IEEE8023-DOT3-EPON-MIB DEFINITIONS ::= BEGIN

 IMPORTS

 MODULE-IDENTITY, OBJECT-TYPE, Counter32,

 Integer32, Unsigned32, Counter64, org

 FROM SNMPv2-SMI

 TruthValue, MacAddress

 FROM SNMPv2-TC

 ifIndex

 FROM IF-MIB

 MODULE-COMPLIANCE, OBJECT-GROUP

 FROM SNMPv2-CONF

 ;

ieee8023dot3EponMIB MODULE-IDENTITY

 LAST-UPDATED "202307310000Z" – July 31, 2023

 ORGANIZATION

 "IEEE 802.3 Working Group"

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 DESCRIPTION

 "The objects in this MIB module are used to manage the

 Ethernet in the First Mile (EFM) Ethernet Passive Optical

 Network (EPON) Interfaces as defined in IEEE Std 802.3

 Clauses 60, 64, and 65.

 Of particular interest are Clause 64 (MultiPoint Control

 Protocol - MPCP), Clause 65 (Point-to-Multipoint

 Reconciliation Sublayer - P2MP RS), Clause 60 (Ethernet

 Passive Optical Network Physical Medium Dependent - EPON

 PMDs), Clause 30, 'Management', and Clause 45, 'Management

 Data Input/Output (MDIO) Interface'."

 REVISION "202307310000Z" – July 31, 2023

 DESCRIPTION

 "Revision, based on an earlier version in IEEE Std 802.3.1-2013

 addressing changes from IEEE Std 802.3 revisions 2012, 2015, 2018,

 and 2022."

 REVISION "201304110000Z" -- April 11, 2013

 DESCRIPTION

 "Revision, based on an earlier version in IEEE Std 802.3.1-2011."

 REVISION "201102020000Z" -- February 2, 2011

 DESCRIPTION

 "Initial version, based on an earlier version published

 as RFC 4837."

 ::= { org ieee(111) standards-association-numbers-series-standards(2)

 lan-man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 9 }

dot3EponObjects OBJECT IDENTIFIER ::= { ieee8023dot3EponMIB 1}

dot3EponConformance OBJECT IDENTIFIER ::= { ieee8023dot3EponMIB 2}

-- MPCP MIB modules definitions (IEEE Std 802.3, Clause 30.3.5)

dot3EponMpcpObjects

 OBJECT IDENTIFIER ::= { dot3EponObjects 1 }

dot3MpcpControlTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3MpcpControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A Table of dot3 MultiPoint Control Protocol (MPCP)

 MIB objects. The entries in the table are control and

 status objects of the MPCP.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

 ::= { dot3EponMpcpObjects 1 }

dot3MpcpControlEntry OBJECT-TYPE

 SYNTAX Dot3MpcpControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the dot3 MPCP Control table.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex }

 ::= { dot3MpcpControlTable 1}

Dot3MpcpControlEntry ::=

 SEQUENCE {

 dot3MpcpOperStatus TruthValue,

 dot3MpcpAdminState TruthValue,

 dot3MpcpMode INTEGER,

 dot3MpcpSyncTime Unsigned32,

 dot3MpcpLinkID Unsigned32,

 dot3MpcpRemoteMACAddress MacAddress,

 dot3MpcpRegistrationState INTEGER,

 dot3MpcpTransmitElapsed Unsigned32,

 dot3MpcpReceiveElapsed Unsigned32,

 dot3MpcpRoundTripTime Unsigned32,

 dot3MpcpMaximumPendingGrants Unsigned32

 }

dot3MpcpOperStatus OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object reflects the operational state of the

 MultiPoint MAC Control sublayer as defined in

 IEEE Std 802.3, Clause 64 or Clause 77.

 When the value is true(1), the interface will act as if the

 MultiPoint Control Protocol is enabled. When the value is false(2)

 , the interface will act as if the MultiPoint Control Protocol is

 disabled. The operational state can be changed using the

 dot3MpcpAdminState object.

 This object is applicable for an OLT, with the same

 value for all virtual interfaces, and for an ONU."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.2"

 ::= { dot3MpcpControlEntry 1 }

dot3MpcpAdminState OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used to define the admin state of the

 MultiPoint MAC Control sublayer, as defined in

 IEEE Std 802.3, Clause 64 or Clause 77,

 and to reflect its state.

 When selecting the value as true(1), the MultiPoint

 Control Protocol of the interface is enabled.

 When selecting the value as false(2), the MultiPoint

 Control Protocol of the interface is disabled.

 This object reflects the administrative state of the

 MultiPoint Control Protocol of the interface.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3MpcpAdminState state can lead to disabling the

 MultiPoint Control Protocol on the respective interface,

 leading to the interruption of service for the users

 connected to the respective EPON interface.

 This object is applicable for an OLT, with the same

 value for all virtual interfaces, and for an ONU."

 REFERENCE "IEEE Std 802.3, 30.3.5.2.1"

 DEFVAL { false }

 ::= { dot3MpcpControlEntry 2 }

dot3MpcpMode OBJECT-TYPE

 SYNTAX INTEGER {

 olt(1),

 onu(2)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is used to identify the operational

 state of the MultiPoint MAC Control sublayer as

 defined in IEEE Std 802.3, Clause 64 or Clause 77.

 Reading olt(1) for an OLT (server) mode and onu(2) for an ONU

 (client) mode. This object is used to identify the operational

 mode for the MPCP tables.

 This object is applicable for an OLT, with the same

 value for all virtual interfaces, and for an ONU."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.3"

 DEFVAL { olt }

 ::= { dot3MpcpControlEntry 3 }

dot3MpcpSyncTime OBJECT-TYPE

 SYNTAX Unsigned32

 UNITS "TQ (16 ns)"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that reports the 'sync lock time' of the

 OLT receiver in increments of Time Quanta (TQ)-16ns

 as defined in IEEE Std 802.3, Clause 64 or Clause 77.

 The value returned shall be (sync lock time ns)/16, rounded up

 to the nearest TQ. If this value exceeds (2^32-1), the

 value (2^32-1) shall be returned. This object is applicable

 for an OLT, with distinct values for all virtual interfaces,

 and for an ONU."

 REFERENCE "IEEE Std 802.3, 64.3.3.2 and 77.3.3.2"

 ::= { dot3MpcpControlEntry 4 }

dot3MpcpLinkID OBJECT-TYPE

 SYNTAX Unsigned32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that identifies the Logical Link

 Identifier (LLID) associated with the MAC of the virtual

 link as specified in IEEE Std 802.3, 65.1.3.2.2 or

 76.2.6.1.3.2, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 The ONU and the corresponding virtual MAC of the OLT,

 for the same virtual link, have the same value.

 Value is assigned when the ONU registers.

 Value is freed when the ONU deregisters."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.4"

 ::= { dot3MpcpControlEntry 5 }

dot3MpcpRemoteMACAddress OBJECT-TYPE

 SYNTAX MacAddress

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that identifies the source\_address

 parameter of the last MPCPDUs passed to the MAC Control.

 This value is updated on reception of a valid frame with

 1) a destination Field equal to the reserved multicast

 address for MAC Control as specified in IEEE Std 802.3, Annex

 31A; 2) the lengthOrType field value equal to the reserved

 Type for MAC Control as specified in IEEE Std 802.3, Annex

 31A; 3) an MPCP subtype value equal to the subtype

 reserved for MPCP as specified in IEEE Std 802.3, Annex 31A.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 The value reflects the MAC address of the remote entity

 and therefore the OLT holds a value for each LLID, which

 is the MAC address of the ONU; the ONU has a single

 value that is the OLT MAC address."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.5"

 ::= { dot3MpcpControlEntry 6 }

dot3MpcpRegistrationState OBJECT-TYPE

 SYNTAX INTEGER {

 unregistered(1),

 registering(2),

 registered(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that identifies the registration state

 of the MultiPoint MAC Control sublayer as defined in

 IEEE Std 802.3, Clause 64 and Clause 77.

 When this object has the enumeration unregistered(1),

 the interface is unregistered and may be used for

 registering a link partner.

 When this object has the enumeration

 registering(2), the interface is in the process of

 registering a link-partner. When this object has the

 enumeration registered(3), the interface has an

 established link-partner.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.6"

 ::= { dot3MpcpControlEntry 7 }

dot3MpcpTransmitElapsed OBJECT-TYPE

 SYNTAX Unsigned32

 UNITS "TQ (16 ns)"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that reports the interval from the last

 MPCP frame transmission in increments of Time Quanta

 (TQ)-16ns. The value returned shall be (interval from

 last MPCP frame transmission in ns)/16. If this value

 exceeds (2^32-1), the value (2^32-1) shall be returned.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.19"

 ::= { dot3MpcpControlEntry 8 }

dot3MpcpReceiveElapsed OBJECT-TYPE

 SYNTAX Unsigned32

 UNITS "TQ (16 ns)"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that reports the interval from last MPCP frame

 reception in increments of Time Quanta (TQ)-16ns. The

 value returned shall be (interval from last MPCP frame

 reception in ns)/16. If this value exceeds (2^32-1), the

 value (2^32-1) shall be returned.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.20"

 ::= { dot3MpcpControlEntry 9 }

dot3MpcpRoundTripTime OBJECT-TYPE

 SYNTAX Unsigned32 (0..'ffff'h)

 UNITS "TQ (16 ns)"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that reports the MPCP round trip time in

 increments of Time Quanta (TQ)-16ns. The value returned

 shall be (round trip time in ns)/16. If this value

 exceeds (2^16-1), the value (2^16-1) shall be returned.

 This object is applicable for an OLT. At the

 OLT, it has a distinct value for each virtual interface."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.21"

 ::= { dot3MpcpControlEntry 10 }

dot3MpcpMaximumPendingGrants OBJECT-TYPE

 SYNTAX Unsigned32 (0..255)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that reports the maximum number of grants

 that an ONU can store for handling. The maximum number

 of grants that an ONU can store for handling has a

 range of 0 to 255.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.24"

 ::= { dot3MpcpControlEntry 11 }

dot3MpcpStatTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3MpcpStatEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table defines the list of statistics counters of

 an interface implementing the IEEE Std 802.3, Clause 64 or

 Clause 77 MPCP.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

::= { dot3EponMpcpObjects 2 }

dot3MpcpStatEntry OBJECT-TYPE

 SYNTAX Dot3MpcpStatEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table of statistics counters of the

 IEEE Std 802.3, Clause 64 or Clause 77 MPCP interface.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual link is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex}

 ::= { dot3MpcpStatTable 1 }

Dot3MpcpStatEntry ::=

 SEQUENCE {

 dot3MpcpMACCtrlFramesTransmitted Counter64,

 dot3MpcpMACCtrlFramesReceived Counter64,

 dot3MpcpDiscoveryWindowsSent Counter32,

 dot3MpcpDiscoveryTimeout Counter32,

 dot3MpcpTxRegRequest Counter64,

 dot3MpcpRxRegRequest Counter64,

 dot3MpcpTxRegAck Counter64,

 dot3MpcpRxRegAck Counter64,

 dot3MpcpTxReport Counter64,

 dot3MpcpRxReport Counter64,

 dot3MpcpTxGate Counter64,

 dot3MpcpRxGate Counter64,

 dot3MpcpTxRegister Counter64,

 dot3MpcpRxRegister Counter64

 }

dot3MpcpMACCtrlFramesTransmitted OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of MPCP frames passed to the MAC sublayer for

 transmission. This counter is incremented when a

 MA\_CONTROL.request service primitive is generated within

 the MAC control sublayer with an opcode indicating an

 MPCP frame.

 This object is applicable for an OLT and an ONU. At the

 OLT it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system, and at other

 times as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.7"

 ::= { dot3MpcpStatEntry 1 }

dot3MpcpMACCtrlFramesReceived OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of MPCP frames passed by the MAC sublayer to the

 MAC Control sublayer. This counter is incremented when a

 ReceiveFrame function call returns a valid frame with

 1) a lengthOrType field value equal to the reserved

 Type for 802.3\_MAC\_Control as specified in IEEE Std 802.3

 31.4.1.3, and

 2) an opcode indicating an MPCP frame.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.8"

 ::= { dot3MpcpStatEntry 2}

dot3MpcpDiscoveryWindowsSent OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of discovery windows generated. The counter is

 incremented by one for each generated discovery window.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.22"

 ::= { dot3MpcpStatEntry 3}

dot3MpcpDiscoveryTimeout OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a discovery timeout

 occurs. Increment the counter by one for each discovery

 processing state-machine reset resulting from timeout

 waiting for message arrival.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.23"

 ::= { dot3MpcpStatEntry 4}

dot3MpcpTxRegRequest OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER\_REQ MPCP

 frame transmission occurs. Increment the counter by one

 for each REGISTER\_REQ MPCP frame transmitted as defined

 in IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.12"

 ::= { dot3MpcpStatEntry 5}

dot3MpcpRxRegRequest OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER\_REQ MPCP

 frame reception occurs.

 Increment the counter by one for each REGISTER\_REQ MPCP

 frame received as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.17"

 ::= { dot3MpcpStatEntry 6}

dot3MpcpTxRegAck OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER\_ACK MPCP

 frame transmission occurs. Increment the counter by one

 for each REGISTER\_ACK MPCP frame transmitted as defined

 in IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.10"

 ::= { dot3MpcpStatEntry 7}

dot3MpcpRxRegAck OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER\_ACK MPCP

 frame reception occurs.

 Increment the counter by one for each REGISTER\_ACK MPCP

 frame received as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.15"

 ::= { dot3MpcpStatEntry 8}

dot3MpcpTxReport OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REPORT MPCP frame

 transmission occurs. Increment the counter by one for

 each REPORT MPCP frame transmitted as defined in

 IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.13"

 ::= { dot3MpcpStatEntry 9}

dot3MpcpRxReport OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REPORT MPCP frame

 reception occurs.

 Increment the counter by one for each REPORT MPCP frame

 received as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.18"

 ::= { dot3MpcpStatEntry 10}

dot3MpcpTxGate OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a GATE MPCP frame

 transmission occurs.

 Increment the counter by one for each GATE MPCP frame

 transmitted as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.9"

 ::= { dot3MpcpStatEntry 11}

dot3MpcpRxGate OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a GATE MPCP frame

 reception occurs.

 Increment the counter by one for each GATE MPCP frame

 received as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.14"

 ::= { dot3MpcpStatEntry 12}

dot3MpcpTxRegister OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER MPCP frame

 transmission occurs.

 Increment the counter by one for each REGISTER MPCP

 frame transmitted as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.11"

 ::= { dot3MpcpStatEntry 13}

dot3MpcpRxRegister OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a REGISTER MPCP frame

 reception occurs.

 Increment the counter by one for each REGISTER MPCP

 frame received as defined in IEEE Std 802.3, Clause 64 or

 Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.16"

 ::= { dot3MpcpStatEntry 14}

-- Optical Multi Point Emulation (OMPEmulation)

-- managed object definitions

dot3OmpEmulationObjects OBJECT IDENTIFIER ::={dot3EponObjects 2}

dot3OmpEmulationTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3OmpEmulationEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of dot3 OmpEmulation MIB objects. The table

 contain objects for the management of the OMPEmulation

 sublayer.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

 ::= { dot3OmpEmulationObjects 1 }

dot3OmpEmulationEntry OBJECT-TYPE

 SYNTAX Dot3OmpEmulationEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the dot3 OmpEmulation table.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex }

 ::= { dot3OmpEmulationTable 1 }

 Dot3OmpEmulationEntry ::=

 SEQUENCE {

 dot3OmpEmulationType INTEGER

 }

dot3OmpEmulationType OBJECT-TYPE

 SYNTAX INTEGER {

 unknown(1),

 olt(2),

 onu(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that indicates the mode of operation

 of the Reconciliation Sublayer for Point-to-Point

 Emulation (see IEEE Std 802.3, 65.1 or 76.2 as appropriate).

 unknown(1) value is assigned in initialization; true state

 or type is not yet known. olt(2) value is assigned when the

 sublayer is operating in OLT mode. onu(3) value is assigned when

 the sublayer is operating in ONU mode.

 This object is applicable for an OLT, with the same

 value for all virtual interfaces, and for an ONU."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.2"

 ::= { dot3OmpEmulationEntry 1}

dot3OmpEmulationStatTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3OmpEmulationStatEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table defines the list of statistics counters of

 IEEE Std 802.3, Clause 65 or Clause 76, OMPEmulation sublayer.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

 ::= { dot3OmpEmulationObjects 2}

dot3OmpEmulationStatEntry OBJECT-TYPE

 SYNTAX Dot3OmpEmulationStatEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table of statistics counters of

 IEEE Std 802.3, Clause 65 or Clause 76, OMPEmulation sublayer.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex}

 ::= { dot3OmpEmulationStatTable 1 }

Dot3OmpEmulationStatEntry::=

 SEQUENCE {

 dot3OmpEmulationSLDErrors Counter64,

 dot3OmpEmulationCRC8Errors Counter64,

 dot3OmpEmulationBadLLID Counter64,

 dot3OmpEmulationGoodLLID Counter64,

 dot3OmpEmulationOnuPonCastLLID Counter64,

 dot3OmpEmulationOltPonCastLLID Counter64,

 dot3OmpEmulationBroadcastBitNotOnuLlid Counter64,

 dot3OmpEmulationOnuLLIDNotBroadcast Counter64,

 dot3OmpEmulationBroadcastBitPlusOnuLlid Counter64,

 dot3OmpEmulationNotBroadcastBitNotOnuLlid Counter64

 }

dot3OmpEmulationSLDErrors OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that do not contain a valid

 SLD field as defined in IEEE Std 802.3, 65.1.3.3.1 or

 76.2.6.1.3.1, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.s

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.3"

 ::= { dot3OmpEmulationStatEntry 1}

dot3OmpEmulationCRC8Errors OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1

 as appropriate, but do not pass the CRC-8 check as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3 as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.4"

 ::= { dot3OmpEmulationStatEntry 2}

dot3OmpEmulationBadLLID OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD field in an

 OLT, and pass the CRC-8 check, but are discarded due to the

 LLID check. The SLD is defined in IEEE Std 802.3, 65.1.3.3.1

 or 76.2.6.1.3.1, as appropriate. The CRC-8 check is defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate. The

 LLID check is defined in IEEE Std 802.3, 65.1.3.3.2 or

 76.2.6.1.3.2, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.8"

 ::= { dot3OmpEmulationStatEntry 3}

dot3OmpEmulationGoodLLID OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1,

 as appropriate, and pass the CRC-8 check as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.5"

 ::= { dot3OmpEmulationStatEntry 4}

dot3OmpEmulationOnuPonCastLLID OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that: 1) contain a valid SLD field

 in an ONU, 2) meet the rules for frame acceptance, and

 3) pass the CRC-8 check. The SLD is defined in

 IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as appropriate. The

 rules for LLID acceptance are defined in IEEE Std 802.3, 65.1.3.3.2

 or 76.2.6.1.3.2, as appropriate. The CRC-8 check is defined

 in IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.6"

 ::= { dot3OmpEmulationStatEntry 5}

dot3OmpEmulationOltPonCastLLID OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD field, as

 defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

 appropriate, pass the CRC-8 check, as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate,

 and meet the rules of acceptance for an OLT defined in

 IEEE Std 802.3, 65.1.3.3.2 or 76.2.6.1.3.2, as appropriate.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the ONU, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.3.7.1.7"

 ::= { dot3OmpEmulationStatEntry 6}

dot3OmpEmulationBroadcastBitNotOnuLlid OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3,

 65.1.3.3.1, pass the CRC-8 check, as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, and contain the

 broadcast bit in the LLID and not the ONU's LLID (frame accepted)

 as defined in IEEE Std 802.3, Clause 65 or Clause 76.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3OmpEmulationStatEntry 7}

dot3OmpEmulationOnuLLIDNotBroadcast OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3,

 65.1.3.3.1, pass the CRC-8 check, as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, and contain the ONU's

 LLID as defined in IEEE Std 802.3, Clause 65 or Clause 76.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3OmpEmulationStatEntry 8}

dot3OmpEmulationBroadcastBitPlusOnuLlid OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3,

 65.1.3.3.1, pass the CRC-8 check, as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, and contain the

 broadcast bit in the LLID and match the ONU's LLID (frame

 reflected) as defined in IEEE Std 802.3, Clause 65 or Clause 76.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3OmpEmulationStatEntry 9}

dot3OmpEmulationNotBroadcastBitNotOnuLlid OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of frames received that contain a valid SLD

 field, as defined in IEEE Std 802.3,

 65.1.3.3.1, pass the CRC-8 check, as defined in

 IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, and do not contain

 the ONU's LLID as defined in IEEE Std 802.3, Clause 65 or

 Clause 76.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3OmpEmulationStatEntry 10}

-- FEC managed object definitions (30.5.1)

dot3EponFecObjects OBJECT IDENTIFIER ::={dot3EponObjects 3}

dot3EponFecTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3EponFecEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of dot3 EPON FEC management objects.

 The entries in the table are control and status objects

 and statistic counters for the FEC layer.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

 ::= { dot3EponFecObjects 1 }

dot3EponFecEntry OBJECT-TYPE

 SYNTAX Dot3EponFecEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the dot3 EPON FEC table.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex}

 ::= { dot3EponFecTable 1 }

Dot3EponFecEntry ::=

 SEQUENCE {

 dot3EponFecPCSCodingViolation Counter64,

 dot3EponFecAbility INTEGER,

 dot3EponFecMode INTEGER,

 dot3EponFecCorrectedBlocks Counter64,

 dot3EponFecUncorrectableBlocks Counter64,

 dot3EponFecBufferHeadCodingViolation Counter64

 }

dot3EponFecPCSCodingViolation OBJECT-TYPE

 SYNTAX Counter64

 UNITS "octets"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For a 100 Mb/s operation, it is a count of the number of

 times an invalid code-group is received, other than the

 /H/ code-group. For a 1000 Mb/s operation, it is a count

 of the number of times an invalid codegroup is received,

 other than the /V/ code-group. /H/ denotes a special

 4b5b codeword of the IEEE Std 802.3 Clause 24 100 Mb/s PCS layer,

 and /V/ denotes a special 8b10b codeword of the IEEE Std 802.3

 Clause 36 1000 Mb/s PCS layer.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.5.1.1.14"

 ::= { dot3EponFecEntry 1}

dot3EponFecAbility OBJECT-TYPE

 SYNTAX INTEGER {

 unknown(1),

 supported(2),

 unsupported(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that indicates the support of operation of the

 optional FEC sublayer of the 1000BASE-PX PHY specified

 in IEEE Std 802.3, 65.2.

 unknown(1) value is assigned in the initialization, for non

 FEC support state or type not yet known. unsupported(3)

 value is assigned when the sublayer is not supported.

 supported(2) value is assigned when the sublayer is

 supported.

 This object is applicable for an OLT, with the same

 value for all virtual interfaces, and for an ONU.

 The FEC counters will have a zero value when the

 interface is not supporting FEC.

 The counters:

 dot3EponFecPCSCodingViolation - not affected by FEC

 ability.

 dot3EponFecCorrectedBlocks - has a zero value when

 dot3EponFecAbility is unknown(1) and unsupported(3).

 dot3EponFecUncorrectableBlocks - has a zero value when

 dot3EponFecAbility is unknown(1) and unsupported(3).

 dot3EponFecBufferHeadCodingViolation - has a zero value

 when dot3EponFecAbility is unknown(1) and

 unsupported(3)."

 REFERENCE "IEEE Std 802.3, 30.5.1.1.15"

 ::= { dot3EponFecEntry 2}

dot3EponFecMode OBJECT-TYPE

 SYNTAX INTEGER {

 unknown(1),

 disabled(2),

 enabled(3)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An object that defines the mode of operation of the

 optional FEC sublayer of the 1000BASE-PX PHY, specified

 in IEEE Std 802.3, 65.2, and reflects its state.

 A GET operation returns the current mode of operation

 of the PHY. A SET operation changes the mode of

 operation of the PHY to the indicated value.

 unknown(1) value is assigned in the initialization for non

 FEC support state or type not yet known.

 disabled(2) value is assigned when the FEC sublayer is

 operating in disabled mode.

 enabled(3) value is assigned when the FEC sublayer is

 operating in FEC mode.

 The write operation is not restricted in this document

 and can be done at any time. Changing dot3EponFecMode

 state can lead to disabling the Forward Error Correction

 on the respective interface, which can lead to a

 degradation of the optical link, and therefore may lead

 to an interruption of service for the users connected to

 the respective EPON interface.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 The counting of

 the FEC counters will stop when the FEC of the interface

 is disabled.

 The counters:

 dot3EponFecPCSCodingViolation - not affected by FEC

 mode.

 dot3EponFecCorrectedBlocks - stops counting when

 Rx\_FEC is not enabled. (unknown(1) and disabled(2)).

 dot3EponFecUncorrectableBlocks - stops counting when

 Rx\_FEC is not enabled (unknown(1) and disabled(2)).

 dot3EponFecBufferHeadCodingViolation - stops counting

 when Rx\_FEC is not enabled (unknown(1) and

 disabled(2)).

 The object:

 dot3EponFecAbility - indicates the FEC ability and

 is not affected by the dot3EponFecMode object."

 REFERENCE "IEEE Std 802.3, 30.5.1.1.16"

 DEFVAL { unknown }

 ::= { dot3EponFecEntry 3}

dot3EponFecCorrectedBlocks OBJECT-TYPE

 SYNTAX Counter64

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For 1000BASE-PX, 10/25/40/50/100/200/400GBASE-R, 10GBASE-PR

 or 10/1GBASE-PRX PHYs, it is a count of corrected FEC blocks.

 This counter will not increment for other PHY Types.

 Increment the counter by one for each received block that is

 corrected by the FEC function in the PHY.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.5.1.1.17"

 ::= { dot3EponFecEntry 4}

dot3EponFecUncorrectableBlocks OBJECT-TYPE

 SYNTAX Counter64

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For 1000BASE-PX, 10/25/40/50/100/200/400GBASE-R, 10GBASE-PR

 or 10/1GBASE-PRX PHYs, it is a count of uncorrectable FEC blocks.

 This counter will not increment for other PHY Types.

 Increment the counter by one for each FEC block that is

 determined to be uncorrectable by the FEC function in the PHY.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 REFERENCE "IEEE Std 802.3, 30.5.1.1.18"

 ::= { dot3EponFecEntry 5}

dot3EponFecBufferHeadCodingViolation OBJECT-TYPE

 SYNTAX Counter64

 UNITS "octets"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For a 1000 Mb/s operation, it is a count of the number of

 invalid code-group received directly from the link. The

 value has a meaning only in 1000 Mb/s mode and it is

 zero otherwise.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3EponFecEntry 6}

-- ExtendedPackage managed object definitions

dot3ExtPkgObjects OBJECT IDENTIFIER ::={dot3EponObjects 4}

dot3ExtPkgControlObjects OBJECT IDENTIFIER ::= { dot3ExtPkgObjects 1}

dot3ExtPkgControlTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3ExtPkgControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of Extended package Control management

 objects. Entries in the table are control and status

 indication objects of an EPON interface, which are

 gathered in an extended package as an addition to the

 objects based on the IEEE Std 802.3, Clause 30, attributes.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID."

 ::= { dot3ExtPkgControlObjects 1 }

dot3ExtPkgControlEntry OBJECT-TYPE

 SYNTAX Dot3ExtPkgControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the Extended package Control table.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex}

 ::= { dot3ExtPkgControlTable 1 }

Dot3ExtPkgControlEntry ::=

 SEQUENCE {

 dot3ExtPkgObjectReset INTEGER,

 dot3ExtPkgObjectPowerDown TruthValue,

 dot3ExtPkgObjectNumberOfLLIDs Unsigned32,

 dot3ExtPkgObjectFecEnabled INTEGER,

 dot3ExtPkgObjectReportMaximumNumQueues Unsigned32,

 dot3ExtPkgObjectRegisterAction INTEGER

 }

dot3ExtPkgObjectReset OBJECT-TYPE

 SYNTAX INTEGER {

 running(1),

 reset(2)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used to reset the EPON interface. The

 interface may be unavailable while the reset occurs and

 data may be lost.

 Setting this object to running(1) will cause the

 interface to enter into running mode. Setting this

 object to reset(2) will cause the interface to go into

 reset mode. When getting running(1), the interface is in

 running mode. When getting reset(2), the interface is in

 reset mode.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgObjectReset state can lead to a reset of the

 respective interface, leading to an interruption of

 service for the users connected to the respective EPON

 interface.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 A reset for a specific virtual interface resets only

 this virtual interface and not the physical interface.

 Thus, a virtual link that is malfunctioning can be

 reset without affecting the operation of other virtual

 interfaces.

 The reset can cause Discontinuities in the values of the

 counters of the interface, similar to re-initialization

 of the management system. Discontinuity should be

 indicated by the ifCounterDiscontinuityTime object of

 the Interfaces Group MIB module."

 DEFVAL { running }

 ::= { dot3ExtPkgControlEntry 1 }

dot3ExtPkgObjectPowerDown OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used to power down the EPON interface.

 The interface may be unavailable while the power down

 occurs and data may be lost.

 Setting this object to true(1) will cause the interface

 to enter into power down mode. Setting this object to

 false(2) will cause the interface to go out of power

 down mode. When getting true(1), the interface is in

 power down mode. When getting false(2), the interface is

 not in power down mode.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgObjectPowerDown state can lead to a power down

 of the respective interface, leading to an interruption

 of service of the users connected to the respective EPON

 interface.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 A power down/up of a specific virtual interface affects

 only the virtual interface and not the physical

 interface. Hence a virtual link, which needs a certain

 handling, can be powered down and then powered up without

 disrupting the operation of other virtual interfaces.

 The object is relevant when the admin state of the

 interface is active as set by the dot3MpcpAdminState."

 DEFVAL { false }

 ::= { dot3ExtPkgControlEntry 2 }

dot3ExtPkgObjectNumberOfLLIDs OBJECT-TYPE

 SYNTAX Unsigned32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A read only object that indicates the number of

 registered LLIDs. The initialization value is 0.

 This object is applicable for an OLT with the same

 value for all virtual interfaces and for an ONU.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID. At the ONU the

 number of LLIDs for an interface is one."

 ::= { dot3ExtPkgControlEntry 3 }

dot3ExtPkgObjectFecEnabled OBJECT-TYPE

 SYNTAX INTEGER {

 noFecEnabled(1),

 fecTxEnabled(2),

 fecRxEnabled(3),

 fecTxRxEnabled(4)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An object defining the FEC mode of operation of the

 interface, and indicating its state. The modes defined in

 this object are extensions to the FEC modes defined in

 the dot3EponFecMode object.

 When noFECEnabled(1), the interface does not enable FEC

 mode.

 When fecTxEnabled(2), the interface enables the FEC

 transmit mode.

 When fecRxEnabled(3), the interface enables the FEC

 receive mode.

 When fecTxRxEnabled(4), the interface enables the FEC

 transmit and receive mode.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 The FEC counters are referring to the receive path. The

 FEC counters will stop when the FEC receive mode of the

 interface is disabled, as defined by fecRxEnabled(3)

 and fecTxRxEnabled(4) values.

 The counters:

 dot3EponFecPCSCodingViolation - not affected by FEC

 mode.

 dot3EponFecCorrectedBlocks - stops counting when

 Rx\_FEC is not enabled (noFecEnabled(1) and

 fecTxEnabled(2)).

 dot3EponFecUncorrectableBlocks - stops counting when

 Rx\_FEC is not enabled (noFecEnabled(1) and

 fecTxEnabled(2)).

 dot3EponFecBufferHeadCodingViolation - stops counting

 when Rx\_FEC is not enabled (noFecEnabled(1) and

 fecTxEnabled(2)).

 The objects:

 dot3EponFecAbility - indicates the FEC ability and is

 not affected by the FEC mode.

 dot3EponFecMode - indicates the FEC mode for combined RX

 and TX.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgObjectFecEnabled state can lead to disabling

 the Forward Error Correction on the respective interface,

 which can lead to a degradation of the optical link, and

 therefore may lead to an interruption of service for the

 users connected to the respective EPON interface."

 DEFVAL { noFecEnabled }

 ::= { dot3ExtPkgControlEntry 4 }

dot3ExtPkgObjectReportMaximumNumQueues OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object, that defines the maximal number of queues in

 the REPORT message as defined in IEEE Std 802.3, Clause 64. For

 further information please see the description of the

 queue table.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 DEFVAL { 0 }

 ::= { dot3ExtPkgControlEntry 5 }

dot3ExtPkgObjectRegisterAction OBJECT-TYPE

 SYNTAX INTEGER {

 none(1),

 register(2),

 deregister(3),

 reregister(4)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An object configuring the registration state of an

 interface, and indicating its registration state.

 Write operation changes the registration state to its new

 value.

 Read operation returns the value of the state.

 The registration state is reflected in this object and in

 the dot3MpcpRegistrationState object.

 none(1) indicates an unknown state,

 register(2) indicates a registered LLID,

 deregister(3) indicates a deregistered LLID,

 reregister(4) indicates an LLID that is reregistering.

 The following list describes the operation of the

 interface, as specified in the IEEE Std 802.3, when a write

 operation is setting a value.

 none(1) - not doing any action.

 register(2) - registering an LLID that has been requested

 for registration (The LLID is in registering mode.

 dot3MpcpRegistrationState - registering(2) ).

 deregister(3) - deregisters an LLID that is registered

 (dot3MpcpRegistrationState - registered(3) ).

 reregister(4) - reregister an LLID that is registered

 (dot3MpcpRegistrationState - registered(3) ).

 The behavior of an ONU and OLT interfaces, at each one

 of the detailed operation at each state, is described in

 the registration state machine of figure 64-22,

 IEEE Std 802.3.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgObjectRegisterAction state can lead to a change

 in the registration state of the respective interface

 leading to a deregistration and an interruption of

 service of the users connected to the respective EPON

 interface."

 DEFVAL { none }

 ::= { dot3ExtPkgControlEntry 6 }

 dot3ExtPkgQueueTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3ExtPkgQueueEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of the extended package objects for queue

 management. The IEEE Std 802.3 MPCP defines a report message

 of the occupancy of the transmit queues for the feedback

 BW request from the ONUs. These queues serve the uplink

 transmission of the ONU and data is gathered there until

 the ONU is granted for transmission.

 The management table of the queues is added here mainly

 to control the reporting and to gather some statistics

 of their operation. This table is not duplicating

 existing management objects of bridging queues,

 specified in IEEE Std 802.1D, since the existence of a

 dedicated transmit queuing mechanism is implied in the

 IEEE Std 802.3, and the ONU may be a device that is not a

 bridge with embedded bridging queues.

 The format of the REPORT message, as specified

 in IEEE Std 802.3, is presented below:

 +-----------------------------------+

 | Destination Address |

 +-----------------------------------+

 | Source Address |

 +-----------------------------------+

 | Length/Type |

 +-----------------------------------+

 | OpCode |

 +-----------------------------------+

 | TimeStamp |

 +-----------------------------------+

 | Number of queue Sets |

 +-----------------------------------+ /|\

 | Report bitmap | |

 +-----------------------------------+ |

 | Queue 0 report | |

 +-----------------------------------+ | repeated for

 | Queue 1 report | | every

 +-----------------------------------+ | queue\_set

 | Queue 2 report | |

 +-----------------------------------+ |

 | Queue 3 report | |

 +-----------------------------------+ |

 | Queue 4 report | |

 +-----------------------------------+ |

 | Queue 5 report | |

 +-----------------------------------+ |

 | Queue 6 report | |

 +-----------------------------------+ |

 | Queue 7 report | |

 +-----------------------------------+ \|/

 | Pad/reserved |

 +-----------------------------------+

 | FCS |

 +-----------------------------------+

 The 'Queue report' field reports the occupancy of each

 uplink transmission queue.

 The number of queue sets defines the number of the

 reported sets, as would be explained in the description

 of the dot3ExtPkgQueueSetsTable table. For each set the

 report bitmap defines which queue is present in the

 report, meaning that although the MPCP REPORT message

 can report up to 8 queues in a REPORT message, the

 actual number is flexible. The Queue table has a

 variable size that is limited by the

 dot3ExtPkgObjectReportMaximumNumQueues object, as an

 ONU can have fewer queues to report.

 The entries in the table are control and status

 indication objects for managing the queues of an EPON

 interface that are gathered in an extended package as

 an addition to the objects that are based on the

 IEEE Std 802.3 attributes.

 Each object has a row for every virtual link and for

 every queue in the report.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID.

 The number of queues is between 0 and 7 and limited by

 dot3ExtPkgObjectReportMaximumNumQueues."

 ::= { dot3ExtPkgControlObjects 2 }

 dot3ExtPkgQueueEntry OBJECT-TYPE

 SYNTAX Dot3ExtPkgQueueEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the Extended package Queue table. At the

 OLT, the rows exist for each ifIndex and dot3QueueIndex.

 At the ONU, rows exist for the single ifIndex for each

 dot3QueueIndex.

 Rows in the table are created when the ifIndex of the

 link is created. A set of rows per queue are added for

 each ifIndex, denoted by the dot3QueueIndex.

 A set of rows per queue in the table, for an ONU

 interface, are created at the system initialization.

 A set of rows per queue in the table, corresponding to

 the OLT ifIndex and a set of rows per queue

 corresponding to the broadcast virtual link, are

 created at the system initialization.

 A set of rows per queue in the table, corresponding to

 the ifIndex of a virtual link, are created when the

 virtual link is established (ONU registers), and deleted

 when the virtual link is deleted (ONU deregisters)."

 INDEX { ifIndex, dot3QueueIndex }

 ::= { dot3ExtPkgQueueTable 1 }

 Dot3ExtPkgQueueEntry ::=

 SEQUENCE {

 dot3QueueIndex Unsigned32,

 dot3ExtPkgObjectReportNumThreshold Unsigned32,

 dot3ExtPkgObjectReportMaximumNumThreshold Unsigned32,

 dot3ExtPkgStatTxFramesQueue Counter64,

 dot3ExtPkgStatRxFramesQueue Counter64,

 dot3ExtPkgStatDroppedFramesQueue Counter64

 }

 dot3QueueIndex OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An object that identifies an index for the queue table

 reflecting the queue index of the queues that are

 reported in the MPCP REPORT message as defined in

 IEEE Std 802.3, Clause 64 or Clause 77.

 The number of queues is between 0 and 7, and limited by

 dot3ExtPkgObjectReportMaximumNumQueues."

 ::= { dot3ExtPkgQueueEntry 1 }

 dot3ExtPkgObjectReportNumThreshold OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An object that defines the number of thresholds for each

 queue in the REPORT message as defined in IEEE Std 802.3,

 Clause 64 or Clause 77.

 Each queue\_set reporting will provide information on the

 queue occupancy of frames below the matching Threshold.

 Read operation reflects the number of thresholds.

 Write operation sets the number of thresholds for each

 queue.

 The write operation is not restricted in this document

 and can be done at any time. Value cannot exceed the

 maximal value defined by the

 dot3ExtPkgObjectReportMaximumNumThreshold object.

 Changing dot3ExtPkgObjectReportNumThreshold can lead to

 a change in the reporting of the ONU interface and

 therefore to a change in the bandwidth allocation of the

 respective interface. This change may lead a degradation

 or an interruption of service of the users connected to

 the respective EPON interface.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface

 and for each queue. At the ONU, it has a distinct value

 for each queue."

 DEFVAL { 0 }

 ::= { dot3ExtPkgQueueEntry 2 }

 dot3ExtPkgObjectReportMaximumNumThreshold OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object, that defines the maximal number of thresholds

 for each queue in the REPORT message as defined in

 IEEE Std 802.3, Clause 64 or Clause 77. Each queue\_set

 reporting will provide information on the queue occupancy of

 frames below the matching Threshold.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface

 and for each queue. At the ONU, it has a distinct value

 for each queue."

 DEFVAL { 0 }

 ::= { dot3ExtPkgQueueEntry 3 }

 dot3ExtPkgStatTxFramesQueue OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a frame transmission

 occurs from the corresponding 'Queue'.

 Increment the counter by one for each frame transmitted,

 which is an output of the 'Queue'.

 The 'Queue' marking matches the REPORT MPCP message

 Queue field as defined in IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface

 and for each queue. At the ONU, it has a distinct value

 for each queue.

 At the OLT the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3ExtPkgQueueEntry 4}

 dot3ExtPkgStatRxFramesQueue OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a frame reception

 occurs from the corresponding 'Queue'.

 Increment the counter by one for each frame received,

 which is an input to the corresponding 'Queue'.

 The 'Queue' marking matches the REPORT MPCP message

 Queue field as defined in IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface

 and for each queue. At the ONU, it has a distinct value

 for each queue.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3ExtPkgQueueEntry 5}

 dot3ExtPkgStatDroppedFramesQueue OBJECT-TYPE

 SYNTAX Counter64

 UNITS "frames"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "A count of the number of times a frame drop

 occurs from the corresponding 'Queue'.

 Increment the counter by one for each frame dropped

 from the corresponding 'Queue'.

 The 'Queue' marking matches the REPORT MPCP message

 Queue field as defined in IEEE Std 802.3, Clause 64 or Clause 77.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface

 and for each queue. At the ONU, it has a distinct value

 for each queue.

 At the OLT, the value should be zero.

 Discontinuities of this counter can occur at

 re-initialization of the management system and at other

 times, as indicated by the value of the

 ifCounterDiscontinuityTime object of the Interfaces Group MIB

 module."

 ::= { dot3ExtPkgQueueEntry 6}

 dot3ExtPkgQueueSetsTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3ExtPkgQueueSetsEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of Extended package objects used for the

 management of the queue\_sets. Entries are control and

 status indication objects of an EPON interface, which

 are gathered in an extended package as an addition to

 the objects based on the IEEE Std 802.3 attributes. The

 objects in this table are specific for the queue\_sets,

 which are reported in the MPCP REPORT message as defined

 in IEEE Std 802.3, Clause 64 or Clause 77.

 The IEEE Std 802.3 MPCP defines a report message of the

 occupancy of the transmit queues for the feedback BW

 request from the ONUs. These queues serve the uplink

 transmission of the ONU and data is gathered there until

 the ONU is granted for transmission.

 The management table of the queues\_sets is added here

 mainly to control the reporting and to gather some

 statistics of their operation. This table is not

 duplicating existing management objects of bridging

 queues, specified in IEEE Std 802.1Q, since the existence of a

 dedicated transmit queuing mechanism is implied in the

 IEEE Std 802.3, and the ONU may be a device that is not a

 bridge with embedded bridging queues.

 The format of the REPORT message, as specified

 in IEEE Std 802.3, is presented below:

 +-----------------------------------+

 | Destination Address |

 +-----------------------------------+

 | Source Address |

 +-----------------------------------+

 | Length/Type |

 +-----------------------------------+

 | OpCode |

 +-----------------------------------+

 | TimeStamp |

 +-----------------------------------+

 | Number of queue Sets |

 +-----------------------------------+ /|\

 | Report bitmap | |

 +-----------------------------------+ |

 | Queue 0 report | |

 +-----------------------------------+ | repeated for

 | Queue 1 report | | every

 +-----------------------------------+ | queue\_set

 | Queue 2 report | |

 +-----------------------------------+ |

 | Queue 3 report | |

 +-----------------------------------+ |

 | Queue 4 report | |

 +-----------------------------------+ |

 | Queue 5 report | |

 +-----------------------------------+ |

 | Queue 6 report | |

 +-----------------------------------+ |

 | Queue 7 report | |

 +-----------------------------------+ \|/

 | Pad/reserved |

 +-----------------------------------+

 | FCS |

 +-----------------------------------+

 As can be seen from the message format, the ONU

 interface reports of the status of up to 8 queues

 and it can report in a single MPCP REPORT message

 of a few sets of queues.

 The number of queue\_sets defines the number of the

 reported sets, and it can reach a value of up to 8.

 It means that an ONU can hold a variable number of

 sets between 0 and 7.

 The dot3ExtPkgQueueSetsTable table has a variable

 queue\_set size that is limited by the

 dot3ExtPkgObjectReportMaximumNumThreshold object as an

 ONU can have fewer queue\_sets to report.

 The 'Queue report' field reports the occupancy of each

 uplink transmission queue. The queue\_sets can be used to

 report the occupancy of the queues in a few levels as to

 allow granting, in an accurate manner, of only part of

 the data available in the queues. A Threshold is

 defined for each queue\_set to define the level of the

 queue that is counted for the report of the occupancy.

 The threshold is reflected in the queue\_set table by the

 dot3ExtPkgObjectReportThreshold object.

 For each queue set, the report bitmap defines which

 queues are present in the report, meaning that

 although the MPCP REPORT message can report of up to 8

 queues in a REPORT message, the actual number is

 flexible.

 The dot3ExtPkgQueueSetsTable table has a variable queue

 size that is limited by the

 dot3ExtPkgObjectReportMaximumNumQueues object as an ONU

 can have fewer queues to report.

 Each object has a row for every virtual link, for each

 queue in the report and for each queue\_set in the queue.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID.

 The number of queues is between 0 and 7 and limited by

 dot3ExtPkgObjectReportMaximumNumQueues.

 The number of queues\_sets is between 0 and 7 and limited

 by dot3ExtPkgObjectReportMaximumNumThreshold."

 ::= { dot3ExtPkgControlObjects 3 }

 dot3ExtPkgQueueSetsEntry OBJECT-TYPE

 SYNTAX Dot3ExtPkgQueueSetsEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the Extended package queue\_set table. At

 the OLT, the rows exist for each ifIndex,

 dot3QueueSetQueueIndex and dot3QueueSetIndex. At the

 ONU, rows exist for the single ifIndex, for each

 dot3QueueSetQueueIndex and dot3QueueSetIndex.

 Rows in the table are created when the ifIndex of the

 link is created. A set of rows per queue and per

 queue\_set are added for each ifIndex, denoted by

 dot3QueueSetIndex and dot3QueueSetQueueIndex.

 A set of rows per queue and per queue\_set in the table,

 for an ONU interface are created at system

 initialization.

 A set of rows per queue and per queue\_Set in the table,

 corresponding to the OLT ifIndex and a set of rows per

 queue and per queue\_set, corresponding to the broadcast

 virtual link, are created at system initialization.

 A set of rows per queue and per queue\_set in the table,

 corresponding to the ifIndex of a virtual link are

 created when the virtual link is established (ONU

 registers) and deleted when the virtual link is deleted

 (ONU deregisters)."

 INDEX { ifIndex,

 dot3QueueSetQueueIndex,dot3QueueSetIndex}

 ::= { dot3ExtPkgQueueSetsTable 1 }

 Dot3ExtPkgQueueSetsEntry ::=

 SEQUENCE {

 dot3QueueSetQueueIndex Unsigned32,

 dot3QueueSetIndex Unsigned32,

 dot3ExtPkgObjectReportThreshold Unsigned32

 }

 dot3QueueSetQueueIndex OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An object that identifies the queue index for the

 dot3ExtPkgQueueSetsTable table. The queues are reported

 in the MPCP REPORT message as defined in IEEE Std 802.3,

 Clause 64 or Clause 77.

 The number of queues is between 0 and 7, and limited by

 dot3ExtPkgObjectReportMaximumNumQueues.

 Value corresponds to the dot3QueueIndex of the queue

 table."

 ::= { dot3ExtPkgQueueSetsEntry 1 }

 dot3QueueSetIndex OBJECT-TYPE

 SYNTAX Unsigned32 (0..7)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An object that identifies the queue\_set index for the

 dot3ExtPkgQueueSetsTable table. The queues are reported

 in the MPCP REPORT message as defined in IEEE Std 802.3,

 Clause 64 or Clause 77.

 The number of queues\_sets is between 0 and 7, and

 limited by dot3ExtPkgObjectReportMaximumNumThreshold."

 ::= { dot3ExtPkgQueueSetsEntry 2 }

 dot3ExtPkgObjectReportThreshold OBJECT-TYPE

 SYNTAX Unsigned32

 UNITS "TQ (16 ns)"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An object that defines the value of a threshold report

 for each queue\_set in the REPORT message as defined in

 IEEE Std 802.3, Clause 64 or Clause 77. The number of sets for

 each queue is dot3ExtPkgObjectReportNumThreshold.

 In the REPORT message, each queue\_set reporting will

 provide information on the occupancy of the queues for

 frames below the matching Threshold.

 The value returned shall be in Time quanta (TQ), which

 is 16 ns or 2 octets increments.

 Read operation provides the threshold value. Write

 operation sets the value of the threshold.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgObjectReportThreshold can lead to a change in

 the reporting of the ONU interface and therefore to a

 change in the bandwidth allocation of the respective

 interface. This change may lead a degradation or an

 interruption of service for the users connected to the

 respective EPON interface.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface,

 for each queue and for each queue\_set. At the ONU, it has

 a distinct value for each queue and for each queue\_set."

 DEFVAL { 0 }

 ::= { dot3ExtPkgQueueSetsEntry 3 }

 --Optical Interface status tables

 dot3ExtPkgOptIfTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3ExtPkgOptIfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table defines the control and status indication

 objects for the optical interface of the EPON interface.

 Each object has a row for every virtual link denoted by

 the corresponding ifIndex.

 The LLID field, as defined in the IEEE Std 802.3, is a 2-byte

 register (15-bit field and a broadcast bit) limiting the

 number of virtual links to 32768. Typically the number

 of expected virtual links in a PON is like the number of

 ONUs, which is 32-64, plus an additional entry for

 broadcast LLID.

 Although the optical interface is a physical interface,

 there is a row in the table for each virtual interface.

 The reason for having a separate row for each virtual

 link is that the OLT has a separate link for each one of

 the ONUs. For instance, ONUs could be in different

 distances with different link budgets and different

 receive powers, therefore having different power alarms.

 It is quite similar to a case of different physical

 interfaces."

 ::= { dot3ExtPkgControlObjects 5}

 dot3ExtPkgOptIfEntry OBJECT-TYPE

 SYNTAX Dot3ExtPkgOptIfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the optical interface table of the EPON

 interface.

 Rows exist for an OLT interface and an ONU interface.

 A row in the table is denoted by the ifIndex of the link

 and it is created when the ifIndex is created.

 The rows in the table for an ONU interface are created

 at system initialization.

 The row in the table corresponding to the OLT ifIndex

 and the row corresponding to the broadcast virtual link

 are created at system initialization.

 A row in the table corresponding to the ifIndex of a

 virtual links is created when a virtual link is

 established (ONU registers) and deleted when the virtual

 link is deleted (ONU deregisters)."

 INDEX { ifIndex }

 ::= { dot3ExtPkgOptIfTable 1 }

 Dot3ExtPkgOptIfEntry ::=

 SEQUENCE {

 dot3ExtPkgOptIfSuspectedFlag TruthValue,

 dot3ExtPkgOptIfInputPower Integer32,

 dot3ExtPkgOptIfLowInputPower Integer32,

 dot3ExtPkgOptIfHighInputPower Integer32,

 dot3ExtPkgOptIfLowerInputPowerThreshold Integer32,

 dot3ExtPkgOptIfUpperInputPowerThreshold Integer32,

 dot3ExtPkgOptIfOutputPower Integer32,

 dot3ExtPkgOptIfLowOutputPower Integer32,

 dot3ExtPkgOptIfHighOutputPower Integer32,

 dot3ExtPkgOptIfLowerOutputPowerThreshold Integer32,

 dot3ExtPkgOptIfUpperOutputPowerThreshold Integer32,

 dot3ExtPkgOptIfSignalDetect TruthValue,

 dot3ExtPkgOptIfTransmitAlarm TruthValue,

 dot3ExtPkgOptIfTransmitEnable TruthValue

 }

 dot3ExtPkgOptIfSuspectedFlag OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is a reliability indication.

 If true, the data in this entry may be unreliable.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 1 }

 dot3ExtPkgOptIfInputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The optical power monitored at the input.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 2 }

 dot3ExtPkgOptIfLowInputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The lowest optical power monitored at the input during the

 current 15-minute interval.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 3 }

 dot3ExtPkgOptIfHighInputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The highest optical power monitored at the input during the

 current 15-minute interval.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 4 }

 dot3ExtPkgOptIfLowerInputPowerThreshold OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "The lower limit threshold on input power. If

 dot3ExtPkgOptIfInputPower drops to this value or below,

 a Threshold Crossing Alert (TCA) should be sent.

 Reading will present the threshold value. Writing will

 set the value of the threshold.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgOptIfLowerInputPowerThreshold can lead to a Threshold

 Crossing Alert (TCA) being sent for the respective interface.

 This alert may be leading to an interruption of service for the

 users connected to the respective EPON interface, depending on

 the system action on such an alert.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 5 }

 dot3ExtPkgOptIfUpperInputPowerThreshold OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "The upper limit threshold on input power. If

 dot3ExtPkgOptIfInputPower reaches or exceeds this value,

 a Threshold Crossing Alert (TCA) should be sent.

 Reading will present the threshold value. Writing will

 set the value of the threshold.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgOptIfUpperInputPowerThreshold can lead to a Threshold

 Crossing Alert (TCA) being sent for the respective interface.

 This alert may be leading to an interruption of service for the

 users connected to the respective EPON interface, depending on

 the system action on such an alert.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 6 }

 dot3ExtPkgOptIfOutputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The optical power monitored at the output.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 7 }

 dot3ExtPkgOptIfLowOutputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The lowest optical power monitored at the output during the

 current 15-minute interval.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 8 }

 dot3ExtPkgOptIfHighOutputPower OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The highest optical power monitored at the output during the

 current 15-minute interval.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 9 }

 dot3ExtPkgOptIfLowerOutputPowerThreshold OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "The lower limit threshold on output power. If

 dot3ExtPkgOptIfOutputPower drops to this value or below,

 a Threshold Crossing Alert (TCA) should be sent.

 Reading will present the threshold value. Writing will

 set the value of the threshold.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgOptIfLowerOutputPowerThreshold can lead to a Threshold

 Crossing Alert (TCA) being sent for the respective interface.

 This alert may be leading to an interruption of service for the

 users connected to the respective EPON interface, depending on

 the system action on such an alert.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 10 }

 dot3ExtPkgOptIfUpperOutputPowerThreshold OBJECT-TYPE

 SYNTAX Integer32

 UNITS "0.1 dbm"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "The upper limit threshold on output power. If

 dot3ExtPkgOptIfOutputPower reaches or exceeds this value,

 a Threshold Crossing Alert (TCA) should be sent.

 Reading will present the threshold value. Writing will

 set the value of the threshold.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgOptIfUpperOutputPowerThreshold can lead to a Threshold

 Crossing Alert (TCA) being sent for the respective interface.

 This alert may be leading to an interruption of service of the

 users connected to the respective EPON interface, depending on

 the system action on such an alert.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 ::= { dot3ExtPkgOptIfEntry 11 }

 dot3ExtPkgOptIfSignalDetect OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "When getting true(1), there is a valid optical signal at

 the receive that is above the optical power level for

 signal detection. When getting false(2) the optical

 signal at the receive is below the optical power level

 for signal detection.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 DEFVAL { false }

 ::= { dot3ExtPkgOptIfEntry 12 }

 dot3ExtPkgOptIfTransmitAlarm OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "When getting true(1) there is a non-valid optical signal

 at the transmit of the interface, either a higher level

 or lower level than expected. When getting false(2) the

 optical signal at the transmit is valid and in the

 required range.

 This object is applicable for an OLT and an ONU. At the

 OLT, it has a distinct value for each virtual interface."

 DEFVAL { false }

 ::= { dot3ExtPkgOptIfEntry 13 }

 dot3ExtPkgOptIfTransmitEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Setting this object to true(1) will cause the optical

 interface to start transmission (according to the

 control protocol specified for the logical interface).

 Setting this object to false(2) will cause the

 interface to stop the optical transmission.

 When getting true(1), the optical interface is in

 transmitting mode (obeying to the logical control

 protocol).

 When getting false(2), the optical interface is not in

 transmitting mode.

 The write operation is not restricted in this document

 and can be done at any time. Changing

 dot3ExtPkgOptIfTransmitEnable state can lead to a halt

 in the optical transmission of the respective interface

 leading to an interruption of service of the users

 connected to the respective EPON interface.

 The object is relevant when the admin state of the

 interface is active as set by the dot3MpcpAdminState.

 This object is applicable for an OLT and an ONU. At the

 OLT it, has a distinct value for each virtual interface."

 DEFVAL { false }

 ::= { dot3ExtPkgOptIfEntry 14 }

 --

 -- The MulticastIDs Table

 --

dot3RecognizedMulticastIDsTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot3RecognizedMulticastIDsEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of MulticastIDs to be recognized by this device."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.25"

 ::= { dot3EponObjects 5 }

dot3RecognizedMulticastIDsEntry OBJECT-TYPE

 SYNTAX Dot3RecognizedMulticastIDsEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table of MulticastIDs to be recognized by this

 device."

 INDEX { ifIndex, dot3RecognizedMulticastIDIndex }

 ::= { dot3RecognizedMulticastIDsTable 1 }

Dot3RecognizedMulticastIDsEntry ::=

 SEQUENCE {

 dot3RecognizedMulticastIDIndex Unsigned32,

 dot3RecognizedMulticastID Unsigned32

 }

dot3RecognizedMulticastIDIndex OBJECT-TYPE

 SYNTAX Unsigned32 (0..127)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An index into the table of MulticastIDs to be recognized by this

 device."

 ::= { dot3RecognizedMulticastIDsEntry 1 }

dot3RecognizedMulticastID OBJECT-TYPE

 SYNTAX Unsigned32

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "An unsigned32 representing a single MulticastID to be recognized

 by this device."

 REFERENCE "IEEE Std 802.3, 30.3.5.1.25"

 ::= { dot3RecognizedMulticastIDsEntry 2 }

 -- Conformance statements

 -- Conformance Groups

 dot3EponGroups OBJECT IDENTIFIER ::= { dot3EponConformance 1 }

 dot3MpcpGroupBase OBJECT-GROUP

 OBJECTS {

 dot3MpcpOperStatus,

 dot3MpcpAdminState,

 dot3MpcpMode,

 dot3MpcpSyncTime,

 dot3MpcpLinkID,

 dot3MpcpRemoteMACAddress,

 dot3MpcpRegistrationState,

 dot3MpcpMaximumPendingGrants,

 dot3MpcpTransmitElapsed,

 dot3MpcpReceiveElapsed,

 dot3MpcpRoundTripTime

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3 Mpcp Control entity state

 definition. Objects are per LLID."

 ::= { dot3EponGroups 1 }

 dot3MpcpGroupStat OBJECT-GROUP

 OBJECTS {

 dot3MpcpMACCtrlFramesTransmitted,

 dot3MpcpMACCtrlFramesReceived,

 dot3MpcpDiscoveryWindowsSent,

 dot3MpcpDiscoveryTimeout,

 dot3MpcpTxRegRequest,

 dot3MpcpRxRegRequest,

 dot3MpcpTxRegAck,

 dot3MpcpRxRegAck,

 dot3MpcpTxReport,

 dot3MpcpRxReport,

 dot3MpcpTxGate,

 dot3MpcpRxGate,

 dot3MpcpTxRegister,

 dot3MpcpRxRegister

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3 Mpcp Statistics.

 Objects are per LLID."

 ::= { dot3EponGroups 2 }

 dot3OmpeGroupID OBJECT-GROUP

 OBJECTS {

 dot3OmpEmulationType

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3 OMP emulation entity

 state definition. Objects are per LLID."

 ::= { dot3EponGroups 3 }

 dot3OmpeGroupStat OBJECT-GROUP

 OBJECTS {

 dot3OmpEmulationSLDErrors,

 dot3OmpEmulationCRC8Errors,

 dot3OmpEmulationBadLLID,

 dot3OmpEmulationGoodLLID,

 dot3OmpEmulationOnuPonCastLLID,

 dot3OmpEmulationOltPonCastLLID,

 dot3OmpEmulationBroadcastBitNotOnuLlid,

 dot3OmpEmulationOnuLLIDNotBroadcast,

 dot3OmpEmulationBroadcastBitPlusOnuLlid,

 dot3OmpEmulationNotBroadcastBitNotOnuLlid

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3 OMP emulation

 Statistics. Objects are per LLID."

 ::= { dot3EponGroups 4 }

 dot3EponFecGroupAll OBJECT-GROUP

 OBJECTS {

 dot3EponFecPCSCodingViolation,

 dot3EponFecAbility,

 dot3EponFecMode,

 dot3EponFecCorrectedBlocks,

 dot3EponFecUncorrectableBlocks,

 dot3EponFecBufferHeadCodingViolation

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3 FEC group control and

 statistics. Objects are per LLID."

 ::= { dot3EponGroups 5 }

 dot3ExtPkgGroupControl OBJECT-GROUP

 OBJECTS {

 dot3ExtPkgObjectReset,

 dot3ExtPkgObjectPowerDown,

 dot3ExtPkgObjectNumberOfLLIDs,

 dot3ExtPkgObjectFecEnabled,

 dot3ExtPkgObjectReportMaximumNumQueues,

 dot3ExtPkgObjectRegisterAction

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3ExtPkg control

 definition. Objects are per LLID."

 ::= { dot3EponGroups 6 }

 dot3ExtPkgGroupQueue OBJECT-GROUP

 OBJECTS {

 dot3ExtPkgObjectReportNumThreshold,

 dot3ExtPkgObjectReportMaximumNumThreshold,

 dot3ExtPkgStatTxFramesQueue,

 dot3ExtPkgStatRxFramesQueue,

 dot3ExtPkgStatDroppedFramesQueue

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3ExtPkg Queue

 control. Objects are per LLID, per queue."

 ::= { dot3EponGroups 7 }

 dot3ExtPkgGroupQueueSets OBJECT-GROUP

 OBJECTS {

 dot3ExtPkgObjectReportThreshold

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of dot3ExtPkg queue\_set

 control. Objects are per LLID, per queue, per

 queue\_set."

 ::= { dot3EponGroups 8 }

 dot3ExtPkgGroupOptIf OBJECT-GROUP

 OBJECTS {

 dot3ExtPkgOptIfSuspectedFlag,

 dot3ExtPkgOptIfInputPower,

 dot3ExtPkgOptIfLowInputPower,

 dot3ExtPkgOptIfHighInputPower,

 dot3ExtPkgOptIfLowerInputPowerThreshold,

 dot3ExtPkgOptIfUpperInputPowerThreshold,

 dot3ExtPkgOptIfOutputPower,

 dot3ExtPkgOptIfLowOutputPower,

 dot3ExtPkgOptIfHighOutputPower,

 dot3ExtPkgOptIfLowerOutputPowerThreshold,

 dot3ExtPkgOptIfUpperOutputPowerThreshold,

 dot3ExtPkgOptIfSignalDetect,

 dot3ExtPkgOptIfTransmitAlarm,

 dot3ExtPkgOptIfTransmitEnable

 }

 STATUS current

 DESCRIPTION

 "A collection of objects of control and status indication

 of the optical interface.

 Objects are per LLID."

 ::= { dot3EponGroups 9 }

 dot3EponGroupMulticastIDs OBJECT-GROUP

 OBJECTS {

 dot3RecognizedMulticastID

 }

 STATUS current

 DESCRIPTION

 "One of a set of MulticastIDs recognized by an EPON interface."

 ::= { dot3EponGroups 10 }

 -- Compliance statements

 dot3EponCompliances

 OBJECT IDENTIFIER ::= { dot3EponConformance 2 }

 dot3MPCPCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION "The compliance statement for MultiPoint

 Control Protocol interfaces."

 MODULE -- this module

 MANDATORY-GROUPS { dot3MpcpGroupBase}

 GROUP dot3MpcpGroupStat

 DESCRIPTION "This group is mandatory for all MPCP supporting

 interfaces for statistics collection."

 ::= { dot3EponCompliances 1}

 dot3OmpeCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION "The compliance statement for OMPEmulation

 interfaces."

 MODULE -- this module

 MANDATORY-GROUPS { dot3OmpeGroupID}

 GROUP dot3OmpeGroupStat

 DESCRIPTION "This group is mandatory for all OMPemulation

 supporting interfaces for statistics collection."

 ::= { dot3EponCompliances 2}

 dot3EponFecCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION "The compliance statement for FEC EPON interfaces.

 This group is mandatory for all FEC supporting

 interfaces for control and statistics collection."

 MODULE -- this module

 MANDATORY-GROUPS { dot3EponFecGroupAll }

 ::= { dot3EponCompliances 3}

 dot3ExtPkgCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION "The compliance statement for EPON Interfaces

 using the extended package."

 MODULE -- this module

 MANDATORY-GROUPS { dot3ExtPkgGroupControl }

 GROUP dot3ExtPkgGroupQueue

 DESCRIPTION " This group is mandatory for all EPON interfaces

 supporting REPORT queue management of the extended

 package."

 GROUP dot3ExtPkgGroupQueueSets

 DESCRIPTION " This group is mandatory for all EPON interfaces

 supporting REPORT queue\_sets management of the

 extended package."

 GROUP dot3ExtPkgGroupOptIf

 DESCRIPTION "This group is mandatory for all EPON interfaces

 supporting optical interfaces management,

 of the extended package."

 ::= { dot3EponCompliances 4}

 dot3EponMulticastIDsCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION "The compliance statement for EPON Interfaces that

 support MulticastIDs."

 MODULE -- this module

 MANDATORY-GROUPS { dot3EponGroupMulticastIDs }

 ::= { dot3EponCompliances 5 }

 END