPBidirectionalR1 object shall generate a communicationsAlarm notification (if the tmnCommunicationsAlarmInformationPackage is present) with the probableCause parameter value set equal to aIS or farEndReceiveFailure, respectively.

The administrativeState attribute may be used by the management system to inhibit (lock) and allow (unlock) the flow of cells through the vcCTPBidirectionalR1. However, when the vcCTPBidirectionalR1 object is configured as a segment end-point, the value of the administrativeState attribute shall not affect the ability of the vcCTPBidirectionalR1 to perform segment OAM cell processing functions.

Instances of this object class may be created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. Instances of this managed object class may also be automatically created by the managed system in response to actions performed on instances of the atmFabricR1 or atmMpFabricR1 object class.";

```

ATTRIBUTES
    "ITU-T Rec. I.751":vcCTPId
        GET,
    "ITU-T Rec. I.751":segmentEndPoint
        DEFAULT VALUE AtmMIBModV2.booleanFalseDefault
        GET-REPLACE,
    trafficDescriptorPtr
        GET-REPLACE;;;
CONDITIONAL PACKAGES
    "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage
        PRESENT IF "supported by the managed system",
    "ITU-T Rec. I.751":loopbackOAMCellPkg
        PRESENT IF "the link termination point supports initiation of OAM cell loopbacks",
    frameDiscardPkg
        PRESENT IF "supplied by the managing system";
REGISTERED AS {atmM4ObjectClass vcCTPBidirectionalR1 (76)};
    
```

### 2.3.54 vpciTp

```

vpciTp MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": top;
CHARACTERIZED BY
    "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,
vpciTpPkg PACKAGE
BEHAVIOUR
    vpciTpBeh BEHAVIOUR
    
```

## DEFINED AS

"Instances of this object class allow management of an ATM VP connection that is used for SVC bearer channels. Each instance is identified by a Virtual Path Connection Identifier (VPCI) that is unique among the VPCIs controlled by a single interoffice link set. Instances of this object class are created and deleted by a managing system.

One instance of this object class is contained by each vpTTPBidirectional object that terminates a VPC which may contain SVCs.

The administrativeState attribute allows the VPCI to be activated (unlocked) or deactivated (locked or shutting down). If locked, no connections, except test connections, may exist for the VPCI. If shutting down, the VPCI is not available for new SVCs. The administrative state may be set to locked, shutting down, or unlocked either by a management system or automatically by the ATM NE. An administrativeState change to locked will occur if the managed system automatically initiates VPCI blocking. Unlocking requires confirmation from the remote signaling entity before it becomes locally effective.

If present, the remoteBlocking attribute indicates the remote blocking state of the virtual path. A blocked virtual path cannot be selected for new, non-test traffic. However, it can be used for test calls. The blocking of a virtual path has no influence on existing calls (non-test calls and test calls).

The onOccEvent notifications are generated with ProbableCause 'timerExpiry' in cases of remote blocking unconfirmed, i.e., Timer T12b expired after a request of initiate blocking on VPCI was sent to a remote signaling entity, and in cases of unblocking failure, i.e., Timer 14b expired after a request to remove blocking on a VPCI was sent to a remote signaling entity.";;

## ATTRIBUTES

vpciTpId GET SET-BY-CREATE,  
vpci GET SET-BY-CREATE,  
assigningNode GET SET-BY-CREATE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": administrativeState GET-REPLACE;

## NOTIFICATIONS

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": stateChange,  
atmOnOccEvent;;

## CONDITIONAL PACKAGES

"ITU-T Rec. Q.824.6":remoteBlockingPkg PRESENT IF "An instance supports it",  
"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage  
PRESENT IF "An instance supports it";

REGISTERED AS {atmfM4ObjectClass vpciTp(77)};

**2.3.55 vpCTPBidirectionalR1**

-- Note: The logical MIB attribute "VPL type" has not been included to vpCTPBidirectionalR1.

vpCTPBidirectionalR1 MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. M.3100 : 1995":connectionTerminationPointBidirectional;  
CHARACTERIZED BY

"ITU-T Rec. M.3100 : 1995":attributeValueChangeNotificationPackage,  
 "ITU-T Rec. M.3100 : 1995":createDeleteNotificationsPackage,  
 "ITU-T Rec. M.3100 : 1995":crossConnectionPointerPackage,  
 vpCTPBidirectionalR1pkg PACKAGE  
 BEHAVIOUR  
 vpCTPBidirectionalR1Beh BEHAVIOUR  
 DEFINED AS

"The vpCTPBidirectionalR1 object class is a class of managed objects that delimit Virtual Path (VP) links. From a configuration management perspective, instances of this object class represent VP link terminations that are (1) cross-connected to other VP link terminations, or are available for such cross-connection, or (2) associated to a vpTTPBidirectional instance or are available for such an association.

Note that the vpCTPId attribute value identifies the VPI value for the VPL being terminated and is also used as the RDN for naming instances of this object class. The vpCTPId attribute value may be provided by the managing system upon creation of this managed object instance or it may be absent in the M-CREATE message and thus selected by the managed system. When selected by the managed system, the value chosen shall be reported to the managing system as a parameter in the response to the successfully carried out M-CREATE request.

From a performance and fault management perspective, instances of this object class represent logical points along VPCs at which various maintenance and network traffic management functions may be performed.

When an instance of this object is configured as a segment end-point (i.e., segmentEndPoint is TRUE), it represents a logical point in the managed system where the segment F4 flow (i.e., OAM cells with VCI=3) for the VP terminates.

In the event that the related vpTTPBidirectional is created, this instance points to the vpTTPBidirectional and its crossConnectionPointer points to the atmFabricR1 or atmMpFabricR1 instance.

The conditional package loopbackOAMCellpkg provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

Note that, when configured as a segment end-point, all Segment F4 Loopback cells with a default Loopback Location field value of all ones would be looped-back at this point.

When a VP-AIS or VP-RDI failure is detected, the vpCTPBidirectionalR1 object shall generate a communicationsAlarm notification (if the tmnCommunicationsAlarmInformationPackage is present) with the probableCause parameter value set equal to aIS or farEndReceiveFailure, respectively.

The administrativeState attribute may be used by the management system to inhibit (lock) and allow (unlock) the flow of cells through the vpCTPBidirectionalR1. However, when the vpCTPBidirectionalR1 object is configured as a segment end-point, the value of the administrativeState attribute shall not affect the ability of the vpCTPBidirectionalR1 to perform segment OAM cell processing functions.

Instances of this object class may be created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. Instances of this managed object class may

also be automatically created by the managed system in response to actions performed on instances of the atmFabricR1 or atmMpFabricR1 object class.";;

```

ATTRIBUTES
  "ITU-T Rec. I.751":vpCTPId
    GET,
  "ITU-T Rec. I.751":segmentEndPoint
    DEFAULT VALUE AtmMIBModV2.booleanFalseDefault
    GET-REPLACE,
  trafficDescriptorPtr
    GET-REPLACE;;;
CONDITIONAL PACKAGES
  "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeStatePackage
    PRESENT IF "supported by the managed system",
  "ITU-T Rec. I.751":loopbackOAMCellPkg
    PRESENT IF "the link termination point supports initiation of OAM cell loopbacks";
REGISTERED AS {atmfM4ObjectClass vpCTPBidirectionalR1(78)};

```

### 2.3.56 vpTTPBidirectionalR1

```

vpTTPBidirectionalR1 MANAGED OBJECT CLASS
  DERIVED FROM "ITU-T Rec. I.751":vpTTPBidirectional;
  CHARACTERIZED BY
    vpTTPBidirectionalR1Pkg PACKAGE
      BEHAVIOUR
        vpTTPBidirectionalR1Beh BEHAVIOUR
          DEFINED AS
            "The 'supportedServiceCategories' attribute may be used to restrict the use of the VP to VCs of selected service categories only. The 'propagationDelayPkg' is used to support the accumulation of propagation delay during the setup of an SVC.";;
          ATTRIBUTES
            supportedServiceCategories
              GET-REPLACE
              ADD-REMOVE;;;
            CONDITIONAL PACKAGES
              "ITU-T Rec. Q.824.6":propagationDelayPkg
                PRESENT IF "required for the support of SVCs.";
REGISTERED AS {atmfM4ObjectClass vpTTPBidirectionalR1(79)};

```

## 2.4 Conditional Packages

### 2.4.1 abortDiagnosticPkg

```

abortDiagnosticPkg PACKAGE
  ACTIONS
    abortDiagnostic;
REGISTERED AS {atmfM4Package abortDiagnosticPkg(32)};

```

### 2.4.2 aBROptSigPkg

```

aBROptSigPkg PACKAGE
  ATTRIBUTES
    egressNrm

```



```

DEFAULT VALUE AtmMIBModV2.nrmDefault
GET SET-BY-CREATE,
ingressNrm
DEFAULT VALUE AtmMIBModV2.nrmDefault
GET SET-BY-CREATE,
egressTrm
DEFAULT VALUE AtmMIBModV2.trmDefault
GET SET-BY-CREATE,
ingressTrm
DEFAULT VALUE AtmMIBModV2.trmDefault
GET SET-BY-CREATE,
egressCDF
DEFAULT VALUE AtmMIBModV2.cdfDefault
GET SET-BY-CREATE,
ingressCDF
DEFAULT VALUE AtmMIBModV2.cdfDefault
GET SET-BY-CREATE,
egressADTF
DEFAULT VALUE AtmMIBModV2.adtfDefault
GET SET-BY-CREATE,
ingressADTF
DEFAULT VALUE AtmMIBModV2.adtfDefault
GET SET-BY-CREATE;
REGISTERED AS {atmfM4Package aBROptSigPkg(33)};

```

### 2.4.3 aBRPkg

```

aBRPkg PACKAGE
ATTRIBUTES
  egressMinCellRate GET SET-BY-CREATE,
  ingressMinCellRate GET SET-BY-CREATE,
  egressInitialCellRate GET SET-BY-CREATE,
  ingressInitialCellRate GET SET-BY-CREATE,
  egressTransientBufferExposure GET SET-BY-CREATE,
  ingressTransientBufferExposure GET SET-BY-CREATE,
  egressRateDecreaseFactor GET SET-BY-CREATE,
  ingressRateDecreaseFactor GET SET-BY-CREATE,
  egressRateIncreaseFactor GET SET-BY-CREATE,
  ingressRateIncreaseFactor GET SET-BY-CREATE,
  fixedRoundTripTime GET SET-BY-CREATE;
REGISTERED AS {atmfM4Package aBRPkg(34)};

```

### 2.4.4 accessSignallingFeaturesPkg

```

accessSignallingFeaturesPkg PACKAGE
ATTRIBUTES
  accessSignallingFeatures
  GET-REPLACE;
REGISTERED AS {atmfM4Package accessSignallingFeaturesPkg(70)};

```

### 2.4.5 activeFeedbackModesPkg

```

activeFeedbackModesPkg PACKAGE
  ATTRIBUTES
    activeFeedbackModes
      GET-REPLACE;
REGISTERED AS {atmfM4Package activeFeedbackModesPkg (35)};

```

#### 2.4.6 activeOperationModePkg

```

activeOperationModePkg PACKAGE
  ATTRIBUTES
    activeOperationMode
      GET-REPLACE;
REGISTERED AS {atmfM4Package activeOperationModePkg (36)};

```

#### 2.4.7 automaticCongestionControlPkg

```

automaticCongestionControlPkg PACKAGE
  ATTRIBUTES
    congestionLevel1 GET,
    congestionLevel2 GET,
    controlDuration GET SET-BY-CREATE,
    trafficAmount GET SET-BY-CREATE;
REGISTERED AS {atmfM4Package automaticCongestionControlPkg(37)};

```

#### 2.4.8 bandwidthPkg

```

bandwidthPkg PACKAGE
  ATTRIBUTES
    egressBandwidth
      GET-REPLACE,
    ingressBandwidth
      GET-REPLACE;
REGISTERED AS {atmfM4Package bandwidthPkg(38)};

```

#### 2.4.9 bisupInterNniFeaturesPkg

```

bisupInterNniFeaturesPkg PACKAGE
  ATTRIBUTES
    bisupInterNniFeatures
      DEFAULT VALUE AtmMIBModV2.bisupInterNniFeaturesDefault
      ADD-REMOVE;
REGISTERED AS {atmfM4Package bisupInterNniFeaturesPkg(39)};

```

#### 2.4.10 callReferencePkg

```

callReferencePkg PACKAGE
  ATTRIBUTES
    callReference
      GET;
REGISTERED AS {atmfM4Package callReferencePkg(29)};

```

#### 2.4.11 cBRPkg

```
cBRPkg PACKAGE
ATTRIBUTES
  egressCLR GET SET-BY-CREATE,
  ingressCLR GET SET-BY-CREATE;
REGISTERED AS {atmfM4Package cBRPkg(40)};
```

#### 2.4.12 cDVTolerancePCRpkg

```
cDVTolerancePCRpkg PACKAGE
ATTRIBUTES
  "ITU-T Rec. I.751":egressCDVTolerancePCR GET SET-BY-CREATE,
  "ITU-T Rec. I.751":ingressCDVTolerancePCR GET SET-BY-CREATE;
REGISTERED AS {atmfM4Package cDVTolerancePCRpkg(41)};
```

#### 2.4.13 changeAccessModePkg

```
changeAccessModePkg PACKAGE
ACTIONS
  changeAccessMode;
REGISTERED AS {atmfM4Package changeAccessModePkg(30)};
```

#### 2.4.14 farEndCarrierNetworkPkg

```
farEndCarrierNetworkPkg PACKAGE
ATTRIBUTES
  farEndCarrierNetwork
  GET-REPLACE;
REGISTERED AS {atmfM4Package 6};
```

#### 2.4.15 chargeNumberPkg

```
chargeNumberPkg PACKAGE
ATTRIBUTES
  chargeNumber GET-REPLACE;
REGISTERED AS {atmfM4Package chargeNumberPkg (42)};
```

#### 2.4.16 fCPkg

```
fCPkg PACKAGE
ATTRIBUTES
  fC
  REPLACE-WITH-DEFAULT
  DEFAULT VALUE AtmMIBModV2.defaultMeasurementValue
  GET;
REGISTERED AS {atmfM4Package fCPkg(43)};
```

**2.4.17 fCHistoryPkg**

```
fCHistoryPkg PACKAGE
  ATTRIBUTES
    fC GET;
  REGISTERED AS {atmfM4Package fCHistoryPkg(44)};
```

**2.4.18 frameDiscardPkg**

```
frameDiscardPkg PACKAGE
  ATTRIBUTES
    egressFrameDiscardEnabled
      GET-REPLACE,
    ingressFrameDiscardEnabled
      GET-REPLACE;
  REGISTERED AS {atmfM4Package frameDiscardPkg (45)};
```

```
-- Note: This package is aligned with UNI 4.0 (AF-SIG-61.000) and the logical MIB (AF-NM-0020.001).
-- Therefore egress and ingress directions are distinguished,
-- but is not possible to distinguish between different types of frame discard like EPD, PPD
```

**2.4.19 ilmiConnectivityPkg**

```
ilmiConnectivityPkg PACKAGE
  ATTRIBUTES
    ilmiEstabConnectivityPollInterval
      DEFAULT VALUE AtmMIBModV2.ilmiEstabConnectivityPollIntervalDefault
      GET-REPLACE,
    ilmiCheckConnectivityPollInterval
      DEFAULT VALUE AtmMIBModV2.ilmiCheckConnectivityPollIntervalDefault
      GET-REPLACE,
    ilmiConnectivityPollFactor
      DEFAULT VALUE AtmMIBModV2.ilmiConnectivityPollFactorDefault
      GET-REPLACE,
    ilmiConnectivityState GET;
  REGISTERED AS {atmfM4Package ilmiConnectivityPkg (46)};
```

**2.4.20 ilmiPkg**

```
ilmiPkg PACKAGE
  ATTRIBUTES
    ilmiChannelIdentifier
      GET-REPLACE;
  REGISTERED AS {atmfM4Package 7};
```

**2.4.21 iscPtCodePkg**

```
iscPtCodePkg PACKAGE
  ATTRIBUTES
    iscPointCode GET-REPLACE,
    iscIncludeInfo GET-REPLACE;
```

REGISTERED AS {atmfM4Package iscPtCodePkg(47)};

#### 2.4.22 networkIndicatorPkg

networkIndicatorPkg PACKAGE

ATTRIBUTES

"ITU-T Rec. Q.751.1 : 1995": networkIndicator GET SET-BY-CREATE;  
REGISTERED AS {atmfM4Package networkIndicatorPkg(48)};

#### 2.4.23 nniAccessPointerPkg

nniAccessPointerPkg PACKAGE

ATTRIBUTES

nniAccessPointer GET SET-BY-CREATE;  
REGISTERED AS {atmfM4Package nniAccessPointerPkg(49)};

#### 2.4.24 originatingLineInfoPkg

originatingLineInfoPkg PACKAGE

ATTRIBUTES

originatingLineInfo GET-REPLACE;  
REGISTERED AS {atmfM4Package originatingLineInfoPkg (50)};

#### 2.4.25 policingPkg

policingPkg PACKAGE

ATTRIBUTES

upcNpc

DEFAULT VALUE DERIVATION RULE upcNpcDvdrBeh

GET-REPLACE;

REGISTERED AS {atmfM4Package policingPkg(51)};

upcNpcDvdrBeh BEHAVIOUR

DEFINED AS

"For an 'atmAccessProfile' object contained in a 'tcAdaptorTTPBidirectional' object the value is set by the managed system to true unless the 'tcAdaptorTTPBidirectional' object is associated with an 'intraNNI' object, in which case the value is set to false. For an 'atmAccessProfileR1' object contained in a 'vpTTPBidirectional' object the value is set to the value defined for the associated 'tcAdaptorTTPBidirectional' object";

#### 2.4.26 reportDiagnosticStatusPkg

reportDiagnosticStatusPkg PACKAGE

ACTIONS

reportDiagnosticStatus;

REGISTERED AS {atmfM4Package reportDiagnosticStatusPkg(53)};

#### 2.4.27 signalingIdentifierPkg

signalingIdentifierPkg PACKAGE

ATTRIBUTES

```
signalingIdentifier
  GET;
REGISTERED AS {atmfM4Package signalingIdentifierPkg(31)};
```

#### 2.4.28 signChannelPointerPkg

```
signChannelPointerPkg PACKAGE
  ATTRIBUTES
    signChannelPointer GET-REPLACE ADD-REMOVE;
REGISTERED AS {atmfM4Package signChannelPointerPkg (54)};
```

#### 2.4.29 sscopNNIHistoryPkg

```
sscopNNIHistoryPkg PACKAGE
  ATTRIBUTES
    sscfAlignmentFailures GET,
    sscopLostPdus GET,
    sscopNoCreditDelay GET;
REGISTERED AS {atmfM4Package sscopNNIHistoryPkg(55)};
```

#### 2.4.30 sscopNNIPkg

```
sscopNNIPkg PACKAGE
  ATTRIBUTES
    sscfAlignmentFailures
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
    sscopLostPdus
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
    sscopNoCreditDelay
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
    GET;
REGISTERED AS {atmfM4Package sscopNNIPkg(56)};
```

#### 2.4.31 supportedOperationModesPkg

```
supportedOperationModesPkg PACKAGE
  ATTRIBUTES
    supportedOperationModes
      GET-REPLACE;
REGISTERED AS {atmfM4Package activeOperationModePkg (57)};
```

#### 2.4.32 svcUniInfoPkg

```
svcUniInfoPkg PACKAGE
  BEHAVIOUR
```

svcUniInfoPkgBeh BEHAVIOUR

DEFINED AS

"If ILMI is active for the individual user, the attributes actualMaxSvccVpi and actualMinSvccVci are calculated by ILMI functions and shall not be modified by management system request.";;

ATTRIBUTES

localMaxSvccVpi GET SET-BY-CREATE,

actualMaxSvccVpi GET-REPLACE,

localMinSvccVci GET SET-BY-CREATE,

actualMinSvccVci GET-REPLACE;

REGISTERED AS {atmfM4Package svcUniInfoPkg (58)};

### 2.4.33 tpAndVpciPtrListPkg

tpAndVpciPtrListPkg PACKAGE

ATTRIBUTES

"ITU-T Rec. Q.824.6":tpAndVpciPtrList GET ADD-REMOVE;

REGISTERED AS {atmfM4Package tpAndVpciPtrListPkg(59)};

### 2.4.34 useItOrLoseItPkg

useItOrLoseItPkg PACKAGE

ATTRIBUTES

useItOrLoseItPolicy

GET;

REGISTERED AS {atmfM4Package useItOrLoseItPkg (60)};

### 2.4.35 vBRPkg

vBRPkg PACKAGE

ATTRIBUTES

"ITU-T Rec. I.751":egressSustainableCellRate GET SET-BY-CREATE,

"ITU-T Rec. I.751":ingressSustainableCellRate GET SET-BY-CREATE,

"ITU-T Rec. I.751":egressMaxBurstSize GET SET-BY-CREATE,

"ITU-T Rec. I.751":ingressMaxBurstSize GET SET-BY-CREATE,

egressCLR GET SET-BY-CREATE,

ingressCLR GET SET-BY-CREATE;

REGISTERED AS {atmfM4Package vBRPkg(61)};

### 2.4.36 vcLevelUniInfoPkg

vcLevelUniInfoPkg PACKAGE

BEHAVIOUR

vcLevelUniInfoPkgBeh BEHAVIOUR

DEFINED AS

"If ILMI is active for the individual user, the values of the attributes maxNumVCIBitsSupported and maxNumActiveVCCsAllowed are calculated by ILMI functions and shall not be modified by a management system request.";;

ATTRIBUTES

localMaxNumVccsSupportable GET-REPLACE,

"ITU-T Rec. I.751":maxNumActiveVCCsAllowed GET-REPLACE,

localMaxNumAllocatedVciBits GET-REPLACE,  
 "ITU-T Rec. I.751":maxNumVCIBitsSupported GET-REPLACE;  
 REGISTERED AS {atmfM4Package vcLevelUniInfoPkg(62)};

#### 2.4.37 vpcisAllowedPkg

vpcisAllowedPkg PACKAGE  
 ATTRIBUTES  
 vpcisAllowed ADD-REMOVE;  
 REGISTERED AS {atmfM4Package vpcisAllowedPkg(63)};

#### 2.4.38 vprisAllowedPk

vprisAllowedPkg PACKAGE  
 ATTRIBUTES  
 vprisAllowed ADD-REMOVE;  
 REGISTERED AS {atmfM4Package vprisAllowedPkg(64)};

#### 2.4.39 vpLevelUniInfoPkg

vpLevelUniInfoPkg PACKAGE  
 BEHAVIOUR  
 vpLevelUniInfoPkgBeh BEHAVIOUR  
 DEFINED AS  
 "If ILMI is active for the individual user, then the values of the  
 attributes maxNumActiveVPCsAllowed and maxNumVPIBitsSupported are  
 calculated by ILMI functions and shall not be modified by management system  
 request.";;  
 ATTRIBUTES  
 localMaxNumVpcsSupportable GET-REPLACE,  
 "ITU-T Rec. I.751":maxNumActiveVPCsAllowed GET-REPLACE,  
 networkMaxNumAllocatedVpiBits GET-REPLACE,  
 "ITU-T Rec. I.751":maxNumVPIBitsSupported GET-REPLACE;  
 REGISTERED AS {atmfM4Package vpLevelUniInfoPkg (65)};

#### 2.4.40 vsVdActivePkg

vsVdActivePkg PACKAGE  
 ATTRIBUTES  
 vsVdActive  
 GET SET-BY-CREATE;  
 REGISTERED AS {atmfM4Package vsVdActivePkg(66)};

#### 2.4.41 vsVdSupportPkg

vsVdSupportPkg PACKAGE  
 ATTRIBUTES  
 vsVdSupport  
 GET;  
 REGISTERED AS {atmfM4Package vsVdSupportPkg (67)};



## 2.5 Attributes

### 2.5.1 abrFeedbackControlId

abrFeedbackControlId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR abrFeedbackControlIdBeh BEHAVIOUR  
DEFINED AS  
"This attribute is used to name instances of the abrFeedbackControl managed object class.";;  
REGISTERED AS {atmfM4Attribute abrFeedbackControlId(226) };

### 2.5.2 accessMode

accessMode ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.AccessMode;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
accessModeBeh BEHAVIOUR  
DEFINED AS  
" The value of this attribute indicates the access mode that a test access path (TAP) is using. The value is with respect to the object that represents the resource under test. Valid values for the access mode include monitor egress traffic, monitor ingress traffic, split toward the NE (TAP VC only), split out from the NE (TAP VC only), and NULL (TAP not in use).";  
REGISTERED AS {atmfM4Attribute accessMode(96)};

### 2.5.3 accessSignallingFeatures

accessSignallingFeatures ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.AccessSignallingFeatures;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR  
accessSignallingFeaturesBeh BEHAVIOUR  
DEFINED AS  
"This attribute lists supported features for the access signalling channel.";;  
REGISTERED AS {atmfM4Attribute accessSignallingFeatures(111)};

### 2.5.4 activeFeedbackModes

activeFeedbackModes ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.FeedbackModes;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR  
activeFeedbackModesBeh BEHAVIOUR  
DEFINED AS  
"This attribute describes the ABR feedback modes which are currently active in the network element.";;  
REGISTERED AS {atmfM4Attribute activeFeedbackModes(112)};

### 2.5.5 activeOperationMode

activeOperationMode ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.OperationMode;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 activeOperationModeBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute describes which operations mode will be used by an intermediate ATM NE for ABR connections, i.e. whether backward RM cells are generated or modified.";;  
 REGISTERED AS {atmfM4Attribute activeOperationMode(113)};

### 2.5.6 actualMaxSvccVpi

actualMaxSvccVpi ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 actualMaxSvccVpiBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the maximum VPI value that may be used for SVCCs for the associated user. If ILMI is active, this value is calculated by the ILMI functions as the smaller of the local maximum SVCC VPI values at near and far ends.";;  
 REGISTERED AS {atmfM4Attribute actualMaxSvccVpi(114)};

### 2.5.7 actualMinSvccVci

actualMinSvccVci ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 actualMinSvccVciBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the minimum VCI value that may be used for SVCCs for the associated user. If ILMI is active, this value is calculated by the ILMI functions as the larger of the local minimum SVCC VCI values at the near and far ends.";;  
 REGISTERED AS {atmfM4Attribute actualMinSvccVci(115)};

### 2.5.8 addrPresentationFormat

addrPresentationFormat ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.AddrPresentationFormat;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 addrPresentationFormatBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute identifies the address formats supported by the managed entity.";;  
 REGISTERED AS {atmfM4Attribute addrPresentationFormat(116)};

### 2.5.9 aesaDirectoryNumber

aesaDirectoryNumber ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.AESADN;  
 MATCHES FOR EQUALITY;

BEHAVIOUR  
 aesaDirectoryNumberBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute represents an ATM endsystem address (AESAs) based on  
 ISO NSAP according to the ATM Forum UNI 4.0 Signalling Specification.";;  
 REGISTERED AS {atmfM4Attribute aesaDirectoryNumber(117)};

### 2.5.10 allCellsDiscarded

allCellsDiscarded ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;  
 BEHAVIOUR  
 allCellsDiscardedBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute provides a count of the number of user or other ATM cells with either CLP=0 or CLP=1  
 that have been discarded at the associated UNI or NNI interface due to congestion during the  
 measurement interval.";;  
 REGISTERED AS {atmfM4Attribute allCellsDiscarded(118)};

### 2.5.11 alpha

alpha ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Real;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 alphaBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the exponential smoothing factor used  
 within the SAAL protocol layer for interoffice signaling links.";;  
 REGISTERED AS {atmfM4Attribute alpha(119)};

### 2.5.12 assigningNode

assigningNode ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 assigningNodeBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute indicates whether or not the ATM NE assigns  
 the VCI values for the vpciTp object that contains this attribute. If the  
 value of this attribute is TRUE, then the ATM NE is the assigning node. If  
 the value of this attribute is FALSE,  
 then the far-end ATM NE is the assigning node.";;  
 REGISTERED AS {atmfM4Attribute assigningNode(120)};

### 2.5.13 atmMtpSignPointId

atmMtpSignPointId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;

## BEHAVIOUR

atmMtpSignPointIdBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is used as the RDN for instances of the atmMtpSignPoint object class.";

REGISTERED AS {atmfM4Attribute atmMtpSignPointId(121)};

**2.5.14 atmSignLinkTpId**

atmSignLinkTpId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

atmSignLinkTpIdBeh BEHAVIOUR

DEFINED AS

"This attribute is used as the RDN for naming instances of the atmSignLinkTp object class Its value shall be equal to the Signaling Link Code for the signaling link. The Signaling link code is unique within a signaling link set and is the same for both ends of a signaling link. The allowed range is 0-15.";

REGISTERED AS {atmfM4Attribute atmSignLinkTpId(122)};

**2.5.15 atmTermPointer**

atmTermPointer ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.ObjectList;

MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR

atmTermPointerBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is either the distinguished names of the local vpCTPBidirectional objects that terminate VP from a remote UNI or the distinguished name of the tcAdaptorTTPBidirectional object associated with a single-user local UNI.";

REGISTERED AS {atmfM4Attribute atmTermPointer(123)};

**2.5.16 atmTestAccessFunctionId**

atmTestAccessFunctionId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

atmTestAccessFunctionIdBeh BEHAVIOUR

DEFINED AS

" This attribute is used to name instances of the atmTestAccessFunction managed object class. ";

REGISTERED AS {atmfM4Attribute atmTestAccessFunctionId(97)};

**2.5.17 atmTestAccessFunctionType**

atmTestAccessFunctionType ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.AtmTestAccessFunctionType;

MATCHES FOR EQUALITY;

BEHAVIOUR

atmTestAccessFunctionTypeBeh BEHAVIOUR  
DEFINED AS

" The value of this attribute identifies the type of test access function to be supported. Valid types include physical port mirroring (PP) and virtual connection access (VC).";  
REGISTERED AS {atmfM4Attribute atmTestAccessFunctionType(98)};

### 2.5.18 atmTrafficDescriptorId

atmTrafficDescriptorId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR

atmTrafficDescriptorIdBeh BEHAVIOUR  
DEFINED AS

"This attribute can be used as an RDN when naming an instance of the atmTrafficDescriptor managed object class."; ;  
REGISTERED AS {atmfM4Attribute atmTrafficDescriptorId(216)};

### 2.5.19 bisupInterNniFeatures

bisupInterNniFeatures ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.BisupFeatureList;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR

bisupInterNniFeaturesBeh BEHAVIOUR  
DEFINED AS

"This set-valued attribute provides a list of the active features being used on the BICI associated with the bisupAccessPoint object containing it.";;  
REGISTERED AS {atmfM4Attribute bisupInterNniFeatures(124)};

### 2.5.20 bisupSignPointId

bisupSignPointId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR

bisupSignPointIdBeh BEHAVIOUR  
DEFINED AS

"This attribute is used as the RDN when naming an instance of the bisupSignPoint managed object class.";;  
REGISTERED AS {atmfM4Attribute bisupSignPointId(125)};

### 2.5.21 bisupTimersProfileId

bisupTimersProfileId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR

bisupTimersProfileIdBeh BEHAVIOUR  
DEFINED AS

"The value of this attribute is used as the RDN for instances of the bisupTimersProfile object class.";;  
 REGISTERED AS {atmfM4Attribute bisupTimersProfileId(126)};

### 2.5.22 callReference

callReference ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.BitString;  
 MATCHES FOR EQUALITY, SUBSTRINGS;  
 BEHAVIOUR  
 callReferenceBeh BEHAVIOUR  
 DEFINED AS  
 " The value of this attribute is the call reference value associated with a call by a DSS2 access signaling entity.";;  
 REGISTERED AS {atmfM4Attribute callReference(99)};

### 2.5.23 cellHeaderAbnormalityType

cellHeaderAbnormalityType ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.CellHeaderAbnormalityType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 cellHeaderAbnormalityTypeBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute identifies the abnormality associated with the log record. Valid values for this attribute are: Unassigned VPI/VCI Value and Out-Of-Range VPI/VCI Value. This attribute type will be used as part of the keyAttributeList in the containing latestOccurrenceLog object.";;  
 REGISTERED AS {atmfM4Attribute 4};

### 2.5.24 chargeNumber

chargeNumber ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.AtmSubscriberAddress;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 chargeNumberBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the subscriber address that will be billed for SVC services provided to the associated UNI or V-UNI.";;  
 REGISTERED AS {atmfM4Attribute chargeNumber(127)};

### 2.5.25 conformanceDefinition

conformanceDefinition ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ConformanceDefinition;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 conformanceDefinitionBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the type of conformance as defined in ATM-Forum TM 4.0. Valid values are CBR.1, VBR.1, VBR.2, VBR.3, UBR.1, UBR.2, ABR. The correspondence between conformanceDefinition and serviceCategory as specified in

ATM-Forum 4.0 should be enforced by the NE."; ;  
REGISTERED AS {atmfM4Attribute conformanceDefinition(128)};

### 2.5.26 commonCTPs

commonCTPs ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.ExistingCTPs;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR  
commonCTPsBeh BEHAVIOUR  
DEFINED AS  
" This attribute identifies all legs of the multipoint connection except the leg identified via the primaryCTP attribute. This attribute provides a pointer to one or more instances of the vpCTPBidirectionalR1 object class or vcCTPBidirectionalR1 object class. For full multipoint cross-connections, all the legs of the multipoint cross-connection shall be identified by this attribute. ";;  
REGISTERED AS {atmfM4Attribute commonCTPs(6)};

### 2.5.27 congestionLevel1

congestionLevel1 ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
congestionLevel1Beh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the level 1 congestion threshold for BISUP automatic congestion control. The measure of congestion used is implementation dependent.";;  
REGISTERED AS {atmfM4Attribute congestionLevel1(129)};

### 2.5.28 congestionLevel2

congestionLevel2 ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
congestionLevel2Beh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the level 2 congestion threshold for BISUP automatic congestion control. The measure of congestion used is implementation dependent.";;  
REGISTERED AS {atmfM4Attribute congestionLevel2(130)};

### 2.5.29 controlDuration

controlDuration ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
controlDurationBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the control duration in milliseconds for BISUP automatic congestion control.";;

REGISTERED AS {atmfM4Attribute controlDuration(131)};

### 2.5.30 diagnosticControlId

diagnosticControlId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.SimpleNameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
diagnosticControlIdBeh BEHAVIOUR  
DEFINED AS  
" The value of this attribute identifies an instance of  
the diagnosticControl managed object class. ";;  
REGISTERED AS {atmfM4Attribute diagnosticControlId(132)};

### 2.5.31 diagnosticObjectList

diagnosticObjectList ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.DiagnosticObjectList;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR  
diagnosticObjectListBeh BEHAVIOUR  
DEFINED AS  
" This attribute specifies a list of object instances that represent  
things for which diagnostics are supported and which are to be diagnosed. ";;  
REGISTERED AS {atmfM4Attribute diagnosticObjectList(133)};

### 2.5.32 diagnosticReportMode

diagnosticReportMode ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.DiagnosticReportMode;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
diagnosticReportModeBeh BEHAVIOUR  
DEFINED AS  
" This attribute specifies how to report the result of a  
failed diagnostic, i.e., the thing being tested did not pass the test.  
Valid report modes are summary mode  
and detailed mode . For the summary report mode, if an  
object failed in one or more test phases, only an overall  
indication of failure will be reported for that object.  
For the detailed report mode, if an object failed in one  
or more test phases, the phases in which failure occurs will also  
be reported (non-reported phases imply pass). ";;  
REGISTERED AS {atmfM4Attribute diagnosticReportMode(134)};

### 2.5.33 diagnosticTerminateMode

diagnosticTerminateMode ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.DiagnosticTerminateMode;  
MATCHES FOR EQUALITY;  
BEHAVIOUR



diagnosticTerminateModeBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute specifies how a diagnostic will terminate in the event that a failure result occurs in one of the diagnostic phases. Valid modes are Normal mode and Immediate mode. For normal terminate mode, the diagnostic will try to complete, if possible, the entire set of specified phases and iterations regardless of any failed phases encountered on that object. For immediate terminate mode, the diagnostic will skip the remaining phases if upon failure occurs on the object. ";;  
 REGISTERED AS {atmfM4Attribute diagnosticTerminateMode(135)};

### 2.5.34 diagnosticType

diagnosticType ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.DiagnosticType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 diagnosticTypeBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute specifies the type of the diagnostic routine to be performed. It may also specify the phases and number of iterations for each phase to be run. Diagnostic test types may be locally defined or may be globally available standardized test types";;  
 REGISTERED AS {atmfM4Attribute diagnosticType(136)};

### 2.5.35 ds3PLCPPathCTPId

ds3PLCPPathCTPId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ds3PLCPPathCTPIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used to name instances of the ds3PLCPPathCTPBidirectional managed object class. ";;  
 REGISTERED AS {atmfM4Attribute ds3PLCPPathCTPId(11)};

### 2.5.36 dss2SignChannelTpId

dss2SignChannelTpId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 dss2SignChannelTpIdBeh BEHAVIOUR  
 DEFINED AS  
 " The value of this attribute identifies an instance of the dss2SignChannelTp managed object class. ";;  
 REGISTERED AS {atmfM4Attribute dss2SignChannelTpId(227)};

**2.5.37 egressADTF**

egressADTF ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ADTF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressADTFBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates egress (with respect to the managed system) the  
 Allowed Cell Rate Decrease Time Factor that has been assigned to the VPL or VCL  
 being terminated."; ;  
 REGISTERED AS {atmfM4Attribute egressADTF(137)};

**2.5.38 egressBandwidth**

egressBandwidth ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer ;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressBandwidthBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute determines the total amount of egress bandwidth for the interface in cells per second.  
 Attribute values are limited by the underlying physical bandwidth.";;  
 REGISTERED AS {atmfM4Attribute egressBandwidth(138)};

**2.5.39 egressCDF**

egressCDF ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.CDF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressCDFBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) Cutoff  
 Decrease Factor that has been assigned to the VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute egressCDF(139)};

**2.5.40 egressCLR**

egressCLR ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.CLR;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressCLRBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system)  
 maximum permissible Cell Loss Ratio Factor that has been assigned to the VPL or  
 VCL being terminated. This attribute applies to CBR and realtime and  
 non-realtime VBR. It applies to CLP=0+1 flow for CBR.1 and VBR.1, and it applies  
 to CLP=0 flow for VBR.2 and VBR.3."; ;  
 REGISTERED AS {atmfM4Attribute egressCLR(140)};

**2.5.41 egressFrameDiscardEnabled**

egressFrameDiscardEnabled ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressFrameDiscardEnabledBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates whether the network element is allowed to treat data leaving the NE as frames and to apply frame discard.";;  
 REGISTERED AS {atmfM4Attribute egressFrameDiscardEnabled(141)};

**2.5.42 egressInitialCellRate**

egressInitialCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressInitialCellRateBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) cell rate at which the source is allowed to send cells initially and after an idle period across the VPL or VCL being terminated." ;  
 REGISTERED AS {atmfM4Attribute egressInitialCellRate(142)};

**2.5.43 egressMinCellRate**

egressMinCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressMinCellRateBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) Minimum Cell Rate at which the source is always allowed to send across the VPL or VCL being terminated." ;  
 REGISTERED AS {atmfM4Attribute egressMinCellRate(143)};

**2.5.44 egressNrm**

egressNrm ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Nrm;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressNrmBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) maximum number of cells a source may send for each forward Resource Management cell across the VPL or VCL being terminated." ;  
 REGISTERED AS {atmfM4Attribute egressNrm(144)};

**2.5.45 egressRateDecreaseFactor**

egressRateDecreaseFactor ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.RDF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressRateDecreaseFactorBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) Rate  
 Decrease Factor, which controls the decrease in the cell transmission rate  
 across the VPL or VCL being terminated." ; ;  
 REGISTERED AS {atmfM4Attribute egressRateDecreaseFactor(145)};

**2.5.46 egressRateIncreaseFactor**

egressRateIncreaseFactor ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.RIF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressRateIncreaseFactorBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) Rate  
 Increase Factor, which controls the amount by which the cell transmission rate  
 may increase upon reception of a resource management cell across the VPL or VCL  
 being terminated." ; ;  
 REGISTERED AS {atmfM4Attribute egressRateIncreaseFactor(146)};

**2.5.47 egressTransientBufferExposure**

egressTransientBufferExposure ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressTransientBufferExposureBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system)  
 negotiated number of cells that the network limits the source to sending across  
 the VPL or VCL being terminated during startup periods, or before the first  
 resource management cell returns." ; ;  
 REGISTERED AS {atmfM4Attribute egressTransientBufferExposure(147)};

**2.5.48 egressTrm**

egressTrm ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Trm;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 egressTrmBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the egress (with respect to the managed system) upper  
 bound on the time between forward Resource Management cells assigned to the VPL  
 or VCL being terminated." ; ;

REGISTERED AS {atmfM4Attribute egressTrm(148)};

#### 2.5.49 eventType

eventType ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.GraphicStringOrNull;

MATCHES FOR EQUALITY, SUBSTRINGS;

BEHAVIOUR

eventTypeBeh BEHAVIOUR

DEFINED AS

" The value of this attribute identifies the type of event or abnormality, if any, that caused information to be

logged. If the event type is not applicable, or cannot be determined, the value of this attribute should be NULL.";;

REGISTERED AS {atmfM4Attribute eventType(100)};

#### 2.5.50 farEndCarrierNetwork

farEndCarrierNetwork ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.FarEndCarrierNetwork;

MATCHES FOR EQUALITY;

BEHAVIOUR farEndCarrierNetworkBeh BEHAVIOUR

DEFINED AS

" This attribute identifies the adjacent (far-end) carrier to which the Inter-NNI is connected. ";;

REGISTERED AS {atmfM4Attribute 18};

#### 2.5.51 fC

fC ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;

BEHAVIOUR

fCBeh BEHAVIOUR

DEFINED AS

" This attribute defines the failure counter.";;

REGISTERED AS {atmfM4Attribute fC(149) };

#### 2.5.52 fixedRoundTripTime

fixedRoundTripTime ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY;

BEHAVIOUR

fixedRoundTripTimeBeh BEHAVIOUR

DEFINED AS

"This attribute indicates the fixed round-trip time, which is the sum of the

fixed and propagation delays from the source to a destination and back." ;

REGISTERED AS {atmfM4Attribute fixedRoundTripTime(150)};

#### 2.5.53 ilmiChannelIdentifier

ilmiChannelIdentifier ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.IlmiChannelIdentifier;

MATCHES FOR EQUALITY;  
BEHAVIOUR

ilmiChannelIdentifierBeh BEHAVIOUR

DEFINED AS

" This attribute identifies the VPI/VCI pair that is used to provide the user connectivity to the Interim Local Management Interface (ILMI) Server in the managed system. The default value for this attribute is VPI=0 and VCI=16. ";;

REGISTERED AS {atmfM4Attribute 19};

#### 2.5.54 ilmiCheckConnectivityPollInterval

ilmiCheckConnectivityPollInterval ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

ilmiCheckConnectivityPollIntervalBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the amount of time in seconds between successive transmissions of ILMI messages on the interface for the purpose of detecting loss of ILMI connectivity. A value of zero disables ILMI connectivity procedures on the interface.";;

REGISTERED AS {atmfM4Attribute ilmiCheckConnectivityPollInterval(151)};

#### 2.5.55 ilmiConnectivityPollFactor

ilmiConnectivityPollFactor ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

ilmiConnectivityPollFactorBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the number of consecutive polls on the associated UNI or V-UNI interface for which no ILMI response message is received before ILMI connectivity is declared lost.";;

REGISTERED AS {atmfM4Attribute ilmiConnectivityPollFactor(152)};

#### 2.5.56 ilmiConnectivityState

ilmiConnectivityState ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.ConnectivityState;

MATCHES FOR EQUALITY;

BEHAVIOUR

ilmiConnectivityStateBeh BEHAVIOUR

DEFINED AS

"The value of this attribute indicates the connectivity state of ILMI for the UNI or V-UNI. If ILMI is defined for the interface, the value of this attribute is connectionUp or connectionDown. If ILMI is not defined, the value is unknown.";;

REGISTERED AS {atmfM4Attribute ilmiConnectivityState(153)};

#### 2.5.57 ilmiEstabConnectivityPollInterval

ilmiEstabConnectivityPollInterval ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 ilmiEstabConnectivityPollIntervalBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the amount of time in seconds between successive transmissions of ILMI messages on this interface for the purpose of detecting establishment of ILMI connectivity";  
 REGISTERED AS {atmfM4Attribute ilmiEstabConnectivityPollInterval(154)};

**2.5.58 ingressADTF**

ingressADTF ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ADTF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressADTFBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system) Allowed Cell Rate Decrease Time Factor assigned to the VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute ingressADTF(155)};

**2.5.59 ingressBandwidth**

ingressBandwidth ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer ;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressBandwidthBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute determines the total amount of ingress bandwidth for the interface in cells per second. Attribute values are limited by the underlying physical bandwidth.";;  
 REGISTERED AS {atmfM4Attribute ingressBandwidth(156)};

**2.5.60 ingressCDF**

ingressCDF ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.CDF;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressCDFBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system) Cutoff Decrease Factor assigned to the VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute ingressCDF(157)};

**2.5.61 ingressCLR**

ingressCLR ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.CLR;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressCLRBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system)  
 maximum permissible Cell Loss Ratio assigned to the VPL or VCL being terminated.  
 This attribute applies to CBR and realtime and non-realtime VBR. It applies to  
 CLP=0+1 flow for CBR.1 and VBR.1, and it applies to CLP=0 flow for VBR.2 and  
 VBR.3."; ;  
 REGISTERED AS {atmfM4Attribute ingressCLR(158)};

### 2.5.62 ingressFrameDiscardEnabled

ingressFrameDiscardEnabled ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressFrameDiscardEnabledBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates whether the network element is allowed to data received by the NE as frames and  
 to apply frame discard.";;  
 REGISTERED AS {atmfM4Attribute ingressFrameDiscardEnabled(159)};

### 2.5.63 ingressInitialCellRate

ingressInitialCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressInitialCellRateBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system) cell  
 rate at which the source is allowed to send cells initially and after an idle  
 period across the VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute ingressInitialCellRate(160)};

### 2.5.64 ingressMinCellRate

ingressMinCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressMinCellRateBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system)  
 minimum cell rate at which the source is always allowed to send cells across the  
 VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute ingressMinCellRate(161)};



### 2.5.65 ingressNrm

ingressNrm ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Nrm;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
ingressNrmBeh BEHAVIOUR  
DEFINED AS  
"This attribute indicates the ingress (with respect to the managed system)  
maximum number of cells a source may send for each forward Resource Management  
cell across the VPL or VCL being terminated."; ;  
REGISTERED AS {atmfM4Attribute ingressNrm(162)};

### 2.5.66 ingressRateDecreaseFactor

ingressRateDecreaseFactor ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.RDF;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
ingressRateDecreaseFactorBeh BEHAVIOUR  
DEFINED AS  
"This attribute indicates the ingress (with respect to the managed system) rate  
decrease factor, which controls the decrease in the cell transmission rate  
across the VPL or VCL being terminated."; ;  
REGISTERED AS {atmfM4Attribute ingressRateDecreaseFactor(163)};

### 2.5.67 ingressRateIncreaseFactor

ingressRateIncreaseFactor ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.RIF;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
ingressRateIncreaseFactorBeh BEHAVIOUR  
DEFINED AS  
"This attribute indicates the ingress (with respect to the managed system) rate  
increase factor, which controls the amount by which the cell transmission rate  
may increase upon reception of a resource management cell across the VPL or VCL  
being terminated."; ;  
REGISTERED AS {atmfM4Attribute ingressRateIncreaseFactor(164)};

### 2.5.68 ingressTransientBufferExposure

ingressTransientBufferExposure ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
ingressTransientBufferExposureBeh BEHAVIOUR  
DEFINED AS  
"This attribute indicates the ingress (with respect to the managed system)  
negotiated number of cells that the network limits the source to sending across  
the VPL or VCL being terminated during startup periods, or before the first

resource management cell returns."; ;  
 REGISTERED AS {atmfM4Attribute ingressTransientBufferExposure(165)};

### 2.5.69 ingressTrm

ingressTrm ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Trm;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 ingressTrmBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute indicates the ingress (with respect to the managed system) upper bound on the time between forward Resource Management cells assigned to the VPL or VCL being terminated."; ;  
 REGISTERED AS {atmfM4Attribute ingressTrm(166)};

### 2.5.70 interfacePointer

interfacePointer ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.InterfacePointer;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 interfacePointerBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute identifies the object instance Id of the uni, interNNI, or intraNNI object with which the cell header abnormality is associated. This attribute type will be used as part of the keyAttributeList in the containing latestOccurrenceLog object."; ;  
 REGISTERED AS {atmfM4Attribute 25};

### 2.5.71 iscIncludeInfo

iscIncludeInfo ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.IscIncludeInfo;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 iscIncludeInfoBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute is used to control the handling of ISC point codes within a BISUP signaling point. If the ISC point code is not received, it determines whether to include or not include the originating ISC point code in Initial Address Messages (IAMs) for outgoing international calls. If the ISC point code is received, it determines whether to discard or include the received originating ISC point code in the outgoing IAMs.";;  
 REGISTERED AS {atmfM4Attribute iscIncludeInfo(167)};

### 2.5.72 iscPointCode

iscPointCode ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointCode;  
 MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

iscPointCodeBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the International Switching Center (ISC) point code for a BISUP signaling point.";;

REGISTERED AS {atmfM4Attribute iscPointCode(169)};

**2.5.73 j2CTPId**

j2CTPId ATTRIBUTE WITH ATTRIBUTE SYNTAX

AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

j2CTPIdBeh BEHAVIOUR

DEFINED AS

" This Is an attribute whose distinguished value can be used as an RDN when naming an instance of the j2CTPSink, j2CTPSource, or j2CTPBidirectional.";;

REGISTERED AS {atmfM4Attribute j2CTPId(170)};

**2.5.74 j2LineTTPId**

j2LineTTPId ATTRIBUTE WITH ATTRIBUTE SYNTAX

AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

j2LineTTPIdBeh BEHAVIOUR

DEFINED AS

"This is an attribute whose distinguished value can be used as an RDN when naming an instance of the j2LineTTPSink, j2LineTTPSource, or j2LineTTPBidirectional.";;

REGISTERED AS {atmfM4Attribute j2LineTTPId(171)};

**2.5.75 j2PathTTPId**

j2PathTTPId ATTRIBUTE WITH ATTRIBUTE SYNTAX

AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

j2PathTTPIdBeh BEHAVIOUR

DEFINED AS

" This is an attribute whose distinguished value can be used as an RDN when naming an instance of the j2PathTTPSink, j2PathTTPSource, or j2PathTTPBidirectional.";;

REGISTERED AS {atmfM4Attribute j2PathTTPId(172)};

**2.5.76 keyAttributeList**

keyAttributeList ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.AttributeList;

MATCHES FOR EQUALITY;

BEHAVIOUR

keyAttributeListBeh BEHAVIOUR

DEFINED AS

"This attribute indicates the list of attribute types to be used as keys to uniquely identify the entries in a latestOccurrenceLog.";;  
 REGISTERED AS {atmfM4Attribute keyAttributeList(28)};

### 2.5.77 localMaxNumAllocatedVciBits

localMaxNumAllocatedVciBits ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 localMaxNumAllocatedVciBitsBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the number of allocated bits of the VCI sub-field that the local ATM NE can support at its end of the interface for the associated user. It must be equal to or less than the maxNumVCIBitsSupported for an associated uni object. ";;  
 REGISTERED AS {atmfM4Attribute localMaxNumAllocatedVciBits(173)};

### 2.5.78 localMaxNumVccsSupportable

localMaxNumVccsSupportable ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 localMaxNumVccsSupportableBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the maximum number of VCCs that the local ATM NE can support for the associated user.";;  
 REGISTERED AS {atmfM4Attribute localMaxNumVccsSupportable(174)};

### 2.5.79 localMaxNumVpcsSupportable

localMaxNumVpcsSupportable ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 localMaxNumVpcsSupportableBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the maximum number of VPCs that the local ATM NE can support for the associated user.";;  
 REGISTERED AS {atmfM4Attribute localMaxNumVpcsSupportable(175)};

### 2.5.80 localMaxSvccVpi

localMaxSvccVpi ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR  
 localMaxSvccVpiBeh BEHAVIOUR  
 DEFINED AS  
 "The value of this attribute is the maximum VPI value that the ATM NE can use for SVCCs for the associated user.";;

REGISTERED AS {atmfM4Attribute localMaxSvccVpi(176)};

### 2.5.81 localMinSvccVci

localMinSvccVci ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
localMinSvccVciBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the minimum VCI value that the ATM NE can use for SVCCs for the associated user.";;  
REGISTERED AS {atmfM4Attribute localMinSvccVci(177)};

### 2.5.82 multipointBridgeId

multipointBridgeId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
multipointBridgeIdBeh BEHAVIOUR  
DEFINED AS  
"This attribute is used to name instances of the multipointBridge managed object class.";;  
REGISTERED AS {atmfM4Attribute multipointBridgeId(36)};

### 2.5.83 multipointConnectionType

multipointConnectionType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.MultipointConnectionType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
multipointConnectionTypeBeh BEHAVIOUR  
DEFINED AS  
"This attribute represents the type of cross-connection established by the multipoint bridge. Valid values are broadcast, merge, composite, and full multipoint.";;  
REGISTERED AS {atmfM4Attribute multipointConnectionType(37)};

### 2.5.84 nBlk

nBlk ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
nBlkBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the number of monitoring intervals in a block for interoffice signaling SAAL protocol layer Algorithm 2. Algorithm 2 is concerned with intermediate error rates.";;  
REGISTERED AS {atmfM4Attribute nBlk(178)};

**2.5.85 nDelay**

nDelay ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

nDelayBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the number of monitoring intervals needed to span the time when interoffice signaling messages are not released from buffers as a result of a 400 ms error event.";;

REGISTERED AS {atmfM4Attribute nDelay(179)};

**2.5.86 networkMaxNumAllocatedVpiBits**

networkMaxNumAllocatedVpiBits ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

networkMaxNumAllocatedVpiBitsBeh BEHAVIOUR

DEFINED AS

"This attribute is the number of allocated bits of the VPI sub-field that can be supported for the associated user on the UNI for multiple-user UNI cases.";;

REGISTERED AS {atmfM4Attribute networkMaxNumAllocatedVpiBits(180)};

**2.5.87 nniAccessPointer**

nniAccessPointer ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
MATCHES FOR EQUALITY;

BEHAVIOUR

nniAccessPointerBeh BEHAVIOUR

DEFINED AS

"This attribute is a pointer to an ITU-T Rec. Q.824.6 nniAccess object associated with the managed object that contains it.";;

REGISTERED AS {atmfM4Attribute nniAccessPointer(181)};

**2.5.88 originatingLineInfo**

originatingLineInfo ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.OriginatingLineInfo;  
MATCHES FOR EQUALITY;

BEHAVIOUR

originatingLineInfoBeh BEHAVIOUR

DEFINED AS

"This attribute provides information needed to process charging information when interconnecting through an interexchange carrier in ANSI based networks.";;

REGISTERED AS {atmfM4Attribute originatingLineInfo(182)};

### 2.5.89 pduOctets

pduOctets ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.OctetString;  
MATCHES FOR EQUALITY, SUBSTRINGS;

BEHAVIOUR

pduOctetsBeh BEHAVIOUR

DEFINED AS

" This attribute contains the entire contents of a protocol data unit (PDU) that is to be retained in a log.";;  
REGISTERED AS {atmfM4Attribute pduOctets(101)};

### 2.5.90 primary

primary ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
MATCHES FOR EQUALITY;

BEHAVIOUR

primaryBeh BEHAVIOUR

DEFINED AS

"This attribute is used to designate a signaling entity as the primary entity for an ATM NE. If the value of this attribute is TRUE, the object containing it represents the primary signaling entity. If the value is FALSE, the object represents a secondary signaling entity.";;  
REGISTERED AS {atmfM4Attribute primary(183)};

### 2.5.91 primaryCTP

primaryCTP ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
MATCHES FOR EQUALITY;

BEHAVIOUR

primaryCTPBeh BEHAVIOUR

DEFINED AS

"The primaryCTP attribute identifies the vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object that generates traffic to broadcast and/or receives merged traffic for broadcast, merge, or composite multipoint cross-connection types. For full multipoint connections (i.e., all legs communicate with all other legs), the value of this attribute shall be set to NULL. The primaryCTP attribute value shall remain fixed during the life of the associated multipoint cross-connection. ";;  
REGISTERED AS {atmfM4Attribute primaryCTP(40)};

### 2.5.92 priorityCellsDiscarded

priorityCellsDiscarded ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;  
BEHAVIOUR

priorityCellsDiscardedBeh BEHAVIOUR

DEFINED AS

"This attribute provides a count of the number of user or other ATM cells with CLP=0 have been discarded at the associated UNI or NNI interface due to congestion during the measurement interval.";;  
REGISTERED AS {atmfM4Attribute priorityCellsDiscarded(184)};

**2.5.93 protocolPointer**

protocolPointer ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 protocolPointerBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute is a pointer to protocol information that applies to the managed object that contains it.";;  
 REGISTERED AS {atmfM4Attribute protocolPointer(186)};

**2.5.94 provingInfo**

provingInfo ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ProvingInfo;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 provingInfoBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute controls whether the SAAL layer will always provide normal proving, always provide emergency proving, or will provide proving as requested by the MTP3 layer.";;  
 REGISTERED AS {atmfM4Attribute provingInfo(187)};

**2.5.95 recoveryType**

recoveryType ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.RecoveryType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 recoveryTypeBeh BEHAVIOUR  
 DEFINED AS  
 "The recoveryType attribute identifies whether the ATM cross-connection is recoverable (default) or non-recoverable. Recoverable cross-connections remain intact regardless of the operational state of the cross-connection. Non-recoverable ATM cross-connections are cross-connections that are automatically released by the managed system upon detection of a service affecting failure.";;  
 REGISTERED AS {atmfM4Attribute 41};

**2.5.96 resourceUnderTest**

resourceUnderTest ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ResourceUnderTest;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 resourceUnderTestBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute identifies an ATM cell stream or connection that is connected to a test access path (TAP). It will point to a tcAdaptorTTPBidirectional object and for virtual connection (VC) test access, it will also identify the VPI value and if necessary the VCI value of the connection under test. If the associated TAP is idle, the value of this attribute will be NULL.";;  
 REGISTERED AS {atmfM4Attribute resourceUnderTest(102)};



**2.5.97 serviceCategory**

serviceCategory ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.ServiceCategory;

MATCHES FOR EQUALITY;

BEHAVIOUR

serviceCategoryBeh BEHAVIOUR

DEFINED AS

"This attribute indicates the service category as defined in ATM-Forum TM 4.0.

Valid values include CBR, rt-VBR, nrt-VBR, UBR, ABR., and such other values as may be agreed in the future"; ;  
REGISTERED AS {atmfM4Attribute serviceCategory(188)};

**2.5.98 signalingIdentifier**

signalingIdentifier ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.BitString;

MATCHES FOR EQUALITY, SUBSTRINGS;

BEHAVIOUR

signalingIdentifierBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is a BISUP Originating Signaling Identifier or Destination Signaling Identifier.";;  
REGISTERED AS {atmfM4Attribute signalingIdentifier(103)};

**2.5.99 signChannelPointer**

signChannelPointer ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;

MATCHES FOR EQUALITY;

BEHAVIOUR

signChannelPointerBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the distinguished name of the signVcTTPBidirectional object that represents the termination point for the associated user's signaling channel. If no signaling channel is assigned, the value is NULL.";;

REGISTERED AS {atmfM4Attribute signChannelPointer(189)};

**2.5.100 signDataLink**

signDataLink ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;

MATCHES FOR EQUALITY;

BEHAVIOUR

signDataLinkBeh BEHAVIOUR

DEFINED AS

"This attribute is a pointer to the object that represents the AAL5 interworking functions of a signaling link.";;  
REGISTERED AS {atmfM4Attribute signDataLink(190)};

**2.5.101 signLink**

signLink ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR signLinkBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute is a pointer to the object that represents an associated access signaling channel termination point or interoffice signaling link termination point.";;  
 REGISTERED AS {atmfM4Attribute signLink(191)};

**2.5.102 signMode**

signMode ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.SignMode;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 signModeBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute identifies if the managed object that contains it is controlling associated mode or quasi-associated mode signaling.";;  
 REGISTERED AS {atmfM4Attribute signMode(192)};

**2.5.103 sourceEntity**

sourceEntity ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.ObjectInstance;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 sourceEntityBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is a pointer to the object instance that represents the source of information to be logged.";;  
 REGISTERED AS {atmfM4Attribute sourceEntity(104)};

**2.5.104 sscfAlignmentFailures**

sscfAlignmentFailures ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;  
 BEHAVIOUR  
 sscfAlignmentFailuresBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute provides a count of the number of times the SSCF-NNI returns to the out-of-service state because of alignment failure.";;  
 REGISTERED AS {atmfM4Attribute sscfAlignmentFailures(193)};

**2.5.105 sscopConnectionMonitoring**

sscopConnectionMonitoring ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;  
 BEHAVIOUR

sscopConnectionMonitoringBeh BEHAVIOUR

DEFINED AS

"This attribute provides a count of the number of times during the measurement period that any of the following events occur on the receive side of the monitored signaling channel: SSCOP connection disconnect (which is characterized by the expiry of Timer\_NO\_RESPONSE and receipt of MAA-ERROR code P); SSCOP connection initiation failure (which is characterized by the number of expiries of the connection control Timer\_CC exceeding MaxCC and receipt of MAA-ERROR code O); or receipt of a BGREJ PDU, SSCOP connection re-establishment or resynchronization (which is characterized by receipt of a BGN or RESYNC PDU).";

REGISTERED AS {atmfM4Attribute sscopConnectionMonitoring(194)};

### 2.5.106 sscopErroredPdus

sscopErroredPdus ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;

BEHAVIOUR

sscopErroredPdusBeh BEHAVIOUR

DEFINED AS

"This attribute provides an aggregate count of the following events occurring on the receive side of a signaling channel during the measurement period: Unexpected PDUs received (which are characterized by MAA-ERRORS A-M), Invalid PDUs received (which are characterized by MAA-ERROR code U, undefined PTU type code (i.e., 0000), or not 32 bit aligned), Unexpected PDU values (which are characterized by PDU N(S), N(PS), N(R) or list elements error in STAT/USTAT PDUs and by receipt of MAA-ERRORS Q-T).";

REGISTERED AS {atmfM4Attribute sscopErroredPdus(195)};

### 2.5.107 sscopLostPdus

sscopLostPdus ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;

BEHAVIOUR

sscopLostPdusBeh BEHAVIOUR

DEFINED AS

"This attribute provides a count of the number of SD PDUs that have been lost on the associated SSCOP signaling connection during the measurement interval.";

REGISTERED AS {atmfM4Attribute sscopLostPdus(196)};

### 2.5.108 sscopNoCreditDelay

sscopNoCreditDelay ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": counter;

BEHAVIOUR

sscopNoCreditDelayBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the time during the measurement period that the local end of an interoffice SSCOP connection has PDUs to send to

its peer but cannot do so because it has insufficient credit.";;  
REGISTERED AS {atmfM4Attribute sscopNoCreditDelay(197)};

### 2.5.109 supportedByObject

supportedByObject ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.ObjectInstance;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
supportedByObjectBeh BEHAVIOUR  
DEFINED AS  
" This attribute points to an object that represents supporting functions for the given object.";;  
REGISTERED AS {atmfM4Attribute supportedByObject(105)};

### 2.5.110 supportedFeedbackModes

supportedFeedbackModes ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.FeedbackModes;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR  
supportedFeedbackModesBeh BEHAVIOUR  
DEFINED AS  
"This attribute describes the ABR feedback modes which are supported in the network element.";;  
REGISTERED AS {atmfM4Attribute supportedFeedbackModes(198)};

### 2.5.111 supportedOperationModes

supportedOperationModes ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.OperationModes;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR supportedOperationModesBeh BEHAVIOUR  
DEFINED AS  
"This attribute describes which ABR operation modes are supported in the network element.";;  
REGISTERED AS {atmfM4Attribute supportedOperationModes(199)};

### 2.5.112 supportedServiceCategories

supportedServiceCategories ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.SupportedServiceCategories ;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
supportedServiceCategoriesBeh BEHAVIOUR  
DEFINED AS  
"This attribute specifies the set of service categories which are supported by the managed entity.";;  
REGISTERED AS {atmfM4Attribute supportedServiceCategories(200)};

**2.5.113 t12b**

t12b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t12bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Blocking Acknowledgment timer value in seconds.";;

REGISTERED AS {atmfM4Attribute t12b(201)};

**2.5.114 t14b**

t14b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t14bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Unblocking Acknowledgment timer value in seconds.";;

REGISTERED AS {atmfM4Attribute t14b(202)};

**2.5.115 t16b**

t16b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t16bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Reset Acknowledgment timer value in seconds.";;

REGISTERED AS {atmfM4Attribute t16b(203)};

**2.5.116 t17b**

t17b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t17bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Repeat Reset timer value in minutes.";;

REGISTERED AS {atmfM4Attribute t17b(204)};

**2.5.117 t1b**

t1b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t1bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Release Complete timer value in seconds.";;

REGISTERED AS {1 3 17 104 attribute(2) gr1114(24) t1b(150)};

**2.5.118 t34b**

t34b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t34bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Segmentation timer value in milliseconds.";;

REGISTERED AS {1 3 17 104 attribute(2) gr1114(24) t34b(151)};

**2.5.119 t40b**

t40b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t40bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await IAM Acknowledgment timer value in milliseconds.";;

REGISTERED AS {atmfM4Attribute t40b(205)};

**2.5.120 t41b**

t41b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t41bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Consistency Check Request Acknowledgment timer value in seconds.";;

REGISTERED AS {atmfM4Attribute t41b(206)};

**2.5.121 t42b**

t42b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t42bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Consistency Check End

Acknowledgment timer value in seconds.";;

REGISTERED AS {atmfM4Attribute t42b(207)};

**2.5.122 t4b**

t4b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t4bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP User Part Availability timer

value in minutes.";;

REGISTERED AS {atmfM4Attribute t4b(208)};

**2.5.123 t7b**

t7b ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

t7bBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is the BISUP Await Address Complete timer

value in seconds.";;

REGISTERED AS {atmfM4Attribute t7b(209)};

**2.5.124 tapPPId**

tapPPId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;

BEHAVIOUR

tapPPIdBeh BEHAVIOUR

DEFINED AS

" This attribute is used for naming instances of the tapPP managed object class.";;

REGISTERED AS {atmfM4Attribute tapPPId(106)};

**2.5.125 tapVCId**

tapVCId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
tapVCIdBeh BEHAVIOUR  
DEFINED AS  
" This attribute is used for naming instances of the tapVC managed object class.";;  
REGISTERED AS {atmfM4Attribute tapVCId(107)};

**2.5.126 tau**

tau ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
tauBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the length of the error monitoring interval in milliseconds within the SAAL protocol layer for interoffice signaling links.";;  
REGISTERED AS {atmfM4Attribute tau(213)};

**2.5.127 thres**

thres ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Real;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
thresBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is used as the threshold for comparing the running QOS within the SAAL protocol layer for interoffice signaling links.";;  
REGISTERED AS {atmfM4Attribute thres(214)};

**2.5.128 timerType**

timerType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.TimerType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR timerTypeBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the name of the timer that expired and caused creation of the given timerExpirationLogRecord object.";;  
REGISTERED AS {atmfM4Attribute timerType(108)};

**2.5.129 timerValue**

timerValue ATTRIBUTE



WITH ATTRIBUTE SYNTAX AtmMIBModV2.TimerValue;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR timerValueBeh BEHAVIOUR  
DEFINED AS  
" The value of this attribute is the value of the associated timer when it expired and caused the creation of the given timerExpirationLogRecord object.";;  
REGISTERED AS {atmfM4Attribute timerValue(109)};

### 2.5.130 tLoss

tLoss ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
tLossBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the STAT loss limit in milliseconds.";;  
REGISTERED AS {atmfM4Attribute tLoss(210)};

### 2.5.131 trafficAmount

trafficAmount ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY;  
BEHAVIOUR  
trafficAmountBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the amount of traffic in cells per second to control with BISUP automatic congestion control.";;  
REGISTERED AS {atmfM4Attribute trafficAmount(215)};

### 2.5.132 trafficDescriptorPtr

trafficDescriptorPtr ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
MATCHES FOR EQUALITY;  
BEHAVIOUR trafficDescriptorPtrBeh BEHAVIOUR  
DEFINED AS  
"This attribute is used as a pointer to an instance of the atmTrafficDescriptor managed object class.";;  
REGISTERED AS {atmfM4Attribute trafficDescriptorPtr(211)};

### 2.5.133 tSup

tSup ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR  
tSupBeh BEHAVIOUR  
DEFINED AS  
"The value of this attribute is the superblock size in seconds.";;  
REGISTERED AS {atmfM4Attribute tSup(212)};

**2.5.134 uniInfoId**

uniInfoId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

uniInfoIdBeh BEHAVIOUR

DEFINED AS

"The value of this attribute is used as the RDN for instances of the uniInfo object class.";;

REGISTERED AS {atmfM4Attribute uniInfoId(217)};

**2.5.135 upcNpc**

upcNpc ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

upcNpcBeh BEHAVIOUR

DEFINED AS

"This attribute determines whether or not policing is performed.";;

REGISTERED AS {atmfM4Attribute upcNpc(218)};

**2.5.136 useItOrLoseItPolicy**

useItOrLoseItPolicy ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

useItOrLoseItPolicyBeh BEHAVIOUR

DEFINED AS

"This attribute indicates whether the NE implements a use-it-or-lose-it policy for ABR connections.";;

REGISTERED AS {atmfM4Attribute useItOrLoseItPolicy(219)};

**2.5.137 vciValue**

vciValue ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.VciValue;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

vciValueBeh BEHAVIOUR

DEFINED AS

" This attribute represents the VCI Value in the header of the discarded ATM cell. ";;

REGISTERED AS {atmfM4Attribute 50};

**2.5.138 vpci**

vpci ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.VpciValue;

MATCHES FOR EQUALITY, ORDERING;

## BEHAVIOUR

vpciBeh BEHAVIOUR

DEFINED AS

"The value of this attribute specifies a virtual path connection identifier that is associated with the managed object instance that contains it.";

REGISTERED AS {atmfM4Attribute vpci(220)};

**2.5.139 vpciTpId**

vpciTpId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

vpciTpIdBeh BEHAVIOUR

DEFINED AS

"This attribute is used to define the RDN for instances of the vpciTp managed object class.";

REGISTERED AS {atmfM4Attribute vpciTpId(221)};

**2.5.140 vpcisAllowed**

vpcisAllowed ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.VpciValues;

MATCHES FOR EQUALITY, ORDERING, SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR

vpcisAllowedBeh BEHAVIOUR

DEFINED AS

"This attribute provides a list of permitted VPCI values that may be used with an interoffice signaling link set.";

REGISTERED AS {atmfM4Attribute vpcisAllowed(222)};

**2.5.141 vpiAllowed**

vpiAllowed ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.VpiValues;

MATCHES FOR EQUALITY, ORDERING, SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR

vpiAllowedBeh BEHAVIOUR

DEFINED AS

"This attribute provides a list of permitted VPI values that may be used with a signaling link set.";

REGISTERED AS {atmfM4Attribute vpiAllowed(223)};

**2.5.142 vpiValue**

vpiValue ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.VpiValue;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR

vpiValueBeh BEHAVIOUR

DEFINED AS

" This attribute represents the VPI value in the header of the discarded ATM cell. ";  
 REGISTERED AS {atmfM4Attribute 53};

### 2.5.143 vsVdActive

vsVdActive ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean ;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 vsVdActiveBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute determines whether or not VS/VD control for ABR service is active.";;  
 REGISTERED AS {atmfM4Attribute vsVdActive(224)};

### 2.5.144 vsVdSupport

vsVdSupport ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean ;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR  
 vsVdSupportBeh BEHAVIOUR  
 DEFINED AS  
 "This attribute provides an indication whether or not VS/VD control for ABR service is supported.";;  
 REGISTERED AS {atmfM4Attribute vsVdSupport(225)};

## 2.6 Name Bindings

### 2.6.1 atmFabricR1-managedElementR1

atmFabric-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS atmFabricR1 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElementR1  
 AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. I.751":atmFabricId;  
 REGISTERED AS {atmfM4NameBinding atmFabric-managedElementR1(36)};

### 2.6.2 abrFeedbackControl-managedElement

abrFeedbackControl-managedElement NAME BINDING  
 SUBORDINATE OBJECT CLASS abrFeedbackControl  
 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement  
 AND SUBCLASSES;  
 WITH ATTRIBUTE abrFeedbackControlId;  
 REGISTERED AS {atmfM4NameBinding abrFeedbackControl-managedElementR1(37)};

### 2.6.3 atmMtpSignPoint-managedElement

atmMtpSignPoint-managedElement NAME BINDING  
 SUBORDINATE OBJECT CLASS atmMtpSignPoint AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement AND SUBCLASSES;  
 WITH ATTRIBUTE atmMtpSignPointId;

CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE ONLY-IF-NO-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding atmMtpSignPoint-managedElement(38)};

#### 2.6.4 atmSignLinkSetTp-atmMtpSignPoint

atmSignLinkSetTp-atmMtpSignPoint NAME BINDING  
 SUBORDINATE OBJECT CLASS atmSignLinkSetTp AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS atmMtpSignPoint AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. Q.751.1 : 1995": signLinkSetTpId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE ONLY-IF-NO-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding atmSignLinkSetTp-atmMtpSignPoint(39)};

#### 2.6.5 atmSignLinkTp-atmSignLinkSetTp

atmSignLinkTp-atmSignLinkSetTp NAME BINDING  
 SUBORDINATE OBJECT CLASS atmSignLinkTp AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS atmSignLinkSetTp AND SUBCLASSES;  
 WITH ATTRIBUTE atmSignLinkTpId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding atmSignLinkTp-atmSignLinkSetTpR1(40)};

#### 2.6.6 atmTestAccessFunction-managedElement

atmTestAccessFunction-managedElement NAME BINDING  
 SUBORDINATE OBJECT CLASS atmTestAccessFunction AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement AND  
 SUBCLASSES;  
 WITH ATTRIBUTE atmTestAccessFunctionId;  
 REGISTERED AS {atmfM4NameBinding atmTestAccessFunction-managedElement(33)};

#### 2.6.7 atmTrafficDescriptor-managedElementR1

atmTrafficDescriptor-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS atmTrafficDescriptor AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElementR1 AND  
 SUBCLASSES;  
 WITH ATTRIBUTE atmTrafficDescriptorId;  
 CREATE WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding atmTrafficDescriptor-managedElementR1(65)};

#### 2.6.8 atmTrafficLoadCurrentData-vcCTPBidirectionalR1

atmTrafficLoadCurrentData-vcCTPBidirectionalR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":atmTrafficLoadCurrentData  
 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS vcCTPBidirectionalR1 AND SUBCLASSES;

```

WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding atmTrafficLoadCurrentData-vcCTPBidirectionalR1 (41)};

```

### 2.6.9 atmTrafficLoadCurrentData-vpCTPBidirectionalR1

```

atmTrafficLoadCurrentData-vpCTPBidirectionalR1 NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":atmTrafficLoadCurrentData
  AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS vpCTPBidirectionalR1 AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding atmTrafficLoadCurrentData-vpCTPBidirectionalR1(42)};

```

### 2.6.10 bidirectionalContinuityMonitor-vcCTPBidirectionalR1

```

bidirectionalContinuityMonitor-vcCTPBidirectionalR1 NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":bidirectionalContinuityMonitor;
NAMED BY SUPERIOR OBJECT CLASS vcCTPBidirectionalR1;
WITH ATTRIBUTE "ITU-T Rec. I.751":continuityMonitorId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bidirectionalContinuityMonitor-vcCTPBidirectionalR1(43)};

```

### 2.6.11 bidirectionalContinuityMonitor-vpCTPBidirectionalR1

```

bidirectionalContinuityMonitor-vpCTPBidirectionalR1 NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":bidirectionalContinuityMonitor;
NAMED BY SUPERIOR OBJECT CLASS vpCTPBidirectionalR1;
WITH ATTRIBUTE "ITU-T Rec. I.751":continuityMonitorId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bidirectionalContinuityMonitor-vpCTPBidirectionalR1(44)};

```

### 2.6.12 bidirectionalPerformanceMonitor-vcCTPBidirectionalR1

```

bidirectionalPerformanceMonitor-vcCTPBidirectionalR1 NAME BINDING

```

```

SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":bidirectionalPerformanceMonitor;
NAMED BY SUPERIOR OBJECT CLASS vcCTPBidirectionalR1 AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. I.751":performanceMonitorId;
CREATE
    WITH-REFERENCE-OBJECT,
    WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bidirectionalPerformanceMonitor-vcCTPBidirectionalR1(45)};

```

### 2.6.13 bidirectionalPerformanceMonitor-vpCTPBidirectionalR1

```

bidirectionalPerformanceMonitor-vpCTPBidirectionalR1 NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":bidirectionalPerformanceMonitor;
NAMED BY SUPERIOR OBJECT CLASS vpCTPBidirectionalR1 AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. I.751":performanceMonitorId;
CREATE
    WITH-REFERENCE-OBJECT,
    WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bidirectionalPerformanceMonitor-vpCTPBidirectionalR1(46)};

```

### 2.6.14 bisupAccessPoint-bisupSignPoint

```

bisupAccessPoint-bisupSignPoint NAME BINDING
SUBORDINATE OBJECT CLASS bisupAccessPoint AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS bisupSignPoint AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. X.723 | ISO/IEC 10165-5 : 1993":sapId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bisupAccessPoint-bisupSignPoint(47)};

```

### 2.6.15 bisupSignPoint-managedElement

```

bisupSignPoint-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS bisupSignPoint AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElement AND SUBCLASSES;
WITH ATTRIBUTE bisupSignPointId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bisupSignPoint-managedElement(48)};

```

### 2.6.16 bisupTimersProfile-managedElement

```

bisupTimersProfile-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS bisupTimersProfile AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElement AND SUBCLASSES;
WITH ATTRIBUTE bisupTimersProfileId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding bisupTimersProfile-managedElement(49)};

```

**2.6.17 callingNumberScreeningBb-dss2SignChannelTp**

```
callingNumberScreeningBb-dss2SignChannelTp NAME BINDING
  SUBORDINATE OBJECT CLASS "ITU-T Rec. Q.824.6":callingNumberScreeningBb
    AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS dss2SignChannelTp
    AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Rec. Q.824.1":callingNumberScreeningId;
  CREATE
    WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding callingNumberScreeningBb-dss2SignChannelTp(50)};
```

**2.6.18 congestionDiscardCurrentData-interNni**

```
congestionDiscardCurrentData-interNni NAME BINDING
  SUBORDINATE OBJECT CLASS congestionDiscardCurrentData AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":interNni AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993": scannerId;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding congestionDiscardCurrentData-interNni(51)};
```

**2.6.19 congestionDiscardCurrentData-intraNni**

```
congestionDiscardCurrentData-intraNni NAME BINDING
  SUBORDINATE OBJECT CLASS congestionDiscardCurrentData AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":intraNni AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993": scannerId;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding congestionDiscardCurrentData-intraNni(52)};
```

**2.6.20 congestionDiscardCurrentData-uni**

```
congestionDiscardCurrentData-uni NAME BINDING
  SUBORDINATE OBJECT CLASS congestionDiscardCurrentData AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":uni AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993": scannerId;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding congestionDiscardCurrentData-uni(53)};
```

**2.6.21 connectedNumberScreeningBb-dss2SignChannelTp**

```
connectedNumberScreeningBb-dss2SignChannelTp NAME BINDING
  SUBORDINATE OBJECT CLASS "ITU-T Rec. Q.824.6":connectedNumberScreeningBb
    AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS dss2SignChannelTp
    AND SUBCLASSES;
```



```

WITH ATTRIBUTE "ITU-T Rec. Q.824.6":connectedNumberScreeningId;
CREATE
    WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding connectedNumberScreeningBb-dss2SignChannelTp(54)};

```

### 2.6.22 diagnosticControl-managedElement

```

diagnosticControl-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS diagnosticControl AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElement AND SUBCLASSES;
WITH ATTRIBUTE diagnosticControlId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding diagnosticControl-managedElement(55)};

```

### 2.6.23 directoryNumber-managedElement

```

directoryNumber-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Rec. Q.824.0":directoryNumber AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. Q.824.0":directoryNumberId;
CREATE WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {atmfM4NameBinding directoryNumber-managedElement(56)};

```

### 2.6.24 ds3PLCPPathCTPBidirectional-ds3PathTTPBidirectional

```

ds3PLCPPathCTPBidirectional-ds3PathTTPBidirectional NAME BINDING
SUBORDINATE OBJECT CLASS ds3PLCPPathCTPBidirectional AND
SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "Bellcore GR-836":ds3PathTTPBidirectional
AND SUBCLASSES;
WITH ATTRIBUTE ds3PLCPPathCTPId;
REGISTERED AS {atmfM4NameBinding ds3PLCPPathCTPBidirectional-ds3PathTTPBidirectional(8)};

```

### 2.6.25 ds3PLCPPathTTPBidirectional-managedElementR1

```

ds3PLCPPathTTPBidirectional-managedElementR1 NAME BINDING
SUBORDINATE OBJECT CLASS ds3PLCPPathTTPBidirectional AND
SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElementR1
AND SUBCLASSES;
WITH ATTRIBUTE "Bellcore GR-836":ds3PathTTPId;
CREATE
    WITH-REFERENCE-OBJECT,
    WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding ds3PLCPPathTTPBidirectional-managedElementR1(9)};

```

**2.6.26 electricalSPITTPBidirectional-managedElementR1**

electricalSPITTPBidirectional-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS "ITU-T Rec. G.774":electricalSPITTPBidirectional  
 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElementR1  
 AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. G.774":electricalSPITTPId;  
 CREATE  
 WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding electricalSPITTPBidirectional-managedElementR1(10)};

**2.6.27 equipmentHolder-equipmentR1**

equipmentHolder-equipmentR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS "ITU-T Rec. M.3100 : 1995":equipmentHolder  
 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": equipmentR1 AND  
 SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. M.3100 : 1995": equipmentId;  
 CREATE  
 WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding equipmentHolder-equipmentR1(11)};

**2.6.28 j2CTPBidirectional-j2LineTTPBidirectional**

j2CTPBidirectional-j2LineTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS j2CTPBidirectional AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS j2LineTTPBidirectional AND SUBCLASSES;  
 WITH ATTRIBUTE j2CTPId;  
 BEHAVIOUR  
 j2CTPBidirectional-j2LineTTPBidirectionalBeh BEHAVIOUR  
 DEFINED AS "

The name binding represents a relationship in which a TTP sends and receives information (traffic) to/from a bidirectional CTP.

The subordinate managed object is automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the network element.

The subordinate managed object is automatically deleted when the superior managed object is deleted.";;  
 REGISTERED AS {atmfM4NameBinding j2CTPBidirectional-j2LineTTPBidirectional(57)};

**2.6.29 j2LineTTPBidirectional- managedElement**

```

j2LineTTPBidirectional-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS j2LineTTPBidirectional AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement AND
SUBCLASSES;
WITH ATTRIBUTE j2LineTTPId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING
"ITU-T Rec. M.3100 : 1995":createErrorParameter;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding j2LineTTPBidirectional-managedElement(58)};

```

**2.6.30 j2LineTTPSinkCurrentData-j2LineTTPBidirectional**

```

j2LineTTPSinkCurrentData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS j2LineTTPSinkCurrentData AND
SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
"ITU-T Rec. M.3100 : 1995":terminationPoint AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;
BEHAVIOUR
j2LineTTPSinkCurrentData-terminationPointBeh BEHAVIOUR
DEFINED AS "
If the containing managed object of the j2LineTTPSinkCurrentData instance is to be deleted, this contained
j2LineTTPSinkCurrentData instance shall also be deleted automatically by the managed system.

```

When a j2LineTTPSinkCurrentData instance is to be deleted, all its contained objects shall be deleted automatically by the managed system.";

```

CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding j2LineTTPSinkCurrentData-terminationPoint(59)};

```

**2.6.31 j2PathTTPBidirectional-managedElement**

```

j2PathTTPBidirectional-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS
j2PathTTPBidirectional AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
"ITU-T Rec. M.3100 : 1995":managedElement AND SUBCLASSES;
WITH ATTRIBUTE
j2PathTTPId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING
"ITU-T Rec. M.3100 : 1995":createErrorParameter;
DELETE

```

DELETES-CONTAINED-OBJECTS  
;  
REGISTERED AS {atmfM4NameBinding j2PathTTPBidirectional-managedElement(60)};

### 2.6.32 j2PathTTPSinkCurrentData-j2PathTTPBidirectional

j2PathTTPSinkCurrentData-terminationPoint NAME BINDING  
SUBORDINATE OBJECT CLASS j2PathTTPSinkCurrentData AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS  
"ITU-T Rec. M.3100 : 1995":terminationPoint AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;  
BEHAVIOUR  
j2PathTTPSinkCurrentData-j2PathTTPBidirectionalBeh BEHAVIOUR  
DEFINED AS  
"If the containing managed object of the j2PathTTPSinkCurrentData instance is to be deleted, this contained  
j2PathTTPSinkCurrentData instance shall also be deleted automatically by the managed system.

When a j2PathTTPSinkCurrentData instance is to be deleted, all its contained objects shall be deleted  
automatically by the managed system." ;

CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding j2PathTTPSinkCurrentData-j2PathTTPBidirectional(61)};

### 2.6.33 latestOccurrenceLog-managedElementR1

latestOccurrenceLog-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS latestOccurrenceLog AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":logId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding latestOccurrenceLog-managedElementR1(14)};

### 2.6.34 msTTPBidirectional-managedElementR1

msTTPBidirectional-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS "ITU-T Rec. G.774":msTTPBidirectional AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. G.774":msTTPId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding msTTPBidirectional-managedElementR1(15)};

### 2.6.35 multipointBridge-managedElementR1

multipointBridge-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS multipointBridge AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE multipointBridgeId;  
CREATE  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
ONLY-IF-NO-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding multipointBridge-managedElementR1(16)};

### 2.6.36 mtpAccessPointR1-atmMtpSignPoint

mtpAccessPointR1-atmMtpSignPoint NAME BINDING  
SUBORDINATE OBJECT CLASS mtpAccessPointR1 AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS atmMtpSignPoint AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. X.723 | ISO/IEC 10165-5 : 1993": sapId;  
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding mtpAccessPointR1-atmMtpSignPoint(62)};

### 2.6.37 opticalSPITTPBidirectional-managedElementR1

opticalSPITTPBidirectional-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS "ITU-T Rec. G.774":opticalSPITTPBidirectional AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. G.774":opticalSPITTPId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding opticalSPITTPBidirectional-managedElementR1(17)};

### 2.6.38 rsTTPBidirectional-managedElementR1

rsTTPBidirectional-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS "ITU-T Rec. G.774":rsTTPBidirectional AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. G.774":rsTTPId;  
CREATE

WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding rsTTPBidirectional-managedElementR1(18)};

### 2.6.39 sscopReceiveCurrentData-atmSignLinkTp

sscopReceiveCurrentData-atmSignLinkTp NAME BINDING  
 SUBORDINATE OBJECT CLASS sscopReceiveCurrentData AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS atmSignLinkTp AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993": scannerId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding sscopReceiveCurrentData-atmSignLinkTp(63)};

### 2.6.40 sscopReceiveCurrentData-dss2SignChannelTp

sscopReceiveCurrentData-dss2SignChannelTp NAME BINDING  
 SUBORDINATE OBJECT CLASS sscopReceiveCurrentData AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS dss2SignChannelTp AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993": scannerId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding sscopReceiveCurrentData-dss2SignChannelTp(64)};

### 2.6.41 tapPP-atmTestAccessFunction

tapPP-atmTestAccessFunction NAME BINDING  
 SUBORDINATE OBJECT CLASS tapPP AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS atmTestAccessFunction AND SUBCLASSES;  
 WITH ATTRIBUTE tapPPId;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding tapPP-atmTestAccessFunction(34)};

### 2.6.42 tapVC-atmTestAccessFunction

tapVC-atmTestAccessFunction NAME BINDING  
 SUBORDINATE OBJECT CLASS tapVC AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS atmTestAccessFunction AND SUBCLASSES;  
 WITH ATTRIBUTE tapVCId;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding tapVC-atmTestAccessFunction(35)};

### 2.6.43 uniInfo-managedElement

uniInfo-managedElement NAME BINDING  
 SUBORDINATE OBJECT CLASS uniInfo AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100 : 1995":managedElement AND SUBCLASSES;  
 WITH ATTRIBUTE uniInfoId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding uniInfo-managedElement(66)};

#### 2.6.44 upcNpcCurrentData-vcCTPBidirectionalR1

upcNpcCurrentData-vcCTPBidirectionalR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":upcNpcCurrentData AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS vcCTPBidirectionalR1 AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;  
 CREATE  
 WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding upcNpcCurrentData-vcCTPBidirectionalR1(67)};

#### 2.6.45 upcNpcCurrentData-vpCTPBidirectionalR1

upcNpcCurrentData-vpCTPBidirectionalR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS "ITU-T Rec. I.751":upcNpcCurrentData AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS vpCTPBidirectionalR1 AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. X.739 | ISO/IEC 10164-11 : 1993":scannerId;  
 CREATE  
 WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding upcNpcCurrentData-vpCTPBidirectionalR1(68)};

#### 2.6.46 vcCTPBidirectionalR1-vpTTPBidirectional

vcCTPBidirectionalR1-vpTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS vcCTPBidirectionalR1 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":vpTTPBidirectional AND  
 SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. I.751":vcCTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding vcCTPBidirectionalR1-vpTTPBidirectional(69)};

#### 2.6.47 vpciTp-vpTTPBidirectional

vpciTp-vpTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS vpciTp AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":vpTTPBidirectional AND SUBCLASSES;  
 WITH ATTRIBUTE vpciTpId;  
 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding vpciTp-vpTTPBidirectional(70)};

### 2.6.48 vpCTPBidirectionalR1-tcAdaptorTTPBidirectional

vpCTPBidirectionalR1-tcAdaptorTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS vpCTPBidirectionalR1 AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. I.751":tcAdaptorTTPBidirectional AND  
 SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T Rec. I.751":vpCTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding vpCTPBidirectionalR1-tcAdaptorTTPBidirectional(71)};

## 2.7 Actions

### 2.7.1 abortDiagnostic

abortDiagnostic ACTION  
 BEHAVIOUR  
 abortDiagnosticBeh BEHAVIOUR  
 DEFINED AS  
 " The abortDiagnostic service is used by a managing system to abort a currently active (running) diagnostic on one or more objects. The active diagnostic to be aborted may be conducted according to a previously invoked M-ACTION (such as diagnostic or invokeDiagnosticControl) or according to a schedule defined in a managementOperationsSchedule for a diagnosticControl object. Two abort modes are provided for aborting a diagnostic, namely, cancel-mode and truncate-mode. For the truncate-mode, the diagnostic will be aborted and the result of the partially completed diagnostic will be returned in the Action Reply parameter of the abortDiagnostic M-ACTION. For the cancel-mode, the diagnostic will be aborted and the result of the partially completed diagnostic will be discarded. The Action Type parameter shall indicate abortDiagnostic. The Action Information parameter shall indicate the mode of the abortion mode, i.e., cancel-mode or truncate-mode. The Action Reply parameter shall indicate the result of the abortion, i.e., aborted (for cancel-mode), aborted with partial result (for truncate-mode), or no active diagnostic to be aborted. ";;  
 MODE CONFIRMED;  
 PARAMETERS  
 specificErrorParameter;



WITH INFORMATION SYNTAX AtmMIBModV2.AbortDiagnosticInfo;  
 WITH REPLY SYNTAX AtmMIBModV2.AbortDiagnosticReply;  
 REGISTERED AS {atmfM4Action abortDiagnostic(13)};

### 2.7.2 addTpsToMultipointBridgeR1

addTpsToMultipointBridgeR1 ACTION

BEHAVIOUR

addTpsToMultipointBridgeR1Beh BEHAVIOUR

DEFINED AS

"This action is used to add one or more vpCTPBidirectionalR1 objects or vcCTPBidirectionalR1 objects (or subclasses) to the identified multipoint connection.

Supplied with this action is the following information:

New CTPs - This parameter identifies the additional CTPs (e.g., the vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object instances) to add to the existing multipoint connection.

MultipointBridge - This parameter identifies the instance of the multipointBridge object class to which the additional legs need to be connected.

If the request is granted, the commonCTPs attribute, in the multipointBridge object, shall be reset to reflect the new legs added to the multipoint connection. ";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.AddTpsToMultipointBridgeInfoR1;

WITH REPLY SYNTAX AtmMIBModV2.AddTpsToMultipointBridgeReply;

REGISTERED AS {atmfM4Action addTpsToMultipointBridgeR1(14)};

### 2.7.3 cancelReset

cancelReset ACTION

BEHAVIOUR

cancelResetBeh BEHAVIOUR

DEFINED AS

"This action stops a BISUP signaling entity from continually trying to reset a VPCI when the far end does not respond.";;

MODE CONFIRMED;

WITH REPLY SYNTAX AtmMIBModV2.CancelResetReply;

REGISTERED AS {atmfM4Action cancelReset(15)};

### 2.7.4 changeAccessMode

changeAccessMode ACTION

BEHAVIOUR

changeAccessModeBeh BEHAVIOUR

DEFINED AS

" This action is used to change the access mode of a test access that has already been established. The action request indicates the new value for the accessMode attribute.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.ChangeAccessModeInfo;

WITH REPLY SYNTAX AtmMIBModV2.ChangeAccessModeReply;

REGISTERED AS {atmfM4Action changeAccessMode(10)};

### 2.7.5 connectMultipointBridgeR1

connectMultipointBridgeR1 ACTION

BEHAVIOUR

connectMultipointBridgeR1Beh BEHAVIOUR

DEFINED AS

"This action is used to establish a multipoint connection between vpCTPBidirectionalR1 or vcCTPBidirectionalR1 objects (or subclasses). Four types of multipoint connections can be established using this action: broadcast, merge, broadcast/merge (composite), and full multipoint. The multipointConnectionType attribute of this action is used to identify the desired connection type. Note that this action will result in the cross-connection of CTP objects to an instance of the multipointBridge object.

Also supplied with this action is the following information:

**Primary CTP** - This parameter identifies a termination point (e.g., vpCTPBidirectionalR1 or vcCTPBidirectionalR1 object) or termination point descriptor for the termination point that generates traffic to broadcast and/or receives merged traffic for broadcast, merge, or composite multipoint connection types. For full multipoint connections (i.e., all legs communicate with all other legs), the value of this attribute shall be set to NULL. The termination point identified by this parameter shall serve as the basis for the primaryCTP attribute of the multipointBridge object.

**Common CTPs** - This identifies termination point descriptor or CTP object instances (e.g., vpCTPBidirectionalR1 object class or vcCTPBidirectionalR1 object class) of all legs of the multipoint connection except the leg identified via the primaryCTP attribute. For full multipoint cross-connections, all the legs of the multipoint cross-connection shall be identified by this attribute. The termination points derived from this parameter shall serve as the basis for the commonCTPs attribute of the multipointBridge.

**Recovery Type** - This parameter indicates if the multipoint session should be recovered in case of service interruption. This parameter serves as the initial values for the recoveryType attribute in all the associated cross-connection objects.

**Administrative State** - This parameter will be used as the initial value for the administrativeState attribute in multipointBridge and its associated cross-connection objects.

The action will fail if the primaryCTP is specified but cannot be connected or none of the commonCTPs can be connected. If the action is accepted, the result would return the primaryCTP termination point, the connected common CTPs, and a problem cause for each of the non-connected common CTPs.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.ConnectMultipointBridgeInfoR1;

WITH REPLY SYNTAX AtmMIBModV2.ConnectMultipointBridgeReply;

REGISTERED AS {atmM4Action connectMultipointBridgeR1(16)};

### 2.7.6 connectR1

connectR1 ACTION

BEHAVIOUR connectBeh BEHAVIOUR

DEFINED AS

"This action is used to establish a point-to-point ATM connection two between termination points. The termination points to be connected can be identified explicitly by specifying the associated vcCTPBidirectionalR1 objects or vpCTPBidirectionalR1 objects (or subclasses), or by specifying the characteristics of each termination point.

Multiple point-to-point connections may be requested with a single connect ACTION.

If a valid end point descriptor is provided and the connect request can be successfully carried out, the NE will reserve the necessary resources such as the VPI and/or VCI value, and automatically create the necessary VP/VC termination points (e.g., the VP CTPs, VP TTPs, and VC CTPs) for the cross-connection.

The result, if successful, always returns an explicit list of termination points.

Successful execution of this action will result in the creation of an instance of the atmCrossConnectionR1 object. This cross-connection object has the fromTermination and toTermination attributes pointing to the two termination points. The administrativeState and recoveryType attributes in the cross-connection object are initialized according to the values provided in the action request information. If the administrativeState parameter is omitted, the administrative state will be set to 'unlocked'. If the recoveryType parameter is omitted, the recovery type will be set to recoverable.

If the administrativeState in the atmCrossConnectionR1 object is unlocked, the upstreamConnectivityPointer and downstreamConnectivityPointer in the two termination points are set to the local distinguished name of the (peer) termination point to which it is connected. Also, the crossConnectionObjectPointer in the termination points shall point to the atmCrossConnectionR1 object.

This action will fail if any of the termination points specified are already involved in a cross-connection, any of the termination point descriptors specified cannot be satisfied, or the two termination points do not have compatible termination point descriptors.";;

```
MODE CONFIRMED;
WITH INFORMATION SYNTAX AtmMIBModV2.ConnectInformationR1;
WITH REPLY SYNTAX AtmMIBModV2.ConnectReply;
REGISTERED AS {atmfM4Action connectR1(17)};
```

### 2.7.7 connectTap

connectTap ACTION

BEHAVIOUR

connectTapBeh BEHAVIOUR

DEFINED AS

" This action will connect one TAP-PP or one TAP-VC to a resource to be tested. Each invocation will allow monitoring one direction of a cell stream. To monitor both sides of a bi-directional cell stream requires the connection of two TAP objects The action request contains the name of the resource to be monitored. For physical port mirroring (PP) or virtual connection access (VC), this parameter contains a pointer to the tcAdaptor object that represents the cell stream to be monitored. For virtual connection access, this parameter will also identify the VPI value, and if necessary, the VCI value of the connection under test. The test access path to be used is identified in the action request by a pointer to a tapPP or tapVC object. If a value is not supplied, the ATM NE should select an available TAP of the appropriate type. The name of the selected tapPP or tapVC object shall be returned in the action reply. If the requested TAP is not available or if all TAPs of the requested type are unavailable, the action reply should indicate TAP not available. The value of the accessMode attribute of the TAP object is also defined in the action request.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.ConnectTapInfo;

WITH REPLY SYNTAX AtmMIBModV2.ConnectTapReply;

```
REGISTERED AS {atmfM4Action connectTap(11)};
```

### 2.7.8 disconnectMultipointBridge

disconnectMultipointBridge ACTION

BEHAVIOUR

disconnectMultipointBridgeBeh BEHAVIOUR

DEFINED AS

"This action is used to release a multipoint cross-connection. Supplied with this action is the instance of the multipointBridge object supporting the multipoint cross-connection.

If any of the commonCTPs cannot be disconnected, the primaryCTP, if any, should not be disconnected. If the multipointBridge is not completely disconnected, the action result would indicate which commonCTPs have been disconnected and which commonCTPs are not disconnected and why.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.DisconnectMultipointBridgeInfo;

WITH REPLY SYNTAX AtmMIBModV2.DisconnectMultipointBridgeReply;

REGISTERED AS {atmfM4Action 5};

### 2.7.9 disconnectTap

disconnectTap ACTION

BEHAVIOUR disconnectTapBeh BEHAVIOUR

DEFINED AS

" This action will disconnect the given test access path and return the resource under test to its normal state. The value of the resourceUnderTest and directionality attributes in a given tapPP object will be set to NULL, or the value of the resourceUnderTest, directionality, and accessMode in a given tapVC object will be set to NULL.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.DisconnectTapInfo;

WITH REPLY SYNTAX AtmMIBModV2.DisconnectTapReply;

REGISTERED AS {atmfM4Action disconnectTap(12)};

### 2.7.10 invokeDiagnosticControl

invokeDiagnosticControl ACTION

BEHAVIOUR

invokeDiagnosticControlBeh BEHAVIOUR

DEFINED AS

" The invokeDiagnosticControl service is used by a managing system to 'stimulate' the diagnosticControl object to perform a diagnostic on a set of object instances. The type of diagnostic and the set of object instances to be diagnosed are specified in the diagnosticControl object. The Action Type parameter shall indicate invokeDiagnosticControl.

The type of diagnostic and the set of object instances to be diagnosed are those specified in the diagnosticControl object. The Action Reply parameter shall indicate the result of the test. If the diagnostic process is aborted (by using the abortDiagnostic M-ACTION) before the completion of the diagnostic, then the value 'aborted' shall be returned in the Action Reply. If the abort mode of the abortDiagnostic M-ACTION is 'truncate', then the result of the truncated diagnostic (i.e., the part of the diagnostic that already has completed), should be return in the Action Reply parameter of the abortDiagnostic M-ACTION. ";;

MODE CONFIRMED;

PARAMETERS

specificErrorParameter;

WITH REPLY SYNTAX AtmMIBModV2.InvokeDiagnosticControlReply;

REGISTERED AS {atmfM4Action invokeDiagnosticControl(18)};

### 2.7.11 removeTpsFromMultipointBridge

removeTpsFromMultipointBridge ACTION

BEHAVIOUR

removeTpsFromMultipointBridgeBeh BEHAVIOUR

DEFINED AS

"This action is used to remove one or more legs (leaf CTPs) from the identified multipoint connection.

Supplied with this action is the following information:

Existing CTPs - This parameter identifies the existing CTPs to remove from the multipoint connection.

MultipointBridge - This parameter identifies the instance of the multipointBridge object class from which the identified legs should be removed (disconnected).

If the request is granted, the commonCTPs attribute, in the multipointBridge object, shall be reset to reflect the remaining legs of the multipoint connection. ";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.RemoveTpsFromMultipointBridgeInfo;

WITH REPLY SYNTAX AtmMIBModV2.RemoveTpsFromMultipointBridgeReply;

REGISTERED AS {atmfM4Action 7};

### 2.7.12 reportDiagnosticStatus

reportDiagnosticStatus ACTION

BEHAVIOUR

reportDiagnosticStatusBeh BEHAVIOUR

DEFINED AS

" The reportDiagnosticStatus service is used by a managing system to determine the status of a supposedly active (running) diagnostic on one or more objects. The status will be reported as 'running', 'not running', or 'stalled'. Optionally, if requested in the M-ACTION request, the result of a partially completed diagnostic will be returned with the Action Reply. The type of report to be returned is that specified by the diagnosticReportMode attribute in the diagnosticControl object.";;

MODE CONFIRMED;

PARAMETERS

specificErrorParameter;

WITH INFORMATION SYNTAX AtmMIBModV2.ReportDiagnosticStatusInfo;

WITH REPLY SYNTAX AtmMIBModV2.ReportDiagnosticStatusReply;

REGISTERED AS {atmfM4Action reportDiagnosticStatus(19)};

### 2.7.13 reset

reset ACTION

BEHAVIOUR

resetBeh BEHAVIOUR

DEFINED AS

"This action returns resources to an idle state. Resets may be for a single VPCI. Future implementations of this action may be required to

support reset of other resources.";;  
 MODE CONFIRMED;  
 WITH REPLY SYNTAX AtmMIBModV2.ResetReply;  
 REGISTERED AS {atmfM4Action reset(20)};

### 2.7.14 restartSvcs

restartSvcs ACTION  
 BEHAVIOUR  
 restartSvcsBeh BEHAVIOUR  
 DEFINED AS  
 "This action is used to restart all SVCs under the control of the associated signalling channel.";;  
 MODE CONFIRMED;  
 WITH REPLY SYNTAX AtmMIBModV2.RestartSvcsReply;  
 REGISTERED AS {atmfM4Action restartSvcs(21)};

## 2.8 Notifications

### 2.8.1 atmOnOccEvent

atmOnOccEvent NOTIFICATION  
 BEHAVIOUR  
 atmOnOccEventBeh BEHAVIOUR  
 DEFINED AS  
 "This notification is used to report events within the ATM NE that are not reported by an alarm notification. These are events which do not represent a persistent condition, and for which no clear notifications are needed.";;  
 WITH INFORMATION SYNTAX AtmMIBModV2.AtmOnOccEventInfo  
 AND ATTRIBUTE IDS  
 additionalInformation "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": additionalInformation,  
 additionalText "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": additionalText,  
 correlatedNotifications "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": correlatedNotifications,  
 notificationIdentifier "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": notificationIdentifier,  
 perceivedSeverity "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": perceivedSeverity,  
 probableCause "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": probableCause,  
 specificProblems "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": specificProblems;  
 REGISTERED AS {atmfM4Notification atmOnOccEvent(1)};

### 2.8.2 diagnosticReport

diagnosticReport NOTIFICATION  
 BEHAVIOUR  
 diagnosticReportBeh BEHAVIOUR  
 DEFINED AS  
 " The diagnosticReport notification is emitted periodically from the diagnosticControl object to report the result of the diagnostic performed on objects specified in the diagnosticControl. The periodicity of the diagnostic is scheduled in a managementOperationsSchedule object. If the currently running diagnostic process is aborted (by using the abortDiagnostic M-ACTION) before the completion of the

diagnostic, then the value 'aborted' shall be returned in the parameter of the notification. If the abort mode of the abortDiagnostic M-ACTION is 'truncate', then the result of the truncated diagnostic (i.e., the part of the diagnostic that has already completed), should be return in the notification. ";;

WITH INFORMATION SYNTAX AtmMIBModV2.DiagnosticReport;  
REGISTERED AS {atmfM4Notification diagnosticReport(2)};

## 2.9 Parameters

### 2.9.1 specificErrorParameter

specificErrorParameter PARAMETER  
CONTEXT SPECIFIC-ERROR;  
WITH SYNTAX AtmMIBModV2.ObjectSpecificErrorParameter;  
BEHAVIOUR  
specificErrorParameterBeh BEHAVIOUR  
DEFINED AS  
" If a requested service (e.g., M-CREATE, M-SET, M-DELETE, M-ACTION, etc.) failed for errors other than those already defined in CMIP-1 (ITU-T Rec. X.711 | ISO/IEC IS 9596-1), the attempt will result in return of a CMIP Processing Failure error where the SpecificErrorInfo field is of the form:

SpecificErrorInfo ::= SEQUENCE {errorid OBJECT IDENTIFIER, errorinfo ANY DEFINED BY errorid }

The OBJECT IDENTIFIER carried in errorid shall be the value under which this parameter definition is registered. The type carried in errorinfo shall be the type identified by the WITH SYNTAX construct of this parameter definition. ";;  
REGISTERED AS {atmfM4Parameter specificErrorParameter(1)};

## 2.10 Supporting Productions

```

AtmMIBModV2
-- {1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmM4(1)
-- atmCmipNEView(1) informationModel(0) asn1Module(2)
-- atmMIBModVersion2(1)}

-- Note: If deprecated object classes from Annex B are to be implemented, the
-- additional productions in
-- Annex B should be merged with these productions.

DEFINITIONS IMPLICIT TAGS ::= BEGIN

-- exports everything
IMPORTS
Boolean,
Failed,
NameType,
ObjectList,
PointerOrNull,
ProblemCause
FROM
ASN1DefinedTypesModule {ccitt(0) recommendation(0) m(13) gnm(3100)
informationModel(0) asn1Modules(2) asn1DefinedTypesModule(0)}
-- ITU-T Rec. M.3100

Attribute,
AttributeId,
EventTypeId,
ObjectInstance
FROM
CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)}
-- ITU-T Rec. X.711

AdditionalText,
AdditionalInformation,
AdministrativeState,
AttributeList,
CorrelatedNotifications,
NotificationIdentifier,
PerceivedSeverity,
ProbableCause,
SimpleNameType,
SpecificProblems
FROM
Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1}
-- ITU-T Rec. X.721

ConnectionIdOffering,
E164DN,

```



```
PropagationDelay,
VpciValue
FROM
ASN1DefinedTypesModule {itu-t(0) recommendation(0) q(17) ca(824) dot(127) bsm(6) informationModel(0)
asn1Module(2) asn1TypeModule(0)}
-- ITU-T Rec. Q.824.6
```

```
PointCode
FROM MTPDefinedTypesModule {itu-t(0) recommendation(0) q(17) omap(751) mtp(1) informationModel(0)
asn1Modules(2) mtpDefinedTypesModule(0)}
-- ITU-T Rec. Q.751.1
```

```
VciValue,
VpiValue
FROM AtmMIBMod {itu-t(0) recommendation(0) i(9) atmm(751) informationModel(0) asn1Module(2) atm(0)}
-- ITU-T Rec. I.751
```

```
Count
FROM Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1};
```

```
-- End of IMPORTS
```

```
atmfM4ObjectClass OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) managedObjectClass(3)}
```

```
atmfM4Package OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) package(4)}
```

```
atmfM4Attribute OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) attribute(7)}
```

```
atmfM4NameBinding OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) nameBinding(6)}
```

```
atmfM4Action OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) action(9)}
```

```
atmfM4Notification OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) notification(10)}
```

```
atmfM4Parameter OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmfM4(1)
atmfCmipNEView(1) informationModel(0) parameter(11)}
```

```
-- default value definitions
```

```
addrPresentationFormatDefault AddrPresentationFormat ::= { nativeE164, aesa }
```

```
adtfDefault INTEGER ::= 50
```

```
alphaNniDefault Real ::= { 1, 10, -1 }
```

```
bisupInterNniFeaturesDefault BisupFeatureList ::= { }
```

```

booleanFalseDefault Boolean ::= FALSE

booleanTrueDefault Boolean ::= TRUE

cdfDefault CDF ::= cDF1over16

connectionIdOfferingDefault ConnectionIdOffering ::= exclusiveVpciExclusiveVci

defaultMeasurementValue Count ::= 0

defaultNULL Null ::= NULL

ilmiEstabConnectivityPollIntervalDefault INTEGER ::= 1

ilmiCheckConnectivityPollIntervalDefault INTEGER ::= 5

ilmiConnectivityPollFactorDefault INTEGER ::= 4

nBlkNniDefault Integer ::= 3

nDelayNniDefault Integer ::= 9

nrmDefault Nrm ::= nrm32

provingInfoDefault ProvingInfo ::= followMtp3Request

tauNniDefault Integer ::= 100

thresNniDefault Real ::= {244, 10, -3}

tLossNniDefault Integer ::= 1300

trmDefault Trm ::= trm1

tSupNniDefault Integer ::= 120

-- other parameters

integerZero INTEGER ::= 0

-- additional value definitions to probableCause production

atmProbableCause OBJECT IDENTIFIER ::= {1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmM4(1)
atmM4(1) atmMIB(99) standardSpecificExtension(0) atmProbableCause(0)}

lossOfCellDelineation ProbableCause ::= globalValue : {atmProbableCause 1}

congestion ProbableCause ::= globalValue : {atmProbableCause 2}

unspecified ProbableCause ::= globalValue : {atmProbableCause 3}

failedRestart ProbableCause ::= globalValue : {atmProbableCause 4}

-- additional eventTypes

```

atmEventType OBJECT IDENTIFIER ::= {1 3 6 1 4 1 353 atmForumNetworkManagement(5) atmM4(1) atmCmipNEView(1) atmMIB(99) standardSpecificExtension(0) atmEventType(1)}

cellHeaderAbnormalityEvent EventTypeId ::= globalForm : {atmEventType 1}

-- supporting productions

AbortDiagnosticInfo ::= ENUMERATED{  
cancel (0),  
truncate (1)}

AbortDiagnosticReply ::= CHOICE {  
noOutStandingDiagnostic [0] NULL,  
diagnosticCancelled [1] NULL,  
resultOfPartialDiagnostic DiagnosticReportInfo}

AccessMode ::= CHOICE {  
noMode [0] NULL,  
mode [1] AccessModeUsage}

AccessModeUsage ::= ENUMERATED {  
monitorEgressTraffic (0), -- monitor traffic leaving NE  
monitorIngressTraffic (1), -- monitor traffic entering NE  
splitIn (2), -- split in towards the NE  
splitOut (3)} -- split out from the NE

AccessSignallingFeature ::= ENUMERATED {  
bHLIxf (0), --Broadband Higher Layer Information Transfer  
bLLIxf (1), --Broadband Lower Layer Information Transfer  
bLLIsel (2), --Broadband Lower Layer Information Selection  
aalParxf (3) --AAL Parameters Transfer  
}

AccessSignallingFeatures ::= SET OF AccessSignallingFeature

AddressFormat ::= ENUMERATED {  
nativeE164 (0),  
aesa (1)  
}

AddrPresentationFormat ::= SET OF AddressFormat

AddTpsToMultipointBridgeInfoR1 ::= SEQUENCE {  
newCTPsR1 NewCTPsR1,  
multipointBridgeInstance ObjectInstance}

AddTpsToMultipointBridgeReply ::= SEQUENCE OF SEQUENCE{  
legAdded ObjectInstance,  
legNotAdded ProblemCause OPTIONAL}

ADTF ::= INTEGER (1 .. 1023) -- in 10 ms increments, i.e., 1=10ms and 1023=10.23 seconds

AESADN ::= SEQUENCE {  
authAndFormatIdent [0] DigitString(SIZE(0..2)),

```

formatDepSubstring [1] AESASubstring,
endSystemIdent [2] DigitString(SIZE(0..12)),
selector [3] DigitString(SIZE(0..2))
}

```

```

AESAE164Substring ::= SEQUENCE {
  idiE164 [0] E164DN,
  hoDomainSpecPart [1] DigitString(SIZE (0..8))
}

```

```

AESANonE164Substring ::= SEQUENCE {
  idiNonE164 [0] DigitString(SIZE (0..4)),
  hoDomainSpecPart [1] DigitString(SIZE (0..20))
}

```

```

AESASubstring ::= CHOICE {
  aesaE164 [0] AESAE164Substring,
  aesaNonE164 [1] AESANonE164Substring
}

```

```

AssociatedEntityUnavailable ::= SET OF SEQUENCE {
  name Name,
  unavailability Unavailability OPTIONAL}

```

```

AtmOnOccEventInfo ::= SEQUENCE {
  probableCause ProbableCause,
  specificProblems [1] SpecificProblems OPTIONAL,
  perceivedSeverity PerceivedSeverity,
  notificationIdentifier [5] NotificationIdentifier OPTIONAL,
  correlatedNotifications [6] CorrelatedNotifications OPTIONAL,
  additionalText AdditionalText OPTIONAL,
  additionalInformation [10] AdditionalInformation OPTIONAL
}

```

```

AtmSubscriberAddress ::= SEQUENCE OF PrintableString

```

```

AtmTestAccessFunctionType ::= ENUMERATED {
  pp (0), -- physical port mirroring
  vc (1)} -- virtual connection access

```

```

BisupFeature ::= ENUMERATED {
  carrierIdParmDel (0), --Carrier Identification Parameter delivery
  carrierSelInfoParmDel (1), --Carrier Selection Information Parameter delivery
  orgLineInfoAndChargeNumDel (2), --Originating Line Information/Charge Number delivery
  callgPartyNumDel (3), --Calling Party Number delivery
  callgPartySubAddTrans (4), --Calling Party Sub-address transfer
  calldPartySubAddTrans (5), --Called Party Sub-address transfer
  aesaCallgPartyTrans (6), --AESA for calling party transfer
  bbHighLayerInfoTrans (7), --Broadband High layer Information transfer
  bbLowLayerInfoTrans (8), --Broadband Low Layer Information transfer
  aalParmTrans (9), --AAL Parameters transfer
  includeUnrecogIamParms (10), --Include unrecognized IAM parameters in outgoing IAM
  includeUnrecogIamParmValues (11)} --Include IAM parameters with unrecognized values in outgoing IAM

```

```

BisupFeatureList ::= SET OF BisupFeature

```

BitString ::= BIT STRING

CancelResetReply ::= ENUMERATED {  
 resetCanceled (0),  
 resetNotCanceled (1)}

CDF ::= ENUMERATED {  
 cDF0 (0), -- = 0,  
 cDF1over64 (1), -- = 1/64,  
 cDF1over32 (3), -- = 1/32,  
 cDF1over16 (4), -- = 1/16,  
 cDF1over8 (5), -- = 1/8,  
 cDF1over4 (6), -- = 1/4,  
 cDF1over2 (7), -- = 1/2,  
 cDF1 (8) -- = 1}

CellHeaderAbnormalityType ::= ENUMERATED {  
 unassignedVpiVciValue (0),  
 outOfRangeVpiVciValue (1)}

ChangeAccessModeInfo ::= AccessModeUsage

ChangeAccessModeReply ::= CHOICE {  
 changed [0] NULL,  
 notChanged [1] ProblemCause}

CLR ::= SEQUENCE {  
 cellLossRatioCLP0plus1 [1] INTEGER OPTIONAL,  
 cellLossRatioCLP0 [2] INTEGER OPTIONAL}

CommonCTPsR1 ::= SEQUENCE OF CtpOrDescriptorR1

ConformanceDefinition ::= ENUMERATED {  
 cBR1 (0),  
 vBR1 (1),  
 vBR2 (2),  
 vBR3 (3),  
 uBR1 (4),  
 uBR2 (5),  
 aBR (6) }

ConnectCtpStatus ::= CHOICE {  
 ctpConnected [0] ObjectInstance,  
 ctpFailed [1] ProblemCause}

Connected ::= SEQUENCE {  
 fromTp ObjectInstance,  
 toTp ObjectInstance,  
 xCon ObjectInstance}

ConnectInformationR1 ::= SEQUENCE OF SEQUENCE {  
 fromTerminationR1 [0] CtpOrDescriptorR1,  
 toTerminationR1 [1] CtpOrDescriptorR1,  
 recoveryType [2] RecoveryType OPTIONAL,

```

    administrativeState [3] AdministrativeState OPTIONAL}

ConnectivityState ::= ENUMERATED {
    unknown (0),
    connectionUp (1),
    connectionDown (2)}

ConnectMultipointBridgeInfoR1 ::= SEQUENCE {
    primaryCTP [0] PrimaryCTPR1,
    commonCTPs [1] CommonCTPsR1 OPTIONAL,
    multipointBridgeInstance [2] ObjectInstance,
    multipointConnectionType [3] MultipointConnectionType,
    recoveryType [4] RecoveryType OPTIONAL,
    -- the recoveryType value is shared by all legs
    administrativeState [5] AdministrativeState OPTIONAL}
    -- the administrativeState value is shared by all legs

ConnectMultipointBridgeReply ::= CHOICE {
    mpConnected MpConnected,
    mpFailed MpFailed}

ConnectReply ::= SEQUENCE OF CHOICE {
    connected [0] Connected,
    failed [1] Failed} -- import from M.3100

ConnectTapInfo ::= SEQUENCE {
    resourceToBeTested ResourceId,
    accessMode AccessModeUsage,
    tapToSelect ObjectInstance OPTIONAL}

ConnectTapReply ::= CHOICE {
    tapConnected [0] NULL,
    tapNotConnected [1] ProblemCause}

CtpOrDescriptorR1 ::= CHOICE {
    ctp [0] ObjectInstance,
    descriptorR1 [1] DescriptorR1}

CtpStatus ::= CHOICE {
    disconnected [0] NULL,
    failed [1] ProblemCause}

DescriptorR1 ::= SEQUENCE {
    interfaceId [0] ObjectInstance, -- a uni, intraNNI, or interNNI
    vpi [1] INTEGER OPTIONAL, -- assigned by NE if absent
    vci [2] INTEGER OPTIONAL, -- set to 0 for VP cross connect
    segmentEndPoint [3] Boolean,
    vpTrafficDescriptor [4] ObjectInstance OPTIONAL,
    -- mandatory for VP cross connect, optional for VC cross connect
    vcTrafficDescriptor [5] ObjectInstance OPTIONAL, -- not provided for VP cross connect
    egressFrameDiscardEnabled [6] Boolean OPTIONAL,
    -- if required for vcCTPBidirectionalR1 auto-creation
    ingressFrameDiscardEnabled [7] Boolean OPTIONAL,
    -- if required for vcCTPBidirectionalR1 auto-creation
    supportedServiceCategories [8] SupportedServiceCategories OPTIONAL,

```

```

        -- if required for vpTTPBidirectionalR1 auto-creation
propagationDelay [9] PropagationDelay OPTIONAL
        -- if required for auto-creation of vpTTPBidirectionalR1 used for SVCs
    }
DiagnosticObjectList ::= SET OF    ObjectInstance

```

```

DiagnosticReport ::= SET OF SEQUENCE {
    objectInstance    ObjectInstance,
    result            CHOICE {
        noDiagnosis    [0] NULL,
        pass           [1] NULL,
        failed-summary [2] NULL,
        failed-detail  SET OF SEQUENCE {
            phase      [3]  INTEGER,
            iteration  [4]  INTEGER OPTIONAL}
        }
    }
}

```

```

DiagnosticReportInfo ::= CHOICE {
    diagnosticReportResults DiagnosticReport,
    aborted                NULL}

```

```

DiagnosticReportMode ::= ENUMERATED {
    summary (0),
    detailed (1)}

```

```

DiagnosticTerminateMode ::= ENUMERATED {
    normalMode (0),
    immediateMode (1)}

```

```

DiagnosticType ::= SEQUENCE {
    typeOfDiagnostic CHOICE {
        localType    PrintableString,
        globalType   OBJECT IDENTIFIER},
    phasesToBeRun   CHOICE {
        phases SEQUENCE OF INTEGER,
        all     NULL},
    iterationsPerPhase [0] INTEGER OPTIONAL}

```

```

DigitString ::= PrintableString
(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))

```

```

DisconnectMultipointBridgeInfo ::= ObjectInstance -- multipointBridge

```

```

DisconnectMultipointBridgeReply ::= CHOICE {
    disconnected NULL,
    notDisconnected SEQUENCE OF DisconnectCtpStatus}

```

```

DisconnectCtpStatus ::= SEQUENCE OF SEQUENCE {
    ctpInstance ObjectInstance,
    ctpStatus   CtpStatus}

```

```

DisconnectTapInfo ::= NULL

```

```

DisconnectTapReply ::= CHOICE {
    tapDisconnected [0] NULL,

```

tapNotDisconnected [1] ProblemCause}

EntityName ::= CHOICE {  
 knownObjectClass OBJECT IDENTIFIER,  
 knownObjectInstance ObjectInstance,  
 unknownEntity NULL}

ExistingCTPs ::= SEQUENCE OF ObjectInstance

FarEndCarrierNetwork ::= GraphicString

FeedbackMode ::= INTEGER {  
 efcMarking (0),  
 relativeRateMarking (1),  
 explicitRateMarking (2)}

FeedbackModes ::= SET OF FeedbackMode

GraphicStringOrNull ::= CHOICE {  
 graphicString GraphicString,  
 null NULL}

IlmiChannelIdentifier ::= SEQUENCE {  
 vpiValue INTEGER,  
 vciValue INTEGER}

Integer ::= INTEGER

IntegerNameType ::= numericName < NameType

IntegerOrReal ::= CHOICE {  
 integer Integer,  
 real Real}

InterfacePointer ::= ObjectInstance -- uni, interNNI, or intraNNI

InvokeDiagnosticControlReply ::= CHOICE {  
 diagnosticReportInfo DiagnosticReportInfo,  
 aborted NULL}

IscIncludeInfo ::= SEQUENCE {  
 includeIfNotReceived BOOLEAN,  
 includeIfReceived BOOLEAN}

MpConnected ::= SEQUENCE {  
 primary [0] ObjectInstance,  
 commonCTPs [1] SEQUENCE OF ConnectCtpStatus}  
 -- in the same sequence as the ConnectMultipointBridgeInfo

MpFailed ::= ProblemCause

MultipointConnectionType ::= CHOICE {  
 typeNotAssigned NULL,  
 multipointType ENUMERATED {  
 broadcast (0), -- point-to-multipoint



```
merge (1), -- multipoint-to-point
composite (2), -- root-to-leaves & leaves-to-root
multipoint (3) -- multipoint-to-multipoint
}}
```

```
Name ::= CHOICE {
  supporting      [0] EntityName,
  supported       [1] EntityName,
  indeterminate   [2] EntityName }
```

```
NewCTPsR1 ::= SEQUENCE OF CtpOrDescriptorR1
```

```
Nrm ::= ENUMERATED {
  nrm2      (1), -- = 2,
  nrm4      (2), -- = 4,
  nrm8      (3), -- = 8,
  nrm16     (4), -- = 16,
  nrm32     (5), -- = 32,
  nrm64     (6), -- = 64,
  nrm128    (7), -- = 128,
  nrm256    (8) -- = 256 }
```

```
Null ::= NULL
```

```
ObjectSpecificErrorParameter ::= CHOICE {
  improperCondition      [0] SET OF Attribute,
  corruptedMemoryError [1] SET OF AttributeId,
  alreadyInCondition     [2] SET OF Attribute,
  associatedEntityUnavailable [3] AssociatedEntityUnavailable,
  errorDescription       [4] PrintableString,
  containingObjectInstance [5] SET OF ObjectInstance }
```

```
OctetString ::= OCTET STRING
```

```
OperationMode ::= ENUMERATED {
  generateBackwardRMCells (0),
  modifyBackwardRMCells   (1) }
```

```
OperationModes ::= SET OF OperationMode
```

```
OriginatingLineInfo ::= OCTET STRING
```

```
PrimaryCTPR1 ::= CHOICE {
  null NULL,
  ctp ObjectInstance,
  descriptorR1 DescriptorR1 }
```

```
ProvingInfo ::= ENUMERATED {
  alwaysNormalProving (0),
  alwaysEmergencyProving (1),
  followMtp3Request (2) }
```

```
RateChangeFactor ::= ENUMERATED {
  rCF1over32768 (0), -- 1/32768
  rCF1over16384 (1), -- 1/16384 }
```

```

rCF1over8192    (2),  -- 1/8192
rCF1over4096    (3),  -- 1/4096
rCF1over2048    (4),  -- 1/2048
rCF1over1024    (5),  -- 1/1024
rCF1over512 (6),  -- 1/512
rCF1over256 (7),  -- 1/256
rCF1over128 (8),  -- 1/128
rCF1over64   (9),  -- 1/64
rCF1over32   (10), -- 1/32
rCF1over16   (11), -- 1/16
rCF1over8    (12), -- 1/8
rCF1over4    (13), -- 1/4
rCF1over2    (14), -- 1/2
rCF1         (15)} -- 1
    
```

RDF ::=RateChangeFactor

Real ::= REAL

RecoveryType ::= ENUMERATED {  
 recoverable (0),  
 nonrecoverable (1)}

RemoveTpsFromMultipointBridgeInfo ::= SEQUENCE {  
 existingCTPs ExistingCTPs,  
 multipointBridgeInstance ObjectInstance }

RemoveTpsFromMultipointBridgeReply ::= SEQUENCE OF SEQUENCE {  
 ctpInstance ObjectInstance,  
 legRemovalProblem ProblemCause OPTIONAL  
 -- absent if ctpInstance is disconnected  
 }

ReportDiagnosticStatusInfo ::= ENUMERATED {  
 withDiagnosticReport (0),  
 noDiagnosticReport (1)}

ReportDiagnosticStatusReply ::= SEQUENCE {  
 diagnosticStatus ENUMERATED {  
 running (0),  
 notRunning (1),  
 stalled (2)},  
 diagnosticReport DiagnosticReport OPTIONAL }

ResetReply ::= ENUMERATED {  
 resetCompleted (0),  
 resetFailed (1)}

ResourceId ::= SEQUENCE {  
 tcAdaptor ObjectInstance,  
 vpi [0] Integer OPTIONAL, --required for VC test access  
 vci [1] Integer OPTIONAL} --required for VC test Access to VC connection

ResourceUnderTest ::=CHOICE {  
 idle [0] NULL,

resourceId [1] ResourceId}

RestartSvcsReply ::= ENUMERATED {  
 restartSuccessful (0),  
 restartNotSuccessful (1) }

RIF ::= RateChangeFactor

ServiceCategory ::= INTEGER {  
 cBR (0),  
 rt-VBR (1),  
 nrt-VBR (2),  
 aBR (3),  
 uBR (4) }

SignMode ::= ENUMERATED {  
 associatedMode (0),  
 quasiAssociatedMode (1)}

SupportedServiceCategories ::= SET OF ServiceCategory

SustainableCellRate ::= SEQUENCE {  
 sustainableCellRateCLP0plus1 [1] INTEGER OPTIONAL,  
 sustainableCellRateCLP0 [2] INTEGER OPTIONAL}

TimerType ::= GraphicString

TimerValue ::= IntegerOrReal

Trm ::= ENUMERATED {  
 trm1 (0), -- 100 ms  
 trm2 (1), --  $100 * 2^{(-1)} = 50$  ms  
 trm3 (2), --  $100 * 2^{(-2)} = 25$  ms  
 trm4 (3), --  $100 * 2^{(-3)} = 12.5$  ms  
 trm5 (4), --  $100 * 2^{(-4)} = 6.25$  ms  
 trm6 (5), --  $100 * 2^{(-5)} = 3.125$  ms  
 trm7 (6), --  $100 * 2^{(-6)} = 1.5626$  ms  
 trm8 (7) --  $100 * 2^{(-7)} = 0.78125$ ms

Unavailability ::= CHOICE {  
 improperCondition SET OF Attribute,  
 busy [1] NULL,  
 failure [2] NULL}

VpciValues ::= SET OF VpciValue

VpiValues ::= SET OF VpiValue

END



## References

- [1] ATM Forum af-nm-0020.001, *M4 Interface Requirements and Logical MIB: ATM Network Element View*, November 1998.
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- [3] ITU-T Recommendation I.321, *B-ISDN Protocol Reference Model and its Application*, February 1990.
- [4] ITU-T Recommendation I.751, *Asynchronous Transfer Mode Management Of The Network Element View*, March 1996.
- [5] ITU-T Recommendation Q.751.1, *Network Element Management Information Model For The Message Transfer Part (MTP)*, October 1995.
- [6] ITU-T Recommendation Q.822, *Stage 1, State 2, and Stage 3 Description for the Q3 Interface. Performance Management*, April 1994.
- [7] ITU-T Recommendation Q.824.0, *Stages 2 and 3 Description for the Q3 Interface Customer Administration Common Information*, October 1995.
- [8] ITU-T Recommendation Q.824.2, *Stages 2 and 3 Description for the Q3 Interface Customer Administration Integrated Services Digital Network (ISDN) Supplementary Services*, October 1995.
- [9] ITU-T Recommendation Q.824.6, *Broadband Switch Management*, June 1998.
- [10] ITU-T Recommendation Q.2751.1 (09/97) - *Extension Of Q.751.1 For SAAL Signalling Links*, September 1997.
- [11] ITU-T Recommendation M.3100, *Generic Network Information Model*, Version 2, March 1995.
- [12] ITU-T Recommendation X.721, *Information Technology - Open Systems Interconnection - Structure of Management Information - Part 2: Definition of Management Information*, February 1992, plus Technical Corrigendum 1.
- [13] ITU-T Recommendation X.739, *Information Technology - Open Systems Interconnection - Systems Management -- Part 11: Workload Monitoring Function*, November 1993.
- [14] ANSI T1.247, *Operations, Administration, Maintenance, and Provisioning (OAM&P) - Performance Management Functional Area Services and Information Model for Interfaces between Operations Systems and Network Elements*, 1995.
- [15] ETS 300 371, *Transmission and Multiplexing <sup>TM</sup>: Plesiochronous Digital Hierarchy (PDH) Information Model for the Network Element (NE) View*, October 1996.
- [16] Bellcore GR-836-IMD, *Generic Operations Interfaces Using OSI Tools - Information Model Details: Transport Configuration and Surveillance for Network Elements*, Issue 1, August 1994, plus Revision October 1994.

[17] Bellcore TA-NWT-001114, *Generic Requirements for Operations Interfaces Using OSI Tools: ATM/Broadband Network Management*, Issue 2, October 1993.

## Annex A Communications Support for the CMIP M4 Interface

In order to promote interoperability, this Annex describes recommended communications stacks to support the CMIP M4 Interface. These recommendations are depicted in Figure A-1 below.

### A.1 Protocol Profiles for OSI Stacks

ITU-T Recommendations Q.812 and Q.811 define the protocol profiles for the Q3 interface as defined in Recommendation M.3010.

Implementations of the CMIP M4 Interface that use OSI protocol stacks, should implement the Q3 interface as defined in Recommendation Q.812 for Interactive Class services, and implement supporting lower layer services as defined in Recommendation Q.811.

### A.2 Protocol Profiles for TCP/IP Stacks

#### A.2.1 Upper Layer Profiles for TCP/IP Stacks, Layers 5-7

Implementations of the CMIP M4 Interface that use TCP/IP protocol stacks, should implement the OSI upper layers (5-7) as defined in Recommendation Q.812 for Interactive Class services.

#### A.2.2 Lower Layer Profiles for TCP/IP Stacks, Over Protocols Other Than ATM

Implementations of the CMIP M4 Interface that use the TCP/IP protocol stack, should implement the ISO TP0 protocol on top of TCP/IP as defined in RFC1006 (STD00035) or, alternatively in RFC 2126.

The IP layer should be implemented as defined in RFC 791 (IPv4, STD00005) or RFC 2460 (IPv6). The TCP layer should be implemented as defined in RFC 791 (STD00007).

If a TCP/IP protocol stack over ATM is not used, any standard data link and physical layer protocol that supports IP may be used.

#### A.2.3 Lower Layer Profiles for TCP/IP Stacks, Over an ATM Layer

Implementations of the CMIP M4 Interface that use the TCP/IP protocol stack over ATM, should implement IP over AAL5/ATM as defined in RFC1577 using the LLC/SNAP Encapsulation method defined in RFC1483. When implementing only Ipv6 over AAL5/ATM, Null Encapsulation may be used as an alternative to LLC/SNAP Encapsulation.

Any standard data link and physical layer protocols that support ATM may be used below the ATM layer.

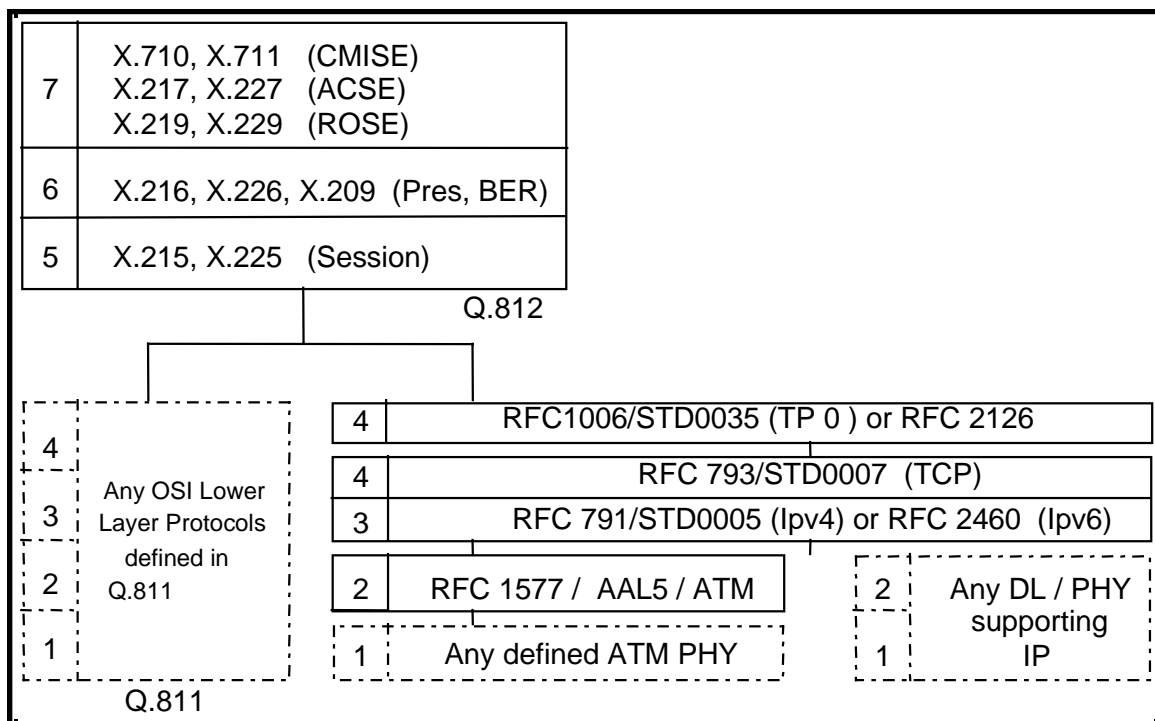


Figure A-1: Communications Stacks for the CMIP M4 Interface

### A.3 References

ITU-T Recommendation Q.811, *Lower Layer Protocols for the Q3 and X Interfaces*, June 1997.

ITU-T Recommendation Q.812, *Upper Layer Protocol Profiles for the Q3 and X Interfaces*, June 1997.

RFC 791/STD0005, J. Postel, *Internet Protocol*, September 1, 1981.

RFC 793/STD0007, J. Postel, *Transmission Control Protocol*, September 1, 1981.

RFC 1006/STD00035, D. Cass, M. Rose, *ISO transport services on top of the TCP: Version: 3*, May 1,1987.

RFC 1189, L. Besaw, B. Handspicker, L. LaBarre, U. Warrior, *The Common Management Information Services and Protocols for the Internet*, October 26, 1990.

RFC 1483, J. Heinanen, *Multiprotocol Encapsulation over ATM Adaptation Layer 5*, July 20, 1993.

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RFC 2460, S. Deering, R. Hinden, *Internet Protocol, Version 6 (IPv6) Specification*, December 1998.



## Annex B Deprecated Information Model Entities

The object classes, packages, attributes, name bindings, and actions defined in this section have been replaced by equivalent or updated definitions in this document, ITU-T Recommendation I.751, or ITU-T Recommendation Q.824.6. These object class descriptions are not recommended for new implementations. However, implementations may need to use these definitions for backward compatibility or other reasons. Therefore, the existing definitions are retained in this section.

### B.1 Deprecated Managed Object Classes

#### B.1.1 aalProfile

```
aalProfile MANAGED OBJECT CLASS
  DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    aalProfilePkg PACKAGE
      BEHAVIOUR aalProfileBeh;
      ATTRIBUTES
        aalProfileId
          GET,
        aalType
          GET;;;
  CONDITIONAL PACKAGES
    aalTypeOneProfilePkg
      PRESENT IF "the aalType attribute is set to aal1",
    aalTypeThreeFourProfilePkg
      PRESENT IF "the aalType attribute is set to aal34",
    aalTypeFiveProfilePkg
      PRESENT IF "the aalType attribute is set to aal5";
  REGISTERED AS {atmfM4ObjectClass 30};
```

```
aalProfileBeh BEHAVIOUR
  DEFINED AS
```

"The aalProfile object class is a managed support object used to organize data that describes the AAL processing functions of the ATM NE. The attribute aalType identifies the type of AAL processing (i.e., AAL1, AAL3/4, or AAL5). The AAL profiling information is contained in packages which are present based on the value of the aalType attribute. ";

#### B.1.2 aalProtocolCurrentData

```
aalProtocolCurrentData MANAGED OBJECT CLASS
  DERIVED FROM "ITU-T Rec. Q.822: 1993": currentData;
  CHARACTERIZED BY
    aalProtocolCurrentDataPkg PACKAGE
      BEHAVIOUR aalProtocolCurrentDataBeh;;;
  CONDITIONAL PACKAGES
    aalTypeOnePerformanceParameterPkg
      PRESENT IF "AAL Type 1 processing is being performed",
    aalTypeThreeFourPerformanceParameterPkg
      PRESENT IF "AAL Type 3/4 processing is being performed",
    aalTypeFivePerformanceParameterPkg
```

PRESENT IF "AAL Type 5 processing is being performed";  
REGISTERED AS {atmfM4ObjectClass 31};

aalProtocolCurrentDataBeh BEHAVIOUR  
DEFINED AS

"The aalProtocolCurrentData object is a managed support object that contains the current performance monitoring data collected as a result of performing Segmentation and Reassembly (SAR) Level and Convergence Sublayer (CS) protocol monitoring. The granularityPeriod attribute inherited from the scanner object class shall be set to 15-minutes. Instances of this object class shall be inherently created by the managed system whenever an instance of the Interworking VCC Termination Point object class is created that represents AAL functions.";

### B.1.3 aalProtocolHistoryData

aalProtocolHistoryData MANAGED OBJECT CLASS  
DERIVED FROM "ITU-T Rec. Q.822: 1993": historyData;  
CHARACTERIZED BY  
aalProtocolHistoryDataPkg PACKAGE  
BEHAVIOUR aalProtocolHistoryDataBeh;;;

#### CONDITIONAL PACKAGES

aalTypeOnePerformanceParameterHistoryDataPkg  
PRESENT IF "AAL Type 1 processing is being performed",  
aalTypeThreeFourPerformanceParameterHistoryDataPkg  
PRESENT IF "AAL Type 3/4 processing is being performed",  
aalTypeFivePerformanceParameterHistoryDataPkg  
PRESENT IF "AAL Type 5 processing is being performed";  
REGISTERED AS {atmfM4ObjectClass 32};

aalProtocolHistoryDataBeh BEHAVIOUR  
DEFINED AS

"The aalProtocolHistoryData object is a managed support object that contains the past performance monitoring data collected as a result of performing Segmentation and Reassembly (SAR) Level and Convergence Sublayer (CS) protocol monitoring. Instances of this object class can only be created locally by an agent (managed system) according to the value of the historyRetention attribute specified in the aalProtocolCurrentData object. ";

### B.1.4 atmAccessProfile

atmAccessProfile MANAGED OBJECT CLASS  
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
CHARACTERIZED BY  
"ITU-T M.3100": attributeValueChangeNotificationPackage,  
"ITU-T M.3100": createDeleteNotificationsPackage,

atmAccessProfilePkg PACKAGE  
BEHAVIOUR atmAccessProfileBeh;  
ATTRIBUTES

atmAccessProfileId  
GET;;;

#### CONDITIONAL PACKAGES

vpLevelProfilePackage  
PRESENT IF "profiling of the VP level at the ATM interface is supported",  
vcLevelProfilePackage  
PRESENT IF "profiling of the VC level at the ATM interface is supported";

REGISTERED AS {atmfM4ObjectClass 1};

atmAccessProfileBeh BEHAVIOUR

DEFINED AS

" The atmAccessProfile object class is a class of managed objects that characterize the client/server relationship at the VP and/or VC level.

Instances of this managed object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M- DELETE services, respectively. ";

### B.1.5 atmCrossConnection

atmCrossConnection MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": crossConnection;

CHARACTERIZED BY

"ITU-T M.3100": createDeleteNotificationsPackage,

atmCrossConnectionPkg PACKAGE

BEHAVIOUR atmCrossConnectionBeh;

ATTRIBUTES

recoveryType

GET-REPLACE;;;

REGISTERED AS {atmM4ObjectClass 2};

atmCrossConnectionBeh BEHAVIOUR

DEFINED AS

"For point-to-point ATM VP and VC cross-connections, this managed object identifies the cross-connection relationship between two instances of the vpCTPBidirectional object class or vcCTPBidirectional object class, respectively. The vpCTPBidirectional or vcCTPBidirectional object instances being cross-connected are identified by the fromTermination and toTermination attributes inherited from the crossConnection object class defined in ITU-T Recommendation M.3100.

For multipoint ATM VP and VC cross-connections, this managed object identifies the cross-connect relationship between an instance of the vpCTPBidirectional object class or vcCTPBidirectional object class and an instance of the multipointBridge object class. For multipoint ATM VP and VC cross-connections, each vpCTPBidirectional or vcCTPBidirectional object instance connected to the multipointBridge object is identified by the fromTermination attribute of the atmCrossConnection object, while the instance of the multipointBridge object class is identified by the toTermination attribute. Note that multipoint ATM cross-connections are established by cross-connecting multiple instances of the vpCTPBidirectional or vcCTPBidirectional object class (each with its own atmCrossConnection object) to a single instance of the multipointBridge object class.

The administrativeState attribute inherited by this managed object may be used by the managing system to inhibit (lock) and allow (unlock) ATM cell flow through the ATM cross-connection being represented.

The recoveryType attribute identifies whether the ATM cross-connection is recoverable (default) or non-recoverable. Recoverable cross-connections remain intact regardless of the operational state of the cross-connection. Non-recoverable ATM cross-connections are cross-connections that are automatically released by the managed system upon detection of a service affecting failure.

Instances of this object class are automatically created and deleted by the managed system based on operations performed on the containing atmFabric or atmMpFabric object.

All ATM VP/VC cross-connections are, by definition, bi-directional; therefore, the directionality attribute, inherited from the crossConnection object class, shall be set to the fixed value of bidirectional.

The value of the signalType attribute is for further study. ";

### B.1.6 atmFabric

atmFabric MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

atmFabricPackage PACKAGE

BEHAVIOUR atmFabricBeh;

ATTRIBUTES

atmFabricId

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState

GET-REPLACE,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState

GET,

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":availabilityStatus

GET;

ACTIONS

connect,

disconnect;;;;

REGISTERED AS {atmfM4ObjectClass 3};

atmFabricBeh BEHAVIOUR

DEFINED AS

"This object class represents the function of managing the establishment and release of ATM cross-connections.

Administrative State:

- Unlocked: The atmFabric is allowed to perform its normal functions. ACTIONS will be accepted to setup or remove cross-connections.
- Locked: The atmFabric is not allowed to perform its normal functions. No ACTIONS will be accepted. No new cross-connection can be setup or removed.

Operational State:

- Enabled: When the atmFabric is in the enabled operational state, it may be fully operational or partially operational (partially operational is indicated by the availability status attribute).
- Disabled: The atmFabric is incapable of performing its normal function. For instance, the managing system will not be able to setup or remove any cross-connection.

Availability Status, the supported values are:

- Degraded: The atmFabric is degraded in some respect. For instance, the atmFabric cannot perform the function of establishing new cross-connections while it can still accept ACTIONS to tear down existing connections. The atmFabric remains available for service (i.e. its operational state is enabled) while it is degraded.
- Empty SET (none of the availableStatus conditions exist).

One instance of the atmFabric object class shall be automatically created by the managed system upon completion of system initialization. Further creation and deletion of such objects is not supported.";

### B.1.7 atmMpFabric

atmMpFabric MANAGED OBJECT CLASS

DERIVED FROM atmFabric;

CHARACTERIZED BY

atmMpFabricPackage PACKAGE

BEHAVIOUR

atmMpFabricBeh BEHAVIOUR

DEFINED AS

"This object class is derived from the atmFabric object class. In addition to all the functionality supported by the super classes, this object class manages the establishment and release of multipoint ATM cross connections.

Administrative State:

- Unlocked: The atmMpFabric is allowed to perform its normal functions. ACTIONS will be accepted to setup or remove multipoint cross-connections, or to rearrange multipoint cross-connections.
- Locked: The atmMpFabric is not allowed to perform its normal functions. No ACTIONS will be accepted. No new multipoint cross-connection can be setup or removed and no multipoint connections may be rearranged.

Operational State:

- Enabled: When the atmMpFabric is in the enabled operational state, it may be fully operational or partially operational (partially operational is indicated by the availability status attribute).
- Disabled: The atmMpFabric is incapable of performing its normal function. For instance, the managing system will not be able to setup or remove any multipoint cross-connection.

Availability Status, the supported values for this attribute are:

- Degraded: The atmMpFabric is degraded in some respect. For instance, the atmMpFabric cannot perform the function of establishing new cross-connections while it can still accept

ACTIONS to rearrange existing connections. The atmMpFabric remains available for service (i.e. its operational state is enabled) while it is degraded.

- Empty SET (none of the availableStatus conditions exist).";

ACTIONS

connectMultipointBridge,  
disconnectMultipointBridge,  
addTpsToMultipointBridge,  
removeTpsFromMultipointBridge;;;

REGISTERED AS {atmfM4ObjectClass 4};

### B.1.8 cellLevelProtocolCurrentData

cellLevelProtocolCurrentData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Q.822":currentData;

CHARACTERIZED BY

"ITU-T M.3100": createDeleteNotificationsPackage,

cellLevelProtocolCurrentDataPkg PACKAGE

BEHAVIOUR cellLevelProtocolCurrentDataBeh;

ATTRIBUTES

discardedCellsInvalidHeader

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET,

numReceivedOAMCells

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET;;;

REGISTERED AS {atmfM4ObjectClass 6};

cellLevelProtocolCurrentDataBeh BEHAVIOUR

DEFINED AS

" Instances of the cellLevelProtocolCurrentData object class are used to hold the current (15 minute) register counts reflecting the protocol monitoring functions performed per ATM UNI, Inter-NNI, and Intra-NNI.

Each instance of this managed object shall maintain a thresholded count of the number of cells discarded due to the detection of ATM Layer protocol violations (e.g., unassigned VPI/VCI value, out-of-range VPI/VCI value, or undefined Payload Type Indication value). In addition, an unthresholded count of the number of OAM cells received and processed (per ATM Interface) shall be maintained by this object.

Instances of this object class should be inherently created by the managed system whenever an instance of the uni, interNNI, or intraNNI object class is created.

This managed object class uses the cellLevelProtocolHistoryData managed object class for history retention. ";

### B.1.9 cellLevelProtocolHistoryData

cellLevelProtocolHistoryData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Q.822":historyData;

CHARACTERIZED BY

```

cellLevelProtocolHistoryDataPkg PACKAGE
  BEHAVIOUR cellLevelProtocolHistoryDataBeh;
  ATTRIBUTES
    discardedCellsInvalidHeader
      GET,
    numReceivedOAMCells
      GET;;;
REGISTERED AS {atmfM4ObjectClass 7};

```

```

cellLevelProtocolHistoryDataBeh BEHAVIOUR
  DEFINED AS
    " Instances of the cellLevelProtocolHistoryData object class are used to store the observed events of a
    cellLevelProtocolCurrentData object at the end of the 15-minute granularity period. Instances of this
    managed object class are contained by an instance of the cellLevelProtocolCurrentData managed object
    class. ";

```

### B.1.10 cesServiceProfile

```

cesServiceProfile MANAGED OBJECT CLASS
  DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    cesServiceProfilePkg PACKAGE
      BEHAVIOUR cesServiceProfileBeh;
      ATTRIBUTES
        cesServiceProfileId
          GET,
        cesBufferedCDVtolerance
          GET-REPLACE,
        channelAssociatedSignalling
          GET-REPLACE;;;
      REGISTERED AS {atmfM4ObjectClass 29};

```

```

cesServiceProfileBeh BEHAVIOUR
  DEFINED AS
    "This managed object is used to organize data that describes the circuit emulation service interworking functions of
    the ATM NE.
    The cesBufferedCDVtolerance attribute specifies the duration of user data that must be buffered by the
    interworkingVCTTPBidirectional managed object to offset Cell Delay variation. The recommended default value for
    DS1 CES is 750 micro seconds and 1000 micro seconds for DS3 CES.
    The channelAssociatedSignalling attribute identifies which AAL1 format should be used. It applies only to
    structured format. For unstructured format this attribute must be set to the default value of basic.
    Instances of this object class shall be explicitly created and deleted by the managing system. An instance of this
    object class shall not be deleted if it is in use by any interworkingVCTTPBidirectional object instance. ";

```

### B.1.11 interNNI

```

interNNI MANAGED OBJECT CLASS
  DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    interNNIPkg PACKAGE
      BEHAVIOUR interNNIBeh;
      ATTRIBUTES
        interNNIId
          GET,

```

```

        underlyingTTPPointer
            GET;;;
CONDITIONAL PACKAGES
    "ITU-T M.3100: 1992": createDeleteNotificationsPackage
        PRESENT IF "the objectCreation and objectDeletion notifications
                    defined in Recommendation X.721 are supported by an
                    instance of this class.",
    farEndCarrierNetworkPkg
        PRESENT IF "call processing functions supporting exchange access
                    service over the Inter-NNI are performed in the managed
                    system",
    loopbackLocationIdentifierPkg
        PRESENT IF "supplied by the managing system";
REGISTERED AS {atmM4ObjectClass 14};

interNNIBeh BEHAVIOUR
    DEFINED AS
        " This managed object is used to configure and identify an ATM Interface on the managed system as an
        Inter-NNI.

        The underlyingTTPPointer attribute provides a pointer relationship to the tcAdaptorTTPBidirectional
        object that represents the location in the managed system where ATM is adapted to the physical
        transmission path.

        The loopbackLocationIdentifierPkg provides a read/write code used for OAM cell loopback purposes.
        Incoming OAM Loopback cells with a Loopback Location field value that matches the value of the
        loopbackLocationIdentifier attribute shall be looped-back over the Inter-NNI.

        An instance of this object class shall exist for each Inter-NNI on the managed system. Instances of this
        object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M-
        DELETE services, respectively. ";

```

### B.1.12 interworkingVCTTPBidirectional

```

interworkingVCTTPBidirectional MANAGED OBJECT CLASS
    DERIVED FROM vcTTPBidirectional;
    CHARACTERIZED BY
        interworkingVCTTPBidirectionalPkg PACKAGE
        BEHAVIOUR interworkingVCTTPBidirectionalBeh;
        ATTRIBUTES
            vpiValue
                GET,
            serviceProfilePointer
                GET-REPLACE,
            aalProfilePointer
                GET-REPLACE,
            terminationPointList
                GET;;;
    CONDITIONAL PACKAGES
        modifyTerminationPointListPkg
            PRESENT IF "an instance supports addition and removal of interworked termination points.";
REGISTERED AS {atmM4ObjectClass 28};

```



interworkingVCTTPBidirectionalBeh BEHAVIOUR  
DEFINED AS

"This managed object represents a point in the managed system where the interworking of a service (e.g., frame relay or SMDS) or an underlying physical infrastructure (e.g. nDS0/DS1/DS3/E3/J2) takes place. At this point ATM cells are generated from the service or physical bit stream or vice versa.

An instance of this object class shall point (via the upstreamConnectivityPointer and downstreamConnectivityPointer attributes) to a vcCTPBidirectional managed object (if already created) and that instance of vcCTPBidirectional object class shall point back (via supportedByObjectList) to this instance of interworkingVCTTPBidirectional object class.

For the conditional package oamCellLoopbackPkg inherited from vcTTPBidirectional object, the loopback cell shall be inserted at the interworkingVCTTPBidirectional side of the network element and the direction of the cell shall be into the switch. Thus the connection matrix of the interworking NE is included by the Loopback.

This managed object shall send a communicationsAlarm notification to the managing system, when the cellLossIntegrationPeriod (identified by aalProfile) expires.

Instances of this object class may be explicitly created and deleted by the managing system. Instances of this managed object class may also be automatically created by the managed system. ";

### B.1.13 intraNNI

intraNNI MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

intraNNIPkg PACKAGE

BEHAVIOUR intraNNIBeh;

ATTRIBUTES

intraNNIID

GET,

underlyingTTPPointer

GET;;;

CONDITIONAL PACKAGES

"ITU-T M.3100: 1992": createDeleteNotificationsPackage

PRESENT IF "the objectCreation and objectDeletion notifications defined in Recommendation X.721 are supported by an instance of this class.",

loopbackLocationIdentifierPkg

PRESENT IF "supplied by the managing system";

REGISTERED AS {atmfM4ObjectClass 15};

intraNNIBeh BEHAVIOUR

DEFINED AS

" This managed object is used to configure and identify an ATM Interface on the managed system as an Intra-NNI.

The underlyingTTPPointer attribute provides a pointer relationship to the tcAdaptorTTPBidirectional object that represents the location in the managed system where ATM is adapted to the physical transmission path.

The loopbackLocationIdentifierPkg provides a read/write code used for OAM cell loopback purposes. Incoming OAM Loopback cells with a Loopback Location field value that matches the value of the loopbackLocationIdentifier attribute shall be looped-back over the Intra-NNI.

An instance of this object class shall exist for each Intra-NNI on the managed system. Instances of this object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. ";

**B.1.14 tcAdaptorCurrentData**

tcAdaptorCurrentData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Q.822":currentData;

CHARACTERIZED BY

"ITU-T M.3100": createDeleteNotificationsPackage,

tcAdaptorCurrentDataPkg PACKAGE

BEHAVIOUR tcAdaptorCurrentDataBeh;

ATTRIBUTES

discardedCellsHECViolation

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET,

erroredCellsHECViolation

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET;;;

REGISTERED AS {atmfM4ObjectClass 18};

tcAdaptorCurrentDataBeh BEHAVIOUR

DEFINED AS

"This managed object contains the current protocol monitoring data collected for its superior tcAdaptorTTPBidirectional object. Specifically, this managed object maintains a count of the number of received cells for which an HEC error was detected as well as a count of the number of received cells that were discarded due to an HEC error during the current 15-minute granularity period.

This object shall be automatically created whenever an instance of the tcAdaptorTTPBidirectional object class is created. ";

**B.1.15 tcAdaptorHistoryData**

tcAdaptorHistoryData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Q.822":historyData;

CHARACTERIZED BY

tcAdaptorHistoryDataPkg PACKAGE

BEHAVIOUR tcAdaptorHistoryDataBeh;

ATTRIBUTES

discardedCellsHECViolation

GET,

erroredCellsHECViolation

GET;;;

REGISTERED AS {atmfM4ObjectClass 19};

tcAdaptorHistoryDataBeh BEHAVIOUR

DEFINED AS

"Instances of the tcAdaptorHistoryData object class are used to store the observed events of a tcAdaptorCurrentData object at the end of the 15-minute granularity period. Instances of this managed object class are contained by an instance of the tcAdaptorCurrentData object class. ";

**B.1.16 tcAdaptorTTPBidirectional**

tcAdaptorTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": trailTerminationPointBidirectional;  
CHARACTERIZED BY

"ITU-T M.3100": tmnCommunicationsAlarmInformationPackage,  
"ITU-T M.3100": createDeleteNotificationsPackage,  
"ITU-T M.3100": stateChangeNotificationPackage,  
tcAdaptorTTPBidirectionalPkg PACKAGE

BEHAVIOUR tcAdaptorTTPBidirectionalBeh;  
ATTRIBUTES

tcTTPId  
GET;;;

CONDITIONAL PACKAGES

cellScramblingEnabledPkg  
PRESENT IF "cell scrambling may be activated and deactivated for  
the supporting ATM interface.";

REGISTERED AS {atmfM4ObjectClass 20};

tcAdaptorTTPBidirectionalBeh BEHAVIOUR

DEFINED AS

" This managed object represents a point in the managed system where the adaptation of the ATM Layer to the underlying physical infrastructure (e.g., SDH or PDH transport network) takes place. ITU-T Recommendation I.321[11] identifies this adaptation function as one of many functions performed at the Transmission Convergence (TC) Sublayer of the BISDN protocol stack.

This object is responsible for generating communicationsAlarm notifications that report the inability of the managed system to delineate ATM cells from the payload of a terminated digital transmission path.

The supportedByObjectList attribute inherited from the trailTerminationPoint managed object shall include a pointer to the underlying, path-level trail termination point managed object (e.g., vc4TTPBidirectional object).

Instances of this object class should be automatically created and deleted by the managed system.";

**B.1.17 uni**

uni MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":top;  
CHARACTERIZED BY

uniPkg PACKAGE  
BEHAVIOUR uniBeh;  
ATTRIBUTES

uniId  
GET,  
underlyingTTPPointer  
GET;;;

CONDITIONAL PACKAGES

"ITU-T M.3100": createDeleteNotificationsPackage  
PRESENT IF "the objectCreation and objectDeletion notifications  
defined in Recommendation X.721 are supported by an  
instance of this object class.",

atmSubscriberAddressPkg  
PRESENT IF "an address or list of addresses are assigned to the UNI",

```

ilmiPkg
  PRESENT IF "the ILMI capability is supported",
loopbackLocationIdentifierPkg
  PRESENT IF "supplied by the managing system",
preferredCarrierPkg
  PRESENT IF "call processing functions supporting exchange access
             service for the UNI subscriber are performed in the
             managed system";
REGISTERED AS {atmfM4ObjectClass 21};

```

## uniBeh BEHAVIOUR

## DEFINED AS

" This managed object is used to configure and identify an ATM interface on the managed system as a Public User Network Interface (UNI), embracing the physical characteristics corresponding to the U<sub>B</sub> reference point.

The underlyingTTPPointer attribute provides a pointer relationship to the tcAdaptorTTPBidirectional object that represents the location in the managed system where ATM is adapted to the physical transmission path.

The ilmiPkg shall be instantiated if the ILMI capability is supported by the UNI. This package identifies the VPI/VCI value used over the UNI to support ILMI.

The loopbackLocationIdentifierPkg provides a read/write code used for OAM cell loopback purposes. Incoming OAM Loopback cells with a Loopback Location field value that matches the value of the loopbackLocationIdentifier attribute shall be looped-back over the UNI.

An instance of this object class shall exist for each Public UNI on the managed system. Instances of this object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. ";

**B.1.18 upcNpcCurrentData**

## upcNpcCurrentData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Q.822":currentData;

## CHARACTERIZED BY

"ITU-T M.3100": createDeleteNotificationsPackage,

upcNpcCurrentDataPkg PACKAGE

BEHAVIOUR upcNpcCurrentDataBeh;

## ATTRIBUTES

discardedCells

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET,

successfullyPassedCells

REPLACE-WITH-DEFAULT

DEFAULT VALUE AtmMIBModV2.integerZero

GET;;;

## CONDITIONAL PACKAGES

discardedCLP0CellsPkg

PRESENT IF "the managed system performs UPC/NPC functions separately for high Cell Loss Priority (CLP) cells (i.e., cells with CLP=0)",

successfullyPassedCLP0CellsPkg

```

PRESENT IF " if the managed system supports high priority only
policing and has the ability to count cells that are
successfully passed by the CLP=0 UPC/NPC policing
function",
taggedCLP0CellsPkg
PRESENT IF "the managed system supports Cell Loss Priority (CLP)
tagging";
REGISTERED AS {atmfM4ObjectClass 22};

```

```

upcNpcCurrentDataBeh BEHAVIOUR
DEFINED AS

```

" An instance of this managed object class is used to collect 15-minute current data associated with UPC/NPC functions performed on its superior managed object.

All instances of this managed object are required to count and threshold the number of cells that were discarded due to UPC/NPC policing of the combined high and low cell loss priority traffic. In addition, all instances of this object class are required to maintain a count of the number of cells that were passed by the aggregate (i.e., CLP=0,1) UPC/NPC policing function.

If the managed system performs UPC/NPC separately for CLP=0 traffic, then an additional count shall be maintained and thresholded for discarded CLP=0 cells due to UPC/NPC policing of high priority (CLP=0) traffic only.

If Cell Loss Priority (CLP) tagging is performed by the managed system, the taggedCLP0CellsPkg conditional package should be present for maintaining a thresholded count of the number of CLP=0 cells that were tagged by the managed system.

This object also provides an optional attribute for counting the number of cells successfully passed by the high priority only policing functions of the UPC/NPC. This parameter, however, shall not be thresholded by the managed system.

Instances of this object class shall be automatically created by the managed system for each instance of the vpCTPBidirectional and vcCTPBidirectional object class where UPC/NPC functions take place (e.g., at UNI and Inter-NNI access points).

These objects shall be automatically deleted when the containing instance of the vpCTPBidirectional and vcCTPBidirectional object class is deleted.

This managed object class uses the upcNpcHistoryData managed object class for history retention.";

### B.1.19 upcNpcHistoryData

```

upcNpcHistoryData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Q.822":historyData;
CHARACTERIZED BY
upcNpcHistoryDataPkg PACKAGE
BEHAVIOUR upcNpcHistoryDataBeh;
ATTRIBUTES
discardedCells
GET,
successfullyPassedCells
GET;;;
CONDITIONAL PACKAGES
discardedCLP0CellsHistoryDataPkg

```

PRESENT IF "attribute value is supplied by upcNpcCurrentData",  
 successfullyPassedCLP0CellsHistoryDataPkg  
 PRESENT IF "attribute value is supplied by upcNpcCurrentData",  
 taggedCLP0CellsHistoryDataPkg  
 PRESENT IF "attribute value is supplied by upcNpcCurrentData";  
 REGISTERED AS {atmfM4ObjectClass 23};

upcNpcHistoryDataBeh BEHAVIOUR  
 DEFINED AS

" Instances of the upcNpcHistoryData object class are used to store the observed events of an upcNpcCurrentData object at the end of the 15-minute granularity period. A minimum of two instances of this managed object are needed to maintain the most recent past 30 minutes of history data.";

### B.1.20 vcCTPBidirectional

vcCTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": connectionTerminationPointBidirectional;

CHARACTERIZED BY

"ITU-T M.3100": attributeValueChangeNotificationPackage,

"ITU-T M.3100": createDeleteNotificationsPackage,

"ITU-T M.3100": crossConnectionPointerPackage,

vcCTPBidirectionalPkg PACKAGE

BEHAVIOUR vcCTPBidirectionalBeh;

ATTRIBUTES

vcCTPId

GET,

segmentEndPoint

DEFAULT VALUE AtmMIBModV2.booleanFalseDefault

GET-REPLACE;;;

CONDITIONAL PACKAGES

egressTrafficDescriptorPkg

PRESENT IF "supplied by the managing system. This package must be present at points where egress UPC/NPC functions are performed.",

ingressTrafficDescriptorPkg

PRESENT IF "supplied by the managing system. This package must be present at points where ingress UPC/NPC functions are performed.",

oamCellLoopbackPkg

PRESENT IF "the termination point supports OAM cell Loopbacks",

qosClassesPkg

PRESENT IF "QOS Class information is supplied by the managing system";

REGISTERED AS {atmfM4ObjectClass 24};

vcCTPBidirectionalBeh BEHAVIOUR

DEFINED AS

" The vcCTPBidirectional object class is a class of managed objects that delimit Virtual Channel (VC) links. From a configuration management perspective, instances of this object class represent VC link terminations that are either cross-connected to other VC link terminations or are available for such cross-connection.

Instances of this object class include attributes that describe the VCI value, traffic descriptor, and, optionally, the Quality of Service (QOS) class assigned to the VCL termination being represented. Note that the vcCTPId attribute value identifies the VCI value for the VCL being terminated and is also used as the RDN for naming instances of this object class. The vcCTPId attribute value may be provided by the

managing system upon creation of this managed object instance or it may be absent in the M-CREATE message and thus selected by the managed system. When selected by the managed system, the value chosen shall be reported to the managing system as a parameter in the response to the successfully performed M-CREATE request.

From a performance and fault management perspective, instances of this object class represent logical points along VCCs at which various maintenance and network traffic management functions may be performed.

The conditional package oamCellLoopbackPkg provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

When a VC-AIS or VC-RDI failure is detected, the vcCTPBidirectional object shall generate a communicationsAlarm notification (if the tmnCommunicationsAlarmInformationPackage is present) with the probableCause parameter value set equal to aIS or farEndReceiverFailure, respectively.

Instances of this object class may be explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. Instances of this managed object class may also be automatically created by the managed system in response to actions performed on instances of the atmFabric or atmMpFabric object class. ";

### B.1.21 vcTTPBidirectional

vcTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": trailTerminationPointBidirectional;

CHARACTERIZED BY

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": administrativeStatePackage,

"ITU-T M.3100": attributeValueChangeNotificationPackage,

"ITU-T M.3100": createDeleteNotificationsPackage,

vcTTPBidirectionalPkg PACKAGE

BEHAVIOUR vcTTPBidirectionalBeh;

ATTRIBUTES

vcTTPId

GET;;;

CONDITIONAL PACKAGES

oamCellLoopbackPkg

PRESENT IF "the termination point supports OAM cell Loopbacks";

REGISTERED AS {atmfM4ObjectClass 25};

vcTTPBidirectionalBeh BEHAVIOUR

DEFINED AS

" The vcTTPBidirectional object class is a class of managed objects that delimit Virtual Channel Connections (VCCs).

An instance of this object class represents the logical point in the managed system where the end-to-end F5 flow (i.e., OAM cells with PT=5) terminates.

The conditional package oamCellLoopbackPkg provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

An instance of this object class shall always point (via the upstreamConnectivityPointer and downstreamConnectivityPointer attributes) to a vcCTPBidirectional managed object.

Instances of this object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. ";

### B.1.22 vpCTPBidirectional

vpCTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": connectionTerminationPointBidirectional;

CHARACTERIZED BY

"ITU-T M.3100": attributeValueChangeNotificationPackage,

"ITU-T M.3100": createDeleteNotificationsPackage,

"ITU-T M.3100": crossConnectionPointerPackage,

vpCTPBidirectionalPkg PACKAGE

BEHAVIOUR vpCTPBidirectionalBeh;

ATTRIBUTES

vpCTPId

GET,

segmentEndPoint

DEFAULT VALUE AtmMIBModV2.booleanFalseDefault

GET-REPLACE;;;

CONDITIONAL PACKAGES

egressTrafficDescriptorPkg

PRESENT IF "supplied by the managing system. This package must be present at points where egress UPC/NPC functions are performed.",

ingressTrafficDescriptorPkg

PRESENT IF "supplied by the managing system. This package must be present at points where ingress UPC/NPC functions are performed.",

oamCellLoopbackPkg

PRESENT IF "the termination point supports OAM cell Loopbacks",

qosClassesPkg

PRESENT IF "QOS Class information is supplied by the managing system";

REGISTERED AS {atmfM4ObjectClass 26};

vpCTPBidirectionalBeh BEHAVIOUR

DEFINED AS

" The vpCTPBidirectional object class is a class of managed objects that delimit Virtual Path (VP) links. From a configuration management perspective, instances of this object class represent VP link terminations that are either cross-connected to other VP link terminations or are available for such cross-connection.

Instances of this object class include attributes that describe the VPI value, traffic descriptor, and, optionally, the Quality of Service (QOS) class assigned to the VPL termination being represented. Note that the vpCTPId attribute value identifies the VPI value of the VPL termination being represented and is also used as the RDN for naming instances of this object class. Note that the vpCTPId attribute may be provided by the managing system upon creation of this managed object instance or it may be absent in the M-CREATE message and thus selected by the managed system. When selected by the managed system, the value chosen shall be reported to the managing system as a parameter in the response to the successfully performed M-CREATE request.

From a performance and fault management perspective, instances of this object class represent logical points along VPCs at which various maintenance and network traffic management functions may be performed.



The conditional package oamCellLoopbackPkg provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

When a VP-AIS or VP-RDI failure is detected, the vpCTPBidirectional object shall generate a communicationsAlarm notification (if the tmnCommunicationsAlarmInformationPackage is present) with the probableCause parameter value set equal to aIS or farEndReceiverFailure, respectively.

Instances of this object class may be explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. Instances of this managed object class may also be automatically created by the managed system in response to actions performed on instances of the atmFabric or atmMpFabric object class. ";

### B.1.23 vpTTPBidirectional

vpTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM "ITU-T M.3100": trailTerminationPointBidirectional;

CHARACTERIZED BY

"ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992": administrativeStatePackage,

"ITU-T M.3100": attributeValueChangeNotificationPackage,

"ITU-T M.3100": createDeleteNotificationsPackage,

vpTTPBidirectionalPkg PACKAGE

BEHAVIOUR vpTTPBidirectionalBeh;

ATTRIBUTES

vpTTPId

GET;;;

CONDITIONAL PACKAGES

oamCellLoopbackPkg

PRESENT IF "the termination point supports OAM cell Loopbacks";

REGISTERED AS {atmM4ObjectClass 27};

vpTTPBidirectionalBeh BEHAVIOUR

DEFINED AS

" The vpTTPBidirectional object class is a class of managed objects that delimit Virtual Path Connections (VPCs).

An instances of this object class represents the logical point in the managed system where the end-to-end F4 flow (i.e., OAM cells with VCI=4) terminates.

The oamCellLoopbackPkg package provides the M-ACTION used to request the termination point to insert an OAM cell for downstream loopbacking and report whether or not the cell was returned within the required time.

An instance of this object class shall always point (via the upstreamConnectivityPointer and downstreamConnectivityPointer attributes) to a vpCTPBidirectional managed object.

Instances of this object class are explicitly created and deleted by the managing system using the CMIS M-CREATE and M-DELETE services, respectively. Instances of this object class may also be automatically created by the managed system in response to actions performed on instances of the atmFabric or atmMpFabric object class.";

## B.2 Deprecated Conditional Packages

### B.2.1 aalTypeOnePerformanceParameterPkg

aalTypeOnePerformanceParameterPkg PACKAGE

ATTRIBUTES

```

sequenceViolations
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
cellLoss
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
cellMisinsertion
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
bufferUnderflows
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
bufferOverflows
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
headerErrors
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
stdPointerReframes
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
stdPointerParityFailures
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET;

```

REGISTERED AS {atmfM4Package 20};

### B.2.2 aalTypeOnePerformanceParameterHistoryDataPkg

aalTypeOnePerformanceParameterHistoryDataPkg PACKAGE

ATTRIBUTES

```

sequenceViolations
    GET,
cellLoss
    GET,
cellMisinsertion
    GET,
bufferUnderflows
    GET,
bufferOverflows

```

```

        GET,
headerErrors
        GET,
stdPointerReframes
        GET,
stdPointerParityFailures
        GET;
REGISTERED AS {atmfM4Package 21};

```

### B.2.3 aalTypeOneProfilePkg

```

aalTypeOneProfilePkg PACKAGE
  ATTRIBUTES
    cbrRate
      GET,
    cellLossIntegrationPeriod,
      GET,
    clockRecoveryType
      GET,
    forwardErrorCorrectionMethod
      GET,
    partiallyFilledCells
      GET,
    structuredDataTransfer
      GET,
    subType
      GET;
REGISTERED AS {atmfM4Package 22};

```

### B.2.4 aalTypeThreeFourPerformanceParameterPkg

```

aalTypeThreeFourPerformanceParameterPkg PACKAGE
  ATTRIBUTES
    sumOfInvalidSARFieldErrors
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
      GET,
    sumOfIncorrectSARFieldErrors
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
      GET,
    sarCrcViolations
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
      GET,
    comsEomsUnexpectedSN
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
      GET,
    bomsEomsUnexpectedMID
      REPLACE-WITH-DEFAULT
      DEFAULT VALUE AtmMIBModV2.integerZero
      GET,

```

```

sriTimeOuts
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
numberOfAborts
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
sumOfInvalidCSFieldErrors
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
sumOfIncorrectCSFieldErrors
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
bETagMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
lengthBAMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET,
lengthMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE AtmMIBModV2.integerZero
    GET;
REGISTERED AS {atmfM4Package 23};

```

**B.2.5 aalTypeThreeFourPerformanceParameterHistoryDataPkg**

aalTypeThreeFourPerformanceParameterHistoryDataPkg PACKAGE

ATTRIBUTES

```

sumOfInvalidSARFieldErrors
    GET,
sumOfIncorrectSARFieldErrors
    GET,
sarCrcViolations
    GET,
comsEomsUnexpectedSN
    GET,
bomsEomsUnexpectedMID
    GET,
sriTimeOuts
    GET,
numberOfAborts
    GET,
sumOfInvalidCSFieldErrors
    GET,
sumOfIncorrectCSFieldErrors
    GET,
bETagMismatch
    GET,

```

```

    lengthBAMismatch
        GET,
    lengthMismatch
        GET;
REGISTERED AS {atmfM4Package 24};

```

### B.2.6 aalTypeThreeFourProfilePkg

```

aalTypeThreeFourProfilePkg PACKAGE
    ATTRIBUTES
        maxCpcsSduSize
            GET,
        midRange
            GET,
        aalMode
            GET,
        sscsType
            GET;
REGISTERED AS {atmfM4Package 25};

```

### B.2.7 aalTypeFivePerformanceParameterPkg

```

aalTypeFivePerformanceParameterPkg PACKAGE
    ATTRIBUTES
        sumOfInvalidCSFieldErrors
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE AtmMIBModV2.integerZero
            GET,
        crcViolations
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE AtmMIBModV2.integerZero
            GET,
        reassemblyTimerExpirations
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE AtmMIBModV2.integerZero
            GET;
REGISTERED AS {atmfM4Package 26};

```

### B.2.8 aalTypeFivePerformanceParameterHistoryDataPkg

```

aalTypeFivePerformanceParameterHistoryDataPkg PACKAGE
    ATTRIBUTES
        sumOfInvalidCSFieldErrors
            GET,
        crcViolations
            GET,
        reassemblyTimerExpirations
            GET;
REGISTERED AS {atmfM4Package 27};

```

**B.2.9 aalTypeFiveProfilePkg**

```
aalTypeFiveProfilePkg PACKAGE
  ATTRIBUTES
    maxCpcsSduSize
      GET,
    aal Mode
      GET,
    sscsType
      GET;
REGISTERED AS {atmfM4Package 28};
```

**B.2.10 atmSubscriberAddressPkg**

```
atmSubscriberAddressPkg PACKAGE
  ATTRIBUTES
    atmSubscriberAddress
      GET-REPLACE
      ADD-REMOVE;
REGISTERED AS {atmfM4Package 1};
```

**B.2.11 cellScramblingEnabledPkg**

```
cellScramblingEnabledPkg PACKAGE
  ATTRIBUTES
    cellScramblingEnabled
      DEFAULT VALUE AtmMIBModV2.booleanTrueDefault
      GET-REPLACE;
REGISTERED AS {atmfM4Package 2};
```

**B.2.12 discardedCLP0CellsHistoryDataPkg**

```
discardedCLP0CellsHistoryDataPkg PACKAGE
  ATTRIBUTES
    discardedCLP0Cells
      GET;
REGISTERED AS {atmfM4Package 3};
```

**B.2.13 discardedCLP0CellsPkg**

```
discardedCLP0CellsPkg PACKAGE
  ATTRIBUTES
    discardedCLP0Cells
      REPLACE-WITH-DEFAULT
      GET;
REGISTERED AS {atmfM4Package 4};
```

**B.2.14 egressTrafficDescriptorPkg**

```
egressTrafficDescriptorPkg PACKAGE
ATTRIBUTES
  egressPeakCellRate
    GET-REPLACE,
  "ITU-T Rec. I.751":egressCDVTolerance
    GET-REPLACE,
  egressSustainableCellRate
    GET-REPLACE,
  egressMaxBurstSize
    GET-REPLACE;
REGISTERED AS {atmfM4Package 5};
```

**B.2.15 ingressTrafficDescriptorPkg**

```
ingressTrafficDescriptorPkg PACKAGE
ATTRIBUTES
  ingressPeakCellRate
    GET-REPLACE,
  ingressCDVTolerance
    GET-REPLACE,
  ingressSustainableCellRate
    GET-REPLACE,
  ingressMaxBurstSize
    GET-REPLACE;
REGISTERED AS {atmfM4Package 8};
```

**B.2.16 loopbackLocationIdentifierPkg**

```
loopbackLocationIdentifierPkg PACKAGE
ATTRIBUTES
  loopbackLocationIdentifier
    GET-REPLACE;
REGISTERED AS {atmfM4Package 9};
```

**B.2.17 modifyTerminationPointListPkg**

```
modifyTerminationPointListPkg PACKAGE
ACTIONS
  addTerminationPoint,
  removeTerminationPoint;
REGISTERED AS {atmfM4Package 19};
```

**B.2.18 oamCellLoopbackPkg**

```
oamCellLoopbackPkg PACKAGE
ACTIONS
  loopbackOAMCell;
REGISTERED AS {atmfM4Package 10};
```

**B.2.19 preferredCarrierPkg**

```
preferredCarrierPkg PACKAGE
  ATTRIBUTES
    preferredCarrier
      GET-REPLACE
      ADD-REMOVE;
REGISTERED AS {atmfM4Package 11};
```

**B.2.20 qosClassesPkg**

```
qosClassesPkg PACKAGE
  ATTRIBUTES
    ingressQOSClass
      GET-REPLACE,
    egressQOSClass
      GET-REPLACE;
REGISTERED AS {atmfM4Package 12};
```

**B.2.21 successfullyPassedCLP0CellsHistoryDataPkg**

```
successfullyPassedCLP0CellsHistoryDataPkg PACKAGE
  ATTRIBUTES
    successfullyPassedCLP0Cells
      GET;
REGISTERED AS {atmfM4Package 13};
```

**B.2.22 successfullyPassedCLP0CellsPkg**

```
successfullyPassedCLP0CellsPkg PACKAGE
  ATTRIBUTES
    successfullyPassedCLP0Cells
      REPLACE-WITH-DEFAULT
      GET;
REGISTERED AS {atmfM4Package 14};
```

**B.2.23 taggedCLP0CellsHistoryDataPkg**

```
taggedCLP0CellsHistoryDataPkg PACKAGE
  ATTRIBUTES
    taggedCLP0Cells
      GET;
REGISTERED AS {atmfM4Package 15};
```

**B.2.24 taggedCLP0CellsPkg**

```
taggedCLP0CellsPkg PACKAGE
  ATTRIBUTES
    taggedCLP0Cells
      REPLACE-WITH-DEFAULT
```



GET;  
REGISTERED AS {atmfM4Package 16};

### B.2.25 vcLevelProfilePackage

vcLevelProfilePackage PACKAGE  
ATTRIBUTES  
maxNumVCIBitsSupported  
GET-REPLACE,  
maxNumActiveVCCsAllowed  
GET-REPLACE;  
REGISTERED AS {atmfM4Package 17};

### B.2.26 vpLevelProfilePackage

vpLevelProfilePackage PACKAGE  
ATTRIBUTES  
maxNumVPIBitsSupported  
GET-REPLACE,  
maxNumActiveVPCsAllowed  
GET-REPLACE,  
maxEgressBandwidth  
GET-REPLACE,  
maxIngressBandwidth  
GET-REPLACE;  
REGISTERED AS {atmfM4Package 18};

## B.3 Deprecated Attributes

### B.3.1 aalMode

aalMode ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.AalMode;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR aalModeBeh;  
REGISTERED AS {atmfM4Attribute 61};

aalModeBeh BEHAVIOUR  
DEFINED AS

" This attribute indicates whether the AAL for the supporting VCC is operating in message mode or streaming mode, assured or unassured. ";

### B.3.2 aalProfileId

aalProfileId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR aalAccessPointIdBeh;  
REGISTERED AS {atmfM4Attribute 62};

aalProfileIdBeh BEHAVIOUR  
DEFINED AS

"This attribute can be used as an RDN when naming an instance of the aalProfile managed object class. ";

### B.3.3 aalProfilePointer

aalProfilePointer ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
MATCHES FOR EQUALITY;  
BEHAVIOUR aalProfilePointerBeh;  
REGISTERED AS {atmfM4Attribute 59};  
aalProfilePointerBeh BEHAVIOUR  
DEFINED AS

"This attribute provides a pointer to an aalProfile managed object instance that defines the common ATM Adaptation Layer processing needed. ";

### B.3.4 aalType

aalType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.AalType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR aalTypeBeh;  
REGISTERED AS {atmfM4Attribute 63};

aalTypeBeh BEHAVIOUR  
DEFINED AS

"This attribute identifies the AAL Type. Valid types are AAL1, AAL3/4, and AAL5. ";

### B.3.5 atmAccessProfileId

atmAccessProfileId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR atmAccessProfileIdBeh;  
REGISTERED AS {atmfM4Attribute 1};

atmAccessProfileIdBeh BEHAVIOUR  
DEFINED AS

" This attribute is used to name instances of the atmAccessProfile managed object class.";

### B.3.6 atmFabricId

atmFabricId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR atmFabricIdBeh;  
REGISTERED AS {atmfM4Attribute 2};

atmFabricIdBeh BEHAVIOUR  
DEFINED AS

" This attribute is used to name instances of the atmFabric managed object class.";

**B.3.7 atmSubscriberAddress**

atmSubscriberAddress ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.AtmSubscriberAddress;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR atmSubscriberAddressBeh;  
REGISTERED AS {atmfM4Attribute 3};

atmSubscriberAddressBeh BEHAVIOUR

DEFINED AS

" This attribute identifies the ATM Subscriber address(es) associated with a particular UNI. The first address listed in this attribute is considered to be the primary address. ";

**B.3.8 bETagMismatch**

bETagMismatch ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR bETagMismatchBeh;  
REGISTERED AS {atmfM4Attribute 64};

bETagMismatchBeh BEHAVIOUR

DEFINED AS

" This attribute represents the number of times an incoming CS\_PDU had a BTag field value that did not equal the ETag field value. ";

**B.3.9 bomsEomsUnexpectedMID**

bomsEomsUnexpectedMID ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR bomsEomsUnexpectedMIDBeh;  
REGISTERED AS {atmfM4Attribute 65};

bomsEomsUnexpectedMIDBeh BEHAVIOUR

DEFINED AS

" This attribute represents the number of BOM/EOM segments with an unexpected MID value. This attribute will be incremented by one each time a BOM is received with a currently active MID (a MID for which an EOM has not yet been received), or when an EOM is received for which a MID is NOT currently active. ";

**B.3.10 bufferOverflows**

bufferOverflows ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR bufferOverflowsBeh;  
REGISTERED AS {atmfM4Attribute 66};

bufferOverflowsBeh BEHAVIOUR

DEFINED AS

" 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 cell level buffer and a bit level buffer, then either buffer overflow will cause this count to be incremented. ";

**B.3.11 bufferUnderflows**

bufferUnderflows ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR bufferUnderflowsBeh;  
REGISTERED AS {atmfM4Attribute 67};

bufferUnderflowsBeh BEHAVIOUR  
DEFINED AS

" This attribute represents a count the number of times the reassembly buffer underflows. In the case of a continuous underflow caused by a loss of ATM cell flow, a single buffer underflow should be counted. If the interworking function is implemented with multiple buffers, such as a cell level buffer and a bit level buffer, then either buffer underflow will cause this count to be incremented.";

**B.3.12 cbrRate**

cbrRate ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR cbrRateBeh;  
REGISTERED AS {atmfM4Attribute 68};

cbrRateBeh BEHAVIOUR  
DEFINED AS

" This attribute represents the rate of the CBR service supported by the AAL.";

**B.3.13 cellLoss**

cellLoss ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR cellLossBeh;  
REGISTERED AS {atmfM4Attribute 69};

cellLossBeh BEHAVIOUR  
DEFINED AS

"This attribute represents a count the number of lost cells, as detected by the AAL1 sequence number processing, for example. This count records the number of cells detected as lost in the network prior to the destination interworking function AAL1 layer processing. A negative value indicates that this attribute is not supported. "

**B.3.14 cellLossIntegrationPeriod**

cellLossIntegrationPeriod ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR cellLossIntegrationPeriodBeh;  
REGISTERED AS {atmfM4Attribute 70};

cellLossIntegrationPeriodBeh BEHAVIOUR  
DEFINED AS

"This attribute identifies the time in milliseconds for the cell loss integration period. If cells are lost for this period of time, the containing interworkingVCTTPBidirectional object will generate a communications alarm. "

### B.3.15 cellMisinsertion

cellMisinsertion ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR cellMisinsertionBeh;  
REGISTERED AS {atmfM4Attribute 71};

cellMisinsertionBeh BEHAVIOUR  
DEFINED AS

"This attribute represents a count of sequence violation events which the AAL CS interprets as misinserted of cells as defined by ITU-T Rec. I.363.1.A negative value indicates that this attribute is not supported. "

### B.3.16 cellScramblingEnabled

cellScramblingEnabled ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
MATCHES FOR EQUALITY;  
BEHAVIOUR cellScramblingEnabledBeh;  
REGISTERED AS {atmfM4Attribute 5};

cellScramblingEnabledBeh BEHAVIOUR  
DEFINED AS

" This attribute identifies whether or not ATM cell scrambling is being performed over the ATM interface. A value of TRUE (default) is used to indicate that cell scrambling is being performed. ";

### B.3.17 cesServiceProfileId

cesServiceProfileId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR cesServiceProfileIdBeh;  
REGISTERED AS {atmfM4Attribute 55};

cesServiceProfileIdBeh BEHAVIOUR  
DEFINED AS

"This attribute is used for naming instances of cesServiceProfile managed object class. ";

### B.3.18 cesBufferedCDVtolerance

cesBufferedCDVtolerance ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY;  
BEHAVIOUR cesBufferedCDVtoleranceBeh;  
REGISTERED AS {atmfM4Attribute 56};

cesBufferedCDVtoleranceBeh BEHAVIOUR

DEFINED AS

"This attribute identifies the duration of user data that must be buffered by the InterworkingVCTTPBidirectional managed object to offset Cell Delay variation. The timing is in increment of 10 micro seconds. The recommended default value for DS1 CES is 750 micro seconds and 1000 micro seconds for DS3 CES. The use of this attribute is for further study. ";

### B.3.19 clockRecoveryType

clockRecoveryType ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.ClockRecoveryType;

MATCHES FOR EQUALITY;

BEHAVIOUR clockRecoveryTypeBeh;

REGISTERED AS {atmfM4Attribute 72};

clockRecoveryTypeBeh BEHAVIOUR

DEFINED AS

" This attribute indicates whether the clock recovery type is Synchronous, SRTS (Synchronous Residual Time Stamp), or Adaptive Clock Recovery.";

### B.3.20 channelAssociatedSignalling

channelAssociatedSignalling ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.ChannelAssociatedSignalling;

MATCHES FOR EQUALITY;

BEHAVIOUR channelAssociatedSignallingBeh;

REGISTERED AS {atmfM4Attribute 57};

channelAssociatedSignallingBeh BEHAVIOUR

DEFINED AS

"This attribute identifies which AAL1 format should be used. This attribute applies only to structured format. The default value Basic does not carry channel associated signalling (CAS) bits and uses a single 125 usec frame. e1Cas, ds1sfCas, and ds1EsfCas carry CAS bits in a multiframe structure for E1, DS1 SF, and DS1 ESF respectively. ";

### B.3.21 comsEomsUnexpectedSN

comsEomsUnexpectedSN ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;

BEHAVIOUR comsEomsUnexpectedSNBeh;

REGISTERED AS {atmfM4Attribute 73};

comsEomsUnexpectedSNBeh BEHAVIOUR

DEFINED AS

"This attribute represents the number of COM and EOM segments received with an unexpected Sequence Number (SN). For a particular message (i.e., MID) transported over a VPC or VCC, this attribute is incremented by one each time a COM or EOM is received with a SAR Sequence Number (SN) that is not correct relative to the SN in the previous (non-EOM) segment. ";

**B.3.22 crcViolations**

crcViolations ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;

BEHAVIOUR crcViolationsBeh;

REGISTERED AS {atmfM4Attribute 74};

crcViolationsBeh BEHAVIOUR

DEFINED AS

"This attribute represents the number of CRC violations that were detected for the incoming AAL PDUs.";

**B.3.23 discardedCells**

discardedCells ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;

BEHAVIOUR discardedCellsBeh;

REGISTERED AS {atmfM4Attribute 7};

discardedCellsBeh BEHAVIOUR

DEFINED AS

" This attribute provides a count of the number of ATM cells that were discarded due to UPC/NPC policing of the combined high and low cell loss priority traffic.";

**B.3.24 discardedCellsHECViolation**

discardedCellsHECViolation ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;

BEHAVIOUR discardedCellsHECViolationBeh;

REGISTERED AS {atmfM4Attribute 8};

discardedCellsHECViolationBeh BEHAVIOUR

DEFINED AS

" This attribute provides a count of the number of cells discarded due to uncorrectable header bit errors. ";

**B.3.25 discardedCLP0Cells**

discardedCLP0Cells ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;

BEHAVIOUR discardedCLP0CellsBeh;

REGISTERED AS {atmfM4Attribute 9};

discardedCLP0CellsBeh BEHAVIOUR

DEFINED AS

" This attribute provides a count of the number of cells with CLP=0 that were discarded due to UPC/NPC policing of high priority (CLP=0) only traffic. ";

**B.3.26 discardedCellsInvalidHeader**

discardedCellsInvalidHeader ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
BEHAVIOUR discardedCellsInvalidHeaderBeh;  
REGISTERED AS {atmfM4Attribute 10};

discardedCellsInvalidHeaderBeh BEHAVIOUR  
DEFINED AS  
" This attribute identifies the number of ATM cells discarded due to header content errors. ";

**B.3.27 egressCDVTolerance**

egressCDVTolerance ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.CDVTolerance;  
MATCHES FOR EQUALITY;  
BEHAVIOUR egressCDVToleranceBeh;  
REGISTERED AS {atmfM4Attribute 12};

egressCDVToleranceBeh BEHAVIOUR  
DEFINED AS  
" This attribute represents the egress (with respect to the managed system) CDV Tolerance assigned to the VPL or VCL being terminated. ";

**B.3.28 egressMaxBurstSize**

egressMaxBurstSize ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.MaxBurstSize;  
MATCHES FOR EQUALITY;  
BEHAVIOUR egressMaxBurstSizeBeh;  
REGISTERED AS {atmfM4Attribute 13};

egressMaxBurstSizeBeh BEHAVIOUR  
DEFINED AS  
" This attribute represents the egress maximum burst size (in cells) that has been assigned to the VP or VC link being terminated. ";

**B.3.29 egressPeakCellRate**

egressPeakCellRate ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.PeakCellRate;  
MATCHES FOR EQUALITY;  
BEHAVIOUR egressPeakCellRateBeh;  
REGISTERED AS {atmfM4Attribute 14};

egressPeakCellRateBeh BEHAVIOUR  
DEFINED AS  
" This attribute is used to indicate the peak cell rate assigned or reserved in the egress (with respect to the managed system) direction of transmission across the VP or VC link being terminated. ";



**B.3.30 egressQOSClass**

egressQOSClass ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.QosClass;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR egressQOSClassBeh;  
 REGISTERED AS {atmfM4Attribute 15};

egressQOSClassBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute identifies the Quality Of Service (QOS) class assigned to the VPL or VCL in the egress (with respect to the managed system) direction of cell transmission. Valid values for this attribute are: Class 0, Class 1, Class 2, Class 3, and Class 4. ";

**B.3.31 egressSustainableCellRate**

egressSustainableCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.SustainableCellRate;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR egressSustainableCellRateBeh;  
 REGISTERED AS {atmfM4Attribute 16};

egressSustainableCellRateBeh BEHAVIOUR  
 DEFINED AS  
 " This traffic descriptor represents the egress (with respect to the managed system) sustainable cell rate (in cells/second) assigned to the link being terminated ";

**B.3.32 erroredCellsHECViolation**

erroredCellsHECViolation ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
 BEHAVIOUR erroredCellsHECViolationBeh;  
 REGISTERED AS {atmfM4Attribute 17};

erroredCellsHECViolationBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute provides a count of the number of cells detected with an HEC error. ";

**B.3.33 forwardErrorCorrectionMethod**

forwardErrorCorrectionMethod ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.FecMethod;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR errorCorrectionTypeBeh;  
 REGISTERED AS {atmfM4Attribute 75};

forwardErrorCorrectionMethodBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute indicates the FEC method: no FEC, FEC for Loss Sensitive Signal Transport, or FEC for Delay Sensitive Signal Transport. ";

**B.3.34 headerErrors**

headerErrors ATTRIBUTE

DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR crcViolationsBeh;  
REGISTERED AS {atmfM4Attribute 76};

headerErrorsBeh BEHAVIOUR

DEFINED AS

" This attribute represents a count of the number of AAL1 header errors detected, including those corrected. Header errors include correctable and uncorrectable CRC plus bad parity. "

**B.3.35 ingressCDVTolerance**

ingressCDVTolerance ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.CDVTolerance;  
MATCHES FOR EQUALITY;  
BEHAVIOUR ingressCDVToleranceBeh;  
REGISTERED AS {atmfM4Attribute 20};

ingressCDVToleranceBeh BEHAVIOUR

DEFINED AS

" This attribute represents the ingress (with respect to the managed system) CDV Tolerance assigned to the VPL or VCL being terminated.";

**B.3.36 ingressMaxBurstSize**

ingressMaxBurstSize ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.MaxBurstSize;  
MATCHES FOR EQUALITY;  
BEHAVIOUR ingressMaxBurstSizeBeh;  
REGISTERED AS {atmfM4Attribute 21};

ingressMaxBurstSizeBeh BEHAVIOUR

DEFINED AS

" This attribute represents the ingress (with respect to the managed system) maximum burst size (in cells) that has been assigned to the VP or VC link being terminated. ";

**B.3.37 ingressPeakCellRate**

ingressPeakCellRate ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.PeakCellRate;  
MATCHES FOR EQUALITY;  
BEHAVIOUR ingressPeakCellRateBeh;  
REGISTERED AS {atmfM4Attribute 22};

ingressPeakCellRateBeh BEHAVIOUR

DEFINED AS

" This attribute is used to indicate the peak cell rate assigned or reserved in the ingress (with respect to the managed system) direction of transmission across the VP or VC link being terminated. ";

**B.3.38 ingressQOSClass**

ingressQOSClass ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.QosClass;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR ingressQOSClassBeh;  
 REGISTERED AS {atmfM4Attribute 23};

ingressQOSClassBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute identifies the Quality Of Service (QOS) class assigned to the VPL or VCL in the ingress (with respect to the managed system) direction of cell transmission. Valid values for this attribute are: Class 0, Class 1, Class 2, Class 3, and Class 4. ";

**B.3.39 ingressSustainableCellRate**

ingressSustainableCellRate ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.SustainableCellRate;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR ingressSustainableCellRateBeh;  
 REGISTERED AS {atmfM4Attribute 24};

ingressSustainableCellRateBeh BEHAVIOUR  
 DEFINED AS  
 " This traffic descriptor represents the ingress (with respect to the managed system) sustainable cell rate (in cells/second) assigned to the link being terminated. ";

**B.3.40 interNNIId**

interNNIId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR interNNIIdBeh;  
 REGISTERED AS {atmfM4Attribute 26};

interNNIIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used to name instances of the interNNI managed object class. ";

**B.3.41 intraNNIId**

intraNNIId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR intraNNIIdBeh;  
 REGISTERED AS {atmfM4Attribute 27};

intraNNIIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used to name instances of the intraNNI managed object class. ";

**B.3.42 lengthBASizeMismatch**

lengthBASizeMismatch ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721":counter;  
 BEHAVIOUR lengthBASizeMismatchBeh;  
 REGISTERED AS {atmfM4Attribute 77};

lengthBASizeMismatchBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute represents the number of CS\_PDUs in which the Length field value was not consistent with the BASize field value. The definition of consistent depends on the mode in which CS\_PDU fragments are being processed. In the message-mode, the BASize field must equal the Length field. In the streaming mode, the BASize field must be less than the Length field. ";

**B.3.43 lengthMismatch**

lengthMismatch ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721":counter;  
 BEHAVIOUR lengthMismatchBeh;  
 REGISTERED AS {atmfM4Attribute 78};

lengthMismatchBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute represents the number of CS\_PDUs received with a Length field value that does not represent the actual length of the CS\_PDU payload. ";

**B.3.44 loopbackLocationIdentifier**

loopbackLocationIdentifier ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.OctetString;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR loopbackLocationIdentifierBeh;  
 REGISTERED AS {atmfM4Attribute 29};

loopbackLocationIdentifierBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute provides a read/write code used for OAM cell loopback purposes. Incoming OAM Loopback cells with a Loopback Location field value that matches the value of the loopbackLocationIdentifier attribute shall be looped-back over the ATM interface. ";

**B.3.45 maxCpcsSduSize**

maxCpcsSduSize ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.MaxCpcsSduSize;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR maxCpcsSduSizeBeh;  
 REGISTERED AS {atmfM4Attribute 79};

maxCpcsSduSizeBeh BEHAVIOUR  
 DEFINED AS  
 " This multi-valued attribute represents the maximum CPCS\_PDU size that will be transmitted over the connection in both the incoming (forward) and outgoing (backward) direction of transmission. ";

**B.3.46 maxEgressBandwidth**

maxEgressBandwidth ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR maxEgressBandwidthBeh;  
REGISTERED AS {atmfM4Attribute 30};

maxEgressBandwidthBeh BEHAVIOUR  
DEFINED AS  
"This attribute identifies the maximum egress bandwidth for the ATM Interface that is managed exclusively by the NE. *Further behaviour for this attribute is the subject of further study.*";

**B.3.47 maxIngressBandwidth**

maxIngressBandwidth ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR maxIngressBandwidthBeh;  
REGISTERED AS {atmfM4Attribute 31};

maxIngressBandwidthBeh BEHAVIOUR  
DEFINED AS  
"This attribute identifies the maximum ingress bandwidth for the ATM Interface that is managed exclusively by the NE. *Further behaviour for this attribute is the subject of further study.*";

**B.3.48 maxNumActiveVCCsAllowed**

maxNumActiveVCCsAllowed ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR maxNumActiveVCCsAllowedBeh;  
REGISTERED AS {atmfM4Attribute 32};

maxNumActiveVCCsAllowedBeh BEHAVIOUR  
DEFINED AS  
" This attribute identifies the maximum number of concurrently active Virtual Channel Connections (VCCs) that the interface has been configured to support. ";

**B.3.49 maxNumActiveVPCsAllowed**

maxNumActiveVPCsAllowed ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR maxNumActiveVPCsAllowedBeh;  
REGISTERED AS {atmfM4Attribute 33};

maxNumActiveVPCsAllowedBeh BEHAVIOUR  
DEFINED AS

" This attribute identifies the maximum number of concurrently active Virtual Path Connections (VPCs) that the interface has been configured to support. ";

### B.3.50 maxNumVCIBitsSupported

maxNumVCIBitsSupported ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR maxNumVCIBitsSupportedBeh;  
 REGISTERED AS {atmfM4Attribute 34};

maxNumVCIBitsSupportedBeh BEHAVIOUR  
 DEFINED AS

" This attribute identifies the maximum number of contiguous VCI bits, starting from the least significant bit, that may be used over the UNI, Inter-NNI, or Intra-NNI. The value of this parameter represents the lower supported value of the equipment on each end of the UNI, Inter-NNI, or Intra-NNI. Note that a value of N for this attribute implies that VCI values in the range of 0 to  $(2^N)-1$  are possible.";

### B.3.51 maxNumVPIBitsSupported

maxNumVPIBitsSupported ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR maxNumVPIBitsSupportedBeh;  
 REGISTERED AS {atmfM4Attribute 35};

maxNumVPIBitsSupportedBeh BEHAVIOUR  
 DEFINED AS

" This attribute identifies the maximum number of contiguous VPI bits, starting from the least significant bit, that may be used over the UNI, Inter-NNI, or Intra-NNI. The value of this parameter represents the lower supported value of the equipment on each end of the UNI, Inter-NNI, or Intra-NNI. Note that a value of N for this attribute implies that VPI values in the range of 0 to  $(2^N)-1$  are possible.";

### B.3.52 midRange

midRange ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.MidRange;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR midRangeBeh;  
 REGISTERED AS {atmfM4Attribute 80};

midRangeBeh BEHAVIOUR  
 DEFINED AS

" This attribute represents the range of MID values supported at the AAL for the supporting VCC.";

### B.3.53 numberOfAborts

numberOfAborts ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721":counter;  
 BEHAVIOUR numberOfAbortsBeh;  
 REGISTERED AS {atmfM4Attribute 81};

numberOfAbortsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a count of the number aborts (i.e., EOM with SAR\_PDU Length Indication = 63) that are received for the underlying VPC or VCC. ";

#### **B.3.54 numReceivedOAMCells**

numReceivedOAMCells ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
BEHAVIOUR numReceivedOAMCellsBeh;  
REGISTERED AS {atmfM4Attribute 38};

numReceivedOAMCellsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a count of the number of OAM cells received by the ATM Layer for the supporting UNI, Inter-NNI, or Intra-NNI. ";

#### **B.3.55 partiallyFilledCells**

partiallyFilledCells ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Integer;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR partiallyFilledCellsBeh;  
REGISTERED AS {atmfM4Attribute 82};

partiallyFilledCellsBeh BEHAVIOUR  
DEFINED AS

" This attribute identifies the number of leading octets in use. ";

#### **B.3.56 preferredCarrier**

preferredCarrier ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.PreferredCarrier;  
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;  
BEHAVIOUR preferredCarrierBeh;  
REGISTERED AS {atmfM4Attribute 39};

preferredCarrierBeh BEHAVIOUR  
DEFINED AS

" This attribute identifies the default carrier to use when one is not explicitly identified in the call setup message received and processed by the managed system. ";

#### **B.3.57 reassemblyTimerExpirations**

reassemblyTimerExpiratons ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR reassemblyTimerExpirationsBeh;  
REGISTERED AS {atmfM4Attribute 83};

reassembleTimerExpirationsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a count of reassembly timer expirations. A negative value indicates that this attribute is not supported.. ";

### B.3.58 sarCrcViolations

sarCrcViolations ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sarCrcViolationsBeh;  
REGISTERED AS {atmfM4Attribute 84};

sarCrcViolationsBeh BEHAVIOUR  
DEFINED AS

"This attribute represents the number of CRC violations that were detected for the incoming SAR PDUs. ";

### B.3.59 segmentEndPoint

segmentEndPoint ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Boolean;  
MATCHES FOR EQUALITY;  
BEHAVIOUR segmentEndPointBeh;  
REGISTERED AS {atmfM4Attribute 42};

segmentEndPointBeh BEHAVIOUR  
DEFINED AS

" This boolean attribute indicates whether the vpCTPBidirectional object instance or vcCTPBidirectional object instance has been configured to represent an end-point of a VPC or VCC Segment, respectively. ";

### B.3.60 sequenceViolations

sequenceViolations ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sequenceViolationsBeh;  
REGISTERED AS {atmfM4Attribute 853};

sequenceViolationsBeh BEHAVIOUR  
DEFINED AS

" This attribute represents a count incoming AAL Type 1 SAR-PDUs where the sequence count in the PDU header causes a transition from the SYNC state to the OUT OF SEQUENCE state as defined by ITU-T Rec. I.363.1. A negative value indicates that this attribute is not supported. ";

### B.3.61 serviceProfilePointer

serviceProfilePointer ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
MATCHES FOR EQUALITY;  
BEHAVIOUR serviceProfilePointerBeh;  
REGISTERED AS {atmfM4Attribute 58};

serviceProfilePointerBeh BEHAVIOUR  
DEFINED AS

"This attribute provides a pointer to a managed object instance that provides information used to control service interworking (e.g., a cesServiceProfile object). ";



**B.3.62 sriTimeOuts**

sriTimeOuts ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sriTimeOutsBeh;  
REGISTERED AS {atmfM4Attribute 86};

sriTimeOutsBeh BEHAVIOUR  
DEFINED AS  
" This attribute represents a count of the number of SRI time-outs that occurred on an ATM connection. ";

**B.3.63 sscsType**

sscsType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.SscsType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR sscsTypeBeh;  
REGISTERED AS {atmfM4Attribute 87};

sscsTypeBeh BEHAVIOUR  
DEFINED AS  
" This attribute identifies the SSCS type for the AAL. Valid values are NULL, Data SSCS based on SSCOP (assured operation), Data SSCS based on SSCOP (non-assured operation), or Frame Relay SSCS. ";

**B.3.64 stdPointerParityFailures**

stdPointerParityFailures ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR stdPointerParityFailuresBeh;  
REGISTERED AS {atmfM4Attribute 88};

stdPointerParityFailuresBeh BEHAVIOUR  
DEFINED AS  
" This attribute represents a count of the number of times the AAL reassembler detects a parity check failure at the point where a structured data pointer is expected. This count is only meaningful for structured data transfer modes as unstructured modes do not use pointers. A negative value indicates that this attribute is not supported. ";

**B.3.65 stdPointerReframes**

stdPointerReframes ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR stdPointerReframesBeh;  
REGISTERED AS {atmfM4Attribute 89};

stdPointerReframesBeh BEHAVIOUR  
DEFINED AS  
" This attribute represents a count of the number of events in which the AAL1 reassembler found that a structured data pointer is not where it is expected, and the pointer must be reacquired. This count is only meaningful for structured data transfer modes as unstructured modes do not use pointers. A negative value indicates that this attribute is not supported, however it must be supported when pointers are used. ";

**B.3.66 structuredDataTransfer**

structuredDataTransfer ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.Booleam;  
MATCHES FOR EQUALITY;  
BEHAVIOUR structuredDataTransferBeh;  
REGISTERED AS {atmfM4Attribute 90};

structuredDataTransferBeh BEHAVIOUR  
DEFINED AS

"This attribute indicates whether Structured Data Transfer (SDT) has been configured at the AAL. A value of TRUE means SDT has been selected. This attribute value cannot be set to TRUE when the errorCorrectionType attribute equals TRUE. ";

**B.3.67 subType**

subType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX AtmMIBModV2.SubType;  
MATCHES FOR EQUALITY;  
BEHAVIOUR subTypeBeh;  
REGISTERED AS {atmfM4Attribute 91};

subTypeBeh BEHAVIOUR  
DEFINED AS

"This attribute is used to identify the AAL subtype. Valid values for this attribute are NULL, Voice-band based on 64 kbps, Circuit Emulation (synchronous), Circuit Emulation (asynchronous), High-quality Audio, and Video.";

**B.3.68 successfullyPassedCells**

successfullyPassedCells ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
BEHAVIOUR successfullyPassedCellsBeh;  
REGISTERED AS {atmfM4Attribute 43};

successfullyPassedCellsBeh BEHAVIOUR  
DEFINED AS

" This attribute represents the number of ATM cells that where received and successfully passed (i.e., not discarded) by the UPC/NPC function after performing policing functions on the combined high and low cell loss priority traffic. ";

**B.3.69 successfullyPassedCLP0Cells**

successfullyPassedCLP0Cells ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
BEHAVIOUR successfullyPassedCLP0CellsBeh;  
REGISTERED AS {atmfM4Attribute 44};

successfullyPassedCLP0CellsBeh BEHAVIOUR  
DEFINED AS

" This attribute represents the number of ATM cells that were received and successfully passed (i.e., not discarded) by the UPC/NPC function after performing policing functions on the high priority (CLP=0) traffic. ";

### **B.3.70 sumOfIncorrectCSFieldErrors**

sumOfIncorrectCSFieldErrors ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sumOfIncorrectCSFieldErrorsBeh;  
REGISTERED AS {atmfM4Attribute 92};

sumOfIncorrectCSFieldErrorsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a sum-of-errors count for incorrect Convergence Sublayer (CS) field errors. For AAL Type 3/4, this attribute provides a single count of CS\_PDU's discarded due to one of the following error conditions: BETag mismatch, BAsize field value not consistent with Length field value, or Length field value not consistent with CS\_PDU length. ";

### **B.3.71 sumOfIncorrectSARFieldErrors**

sumOfIncorrectSARFieldErrors ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sumOfIncorrectSARFieldErrorsBeh;  
REGISTERED AS {atmfM4Attribute 93};

sumOfIncorrectSARFieldErrorsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a sum-of-errors count for incorrect Segmentation And Reassembly (SAR) field errors. For AAL Type 3/4, this attribute provides a single count of SAR\_PDU's discarded due to one of the following errors: CRC violation, unexpected Sequence Number (SN) field value, or unexpected MID field value ";

### **B.3.72 sumOfInvalidCSFieldErrors**

sumOfInvalidCSFieldErrors ATTRIBUTE  
DERIVED FROM "ITU-T Rec. X.721":counter;  
BEHAVIOUR sumOfInvalidCSFieldErrorsBeh;  
REGISTERED AS {atmfM4Attribute 94};

sumOfInvalidCSFieldErrorsBeh BEHAVIOUR  
DEFINED AS

" This attribute provides a sum-of-errors count for invalid Convergence Sublayer (CS) field errors. For AAL Type 3/4, this attribute provides a single count of the number of CS\_PDU's discarded due to one of the following error conditions: Common Part Indicator (CPI) field not equal to 0, Alignment field value not equal to 0, or BAsize field value < 37 octets for multi-segment messages. For AAL Type 5, this attribute provides a single count of the number of CS\_PDU's discarded due to one of the following error conditions: Invalid Common Part Indicator (CPI), oversized received SDU, or length violation. ";

**B.3.73 sumOfInvalidSARFieldErrors**

sumOfInvalidSARFieldErrors ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721":counter;  
 BEHAVIOUR sumOfInvalidSARFieldErrorsBeh;  
 REGISTERED AS {atmfM4Attribute 95};

sumOfInvalidSARFieldErrorsBeh BEHAVIOUR  
 DEFINED AS

" This attribute provides a sum-of-errors count for invalid Segmentation And Reassembly (SAR) field errors. For AAL Type 3/4, this attribute provides a single count of the number of SAR\_PDUs discarded due to one of the following error conditions: MID=0 when there is multiplexing, MID not equal to 0 when there is no multiplexing, Length field not equal to 44 octets for a BOM or COM, Length field not in the set [4, 8, ..., 44] octets or 63 octets for an EOM, or Length field not in the set [8, 12, ..., 44] octets for an SSM";

**B.3.74 taggedCLP0Cells**

taggedCLP0Cells ATTRIBUTE  
 DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":counter;  
 BEHAVIOUR taggedCLP0CellsBeh;  
 REGISTERED AS {atmfM4Attribute 45};

taggedCLP0CellsBeh BEHAVIOUR  
 DEFINED AS

" This attribute provides a count of the number of cells with CLP=0 that were tagged (i.e., CLP reset to 1) by the UPC or NPC function. ";

**B.3.75 tcTTPId**

tcTTPId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR tcTTPIdBeh;  
 REGISTERED AS {atmfM4Attribute 46};

tcTTPIdBeh BEHAVIOUR  
 DEFINED AS

" This attribute is used for naming instances of the tcAdaptorTTPBidirectional managed object class. ";

**B.3.76 terminationPointList**

terminationPointList ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectList;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR terminationPointListBeh;  
 REGISTERED AS {atmfM4Attribute 60};

terminationPointListBeh BEHAVIOUR  
 DEFINED AS

"This attribute provides an ordered list of the termination points (e.g. nDS0/DS1/DS3/E3/J2/Frame Relay) that are interworked. The traffic characteristics of the interworked ATM VC termination point must be able to accommodate the combination of traffic characteristics of all the termination points in this list. ";

**B.3.77 underlyingTTPPointer**

underlyingTTPPointer ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.PointerOrNull;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR underlyingTTPPointerBeh;  
 REGISTERED AS {atmfM4Attribute 47};

underlyingTTPPointerBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute provides a pointer relationship to the tcAdaptorTTPBidirectional object that provides the underlying ATM transport for the interface. ";

**B.3.78 uniId**

uniId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR uniIdBeh;  
 REGISTERED AS {atmfM4Attribute 48};

uniIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used for naming instances of the uni managed object class. ";

**B.3.79 vcCTPId**

vcCTPId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.SimpleNameType;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR vcCTPIdBeh;  
 REGISTERED AS {atmfM4Attribute 49};

vcCTPIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used for naming instances of the vcCTPBidirectional managed object class. The value of this attribute shall be set equal to the VCI value of the Virtual Channel Link (VCL) being terminated. ";

**B.3.80 vcTTPId**

vcTTPId ATTRIBUTE  
 WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR vcTTPIdBeh;  
 REGISTERED AS {atmfM4Attribute 51};

vcTTPIdBeh BEHAVIOUR  
 DEFINED AS  
 " This attribute is used for naming instances of the vcTTPBidirectional managed object class. ";

**B.3.81 vpCTPId**

vpCTPId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.SimpleNameType;  
 MATCHES FOR EQUALITY, ORDERING;  
 BEHAVIOUR vpCTPIdBeh;  
 REGISTERED AS {atmfM4Attribute 52};

vpCTPIdBeh BEHAVIOUR

DEFINED AS

" This attribute is used for naming instances of the vpCTPBidirectional managed object class. This attribute shall be set equal to the VPI value of the Virtual Path Link (VPL) being terminated. ";

**B.3.82 vpTTPId**

vpTTPId ATTRIBUTE

WITH ATTRIBUTE SYNTAX AtmMIBModV2.NameType;  
 MATCHES FOR EQUALITY;  
 BEHAVIOUR vpTTPIdBeh;  
 REGISTERED AS {atmfM4Attribute 54};

vpTTPIdBeh BEHAVIOUR

DEFINED AS

" This attribute is used for naming instances of the vpTTPBidirectional managed object class. ";

**B.4 Deprecated Name Bindings****B.4.1 aalProfile-managedElementR1**

aalProfile-managedElementR1 NAME BINDING

SUBORDINATE OBJECT CLASS

alProfile AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

ITU-T Rec. M.3100":managedElementR1 AND SUBCLASSES;

WITH ATTRIBUTE aalProfileId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {atmfM4NameBinding 31};

**B.4.2 aalProtocolCurrentData-interworkingVCTTPBidirectional**

aalProtocolCurrentData-interworkingVCTTPBidirectional NAME BINDING

SUBORDINATE OBJECT CLASS

alProtocolCurrentData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

interworkingVCTTPBidirectional AND SUBCLASSES;

WITH ATTRIBUTE "ITU-T Rec. X.739":scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 32};

#### **B.4.3 atmAccessProfile-tcAdaptorTTPBidirectional**

atmAccessProfile-tcAdaptorTTPBidirectional NAME BINDING  
SUBORDINATE OBJECT CLASS atmAccessProfile AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS tcAdaptorTTPBidirectional AND  
SUBCLASSES;  
WITH ATTRIBUTE atmAccessProfileId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 1};

#### **B.4.4 atmCrossConnection-atmFabric**

atmCrossConnection-atmFabric NAME BINDING  
SUBORDINATE OBJECT CLASS atmCrossConnection AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS atmFabric AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T M.3100":crossConnectionId;  
DELETE  
ONLY-IF-NO-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 2};

#### **B.4.5 atmFabric-managedElementR1**

atmFabric-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS atmFabric AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE atmFabricId;  
REGISTERED AS {atmfM4NameBinding 3};

#### **B.4.6 cellHeaderAbnormalityLogRecord-latestOccurrenceLog**

cellHeaderAbnormalityLogRecord-latestOccurrenceLog NAME BINDING  
SUBORDINATE OBJECT CLASS cellHeaderAbnormalityLogRecord AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS latestOccurrenceLog AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T Rec. X.721 | ISO/IEC 10165-2 : 1992":logRecordId;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 4};

**B.4.7 cellLevelProtocolCurrentData-interNNI**

cellLevelProtocolCurrentData-interNNI NAME BINDING  
SUBORDINATE OBJECT CLASS cellLevelProtocolCurrentData AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS interNNI AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T X.739":scannerId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 5};

**B.4.8 cellLevelProtocolCurrentData-intraNNI**

cellLevelProtocolCurrentData-intraNNI NAME BINDING  
SUBORDINATE OBJECT CLASS cellLevelProtocolCurrentData AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS intraNNI AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T X.739":scannerId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 6};

**B.4.9 cellLevelProtocolCurrentData-uni**

cellLevelProtocolCurrentData-uni NAME BINDING  
SUBORDINATE OBJECT CLASS cellLevelProtocolCurrentData AND  
SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS uni AND SUBCLASSES;  
WITH ATTRIBUTE "ITU-T X.739":scannerId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 7};

**B.4.10 cesServiceProfile-managedElementR1**

cesServiceProfile-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS cesServiceProfile AND SUBCLASSES ;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1 AND SUBCLASSES ;  
WITH ATTRIBUTE cesServiceProfileId;  
CREATE  
WITH-AUTOMATIC-INSTANCE-NAMING;



DELETE  
ONLY-IF-NO-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 29};

#### **B.4.11 interNNI-managedElementR1**

interNNI-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS interNNI AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE interNNId;  
CREATE  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 12};

#### **B.4.12 intraNNI-managedElementR1**

intraNNI-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS intraNNI AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE intraNNId;  
CREATE  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 13};

#### **B.4.13 tcAdaptorCurrentData-tcAdaptorTTPBidirectional**

tcAdaptorCurrentData-tcAdaptorTTPBidirectional NAME BINDING  
SUBORDINATE OBJECT CLASS tcAdaptorCurrentData AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS tcAdaptorTTPBidirectional AND  
SUBCLASSES;  
WITH ATTRIBUTE "ITU-T X.739":scannerId;  
CREATE  
WITH-REFERENCE-OBJECT,  
WITH-AUTOMATIC-INSTANCE-NAMING;  
DELETE  
DELETES-CONTAINED-OBJECTS;  
REGISTERED AS {atmfM4NameBinding 19};

#### **B.4.14 tcAdaptorTTPBidirectional-managedElementR1**

tcAdaptorTTPBidirectional-managedElementR1 NAME BINDING  
SUBORDINATE OBJECT CLASS tcAdaptorTTPBidirectional AND SUBCLASSES;  
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100": managedElementR1  
AND SUBCLASSES;  
WITH ATTRIBUTE tcTTPId;

```
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding 20};
```

#### **B.4.15 uni-managedElementR1**

```
uni-managedElementR1 NAME BINDING
  SUBORDINATE OBJECT CLASS uni AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
  AND SUBCLASSES;
  WITH ATTRIBUTE uniId;
CREATE
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding 21};
```

#### **B.4.16 upcNpcCurrentData-vcCTPBidirectional**

```
upcNpcCurrentData-vcCTPBidirectional NAME BINDING
  SUBORDINATE OBJECT CLASS upcNpcCurrentData AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS vcCTPBidirectional AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T X.739":scannerId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding 22};
```

#### **B.4.17 upcNpcCurrentData-vpCTPBidirectional**

```
upcNpcCurrentData-vpCTPBidirectional NAME BINDING
  SUBORDINATE OBJECT CLASS upcNpcCurrentData AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS vpCTPBidirectional AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T X.739":scannerId;
CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {atmfM4NameBinding 23};
```

#### **B.4.18 vc4TTPBidirectional-managedElementR1**

```
vc4TTPBidirectional-managedElementR1 NAME BINDING
  SUBORDINATE OBJECT CLASS "ITU-T G.774":vc4TTPBidirectional AND
  SUBCLASSES;
```

NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1  
 AND SUBCLASSES;  
 WITH ATTRIBUTE "ITU-T G.774":vc4TTPId;  
 CREATE  
 WITH-REFERENCE-OBJECT,  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 24};

#### **B.4.19 vcCTPBidirectional-managedElementR1**

vcCTPBidirectional-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS vcCTPBidirectional AND SUBCLASSES ;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1 AND SUBCLASSES ;  
 WITH ATTRIBUTE "ITU-T M.3100":cTPId ;  
 BEHAVIOUR  
 vcCTPBidirectional-managedElementR1Behaviour BEHAVIOUR  
 DEFINED AS  
 "The value of vcCTPId attribute (VCI value) in the vcCTPBidirectional object is used internal to the ATM Network  
 Element and the value it is given is a local matter."  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 ONLY-IF-NO-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 30};

#### **B.4.20 vcCTPBidirectional-vpTTPBidirectional**

vcCTPBidirectional-vpTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS vcCTPBidirectional AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS vpTTPBidirectional AND SUBCLASSES;  
 WITH ATTRIBUTE vcCTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 25};

#### **B.4.21 vcTTPBidirectional-managedElementR1**

vcTTPBidirectional-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS vcTTPBidirectional AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1  
 AND SUBCLASSES;  
 WITH ATTRIBUTE vcTTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 ONLY-IF-NO-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 26};

**B.4.22 vpCTPBidirectional-tcAdaptorTTPBidirectional**

vpCTPBidirectional-tcAdaptorTTPBidirectional NAME BINDING  
 SUBORDINATE OBJECT CLASS vpCTPBidirectional AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS tcAdaptorTTPBidirectional AND  
 SUBCLASSES;  
 WITH ATTRIBUTE vpCTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 DELETES-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 27};

**B.4.23 vpTTPBidirectional-managedElementR1**

vpTTPBidirectional-managedElementR1 NAME BINDING  
 SUBORDINATE OBJECT CLASS vpTTPBidirectional AND SUBCLASSES;  
 NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1  
 AND SUBCLASSES;  
 WITH ATTRIBUTE vpTTPId;  
 CREATE  
 WITH-AUTOMATIC-INSTANCE-NAMING;  
 DELETE  
 ONLY-IF-NO-CONTAINED-OBJECTS;  
 REGISTERED AS {atmfM4NameBinding 28};

**B.5 Deprecated Actions****B.5.1 addTerminationPoint**

addTerminationPoint ACTION  
 BEHAVIOUR addTerminationPointBeh;  
 MODE CONFIRMED;  
 WITH INFORMATION SYNTAX AtmMIBModV2.AddTerminationPointInfo;  
 WITH REPLY SYNTAX AtmMIBModV2.AddTerminationPointReply;  
 REGISTERED AS {atmfM4Action 8};

addTerminationPointBeh BEHAVIOUR  
 DEFINED AS

"This action is used to add one or more termination point objects to the identified interworkingVCTTPBidirectional. The traffic characteristics of the interworked ATM VC termination point must be able to accommodate the additional termination point.

Supplied with this action is the following information:

New TPs - This parameter identifies the additional Termination Points to be added to the existing terminationPointList attribute of the identified interworkingVCTTPBidirectional object.

InterworkingVCTTPBidirectional - This parameter identifies the instance of the interworkingVCTTPBidirectional object class to which the additional termination point to be interworked.

If the request is granted, the terminationPointList attribute, in the interworkingVCTTPBidirectional object, shall be reset to reflect the new termination point added. ";

**B.5.2 addTpsToMultipointBridge**

addTpsToMultipointBridge ACTION

BEHAVIOUR

addTpsToMultipointBridgeBeh BEHAVIOUR

DEFINED AS

"This action is used to add one or more vpCTPBidirectional objects or vcCTPBidirectional objects to the identified multipoint connection.

Supplied with this action is the following information:

New CTPs - This parameter identifies the additional CTPs (i.e., the vpCTPBidirectional or vcCTPBidirectional object instances) to add to the existing multipoint connection.

MultipointBridge - This parameter identifies the instance of the multipointBridge object class to which the additional legs need to be connected.

If the request is granted, the commonCTPs attribute, in the multipointBridge object, shall be reset to reflect the new legs added to the multipoint connection. ";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.AddTpsToMultipointBridgeInfo;

WITH REPLY SYNTAX AtmMIBModV2.AddTpsToMultipointBridgeReply;

REGISTERED AS {atmfM4Action 1};

**B.5.3 connect**

connect ACTION

BEHAVIOUR connectBeh;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.ConnectInformation;

WITH REPLY SYNTAX AtmMIBModV2.ConnectReply;

REGISTERED AS {atmfM4Action 2};

connectBeh BEHAVIOUR

DEFINED AS

"This action is used to establish a point-to-point ATM connection two between termination points. The termination points to be connected can be identified explicitly by specifying the associated vcCTPBidirectional object or vpCTPBidirectional object, or by specifying the characteristics of each termination point. Multiple point-to-point connections may be requested with a single connect ACTION.

If a valid end point descriptor is provided and the connect request can be successfully carried out, the NE would reserve the necessary resources such as the VPI and/or VCI value, and automatically create the necessary VP/VC termination points (e.g., the VP CTPs, VP TTPs, and VC CTPs) for the cross-connection.

The result, if successful, always returns an explicit list of termination points.

Successful execution of this action would result in the creation of an instance of the atmCrossConnection object.

This cross-connection object has the fromTermination and toTermination attributes pointing to the two termination points. The administrativeState and recoveryType attributes in the cross-connection object are initialized according to the values provided in the action request information. If the administrativeState parameter is omitted, the administrative state will be set to 'unlocked'. If the recoveryType parameter is omitted, the recovery type will be set to recoverable.

If the administrativeState in the atmCrossConnection object is unlocked, the upstreamConnectivityPointer and downstreamConnectivityPointer in the two termination points are set to the local distinguished name of the (peer) termination point to which it is connected. Also, the crossConnectionObjectPointer in the termination points shall point to the atmCrossConnection object.

This action will fail if any of the termination points specified are already involved in a cross-connection, any of the termination point descriptors specified cannot be satisfied, or the two termination points do not have compatible termination point descriptors.";

#### B.5.4 connectMultipointBridge

connectMultipointBridge ACTION

BEHAVIOUR

connectMultipointBridgeBeh BEHAVIOUR

DEFINED AS

"This action is used to establish a multipoint connection between vpCTPBidirectional or vcCTPBidirectional objects. Four types of multipoint connections can be established using this action: broadcast, merge, broadcast/merge (composite), and full multipoint. The multipointConnectionType attribute of this action is used to identify the desired connection type. Note that this action will result in the cross-connection of CTP objects to an instance of the multipointBridge object.

Also supplied with this action is the following information:

**Primary CTP** - This parameter identifies a termination point (vpCTPBidirectional or vcCTPBidirectional object) or termination point descriptor for the termination point that generates traffic to broadcast and/or receives merged traffic for broadcast, merge, or composite multipoint connection types. For full multipoint connections (i.e., all legs communicate with all other legs), the value of this attribute shall be set to NULL. The termination point identified by this parameter shall serve as the basis for the primaryCTP attribute of the multipointBridge object.

**Common CTPs** - This identifies termination point descriptor or CTP object instances (vpCTPBidirectional object class or vcCTPBidirectional object class) of all legs of the multipoint connection except the leg identified via the primaryCTP attribute. For full multipoint cross-connections, all the legs of the multipoint cross-connection shall be identified by this attribute. The termination points derived from this parameter shall serve as the basis for the commonCTPs attribute of the multipointBridge.

**Recovery Type** - This parameter indicates if the multipoint session should be recovered in case of service interruption. This parameter serves as the initial values for the recoveryType attribute in all the associated cross-connection objects.

**Administrative State** - This parameter will be used as the initial value for the administrativeState attribute in multipointBridge and its associated cross-connection objects.

The action will fail if the primaryCTP is specified but cannot be connected or none of the commonCTPs can be connected. If the action is accepted, the result would return the primaryCTP termination point, the connected common CTPs, and a problem cause for each of the non-connected common CTPs.";

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.ConnectMultipointBridgeInfo;

WITH REPLY SYNTAX AtmMIBModV2.ConnectMultipointBridgeReply;

REGISTERED AS {atmM4Action 3};

**B.5.5 disconnect**

disconnect ACTION

BEHAVIOUR disconnectBeh;

MODE CONFIRMED;

WITH INFORMATION SYNTAX ASN1DefinedTypesModule.DisconnectInformation;

WITH REPLY SYNTAX ASN1DefinedTypesModule.DisconnectResult;

REGISTERED AS {atmfM4Action 4};

disconnectBeh BEHAVIOUR

DEFINED AS

"This action is used to take down a point-to-point cross-connection. The connection to be taken down is specified by identifying a termination point of the connection. The other termination point of the point-to-point connection is implicitly disconnected as well and the cross-connection object is deleted. The connectivity pointers in the disconnected termination points will be set to NULL as a result of this action. Disconnection of multiple point-to-point connections can be requested by providing multiple CTP object instances in the DisconnectInformation. Each component in the DisconnectResult sequence provides the disconnection result for the corresponding components of the DisconnectInformation sequence.

This action shall not result in the deletion any of the termination point objects to disconnect.";

**B.5.6 loopbackOAMCell**

loopbackOAMCell ACTION

BEHAVIOUR loopbackOAMCellBeh;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.LoopbackOAMCellInfo;

WITH REPLY SYNTAX AtmMIBModV2.LoopbackOAMCellReply;

REGISTERED AS {atmfM4Action 6};

loopbackOAMCellBeh BEHAVIOUR

DEFINED AS

" This action is used to request a vpCTPBidirectional, vcCTPBidirectional, vpTTPBidirectional, or vcTTPBidirectional object to insert (in the outgoing direction) a loopback OAM cell into the ATM cell stream and verify its return.

Supplied along with this action is the loopbackLocation parameter. This parameter identifies the downstream vpCTPBidirectional, vcCTPBidirectional, vpTTPBidirectional, or vcTTPBidirectional object instance responsible for looping back the OAM cell. The value of TRUE-NULL (default) can be used to request the end-point of the ATM connection or connection segment to loopback the OAM cell. Also supplied with this parameter is an indication as to whether or not the OAM Loopback Cell to be inserted shall be of the segment type or end-to-end type.";

**B.5.7 removeTerminationPoint**

removeTerminationPoint ACTION

BEHAVIOUR removeTerminationPointBeh;

MODE CONFIRMED;

WITH INFORMATION SYNTAX AtmMIBModV2.RemoveTerminationPointInfo;

WITH REPLY SYNTAX AtmMIBModV2.RemoveTerminationPointReply;

REGISTERED AS {atmfM4Action 9};

removeTerminationPointBeh BEHAVIOUR

## DEFINED AS

"This action is used to remove one or more termination point objects from the identified interworkingVCTTPBidirectional.

Supplied with this action is the following information:

Existing TPs - This parameter identifies the existing Termination Points to be removed from the identified interworkingVCTTPBidirectional object.

InterworkingVCTTPBidirectional - This parameter identifies the instance of the interworkingVCTTPBidirectional object class from which the identified termination points should be removed.

If the request is granted, the terminationPointList attribute, in the interworkingVCTTPBidirectional object, shall be reset to reflect the remaining termination points. ";

## B.6 Deprecated Supporting Productions

--Note: When deprecated objects from this Annex are to be implemented the following additional productions should be merged with the productions in AtmMIBModV2 found in Section 2.10.

## IMPORTS

DisconnectInformation,  
DisconnectResult

## FROM

ASN1DefinedTypesModule {ccitt recommendation m(13) gnm(3100)  
informationModel(0) asn1Modules(2) asn1DefinedTypesModule(0)}

-- supporting productions

AalMode ::= ENUMERATED {

message\_assured (0),  
message\_unassured (1),  
streaming\_assured (2)  
streaming\_unassured (3)}

AalType ::= ENUMERATED {

aal1 (0),  
aal2 (1), -- encoded for future use  
aal34 (2),  
aal5 (3)}

AddTerminationPointInfo ::= SEQUENCE {

newTPs NewTPs,  
interworkingVCTTPBidirectionalInstance ObjectInstance}

AddTerminationPointReply ::= SEQUENCE OF SEQUENCE {

TpAdded ObjectInstance,  
TpNotAdded ProblemCause OPTIONAL}

AddTpsToMultipointBridgeInfo ::= SEQUENCE {

newCTPs NewCTPs,  
multipointBridgeInstance ObjectInstance}

CDVTolerance ::= SEQUENCE {

cellDealyVariationToleranceCLP0plus1 [1] INTEGER OPTIONAL,  
cellDelayVariationToleranceCLP0 [2] INTEGER OPTIONAL}



```
ChannelAssociatedSignalling ::= ENUMERATED {
    basic (0),
    e1Cas (1),
    ds1SfCas (2),
    ds1EsfCas (3),
    j2Cas (4)}
```

```
ClockRecoveryType ::= ENUMERATED {
    synchronous (0),
    srts (1),
    adaptive (2)}
```

```
CommonCTPs ::= SEQUENCE OF CtpOrDescriptor
```

```
ConnectInformation ::= SEQUENCE OF SEQUENCE {
    fromTermination [0] CtpOrDescriptor,
    toTermination [1] CtpOrDescriptor,
    recoveryType [2] RecoveryType OPTIONAL,
    administrativeState [3] AdministrativeState OPTIONAL}
```

```
ConnectMultipointBridgeInfo ::= SEQUENCE {
    primaryCTP [0] PrimaryCTP,
    commonCTPs [1] CommonCTPs OPTIONAL,
    multipointBridgeInstance [2] ObjectInstance,
    multipointConnectionType[3] MultipointConnectionType,
    recoveryType [4] RecoveryType OPTIONAL,
    -- the recoveryType value is shared by all legs
    administrativeState [5] AdministrativeState OPTIONAL}
    -- the administrativeState value is shared by all legs
```

```
CtpOrDescriptor ::= CHOICE {
    ctp [0] ObjectInstance,
    descriptor [1] Descriptor}
```

```
Descriptor ::= SEQUENCE {
    interfaceId [0] ObjectInstance, -- a uni, intraNNI, or interNNI
    vpi [1] INTEGER OPTIONAL, -- assigned by NE if absent
    vci [2] INTEGER OPTIONAL, -- set to 0 for VP cross connect
    egressCDVTTolerance [3] CDVTTolerance OPTIONAL,
    ingressCDVTTolerance [4] CDVTTolerance OPTIONAL,
    egressMaxBurstSize [5] MaxBurstSize OPTIONAL,
    ingressMaxBurstSize [6] MaxBurstSize OPTIONAL,
    egressPeakCellRate [7] PeakCellRate OPTIONAL,
    ingressPeakCellRate [8] PeakCellRate OPTIONAL,
    egressSustainableCellRate [9] SustainableCellRate OPTIONAL,
    ingressSustainableCellRate [10] SustainableCellRate OPTIONAL,
    egressQosClass [11] QosClass OPTIONAL,
    ingressQosClass [12] QosClass OPTIONAL}
```

```
ExistingTPs ::= SEQUENCE OF ObjectInstance
```

```
FecMethod ::= ENUMERATED{
    noFEC (0),
    lossSensitiveSignalFEC (1),
    delaySensitiveSignalFEC (2)}
```

```

LoopbackLocation ::= SEQUENCE {
    endPoint BOOLEAN, -- default is TRUE
    loopbackLocationCode OctetStringOrNull -- default is NULL
}

LoopbackOAMCellInfo ::= SEQUENCE {
    loopbackLocation LoopbackLocation,
    oamCellType OamCellType}

LoopbackOAMCellReply ::= SEQUENCE {
    loopbackSuccessful BOOLEAN,
    problemCause ProblemCause OPTIONAL}

MaxBurstSize ::= SEQUENCE {
    maxBurstSizeCLP0plus1 [1] INTEGER OPTIONAL,
    maxBurstSizeCLP0 [2] INTEGER OPTIONAL}

MaxCpcsSduSize ::= SEQUENCE {
    forward [0] INTEGER (1..65535) OPTIONAL,
    backward [1] INTEGER (1..65535) OPTIONAL}

MidRange ::= SEQUENCE {
    lowvalue [0] INTEGER (1..66536)
    highvalue [1] INTEGER (1..66536)}

NewCTPs ::= SEQUENCE OF CtpOrDescriptor

NewTPs ::= SEQUENCE OF ObjectInstance

PeakCellRate ::= SEQUENCE {
    peakCellRateCLP0plus1 [1] INTEGER OPTIONAL,
    peakCellRateCLP0 [2] INTEGER OPTIONAL}

PreferredCarrier ::= SEQUENCE OF GraphicString

PrimaryCTP ::= CHOICE {
    null NULL,
    ctp ObjectInstance,
    descriptor Descriptor}

OamCellType ::= ENUMERATED {
    segment (0),
    endToEnd (1)}

QosClass ::= ENUMERATED {
    class0 (0),
    class1 (1),
    class2 (2),
    class3 (3),
    class4 (4)}

RemoveTerminationPointInfo ::= SEQUENCE {
    existingTPs ExistingTPs,
    interworkingVCTTPBidirectionalInstance ObjectInstance}

```

```
RemoveTerminationPointReply ::= SEQUENCE OF SEQUENCE {  
    tpInstance          ObjectInstance,  
    tpRemovalProblem   ProblemCause OPTIONAL  
    -- absent if tpInstance is removed  
}
```

```
SscsType ::= ENUMERATED {  
    null (0),  
    dataAssured (1),  
    dataNonAssured (2),  
    frameRelay (3)}
```

```
SubType ::= ENUMERATED {  
    null (0),  
    voiceBand (1),  
    circuitEmulationSynchronous (2),  
    circuitEmulationAsynchronous (3),  
    highQualityAudio (4),  
    video (5)}
```

```
SustainableCellRate ::= SEQUENCE {  
    sustainableCellRateCLP0plus1 [1] INTEGER OPTIONAL,  
    sustainableCellRateCLP0 [2] INTEGER OPTIONAL}
```