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ITU-T

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OF ITU

M.3100

Amendment 8
(08/2004)

SERIES M: TMN AND NETWORK MAINTENANCE:
INTERNATIONAL TRANSMISSION SYSTEMS,
TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE
AND LEASED CIRCUITS

Telecommunications management network

Generic network information model

Amendment 8

ITU-T Recommendation M.3100 (1995) – Amendment 8

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TMN AND NETWORK MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS, TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE AND LEASED CIRCUITS

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ITU-T Recommendation M.3100

Generic network information model

Amendment 8

Summary

Amendment 8 to ITU-T Rec. M.3100 adds new capability of physical port.

Source

Amendment 8 to ITU-T Recommendation M.3100 (1995) was approved on 22 August 2004 by ITU-T Study Group 4 (2001-2004) under the ITU-T Recommendation A.8 procedure.

FOREWORD

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Generic network information model

Amendment 8

1) New capability – Physical port

Add the following to the main body of the Recommendation:

3.6.x Physical Port

physicalPort MANAGED OBJECT CLASS

DERIVED FROM "Recommendation X.721 : 1992":top;

CHARACTERIZED BY

physicalPortPackage PACKAGE

BEHAVIOUR

physicalPortBehaviour BEHAVIOUR

DEFINED AS

"This managed object class represents the characteristics of physical termination of network equipments. This MOC is a collection of common attributes of physical ports, and it is defined for inheritance. The purpose of modelling the physical port as an individual managed object is to provide more detailed information and possibility to show relationships among a port and its supported TTP(s) and (indirectly) CTP(s). When an instance of this class or its derived classes is instantiated under an instance of circuitPackR1, the conditional package circuitPackConfigurationPackage in the circuitPackR1 class should not be instantiated.

A physical port is understood to consist of a physical part and a logical part. The physicalPort MOC is a physical resource that represents the physical part of the physical port while the genericTransportTTP MOC is a logical resource (sometimes called a device interface TP), one or more of which represent the logical part of the physical port. Transmission and mapping capabilities, as represented by the signal rates and mapping lists (and wavelengths) of the physicalPortSignalRateAndMappingList attribute are considered logical properties of a physical port, and so are included in the definition of genericTransportTTP Rev.1.

Since the physical port is split into a physical resource part and a logical resource part, the supportedTTPList attribute is used to reference the logical part from the physical part. Conversely, the physicalPort attribute and the conditional ttpPortID attribute of the genericTransportTTPR1 object serve as references from the (pieces of the) logical part to the physical part.

The associated genericTransportTTPs, i.e., the logical part of the physical port, are considered the lowest-layer server trail termination points (TTPs) supported by the physical port, e.g., vc4TTP or opticalSPITTP or vpTTP or ETYnTTPBidirectional.

The capability to support the directionality for data transfer is represented by the pointDirectionality attribute of the associated genericTransportTTP objects (inherited from networkTerminationPoint)."

;;

ATTRIBUTES

physicalPortId GET SET-BY-CREATE,

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

connectorType GET,

reach GET,

supportedTTPList GET

;;;

CONDITIONAL PACKAGES

objectManagementNotificationsPackage PRESENT IF "an instance supports it",

stateChangeNotificationPackage PRESENT IF "an instance supports it",

userLabelPackage PRESENT IF "an instance supports it";

REGISTERED AS {m3100ObjectClass 79};

3.6.x Generic transport TTP with physical port SignalRateAndMapping list

genericTransportTTPR1 MANAGED OBJECT CLASS

DERIVED FROM genericTransportTTP;

CHARACTERIZED BY

genericTransportTTPR1Package PACKAGE

BEHAVIOUR genericTransportTTPR1Behaviour BEHAVIOUR DEFINED AS

"The GenericTransportTTPR1 object is used to represent a GenericTransportTTP which has an associated physical port object and hosts the SignalRateAndMapping list of this physical port.

The physicalPort attribute and the inherited conditional ttpPortID attribute store references to the Physical Port that supports this generic transport TTP."

;;

ATTRIBUTES

physicalPort GET,

physicalPortSignalRateAndMappingList GET-REPLACE ADD-REMOVE

;;;

REGISTERED AS {m3100ObjectClass 80};

5.x Port Number

physicalPortId ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.PortNumber;

MATCHES FOR EQUALITY;

BEHAVIOUR

physicalPortIdBehaviour BEHAVIOUR

DEFINED AS

"This attribute is the value of the port number. The port number may be used in constructing the name of the managed entity Physical Port."

;;

REGISTERED AS {m3100Attribute 168};

5.x Physical Port SignalRateAndMapping List

physicalPortSignalRateAndMappingList ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.PhysicalPortSignalRateAndMappingList;

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

BEHAVIOUR

physicalPortSignalRateAndMappingListBehaviour BEHAVIOUR

DEFINED AS

"This attribute identifies the signal rate associated with a supported TTP of a physical port (e.g., rate = stm1) and its payload mapping (e.g., au3 or au4). The signal rate and payload mapping is provisionable. For example, a port with signal rate stm4 may have a payload mapping of au4-4c. Another possible mapping of this rate is a sequence of four individual au4 (i.e., au4, au4, au4, au4) or a sequence of mixed au3 and au4 (e.g., au3, au3, au3, au4, au4, au3, au3, au3). This attribute supports two choices depending on whether the signal may be sent with the same rate in both directions or depends on the direction. It is also possible to support only one direction for signal transfer, which is a special case of different rates in the two directions. In addition if the port terminates an optical signal, different rates may be supported on different wavelengths. The port mapping list shall be consistent with the value of the attribute pointDirectionality. For example, if the directionality is source, 'uniform' choice in the port mapping list is not a valid option."

;;

REGISTERED AS {m3100Attribute 169};

5.x Connector Type

connectorType ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.ConnectorType;

MATCHES FOR EQUALITY;

BEHAVIOUR

**connectorTypeBehaviour BEHAVIOUR
DEFINED AS**

"This attribute describes the connector type used for this port. The value of this attribute can be one of the following: FC(Fibre Connector), LC(Lucent Connector), SC(Subscriber Connector), etc."

;;

REGISTERED AS {m3100Attribute 170};

5.x Reach

reach ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.Reach;

MATCHES FOR EQUALITY;

BEHAVIOUR

reachBehaviour BEHAVIOUR

DEFINED AS

"This attribute indicates the length a signal may travel before requiring termination or regeneration. This attribute is useful for both planning and operations."

;;

REGISTERED AS {m3100Attribute 171};

5.x Supported TTP List

supportedTTPList ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.ObjectList;

MATCHES FOR EQUALITY;

BEHAVIOUR

supportedTTPListBehaviour BEHAVIOUR

DEFINED AS

"This attribute stores references to the lowest-layer Generic Transport Trail Termination Points with Physical Port SignalRateAndMapping List (genericTransportTTPR1) supported by this physical port."

;;

REGISTERED AS {m3100Attribute 172};

5.x Physical Port

physicalPortAttribute ATTRIBUTE

WITH ATTRIBUTE SYNTAX M3100ASN1TypeModule2.ObjectInstance;

MATCHES FOR EQUALITY;

BEHAVIOUR

physicalPortAttributeBehaviour BEHAVIOUR

DEFINED AS

"This attribute stores a reference to the Physical Port that supports this generic transport TTP."

;;

REGISTERED AS {m3100Attribute 173};

6.x Name Binding

– **Physical Port is named from either Equipment (including Circuit Pack) or Managed Element**

physicalPort-equipment NAME BINDING

SUBORDINATE OBJECT CLASS physicalPort AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS equipment AND SUBCLASSES;

WITH ATTRIBUTE physicalPortId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE;

REGISTERED AS {m3100NameBinding 95};

```

physicalPort-managedElement NAME BINDING
  SUBORDINATE OBJECT CLASS      physicalPort AND SUBCLASSES;
  NAMED BY
    SUPERIOR OBJECT CLASS      managedElement AND SUBCLASSES;
  WITH ATTRIBUTE    physicalPortId;
  CREATE
    WITH-REFERENCE-OBJECT,
    WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE;
REGISTERED AS {m3100NameBinding 96};

```

2) Clause 10.2 ASN.1 module

Augment ASN.1 module M3100ASN1TypeModule2 (see M.3100 Amd.1) as follows:

```

ConnectorType ::= INTEGER
-- currently defined values for ConnectorType are:
fcConnectorType    ConnectorType ::= 1    -- Fibre Connector
lcConnectorType    ConnectorType ::= 2    -- Lucent connector
scConnectorType    ConnectorType ::= 3    -- Subscriber Connector

PhysicalPortSignalRateAndMappingList ::= CHOICE {
    diverse    SEQUENCE {
        downstream    SignalRateAndMappingList,
        upStream      SignalRateAndMappingList
    },
    uniform    SignalRateAndMappingList
}

PortNumber ::= INTEGER
SignalRateAndMappingList ::= SET OF SEQUENCE { -- only one member in the case of
TDM
    signalRate        SignalRate,
    mappingList        MappingList OPTIONAL,
    wavelength        WaveLength OPTIONAL -- used for WDM
}
-- the SignalRateAndMappingList is a SET OF to accommodate multiple
wavelengths on a single TTP
Reach ::= INTEGER
WaveLength ::= INTEGER

```


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