IEEE8023-EFM-CU-MIB DEFINITIONS ::= BEGIN

 IMPORTS

 MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE, Integer32,

 Unsigned32, Counter32, org

 FROM SNMPv2-SMI -- [RFC2578]

 TEXTUAL-CONVENTION, TruthValue, RowStatus, PhysAddress

 FROM SNMPv2-TC -- [RFC2579]

 MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP

 FROM SNMPv2-CONF -- [RFC2580]

 SnmpAdminString

 FROM SNMP-FRAMEWORK-MIB -- [RFC3411]

 ifIndex, ifSpeed

 FROM IF-MIB -- [RFC2863]

 ;

 ieee8023efmCuMIB 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) Copper (EFMCu) Interfaces

 2BASE-TL and 10PASS-TS, defined in IEEE Std 802.3.

 Of particular interest are Clause 61, 'Physical Coding

 Sublayer (PCS) and common specifications, type 10PASS-TS and

 type 2BASE-TL', Clause 30, 'Management', Clause 45,

 'Management Data Input/Output (MDIO) Interface', Annex 62A,

 'PMD profiles for 10PASS-TS' and Annex 63A, 'PMD profiles for

 2BASE-TL'."

 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 5066."

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

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

 ieee8023efmcu(11) 2 }

 -- Sections of the module

 efmCuObjects OBJECT IDENTIFIER ::= { ieee8023efmCuMIB 1 }

 efmCuConformance OBJECT IDENTIFIER ::= { ieee8023efmCuMIB 2 }

 -- Groups in the module

 efmCuPort OBJECT IDENTIFIER ::= { efmCuObjects 1 }

 efmCuPme OBJECT IDENTIFIER ::= { efmCuObjects 2 }

 -- Textual Conventions

 EfmProfileIndex ::= TEXTUAL-CONVENTION

 DISPLAY-HINT "d"

 STATUS current

 DESCRIPTION

 "A unique value, greater than zero, for each PME configuration

 profile in the managed EFMCu port. Values should be assigned

 contiguously starting from 1. The value for each profile shall

 remain constant at least from one re-initialization of the

 entity's network management system to the next re-initialization."

 SYNTAX Unsigned32 (1..255)

 EfmProfileIndexOrZero ::= TEXTUAL-CONVENTION

 DISPLAY-HINT "d"

 STATUS current

 DESCRIPTION

 "This textual convention is an extension of the

 EfmProfileIndex convention. The latter defines a greater than

 zero value used to identify a PME profile in the managed EFMCu

 port. This extension permits the additional value of zero.

 The value of zero is object-specific and shall therefore be

 defined as part of the description of any object that uses

 this syntax.

 Examples of the usage of zero value might include situations

 where the current operational profile is unknown."

 SYNTAX Unsigned32 (0..255)

 EfmProfileIndexList ::= TEXTUAL-CONVENTION

 DISPLAY-HINT "1d:"

 STATUS current

 DESCRIPTION

 "This textual convention represents a list of up to 6

 EfmProfileIndex values, any of which can be chosen for

 configuration of a PME in a managed EFMCu port.

 The EfmProfileIndex textual convention defines a greater than

 zero value used to identify a PME profile.

 The value of this object is a concatenation of zero or

 more (up to 6) octets, where each octet contains an 8-bit

 EfmProfileIndex value.

 A zero-length octet string is object-specific and shall

 therefore be defined as part of the description of any object

 that uses this syntax. Examples of the usage of a zero-length

 value might include situations where an object using this

 textual convention is irrelevant for a specific EFMCu port

 type."

 SYNTAX OCTET STRING (SIZE(0..6))

 EfmTruthValueOrUnknown ::= TEXTUAL-CONVENTION

 STATUS current

 DESCRIPTION

 "This textual convention is an extension of the TruthValue

 convention. The latter defines a Boolean value with possible

 values of true(1) and false(2). This extension permits the

 additional value of unknown(0), which can be returned as the

 result of a GET operation when an exact true or false value

 of the object cannot be determined."

 SYNTAX INTEGER { unknown(0), true(1), false(2) }

 -- Port Notifications Group

 efmCuPortNotifications OBJECT IDENTIFIER ::= { efmCuPort 0 }

 efmCuLowRateCrossing NOTIFICATION-TYPE

 OBJECTS {

 ifSpeed,

 efmCuThreshLowRate

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that the EFMCu port's data rate

 has reached/dropped below or exceeded the low rate threshold,

 specified by efmCuThreshLowRate.

 This notification may be sent for the -O subtype ports

 (2BaseTL-O/10PassTS-O) while the port is Up, on the crossing

 event in both directions: from normal (rate is above the

 threshold) to low (rate equals the threshold or below it) and

 from low to normal. This notification is not applicable to

 the -R subtypes.

 A small debouncing period of 2.5 sec, between the detection

 of the condition and the notification, should be implemented to

 prevent simultaneous LinkUp/LinkDown and efmCuLowRateCrossing

 notifications to be sent.

 The adaptive nature of the EFMCu technology allows the port to

 adapt itself to the changes in the copper environment, e.g.,

 an impulse noise, alien crosstalk, or a micro-interruption may

 temporarily drop one or more PMEs in the aggregation group,

 causing a rate degradation of the aggregated EFMCu link.

 The dropped PMEs would then try to re-initialize, possibly at

 a lower rate than before, adjusting the rate to provide

 required target SNR margin.

 Generation of this notification is controlled by the

 efmCuLowRateCrossingEnable object."

 ::= { efmCuPortNotifications 1 }

 -- PCS Port group

 efmCuPortConfTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPortConfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table for Configuration of EFMCu 2BASE-TL/10PASS-TS (PCS)

 Ports. Entries in this table shall be maintained in a

 persistent manner."

 ::= { efmCuPort 1 }

 efmCuPortConfEntry OBJECT-TYPE

 SYNTAX EfmCuPortConfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu Port Configuration table.

 Each entry represents an EFMCu port indexed by the ifIndex.

 Note that an EFMCu PCS port runs on top of a single

 or multiple PME port(s), which are also indexed by ifIndex."

 INDEX { ifIndex }

 ::= { efmCuPortConfTable 1 }

 EfmCuPortConfEntry ::=

 SEQUENCE {

 efmCuPAFAdminState INTEGER,

 efmCuPAFDiscoveryCode PhysAddress,

 efmCuAdminProfile EfmProfileIndexList,

 efmCuTargetDataRate Unsigned32,

 efmCuTargetSnrMgn Unsigned32,

 efmCuAdaptiveSpectra TruthValue,

 efmCuThreshLowRate Unsigned32,

 efmCuLowRateCrossingEnable TruthValue

 }

 efmCuPAFAdminState OBJECT-TYPE

 SYNTAX INTEGER {

 enabled(1),

 disabled(2)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Administrative (desired) state of the PAF of the EFMCu port

 (PCS).

 When 'disabled', PME aggregation will not be performed by the

 PCS. No more than a single PME can be assigned to this PCS in

 this case.

 When 'enabled', PAF will be performed by the PCS when the link

 is Up, even on a single attached PME, if PAF is supported.

 PCS ports incapable of supporting PAF shall return a value of

 'disabled'. Attempts to 'enable' such ports shall be

 rejected.

 A PAF 'enabled' port with multiple PMEs assigned cannot be

 'disabled'. Attempts to 'disable' such port shall be

 rejected, until at most one PME is left assigned.

 Changing PAFAdminState is a traffic-disruptive operation and

 as such shall be done when the link is Down. Attempts to

 change this object shall be rejected if the link is Up or

 Initializing.

 This object maps to IEEE Std 802.3, Clause 30 attribute aPAFAdminState.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then this

 object maps to the PAF enable bit in the 10P/2B PCS control

 register.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 45.2.3.26.3"

 ::= { efmCuPortConfEntry 1 }

 efmCuPAFDiscoveryCode OBJECT-TYPE

 SYNTAX PhysAddress (SIZE(0|6))

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "PAF Discovery Code of the EFMCu port (PCS).

 A unique 6-octet code used by the Discovery function,

 when PAF is supported.

 PCS ports incapable of supporting PAF shall return a

 zero-length octet string on an attempt to read this object.

 An attempt to write to this object shall be rejected for such

 ports.

 This object shall be instantiated for the -O subtype PCS before

 writing operations on the efmCuPAFRemoteDiscoveryCode

 (Set\_if\_Clear and Clear\_if\_Same) are performed by PMEs

 associated with the PCS.

 The initial value of this object for -R subtype ports after

 reset is all zeros. For -R subtype ports, the value of this

 object cannot be changed directly. This value may be changed

 as a result of writing operation on the

 efmCuPAFRemoteDiscoveryCode object of remote PME of -O

 subtype, connected to one of the local PMEs associated with

 the PCS.

 Discovery shall be performed when the link is Down.

 Attempts to change this object shall be rejected (in case of

 SNMP with the error inconsistentValue), if the link is Up or

 Initializing.

 The PAF Discovery Code maps to the local Discovery code

 variable in PAF (note that it does not have a corresponding

 Clause 45 register)."

 REFERENCE

 "IEEE Std 802.3, 61.2.2.8.3, 61.2.2.8.4, 45.2.6.6.1, 45.2.6.8,

 61A.2"

 ::= { efmCuPortConfEntry 2 }

 efmCuAdminProfile OBJECT-TYPE

 SYNTAX EfmProfileIndexList

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired configuration profile(s), common for all PMEs in the

 EFMCu port. This object is a list of pointers to entries in

 either efmCuPme2BProfileTable or

 efmCuPme10PProfileTable, depending on the current

 operating SubType of the EFMCu port as indicated by

 efmCuPortSide.

 The value of this object is a list of up to 6 indices of

 profiles. If this list consists of a single profile index,

 then all PMEs assigned to this EFMCu port shall be configured

 according to the profile referenced by that index, unless it

 is overwritten by a corresponding non-zero

 efmCuPmeAdminProfile instance, which takes precedence over

 efmCuAdminProfile.

 A list consisting of more than one index allows each PME

 in the port to be configured according to any profile

 specified in the list.

 By default, this object has a value of 0x01, referencing the

 1st entry in efmCuPme2BProfileTable or

 efmCuPme10PProfileTable.

 This object is writeable and readable for the -O subtype

 (2BaseTL-O or 10PassTS-O) EFMCu ports. It is irrelevant for

 the -R subtype (2BaseTL-R or 10PassTS-R) ports -- a

 zero-length octet string shall be returned on an attempt to

 read this object and an attempt to change this object shall be

 rejected in this case.

 Note that the current operational profile value is available

 via the efmCuPmeOperProfile object.

 Any modification of this object shall be performed when the

 link is Down. Attempts to change this object shall be

 rejected, if the link is Up or Initializing.

 Attempts to set this object to a list with a member value that

 is not the value of the index for an active entry in the

 corresponding profile table shall be rejected.

 This object maps to IEEE Std 802.3, Clause 30 attribute aProfileSelect.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.6"

 DEFVAL { '01'H }

 ::= { efmCuPortConfEntry 3 }

 efmCuTargetDataRate OBJECT-TYPE

 SYNTAX Unsigned32(1..100000|999999)

 UNITS "Kbps"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired EFMCu port 'net' (as seen across MII) Data Rate in

 kb/s, to be achieved during initialization, under spectral

 restrictions placed on each PME via efmCuAdminProfile or

 efmCuPmeAdminProfile, with the desired SNR margin specified by

 efmCuTargetSnrMgn.

 In case of PAF, this object represents a sum of individual PME

 data rates, modified to compensate for fragmentation and

 64/65-octet encapsulation overhead (e.g., target data rate of

 10 Mb/s shall allow lossless transmission of a full-duplex

 10 Mb/s Ethernet frame stream with minimal inter-frame gap).

 The value is limited above by 100 Mb/s as this is the max

 burst rate across MII for EFMCu ports.

 The value between 1 and 100000 indicates that the total data

 rate (ifSpeed) of the EFMCu port after initialization shall be

 equal to the target data rate or less, if the target data rate

 cannot be achieved under spectral restrictions specified by

 efmCuAdminProfile/efmCuPmeAdminProfile and with the desired

 SNR margin. In case the copper environment allows a higher

 total data rate to be achieved than that specified by the

 target, the excess capability shall be either converted to

 additional SNR margin or reclaimed by minimizing transmit

 power as controlled by efmCuAdaptiveSpectra.

 The value of 999999 means that the target data rate is not

 fixed and shall be set to the maximum attainable rate during

 initialization (Best Effort), under specified spectral

 restrictions and with the desired SNR margin.

 This object is read-write for the -O subtype EFMCu ports

 (2BaseTL-O/10PassTS-O) and not available for the -R subtypes.

 Changing of the Target Data Rate shall be performed when the

 link is Down. Attempts to change this object shall be rejected

 (in case of SNMP with the error inconsistentValue), if the

 link is Up or Initializing.

 Note that the current Data Rate of the EFMCu port is

 represented by the ifSpeed object of IF-MIB.

 This object shall be maintained in a persistent manner."

 ::= { efmCuPortConfEntry 4 }

 efmCuTargetSnrMgn OBJECT-TYPE

 SYNTAX Unsigned32(0..21)

 UNITS "dB"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired EFMCu port SNR margin to be achieved on all PMEs

 assigned to the port, during initialization. (The SNR margin

 is the difference between the desired SNR and the actual SNR.)

 Note that IEEE Std 802.3 recommends using a default target SNR margin

 of 5 dB for 2BASE-TL ports and 6 dB for 10PASS-TS ports in

 order to achieve a mean bit error ratio (BER) of 10^-7 at the

 PMA service interface.

 This object is read-write for the -O subtype EFMCu ports

 (2BaseTL-O/10PassTS-O) and not available for the -R subtypes.

 Changing of the target SNR margin shall be performed when the

 link is Down. Attempts to change this object shall be rejected

 (in case of SNMP with the error inconsistentValue), if the

 link is Up or Initializing.

 Note that the current SNR margin of the PMEs comprising the

 EFMCu port is represented by efmCuPmeSnrMgn.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 61.1.2"

 ::= { efmCuPortConfEntry 5 }

 efmCuAdaptiveSpectra OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates how to utilize excess capacity when the copper

 environment allows a higher total data rate to be achieved

 than that specified by the efmCuTargetDataRate.

 A value of true(1) indicates that the excess capability shall

 be reclaimed by minimizing transmit power, e.g., using higher

 constellations and Power Back-Off, in order to reduce

 interference to other copper pairs in the binder and the

 adverse impact to link/system performance.

 A value of false(2) indicates that the excess capability shall

 be converted to additional SNR margin and spread evenly across

 all active PMEs assigned to the (PCS) port, to increase link

 robustness.

 This object is read-write for the -O subtype EFMCu ports

 (2BaseTL-O/10PassTS-O) and not available for the -R subtypes.

 Changing of this object shall be performed when the link is

 Down. Attempts to change this object shall be rejected (in

 case of SNMP with the error inconsistentValue), if the link

 is Up or Initializing.

 This object shall be maintained in a persistent manner."

 ::= { efmCuPortConfEntry 6 }

 efmCuThreshLowRate OBJECT-TYPE

 SYNTAX Unsigned32(1..100000)

 UNITS "Kbps"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object configures the EFMCu port low-rate crossing alarm

 threshold. When the current value of ifSpeed for this port

 reaches/drops below or exceeds this threshold, an

 efmCuLowRateCrossing notification may be generated if enabled

 by efmCuLowRateCrossingEnable.

 This object is read-write for the -O subtype EFMCu ports

 (2BaseTL-O/10PassTS-O) and not available for the -R subtypes.

 This object shall be maintained in a persistent manner."

 ::= { efmCuPortConfEntry 7 }

 efmCuLowRateCrossingEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuLowRateCrossing notifications should

 be generated for this interface.

 A value of true(1) indicates that efmCuLowRateCrossing

 notification is enabled. A value of false(2) indicates that

 the notification is disabled.

 This object is read-write for the -O subtype EFMCu ports

 (2BaseTL-O/10PassTS-O) and not available for the -R subtypes.

 This object shall be maintained in a persistent manner."

 ::= { efmCuPortConfEntry 8 }

 efmCuPortCapabilityTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPortCapabilityEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table for Capabilities of EFMCu 2BASE-TL/10PASS-TS (PCS)

 Ports. Entries in this table shall be maintained in a

 persistent manner"

 ::= { efmCuPort 2 }

 efmCuPortCapabilityEntry OBJECT-TYPE

 SYNTAX EfmCuPortCapabilityEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu Port Capability table.

 Each entry represents an EFMCu port indexed by the ifIndex.

 Note that an EFMCu PCS port runs on top of a single

 or multiple PME port(s), which are also indexed by ifIndex."

 INDEX { ifIndex }

 ::= { efmCuPortCapabilityTable 1 }

 EfmCuPortCapabilityEntry ::=

 SEQUENCE {

 efmCuPAFSupported TruthValue,

 efmCuPeerPAFSupported EfmTruthValueOrUnknown,

 efmCuPAFCapacity Unsigned32,

 efmCuPeerPAFCapacity Unsigned32

 }

 efmCuPAFSupported OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "PME Aggregation Function (PAF) capability of the EFMCu port

 (PCS).

 This object has a value of true(1) when the PCS can perform

 PME aggregation on the available PMEs.

 Ports incapable of PAF shall return a value of false(2).

 This object maps to IEEE Std 802.3, Clause 30 attribute aPAFSupported.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present,

 then this object maps to the PAF available bit in the

 10P/2B capability register."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 30.11.1.1.4, 45.2.3.25.1"

 ::= { efmCuPortCapabilityEntry 1 }

 efmCuPeerPAFSupported OBJECT-TYPE

 SYNTAX EfmTruthValueOrUnknown

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "PME Aggregation Function (PAF) capability of the EFMCu port

 (PCS) link partner.

 This object has a value of true(1) when the remote PCS can

 perform PME aggregation on its available PMEs.

 Ports whose peers are incapable of PAF shall return a value

 of false(2).

 Ports whose peers cannot be reached because of the link

 state shall return a value of unknown(0).

 This object maps to IEEE Std 802.3, Clause 30 attribute

 aRemotePAFSupported.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the Remote PAF supported bit in the

 10P/2B capability register."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 30.11.1.1.9, 45.2.3.25.2"

 ::= { efmCuPortCapabilityEntry 2 }

 efmCuPAFCapacity OBJECT-TYPE

 SYNTAX Unsigned32 (1..32)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "Number of PMEs that can be aggregated by the local PAF.

 The number of PMEs currently assigned to a particular

 EFMCu port (efmCuNumPMEs) is never greater than

 efmCuPAFCapacity.

 This object maps to IEEE Std 802.3, Clause 30 attribute

 aLocalPAFCapacity."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 30.11.1.1.6"

 ::= { efmCuPortCapabilityEntry 3 }

 efmCuPeerPAFCapacity OBJECT-TYPE

 SYNTAX Unsigned32 (0|1..32)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "Number of PMEs that can be aggregated by the PAF of the peer

 PHY (PCS port).

 A value of 0 is returned when peer PAF capacity is unknown

 (peer cannot be reached).

 This object maps to IEEE Std 802.3, Clause 30 attribute

 aRemotePAFCapacity."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 30.11.1.1.10"

 ::= { efmCuPortCapabilityEntry 4 }

 efmCuPortStatusTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPortStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table provides overall status information of EFMCu

 2BASE-TL/10PASS-TS ports, complementing the generic status

 information from the ifTable of IF-MIB and ifMauTable of the

 MAU-MIB module. Additional status information about connected PMEs

 is available from the efmCuPmeStatusTable.

 This table contains live data from the equipment. As such,

 it is not persistent."

 ::= { efmCuPort 3 }

 efmCuPortStatusEntry OBJECT-TYPE

 SYNTAX EfmCuPortStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu Port Status table.

 Each entry represents an EFMCu port indexed by the ifIndex.

 Note that an EFMCu PCS port runs on top of a single

 or multiple PME port(s), which are also indexed by ifIndex."

 INDEX { ifIndex }

 ::= { efmCuPortStatusTable 1 }

 EfmCuPortStatusEntry ::=

 SEQUENCE {

 efmCuFltStatus BITS,

 efmCuPortSide INTEGER,

 efmCuNumPMEs Unsigned32,

 efmCuPAFInErrors Counter32,

 efmCuPAFInSmallFragments Counter32,

 efmCuPAFInLargeFragments Counter32,

 efmCuPAFInBadFragments Counter32,

 efmCuPAFInLostFragments Counter32,

 efmCuPAFInLostStarts Counter32,

 efmCuPAFInLostEnds Counter32,

 efmCuPAFInOverflows Counter32

 }

 efmCuFltStatus OBJECT-TYPE

 SYNTAX BITS {

 noPeer(0),

 peerPowerLoss(1),

 pmeSubTypeMismatch(2),

 lowRate(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "EFMCu (PCS) port Fault Status. This is a bitmap of possible

 conditions. The various bit positions are:

 noPeer - the peer PHY cannot be reached (e.g.,

 no PMEs attached, all PMEs are Down,

 etc.). More info is available in

 efmCuPmeFltStatus.

 peerPowerLoss - the peer PHY has indicated impending

 unit failure due to loss of local

 power ('Dying Gasp').

 pmeSubTypeMismatch - local PMEs in the aggregation group

 are not of the same subtype, e.g.,

 some PMEs in the local device are -O

 while others are -R subtype.

 lowRate - ifSpeed of the port reached or dropped

 below efmCuThreshLowRate.

 This object is intended to supplement the ifOperStatus object

 in IF-MIB and ifMauMediaAvailable in the MAU-MIB module.

 Additional information is available via the efmCuPmeFltStatus

 object for each PME in the aggregation group (single PME if

 PAF is disabled)."

 REFERENCE

 "IF-MIB, ifOperStatus; MAU-MIB, ifMauMediaAvailable;

 efmCuPmeFltStatus"

 ::= { efmCuPortStatusEntry 1 }

 efmCuPortSide OBJECT-TYPE

 SYNTAX INTEGER {

 subscriber(1),

 office(2),

 unknown(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "EFM port mode of operation (subtype).

 The value of 'subscriber' indicates that the port is

 designated as '-R' subtype (all PMEs assigned to this port are

 of subtype '-R').

 The value of the 'office' indicates that the port is

 designated as '-O' subtype (all PMEs assigned to this port are

 of subtype '-O').

 The value of 'unknown' indicates that the port has no assigned

 PMEs yet or that the assigned PMEs are not of the same side

 (subTypePMEMismatch).

 This object partially maps to IEEE Std 802.3, Clause 30 attribute

 aPhyEnd."

 REFERENCE

 "IEEE Std 802.3, 61.1, 30.11.1.1.2"

 ::= { efmCuPortStatusEntry 2 }

 efmCuNumPMEs OBJECT-TYPE

 SYNTAX Unsigned32 (0..32)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of PMEs that is currently aggregated by the local

 PAF (assigned to the EFMCu port using the ifStackTable).

 This number is never greater than efmCuPAFCapacity.

 This object shall be automatically incremented or decremented

 when a PME is added or deleted to/from the EFMCu port using

 the ifStackTable."

 REFERENCE

 "IEEE Std 802.3, 61.2.2, 30.11.1.1.6"

 ::= { efmCuPortStatusEntry 3 }

 efmCuPAFInErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of fragments that have been received across the

 gamma interface with RxErr asserted and discarded.

 This read-only counter is inactive (not incremented) when the

 PAF is unsupported or disabled. Upon disabling the PAF, the

 counter retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF RX error register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.29"

 ::= { efmCuPortStatusEntry 4 }

 efmCuPAFInSmallFragments OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of fragments smaller than minFragmentSize

 (64 bytes) that have been received across the gamma interface

 and discarded.

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF small fragments register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.30"

 ::= { efmCuPortStatusEntry 5 }

 efmCuPAFInLargeFragments OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of fragments larger than maxFragmentSize

 (512 bytes) that have been received across the gamma interface

 and discarded.

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF large fragments register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.31"

 ::= { efmCuPortStatusEntry 6 }

 efmCuPAFInBadFragments OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of fragments that do not fit into the sequence

 expected by the frame assembly function and that have been

 received across the gamma interface and discarded (the

 frame buffer is flushed to the next valid frame start).

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF bad fragments register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.33"

 ::= { efmCuPortStatusEntry 7 }

 efmCuPAFInLostFragments OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of gaps in the sequence of fragments that have

 been received across the gamma interface (the frame buffer is

 flushed to the next valid frame start, when fragment/fragments

 expected by the frame assembly function is/are not received).

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF lost fragment register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.34"

 ::= { efmCuPortStatusEntry 8 }

 efmCuPAFInLostStarts OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of missing StartOfPacket indicators expected by

 the frame assembly function.

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF lost start of fragment

 register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.35"

 ::= { efmCuPortStatusEntry 9 }

 efmCuPAFInLostEnds OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of missing EndOfPacket indicators expected by the

 frame assembly function.

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF lost ends of fragments

 register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.36"

 ::= { efmCuPortStatusEntry 10 }

 efmCuPAFInOverflows OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of fragments, received across the gamma interface

 and discarded, which would have caused the frame assembly

 buffer to overflow.

 This read-only counter is inactive when the PAF is

 unsupported or disabled. Upon disabling the PAF, the counter

 retains its previous value.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then

 this object maps to the 10P/2B PAF overflow register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.3.32"

 ::= { efmCuPortStatusEntry 11 }

 -- PME Notifications Group

 efmCuPmeNotifications OBJECT IDENTIFIER ::= { efmCuPme 0 }

 efmCuPmeLineAtnCrossing NOTIFICATION-TYPE

 OBJECTS {

 efmCuPmeLineAtn,

 efmCuPmeThreshLineAtn

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that the loop attenuation

 threshold (as per the efmCuPmeThreshLineAtn

 value) has been reached/exceeded for the 2BASE-TL/10PASS-TS

 PME. This notification may be sent on the crossing event in

 both directions: from normal to exceeded and from exceeded

 to normal.

 A small debouncing period of 2.5 sec, between the detection

 of the condition and the notification, should be implemented

 to prevent intermittent notifications from being sent.

 Generation of this notification is controlled by the

 efmCuPmeLineAtnCrossingEnable object."

 ::= { efmCuPmeNotifications 1 }

 efmCuPmeSnrMgnCrossing NOTIFICATION-TYPE

 OBJECTS {

 efmCuPmeSnrMgn,

 efmCuPmeThreshSnrMgn

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that the SNR margin threshold

 (as per the efmCuPmeThreshSnrMgn value) has been

 reached/exceeded for the 2BASE-TL/10PASS-TS PME.

 This notification may be sent on the crossing event in

 both directions: from normal to exceeded and from exceeded

 to normal.

 A small debouncing period of 2.5 sec, between the detection

 of the condition and the notification, should be implemented

 to prevent intermittent notifications from being sent.

 Generation of this notification is controlled by the

 efmCuPmeSnrMgnCrossingEnable object."

 ::= { efmCuPmeNotifications 2 }

 efmCuPmeDeviceFault NOTIFICATION-TYPE

 OBJECTS {

 efmCuPmeFltStatus

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that a fault in the PME has been

 detected by a vendor-specific diagnostic or a self-test.

 Generation of this notification is controlled by the

 efmCuPmeDeviceFaultEnable object."

 ::= { efmCuPmeNotifications 3 }

 efmCuPmeConfigInitFailure NOTIFICATION-TYPE

 OBJECTS {

 efmCuPmeFltStatus,

 efmCuAdminProfile,

 efmCuPmeAdminProfile

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that PME initialization has

 failed, due to inability of the PME link to achieve the

 requested configuration profile.

 Generation of this notification is controlled by the

 efmCuPmeConfigInitFailEnable object."

 ::= { efmCuPmeNotifications 4 }

 efmCuPmeProtocolInitFailure NOTIFICATION-TYPE

 OBJECTS {

 efmCuPmeFltStatus,

 efmCuPmeOperSubType

 }

 STATUS current

 DESCRIPTION

 "This notification indicates that the peer PME was using

 an incompatible protocol during initialization.

 Generation of this notification is controlled by the

 efmCuPmeProtocolInitFailEnable object."

 ::= { efmCuPmeNotifications 5 }

 -- The PME group

 efmCuPmeConfTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPmeConfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table for Configuration of common aspects for EFMCu

 2BASE-TL/10PASS-TS PME ports (modems). Configuration of

 aspects specific to 2BASE-TL or 10PASS-TS PME types is

 represented in efmCuPme2BConfTable and efmCuPme10PConfTable,

 respectively.

 Entries in this table shall be maintained in a persistent

 manner."

 ::= { efmCuPme 1 }

 efmCuPmeConfEntry OBJECT-TYPE

 SYNTAX EfmCuPmeConfEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu PME Configuration table.

 Each entry represents common aspects of an EFMCu PME port

 indexed by the ifIndex. Note that an EFMCu PME port can be

 stacked below a single PCS port, also indexed by ifIndex,

 possibly together with other PME ports if PAF is enabled."

 INDEX { ifIndex }

 ::= { efmCuPmeConfTable 1 }

 EfmCuPmeConfEntry ::=

 SEQUENCE {

 efmCuPmeAdminSubType INTEGER,

 efmCuPmeAdminProfile EfmProfileIndexOrZero,

 efmCuPAFRemoteDiscoveryCode PhysAddress,

 efmCuPmeThreshLineAtn Integer32,

 efmCuPmeThreshSnrMgn Integer32,

 efmCuPmeLineAtnCrossingEnable TruthValue,

 efmCuPmeSnrMgnCrossingEnable TruthValue,

 efmCuPmeDeviceFaultEnable TruthValue,

 efmCuPmeConfigInitFailEnable TruthValue,

 efmCuPmeProtocolInitFailEnable TruthValue

 }

 efmCuPmeAdminSubType OBJECT-TYPE

 SYNTAX INTEGER {

 ieee2BaseTLO(1),

 ieee2BaseTLR(2),

 ieee10PassTSO(3),

 ieee10PassTSR(4),

 ieee2BaseTLor10PassTSR(5),

 ieee2BaseTLor10PassTSO(6),

 ieee10PassTSor2BaseTLO(7)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Administrative (desired) subtype of the PME.

 Possible values are:

 ieee2BaseTLO - PME shall operate as 2BaseTL-O

 ieee2BaseTLR - PME shall operate as 2BaseTL-R

 ieee10PassTSO - PME shall operate as 10PassTS-O

 ieee10PassTSR - PME shall operate as 10PassTS-R

 ieee2BaseTLor10PassTSR - PME shall operate as 2BaseTL-R or

 10PassTS-R. The actual value will

 be set by the -O link partner

 during initialization (handshake).

 ieee2BaseTLor10PassTSO - PME shall operate as 2BaseTL-O

 (preferred) or 10PassTS-O. The

 actual value will be set during

 initialization depending on the -R

 link partner capability (i.e., if

 -R is incapable of the preferred

 2BaseTL mode, 10PassTS will be

 used).

 ieee10PassTSor2BaseTLO - PME shall operate as 10PassTS-O

 (preferred) or 2BaseTL-O. The

 actual value will be set during

 initialization depending on the -R

 link partner capability (i.e., if

 -R is incapable of the preferred

 10PassTS mode, 2BaseTL will be

 used).

 Changing efmCuPmeAdminSubType is a traffic-disruptive

 operation and as such shall be done when the link is Down.

 Attempts to change this object shall be rejected if the link

 is Up or Initializing.

 Attempts to change this object to an unsupported subtype

 (see efmCuPmeSubTypesSupported) shall be rejected.

 The current operational subtype is indicated by the

 efmCuPmeOperSubType variable.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then

 this object combines values of the Port subtype select bits

 and the PMA/PMD type selection bits in the 10P/2B PMA/PMD

 control register."

 REFERENCE

 "IEEE Std 802.3, 61.1, 45.2.1.14.4, 45.2.1.14.7"

 ::= { efmCuPmeConfEntry 1 }

 efmCuPmeAdminProfile OBJECT-TYPE

 SYNTAX EfmProfileIndexOrZero

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired PME configuration profile. This object is a pointer

 to an entry in either the efmCuPme2BProfileTable or the

 efmCuPme10PProfileTable, depending on the current operating

 SubType of the PME. The value of this object is the index of

 the referenced profile.

 The value of zero (default) indicates that the PME is

 configured via the efmCuAdminProfile object for the PCS port

 to which this PME is assigned. That is, the profile

 referenced by efmCuPmeAdminProfile takes precedence

 over the profile(s) referenced by efmCuAdminProfile.

 This object is writeable and readable for the CO subtype PMEs

 (2BaseTL-O or 10PassTS-O). It is irrelevant for the CPE

 subtype (2BaseTL-R or 10PassTS-R) -- a zero value shall be

 returned on an attempt to read this object and any attempt

 to change this object shall be rejected in this case.

 Note that the current operational profile value is available

 via efmCuPmeOperProfile object.

 Any modification of this object shall be performed when the

 link is Down. Attempts to change this object shall be

 rejected, if the link is Up or Initializing.

 Attempts to set this object to a value that is not the value

 of the index for an active entry in the corresponding profile

 table shall be rejected.

 This object maps to IEEE Std 802.3, Clause 30 attribute aProfileSelect.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.6"

 DEFVAL { 0 }

 ::= { efmCuPmeConfEntry 2 }

 efmCuPAFRemoteDiscoveryCode OBJECT-TYPE

 SYNTAX PhysAddress (SIZE(0|6))

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "PAF Remote Discovery Code of the PME port at the CO.

 The 6-octet Discovery Code of the peer PCS connected via

 the PME.

 Reading this object results in a Discovery Get operation.

 Setting this object to all zeros results in a Discovery

 Clear\_if\_Same operation (the value of efmCuPAFDiscoveryCode

 at the peer PCS shall be the same as efmCuPAFDiscoveryCode of

 the local PCS associated with the PME for the operation to

 succeed).

 Writing a non-zero value to this object results in a

 Discovery Set\_if\_Clear operation.

 A zero-length octet string shall be returned on an attempt to

 read this object when PAF aggregation is not enabled.

 This object is irrelevant in CPE port (-R) subtypes: in this

 case, a zero-length octet string shall be returned on an

 attempt to read this object; writing to this object shall

 be rejected.

 Discovery shall be performed when the link is Down.

 Attempts to change this object shall be rejected (in case of

 SNMP with the error inconsistentValue), if the link is Up or

 Initializing.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then

 this object is a function of 10P/2B aggregation discovery

 control register, Discovery operation result bits in 10P/2B

 aggregation and discovery status register and

 10P/2B aggregation discovery code register."

 REFERENCE

 "IEEE Std 802.3, 61.2.2.8.4, 45.2.6.6 to 45.2.6.8"

 ::= { efmCuPmeConfEntry 3 }

 efmCuPmeThreshLineAtn OBJECT-TYPE

 SYNTAX Integer32(-127..128)

 UNITS "dB"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired Line Attenuation threshold for the 2B/10P PME.

 This object configures the line attenuation alarm threshold.

 When the current value of Line Attenuation reaches or

 exceeds this threshold, an efmCuPmeLineAtnCrossing

 notification may be generated, if enabled by

 efmCuPmeLineAtnCrossingEnable.

 This object is writeable for the CO subtype PMEs (-O).

 It is read-only for the CPE subtype (-R).

 Changing of the Line Attenuation threshold shall be performed

 when the link is Down. Attempts to change this object shall be

 rejected (in case of SNMP with the error inconsistentValue),

 if the link is Up or Initializing.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the loop attenuation threshold bits in

 the 2B PMD line quality thresholds register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.23"

 ::= { efmCuPmeConfEntry 4 }

 efmCuPmeThreshSnrMgn OBJECT-TYPE

 SYNTAX Integer32(-127..128)

 UNITS "dB"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Desired SNR margin threshold for the 2B/10P PME.

 This object configures the SNR margin alarm threshold.

 When the current value of SNR margin reaches or exceeds this

 threshold, an efmCuPmeSnrMgnCrossing notification may be

 generated, if enabled by efmCuPmeSnrMgnCrossingEnable.

 This object is writeable for the CO subtype PMEs

 (2BaseTL-O/10PassTS-O). It is read-only for the CPE subtype

 (2BaseTL-R/10PassTS-R).

 Changing of the SNR margin threshold shall be performed when

 the link is Down. Attempts to change this object shall be

 rejected (in case of SNMP with the error inconsistentValue),

 if the link is Up or Initializing.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the SNR margin threshold bits in the 2B PMD

 line quality thresholds register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.23"

 ::= { efmCuPmeConfEntry 5 }

 efmCuPmeLineAtnCrossingEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuPmeLineAtnCrossing notifications

 should be generated for this interface.

 A value of true(1) indicates that efmCuPmeLineAtnCrossing

 notification is enabled. A value of false(2) indicates that

 the notification is disabled."

 ::= { efmCuPmeConfEntry 6 }

 efmCuPmeSnrMgnCrossingEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuPmeSnrMgnCrossing notifications

 should be generated for this interface.

 A value of true(1) indicates that efmCuPmeSnrMgnCrossing

 notification is enabled. A value of false(2) indicates that

 the notification is disabled."

 ::= { efmCuPmeConfEntry 7 }

 efmCuPmeDeviceFaultEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuPmeDeviceFault notifications

 should be generated for this interface.

 A value of true(1) indicates that efmCuPmeDeviceFault

 notification is enabled. A value of false(2) indicates that

 the notification is disabled."

 ::= { efmCuPmeConfEntry 8 }

 efmCuPmeConfigInitFailEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuPmeConfigInitFailure notifications

 should be generated for this interface.

 A value of true(1) indicates that efmCuPmeConfigInitFailure

 notification is enabled. A value of false(2) indicates that

 the notification is disabled."

 ::= { efmCuPmeConfEntry 9 }

 efmCuPmeProtocolInitFailEnable OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Indicates whether efmCuPmeProtocolInitFailure notifications

 should be generated for this interface.

 A value of true(1) indicates that efmCuPmeProtocolInitFailure

 notification is enabled. A value of false(2) indicates that

 the notification is disabled."

 ::= { efmCuPmeConfEntry 10 }

 efmCuPmeCapabilityTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPmeCapabilityEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table for the configuration of common aspects for EFMCu

 2BASE-TL/10PASS-TS PME ports (modems). The configuration of

 aspects specific to 2BASE-TL or 10PASS-TS PME types is

 represented in the efmCuPme2BConfTable and the

 efmCuPme10PConfTable, respectively.

 Entries in this table shall be maintained in a persistent

 manner."

 ::= { efmCuPme 2 }

 efmCuPmeCapabilityEntry OBJECT-TYPE

 SYNTAX EfmCuPmeCapabilityEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu PME Capability table.

 Each entry represents common aspects of an EFMCu PME port

 indexed by the ifIndex. Note that an EFMCu PME port can be

 stacked below a single PCS port, also indexed by ifIndex,

 possibly together with other PME ports if PAF is enabled."

 INDEX { ifIndex }

 ::= { efmCuPmeCapabilityTable 1 }

 EfmCuPmeCapabilityEntry ::=

 SEQUENCE {

 efmCuPmeSubTypesSupported BITS

 }

 efmCuPmeSubTypesSupported OBJECT-TYPE

 SYNTAX BITS {

 ieee2BaseTLO(0),

 ieee2BaseTLR(1),

 ieee10PassTSO(2),

 ieee10PassTSR(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "PME supported subtypes. This is a bitmap of possible

 subtypes. The various bit positions are:

 ieee2BaseTLO - PME is capable of operating as 2BaseTL-O

 ieee2BaseTLR - PME is capable of operating as 2BaseTL-R

 ieee10PassTSO - PME is capable of operating as 10PassTS-O

 ieee10PassTSR - PME is capable of operating as 10PassTS-R

 The desired mode of operation is determined by

 efmCuPmeAdminSubType, while efmCuPmeOperSubType reflects the

 current operating mode.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then this

 object combines the 10PASS-TS capable and 2BASE-TL capable

 bits in the 10P/2B PMA/PMD speed ability register and the

 CO supported and CPE supported bits in the 10P/2B PMA/PMD

 status register."

 REFERENCE

 "IEEE Std 802.3, 61.1, 45.2.1.4.7, 45.2.1.4.8, 45.2.1.15.2,

 45.2.1.15.3"

 ::= { efmCuPmeCapabilityEntry 1 }

 efmCuPmeStatusTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPmeStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table provides common status information of EFMCu

 2BASE-TL/10PASS-TS PME ports. Status information specific

 to 10PASS-TS PME is represented in efmCuPme10PStatusTable.

 This table contains live data from the equipment. As such,

 it is not persistent."

 ::= { efmCuPme 3 }

 efmCuPmeStatusEntry OBJECT-TYPE

 SYNTAX EfmCuPmeStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu PME Status table.

 Each entry represents common aspects of an EFMCu PME port

 indexed by the ifIndex. Note that an EFMCu PME port can be

 stacked below a single PCS port, also indexed by ifIndex,

 possibly together with other PME ports if PAF is enabled."

 INDEX { ifIndex }

 ::= { efmCuPmeStatusTable 1 }

 EfmCuPmeStatusEntry ::=

 SEQUENCE {

 efmCuPmeOperStatus INTEGER,

 efmCuPmeFltStatus BITS,

 efmCuPmeOperSubType INTEGER,

 efmCuPmeOperProfile EfmProfileIndexOrZero,

 efmCuPmeSnrMgn Integer32,

 efmCuPmePeerSnrMgn Integer32,

 efmCuPmeLineAtn Integer32,

 efmCuPmePeerLineAtn Integer32,

 efmCuPmeEquivalentLength Unsigned32,

 efmCuPmeTCCodingErrors Counter32,

 efmCuPmeTCCrcErrors Counter32

 }

 efmCuPmeOperStatus OBJECT-TYPE

 SYNTAX INTEGER {

 up(1),

 downNotReady(2),

 downReady(3),

 init(4)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "Current PME link Operational Status. Possible values are:

 up(1) - The link is Up and ready to pass

 64/65-octet encoded frames or fragments.

 downNotReady(2) - The link is Down and the PME does not

 detect Handshake tones from its peer.

 This value may indicate a possible

 problem with the peer PME.

 downReady(3) - The link is Down and the PME detects

 Handshake tones from its peer.

 init(4) - The link is Initializing, as a result of

 ifAdminStatus being set to 'up' for a

 particular PME or a PCS to which the PME

 is connected.

 This object is intended to supplement the Down(2) state of

 ifOperStatus.

 This object partially maps to IEEE Std 802.3, Clause 30 attribute

 aPMEStatus.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object partially maps to PMA/PMD link status bits in 10P/2B

 PMA/PMD status register."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.3, 45.2.1.15.4"

 ::= { efmCuPmeStatusEntry 1 }

 efmCuPmeFltStatus OBJECT-TYPE

 SYNTAX BITS {

 lossOfFraming(0),

 snrMgnDefect(1),

 lineAtnDefect(2),

 deviceFault(3),

 configInitFailure(4),

 protocolInitFailure(5)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "Current/Last PME link Fault Status. This is a bitmap of

 possible conditions. The various bit positions are:

 lossOfFraming - Loss of Framing for 10P or

 Loss of Sync word for 2B PMD or

 Loss of 64/65-octet framing.

 snrMgnDefect - SNR margin dropped below the

 threshold.

 lineAtnDefect - Line Attenuation exceeds the

 threshold.

 deviceFault - Indicates a vendor-dependent

 diagnostic or self-test fault

 has been detected.

 configInitFailure - Configuration initialization failure,

 due to inability of the PME link to

 support the configuration profile,

 requested during initialization.

 protocolInitFailure - Protocol initialization failure, due

 to an incompatible protocol used by

 the peer PME during init (that could

 happen if a peer PMD is a regular

 G.SDHSL/VDSL modem instead of a

 2BASE-TL/10PASS-TS PME).

 This object is intended to supplement ifOperStatus in IF-MIB.

 This object holds information about the last fault.

 efmCuPmeFltStatus is cleared by the device restart.

 In addition, lossOfFraming, configInitFailure, and

 protocolInitFailure are cleared by PME init;

 deviceFault is cleared by successful diagnostics/test;

 snrMgnDefect and lineAtnDefect are cleared by SNR margin

 and Line attenuation, respectively, returning to norm and by

 PME init.

 This object partially maps to IEEE Std 802.3, Clause 30 attribute

 aPMEStatus.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object consolidates information from various PMA/PMD

 registers, namely: Fault bit in PMA/PMD status 1 register,

 10P/2B PMA/PMD link loss register,

 10P outgoing indicator bits status register,

 10P incoming indicator bits status register,

 2B state defects register."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.3, 45.2.1.2.1, 45.2.1.41,

 45.2.1.42, 45.2.1.57"

 ::= { efmCuPmeStatusEntry 2 }

 efmCuPmeOperSubType OBJECT-TYPE

 SYNTAX INTEGER {

 ieee2BaseTLO(1),

 ieee2BaseTLR(2),

 ieee10PassTSO(3),

 ieee10PassTSR(4)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "Current operational subtype of the PME.

 Possible values are:

 ieee2BaseTLO - PME operates as 2BaseTL-O

 ieee2BaseTLR - PME operates as 2BaseTL-R

 ieee10PassTSO - PME operates as 10PassTS-O

 ieee10PassTSR - PME operates as 10PassTS-R

 The desired operational subtype of the PME can be configured

 via the efmCuPmeAdminSubType variable.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then

 this object combines values of the Port subtype select

 bits, the PMA/PMD type selection bits in the 10P/2B

 PMA/PMD control register, and the PMA/PMD link status bits in

 the 10P/2B PMA/PMD status register."

 REFERENCE

 "IEEE Std 802.3, 61.1, 45.2.1.14.4, 45.2.1.14.7, 45.2.1.15.4"

 ::= { efmCuPmeStatusEntry 3 }

 efmCuPmeOperProfile OBJECT-TYPE

 SYNTAX EfmProfileIndexOrZero

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "PME current operating profile. This object is a pointer to

 an entry in either the efmCuPme2BProfileTable or the

 efmCuPme10PProfileTable, depending on the current operating

 SubType of the PME as indicated by efmCuPmeOperSubType.

 Note that a profile entry to which efmCuPmeOperProfile is

 pointing can be created automatically to reflect achieved

 parameters in adaptive (not fixed) initialization,

 i.e., values of efmCuPmeOperProfile and efmCuAdminProfile or

 efmCuPmeAdminProfile may differ.

 The value of zero indicates that the PME is Down or

 Initializing.

 This object partially maps to the aOperatingProfile attribute

 in Clause 30."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.7"

 ::= { efmCuPmeStatusEntry 4 }

 efmCuPmeSnrMgn OBJECT-TYPE

 SYNTAX Integer32(-127..128|65535)

 UNITS "dB"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The current signal-to-noise ratio (SNR) margin with respect

 to the received signal as perceived by the local PME.

 The value of 65535 is returned when the PME is Down or

 Initializing.

 This object maps to the aPMESNRMgn attribute in Clause 30.

 If IEEE Std 802.3, Clause 45 MDIO Interface is present, then this

 object maps to the 10P/2B RX SNR margin register."

 REFERENCE

 "IEEE Std 802.3, 30.11.2.1.4, 45.2.1.19"

 ::= { efmCuPmeStatusEntry 5 }

 efmCuPmePeerSnrMgn OBJECT-TYPE

 SYNTAX Integer32(-127..128|65535)

 UNITS "dB"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The current SNR margin in dB with respect to the received

 signal, as perceived by the remote (link partner) PME.

 The value of 65535 is returned when the PME is Down or

 Initializing.

 This object is irrelevant for the -R PME subtypes. The value

 of 65535 shall be returned in this case.

 If IEEE Std 802.3, Clause 45 MDIO Interface is present, then this

 object maps to the 10P/2B link partner RX SNR margin

 register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.20"

 ::= { efmCuPmeStatusEntry 6}

 efmCuPmeLineAtn OBJECT-TYPE

 SYNTAX Integer32(-127..128|65535)

 UNITS "dB"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The current Line Attenuation in dB as perceived by the local

 PME.

 The value of 65535 is returned when the PME is Down or

 Initializing.

 If IEEE Std 802.3, Clause 45 MDIO Interface is present, then this

 object maps to the Line Attenuation register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.21"

 ::= { efmCuPmeStatusEntry 7 }

 efmCuPmePeerLineAtn OBJECT-TYPE

 SYNTAX Integer32(-127..128|65535)

 UNITS "dB"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The current Line Attenuation in dB as perceived by the remote

 (link partner) PME.

 The value of 65535 is returned when the PME is Down or

 Initializing.

 This object is irrelevant for the -R PME subtypes. The value

 of 65535 shall be returned in this case.

 If IEEE Std 802.3, Clause 45 MDIO Interface is present, then this

 object maps to the 20P/2B link partner Line Attenuation

 register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.22"

 ::= { efmCuPmeStatusEntry 8 }

 efmCuPmeEquivalentLength OBJECT-TYPE

 SYNTAX Unsigned32(0..8192|65535)

 UNITS "m"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An estimate of the equivalent loop's physical length in

 meters, as perceived by the PME after the link is established.

 An equivalent loop is a hypothetical 26AWG (0.4mm) loop with a

 perfect square root attenuation characteristic, without any

 bridged taps.

 The value of 65535 is returned if the link is Down or

 Initializing or the PME is unable to estimate the equivalent

 length.

 For a 10BASE-TL PME, If IEEE Std 802.3, Clause 45 MDIO Interface to the PME

 is present, then this object maps to the 10P Electrical Length

 register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.29"

 ::= { efmCuPmeStatusEntry 9 }

 efmCuPmeTCCodingErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of 64/65-octet encapsulation errors. This counter

 is incremented for each 64/65-octet encapsulation error

 detected by the 64/65-octet receive function.

 This object maps to aTCCodingViolations attribute in

 Clause 30.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME TC is present, then

 this object maps to the TC coding violations register

 (see IEEE Std 802.3 45.2.6.12).

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 61.3.3.1, 30.11.2.1.5, 45.2.6.12"

 ::= { efmCuPmeStatusEntry 10 }

 efmCuPmeTCCrcErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of TC-CRC errors. This counter is incremented for

 each TC-CRC error detected by the 64/65-octet receive function

 (see IEEE Std 802.3 61.3.3.3 and IEEE Std 802.3 Figure 61-19).

 This object maps to aTCCRCErrors attribute in

 Clause 30.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME TC is present, then

 this object maps to the TC CRC error register

 (see IEEE Std 802.3 45.2.6.11).

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 61.3.3.3, 30.11.2.1.10, 45.2.6.11"

 ::= { efmCuPmeStatusEntry 11 }

 -- 2BASE-TL specific PME group

 efmCuPme2B OBJECT IDENTIFIER ::= { efmCuPme 5 }

 efmCuPme2BProfileTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPme2BProfileEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table supports definitions of administrative and

 operating profiles for 2BASE-TL PMEs.

 The first 14 entries in this table shall be defined as

 follows (see IEEE Std 802.3 Annex 63A):

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

 Profile MinRate MaxRate Power Region Constellation Comment

 index (kb/s) (kb/s) (dBm)

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

 1 5696 5696 13.5 1 32-TCPAM default

 2 3072 3072 13.5 1 32-TCPAM

 3 2048 2048 13.5 1 16-TCPAM

 4 1024 1024 13.5 1 16-TCPAM

 5 704 704 13.5 1 16-TCPAM

 6 512 512 13.5 1 16-TCPAM

 7 5696 5696 14.5 2 32-TCPAM

 8 3072 3072 14.5 2 32-TCPAM

 9 2048 2048 14.5 2 16-TCPAM

 10 1024 1024 13.5 2 16-TCPAM

 11 704 704 13.5 2 16-TCPAM

 12 512 512 13.5 2 16-TCPAM

 13 192 5696 0 1 0 best effort

 14 192 5696 0 2 0 best effort

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

 These default entries shall be created during agent

 initialization and shall not be deleted.

 Entries following the first 14 can be dynamically created and

 deleted to provide custom administrative (configuration)

 profiles and automatic operating profiles.

 This table shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, Annex 63A, 30.11.2.1.6"

 ::= { efmCuPme2B 2 }

 efmCuPme2BProfileEntry OBJECT-TYPE

 SYNTAX EfmCuPme2BProfileEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Each entry corresponds to a single 2BASE-TL PME profile.

 Each profile contains a set of parameters, used either for

 configuration or representation of a 2BASE-TL PME.

 In case a particular profile is referenced via the

 efmCuPmeAdminProfile object (or efmCuAdminProfile if

 efmCuPmeAdminProfile is zero), it represents the desired

 parameters for the 2BaseTL-O PME initialization.

 If a profile is referenced via an efmCuPmeOperProfile object,

 it represents the current operating parameters of an

 operational PME.

 Profiles may be created/deleted using the row creation/

 deletion mechanism via efmCuPme2BProfileRowStatus. If an

 active entry is referenced, the entry shall remain 'active'

 until all references are removed.

 Default entries shall not be removed."

 INDEX { efmCuPme2BProfileIndex }

 ::= { efmCuPme2BProfileTable 1 }

 EfmCuPme2BProfileEntry ::=

 SEQUENCE {

 efmCuPme2BProfileIndex EfmProfileIndex,

 efmCuPme2BProfileDescr SnmpAdminString,

 efmCuPme2BRegion INTEGER,

 efmCuPme2BsMode EfmProfileIndexOrZero,

 efmCuPme2BMinDataRate Unsigned32,

 efmCuPme2BMaxDataRate Unsigned32,

 efmCuPme2BPower Unsigned32,

 efmCuPme2BConstellation INTEGER,

 efmCuPme2BProfileRowStatus RowStatus

 }

 efmCuPme2BProfileIndex OBJECT-TYPE

 SYNTAX EfmProfileIndex

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "2BASE-TL PME profile index.

 This object is the unique index associated with this profile.

 Entries in this table are referenced via efmCuAdminProfile or

 efmCuPmeAdminProfile objects."

 ::= { efmCuPme2BProfileEntry 1 }

 efmCuPme2BProfileDescr OBJECT-TYPE

 SYNTAX SnmpAdminString

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "A textual string containing information about a 2BASE-TL PME

 profile. The string may include information about the data

 rate and spectral limitations of this particular profile."

 ::= { efmCuPme2BProfileEntry 2 }

 efmCuPme2BRegion OBJECT-TYPE

 SYNTAX INTEGER {

 region1(1),

 region2(2)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Regional settings for a 2BASE-TL PME, as specified in the

 relevant Regional Annex of ITU-T Recommendation G.991.2.

 Regional settings specify the Power Spectral Density (PSD)

 mask and the Power Back-Off (PBO) values, and place

 limitations on the max allowed data rate, power, and

 constellation.

 Possible values for this object are:

 region1 - Annexes A and F (e.g., North America)

 region2 - Annexes B and G (e.g., Europe)

 Annex A/B specify regional settings for data rates from

 192 kb/s to 2304 kb/s using 16-TCPAM encoding.

 Annex F/G specify regional settings for rates from

 2320 kb/s to 3840 kb/s using 16-TCPAM encoding and from

 768 kb/s to 5696 kb/s using 32-TCPAM encoding.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object partially maps to the Region bits in the 2B general

 parameter register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.45; ITU-T Recommendation G.991.2,

 Annexes A, B, F and G"

 ::= { efmCuPme2BProfileEntry 3 }

 efmCuPme2BsMode OBJECT-TYPE

 SYNTAX EfmProfileIndexOrZero

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Desired custom Spectral Mode for a 2BASE-TL PME. This object

 is a pointer to an entry in efmCuPme2BsModeTable and a block

 of entries in efmCuPme2BRateReachTable, which together define

 (country-specific) reach-dependent rate limitations in

 addition to those defined by efmCuPme2BRegion.

 The value of this object is the index of the referenced

 spectral mode.

 The value of zero (default) indicates that no specific

 spectral mode is applicable.

 Attempts to set this object to a value that is not the value

 of the index for an active entry in the corresponding spectral

 mode table shall be rejected."

 REFERENCE

 "efmCuPme2BsModeTable, efmCuPme2BRateReachTable"

 DEFVAL { 0 }

 ::= { efmCuPme2BProfileEntry 4 }

 efmCuPme2BMinDataRate OBJECT-TYPE

 SYNTAX Unsigned32(192..5696)

 UNITS "Kbps"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Minimum Data Rate for the 2BASE-TL PME.

 This object can take values of (n x 64)kb/s,

 where n=3..60 for 16-TCPAM and n=12..89 for 32-TCPAM encoding.

 The data rate of the 2BASE-TL PME is considered 'fixed' when

 the value of this object equals that of efmCuPme2BMaxDataRate.

 If efmCuPme2BMinDataRate is less than efmCuPme2BMaxDataRate in

 the administrative profile, the data rate is considered

 'adaptive', and shall be set to the maximum attainable rate

 not exceeding efmCuPme2BMaxDataRate, under the spectral

 limitations placed by the efmCuPme2BRegion and

 efmCuPme2BsMode.

 Note that the current operational data rate of the PME is

 represented by the ifSpeed object of IF-MIB.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the Min Data Rate1 bits in the 2B PMD

 parameters register.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.46"

 ::= { efmCuPme2BProfileEntry 5 }

 efmCuPme2BMaxDataRate OBJECT-TYPE

 SYNTAX Unsigned32(192..5696)

 UNITS "Kbps"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Maximum Data Rate for the 2BASE-TL PME.

 This object can take values of (n x 64)kb/s,

 where n=3..60 for 16-TCPAM and n=12..89 for 32-TCPAM encoding.

 The data rate of the 2BASE-TL PME is considered 'fixed' when

 the value of this object equals that of efmCuPme2BMinDataRate.

 If efmCuPme2BMinDataRate is less than efmCuPme2BMaxDataRate in

 the administrative profile, the data rate is considered

 'adaptive', and shall be set to the maximum attainable rate

 not exceeding efmCuPme2BMaxDataRate, under the spectral

 limitations placed by the efmCuPme2BRegion and

 efmCuPme2BsMode.

 Note that the current operational data rate of the PME is

 represented by the ifSpeed object of IF-MIB.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the Max Data Rate1 bits in the 2B PMD

 parameters register.

 This object shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.46"

 ::= { efmCuPme2BProfileEntry 6 }

 efmCuPme2BPower OBJECT-TYPE

 SYNTAX Unsigned32(0|10..42)

 UNITS "0.5 dBm"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Signal Transmit Power. Multiple of 0.5 dBm.

 The value of 0 in the administrative profile means that the

 signal transmit power is not fixed and shall be set to

 maximize the attainable rate, under the spectral limitations

 placed by the efmCuPme2BRegion and efmCuPme2BsMode.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the Power1 bits in the 2B PMD parameters

 register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.46"

 ::= { efmCuPme2BProfileEntry 7 }

 efmCuPme2BConstellation OBJECT-TYPE

 SYNTAX INTEGER {

 adaptive(0),

 tcpam16(1),

 tcpam32(2)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "TCPAM Constellation of the 2BASE-TL PME.

 The possible values are:

 adaptive(0) - either 16- or 32-TCPAM

 tcpam16(1) - 16-TCPAM

 tcpam32(2) - 32-TCPAM

 The value of adaptive(0) in the administrative profile means

 that the constellation is not fixed and shall be set to

 maximize the attainable rate, under the spectral limitations

 placed by the efmCuPme2BRegion and efmCuPme2BsMode.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PME is present, then this

 object maps to the Constellation1 bits in the 2B general

 parameter register."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.46"

 ::= { efmCuPme2BProfileEntry 8 }

 efmCuPme2BProfileRowStatus OBJECT-TYPE

 SYNTAX RowStatus

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "This object controls the creation, modification, or deletion

 of the associated entry in the efmCuPme2BProfileTable per the

 semantics of RowStatus.

 If an 'active' entry is referenced via efmCuAdminProfile or

 efmCuPmeAdminProfile instance(s), the entry shall remain

 'active'.

 An 'active' entry shall not be modified. In order to modify

 an existing entry, it shall be taken out of service (by setting

 this object to 'notInService'), modified, and set 'active'

 again."

 ::= { efmCuPme2BProfileEntry 9 }

 efmCuPme2BsModeTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPme2BsModeEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table, together with efmCu2BReachRateTable, supports

 definition of administrative custom spectral modes for

 2BASE-TL PMEs, describing spectral limitations in addition to

 those specified by efmCuPme2BRegion.

 In some countries, spectral regulations (e.g., UK ANFP) limit

 the length of the loops for certain data rates. This table

 allows these country-specific limitations to be specified.

 Entries in this table referenced by the efmCuPme2BsMode

 shall not be deleted until all the active references are

 removed.

 This table shall be maintained in a persistent manner."

 REFERENCE

 "efmCu2BReachRateTable"

 ::= { efmCuPme2B 3 }

 efmCuPme2BsModeEntry OBJECT-TYPE

 SYNTAX EfmCuPme2BsModeEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Each entry specifies a spectral mode description and its

 index, which is used to reference corresponding entries in the

 efmCu2BReachRateTable.

 Entries may be created/deleted using the row creation/

 deletion mechanism via efmCuPme2BsModeRowStatus."

 INDEX { efmCuPme2BsModeIndex }

 ::= { efmCuPme2BsModeTable 1 }

 EfmCuPme2BsModeEntry ::=

 SEQUENCE {

 efmCuPme2BsModeIndex EfmProfileIndex,

 efmCuPme2BsModeDescr SnmpAdminString,

 efmCuPme2BsModeRowStatus RowStatus

 }

 efmCuPme2BsModeIndex OBJECT-TYPE

 SYNTAX EfmProfileIndex

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "2BASE-TL PME Spectral Mode index.

 This object is the unique index associated with this spectral

 mode.

 Entries in this table are referenced via the efmCuPme2BsMode

 object."

 ::= { efmCuPme2BsModeEntry 1 }

 efmCuPme2BsModeDescr OBJECT-TYPE

 SYNTAX SnmpAdminString

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "A textual string containing information about a 2BASE-TL PME

 spectral mode. The string may include information about

 corresponding (country-specific) spectral regulations

 and rate/reach limitations of this particular spectral mode."

 ::= { efmCuPme2BsModeEntry 2 }

 efmCuPme2BsModeRowStatus OBJECT-TYPE

 SYNTAX RowStatus

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "This object controls creation, modification, or deletion of

 the associated entry in efmCuPme2BsModeTable per the semantics

 of RowStatus.

 If an 'active' entry is referenced via efmCuPme2BsMode

 instance(s), the entry shall remain 'active'.

 An 'active' entry shall not be modified. In order to modify

 an existing entry, it shall be taken out of service (by setting

 this object to 'notInService'), modified, and set 'active'

 again."

 ::= { efmCuPme2BsModeEntry 3 }

 efmCuPme2BReachRateTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPme2BReachRateEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table supports the definition of administrative custom

 spectral modes for 2BASE-TL PMEs, providing spectral

 limitations in addition to those specified by

 efmCuPme2BRegion.

 The spectral regulations in some countries (e.g., UK ANFP)

 limit the length of the loops for certain data rates.

 This table allows these country-specific limitations to be

 specified.

 Below is an example of this table for NICC Document ND1602:2005/08:

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

 Equivalent MaxRate MaxRate

 Length PAM16 PAM32

 (m) (kb/s) (kb/s)

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

 975 2304 5696

 1125 2304 5504

 1275 2304 5120

 1350 2304 4864

 1425 2304 4544

 1500 2304 4288

 1575 2304 3968

 1650 2304 3776

 1725 2304 3520

 1800 2304 3264

 1875 2304 3072

 1950 2048 2688

 2100 1792 2368

 2250 1536 0

 2400 1408 0

 2550 1280 0

 2775 1152 0

 2925 1152 0

 3150 1088 0

 3375 1024 0

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

 Entries in this table referenced by an efmCuPme2BsMode

 instance shall not be deleted.

 This table shall be maintained in a persistent manner."

 REFERENCE

 "NICC Document ND1602:2005/08"

 ::= { efmCuPme2B 4 }

 efmCuPme2BReachRateEntry OBJECT-TYPE

 SYNTAX EfmCuPme2BReachRateEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Each entry specifies maximum 2BASE-TL PME data rates

 allowed for a certain equivalent loop length, when using

 16-TCPAM or 32-TCPAM encoding.

 When a 2BASE-TL PME is initialized, its data rate shall not

 exceed the following limitations:

 - the value of efmCuPme2BMaxDataRate

 - maximum data rate allowed by efmCuPme2BRegion and

 efmCuPme2BPower

 - maximum data rate for a given encoding specified in the

 efmCuPme2BsModeEntry, corresponding to the equivalent loop

 length, estimated by the PME

 efmCuPme2BEquivalentLength values should be assigned

 in increasing order, starting from the minimum value.

 Entries may be created/deleted using the row creation/

 deletion mechanism via efmCuPme2ReachRateRowStatus."

 INDEX { efmCuPme2BsModeIndex, efmCuPme2BReachRateIndex }

 ::= { efmCuPme2BReachRateTable 1 }

 EfmCuPme2BReachRateEntry ::=

 SEQUENCE {

 efmCuPme2BReachRateIndex EfmProfileIndex,

 efmCuPme2BEquivalentLength Unsigned32,

 efmCuPme2BMaxDataRatePam16 Unsigned32,

 efmCuPme2BMaxDataRatePam32 Unsigned32,

 efmCuPme2BReachRateRowStatus RowStatus

 }

 efmCuPme2BReachRateIndex OBJECT-TYPE

 SYNTAX EfmProfileIndex

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "2BASE-TL custom spectral mode Reach-Rate table index.

 This object is the unique index associated with each entry."

 ::= { efmCuPme2BReachRateEntry 1 }

 efmCuPme2BEquivalentLength OBJECT-TYPE

 SYNTAX Unsigned32(0..8192)

 UNITS "m"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Maximum allowed equivalent loop's physical length in meters

 for the specified data rates.

 An equivalent loop is a hypothetical 26AWG (0.4mm) loop with a

 perfect square root attenuation characteristic, without any

 bridged taps."

 ::= { efmCuPme2BReachRateEntry 2 }

 efmCuPme2BMaxDataRatePam16 OBJECT-TYPE

 SYNTAX Unsigned32(0|192..5696)

 UNITS "Kbps"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Maximum data rate for a 2BASE-TL PME at the specified

 equivalent loop's length using TC-PAM16 encoding.

 The value of zero means that TC-PAM16 encoding should not be

 used at this distance."

 ::= { efmCuPme2BReachRateEntry 3 }

 efmCuPme2BMaxDataRatePam32 OBJECT-TYPE

 SYNTAX Unsigned32(0|192..5696)

 UNITS "Kbps"

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Maximum data rate for a 2BASE-TL PME at the specified

 equivalent loop's length using TC-PAM32 encoding.

 The value of zero means that TC-PAM32 encoding should not be

 used at this distance."

 ::= { efmCuPme2BReachRateEntry 4 }

 efmCuPme2BReachRateRowStatus OBJECT-TYPE

 SYNTAX RowStatus

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "This object controls the creation, modification, or deletion

 of the associated entry in the efmCuPme2BReachRateTable per

 the semantics of RowStatus.

 If an 'active' entry is referenced via efmCuPme2BsMode

 instance(s), the entry shall remain 'active'.

 An 'active' entry shall not be modified. In order to modify

 an existing entry, it shall be taken out of service (by setting

 this object to 'notInService'), modified, and set 'active'

 again."

 ::= { efmCuPme2BReachRateEntry 5 }

 -- 10PASS-TS specific PME group

 efmCuPme10P OBJECT IDENTIFIER ::= { efmCuPme 6 }

 efmCuPme10PProfileTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPme10PProfileEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table supports definitions of configuration profiles for

 10PASS-TS PMEs.

 The first 22 entries in this table shall be defined as

 follows (see IEEE Std 802.3 Annex 62B.3, Table 62B-1):

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

 Profile Bandplan UPBO BandNotch DRate URate Comment

 Index PSDMask# p# p# p# p#

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

 1 1 3 2,6,10,11 20 20 default profile

 2 13 5 0 20 20

 3 1 1 0 20 20

 4 16 0 0 100 100

 5 16 0 0 70 50

 6 6 0 0 50 10

 7 17 0 0 30 30

 8 8 0 0 30 5

 9 4 0 0 25 25

 10 4 0 0 15 15

 11 23 0 0 10 10

 12 23 0 0 5 5

 13 16 0 2,5,9,11 100 100

 14 16 0 2,5,9,11 70 50

 15 6 0 2,6,10,11 50 10

 16 17 0 2,5,9,11 30 30

 17 8 0 2,6,10,11 30 5

 18 4 0 2,6,10,11 25 25

 19 4 0 2,6,10,11 15 15

 20 23 0 2,5,9,11 10 10

 21 23 0 2,5,9,11 5 5

 22 30 0 0 200 50

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

 These default entries shall be created during agent

 initialization and shall not be deleted.

 Entries following the first 22 can be dynamically created and

 deleted to provide custom administrative (configuration)

 profiles and automatic operating profiles.

 This table shall be maintained in a persistent manner."

 REFERENCE

 "IEEE Std 802.3, Annex 62B.3, 30.11.2.1.6"

 ::= { efmCuPme10P 1 }

 efmCuPme10PProfileEntry OBJECT-TYPE

 SYNTAX EfmCuPme10PProfileEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Each entry corresponds to a single 10PASS-TS PME profile.

 Each profile contains a set of parameters, used either for

 configuration or representation of a 10PASS-TS PME.

 In case a particular profile is referenced via the

 efmCuPmeAdminProfile object (or efmCuAdminProfile if

 efmCuPmeAdminProfile is zero), it represents the desired

 parameters for the 10PassTS-O PME initialization.

 If a profile is referenced via an efmCuPmeOperProfile object,

 it represents the current operating parameters of the PME.

 Profiles may be created/deleted using the row creation/

 deletion mechanism via efmCuPme10PProfileRowStatus. If an

 'active' entry is referenced, the entry shall remain 'active'

 until all references are removed.

 Default entries shall not be removed."

 INDEX { efmCuPme10PProfileIndex }

 ::= { efmCuPme10PProfileTable 1 }

 EfmCuPme10PProfileEntry ::=

 SEQUENCE {

 efmCuPme10PProfileIndex EfmProfileIndex,

 efmCuPme10PProfileDescr SnmpAdminString,

 efmCuPme10PBandplanPSDMskProfile INTEGER,

 efmCuPme10PUPBOReferenceProfile INTEGER,

 efmCuPme10PBandNotchProfiles BITS,

 efmCuPme10PPayloadDRateProfile INTEGER,

 efmCuPme10PPayloadURateProfile INTEGER,

 efmCuPme10PProfileRowStatus RowStatus

 }

 efmCuPme10PProfileIndex OBJECT-TYPE

 SYNTAX EfmProfileIndex

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "10PASS-TS PME profile index.

 This object is the unique index associated with this profile.

 Entries in this table are referenced via efmCuAdminProfile or

 efmCuPmeAdminProfile."

 ::= { efmCuPme10PProfileEntry 1 }

 efmCuPme10PProfileDescr OBJECT-TYPE

 SYNTAX SnmpAdminString

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "A textual string containing information about a 10PASS-TS PME

 profile. The string may include information about data rate

 and spectral limitations of this particular profile."

 ::= { efmCuPme10PProfileEntry 2 }

 efmCuPme10PBandplanPSDMskProfile OBJECT-TYPE

 SYNTAX INTEGER {

 profile1(1),

 profile2(2),

 profile3(3),

 profile4(4),

 profile5(5),

 profile6(6),

 profile7(7),

 profile8(8),

 profile9(9),

 profile10(10),

 profile11(11),

 profile12(12),

 profile13(13),

 profile14(14),

 profile15(15),

 profile16(16),

 profile17(17),

 profile18(18),

 profile19(19),

 profile20(20),

 profile21(21),

 profile22(22),

 profile23(23),

 profile24(24),

 profile25(25),

 profile26(26),

 profile27(27),

 profile28(28),

 profile29(29),

 profile30(30)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The 10PASS-TS PME Bandplan and PSD Mask Profile, as specified

 in IEEE Std 802.3 Annex 62A, table 62A-1. Possible values are:

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

 Profile Name PSD Mask Bands ITU-T G.993.1

 0/1/2/3/4/5 Bandplan

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

 profile1(1) ANSI T1.424 FTTCab.M1 x/D/U/D/U A

 profile2(2) ANSI T1.424 FTTEx.M1 x/D/U/D/U A

 profile3(3) ANSI T1.424 FTTCab.M2 x/D/U/D/U A

 profile4(4) ANSI T1.424 FTTEx.M2 x/D/U/D/U A

 profile5(5) ANSI T1.424 FTTCab.M1 D/D/U/D/U A

 profile6(6) ANSI T1.424 FTTEx.M1 D/D/U/D/U A

 profile7(7) ANSI T1.424 FTTCab.M2 D/D/U/D/U A

 profile8(8) ANSI T1.424 FTTEx.M2 D/D/U/D/U A

 profile9(9) ANSI T1.424 FTTCab.M1 U/D/U/D/x A

 profile10(10) ANSI T1.424 FTTEx.M1 U/D/U/D/x A

 profile11(11) ANSI T1.424 FTTCab.M2 U/D/U/D/x A

 profile12(12) ANSI T1.424 FTTEx.M2 U/D/U/D/x A

 profile13(13) ETSI TS 101 270-1 Pcab.M1.A x/D/U/D/U B

 profile14(14) ETSI TS 101 270-1 Pcab.M1.B x/D/U/D/U B

 profile15(15) ETSI TS 101 270-1 Pex.P1.M1 x/D/U/D/U B

 profile16(16) ETSI TS 101 270-1 Pex.P2.M1 x/D/U/D/U B

 profile17(17) ETSI TS 101 270-1 Pcab.M2 x/D/U/D/U B

 profile18(18) ETSI TS 101 270-1 Pex.P1.M2 x/D/U/D/U B

 profile19(19) ETSI TS 101 270-1 Pex.P2.M2 x/D/U/D/U B

 profile20(20) ETSI TS 101 270-1 Pcab.M1.A U/D/U/D/x B

 profile21(21) ETSI TS 101 270-1 Pcab.M1.B U/D/U/D/x B

 profile22(22) ETSI TS 101 270-1 Pex.P1.M1 U/D/U/D/x B

 profile23(23) ETSI TS 101 270-1 Pex.P2.M1 U/D/U/D/x B

 profile24(24) ETSI TS 101 270-1 Pcab.M2 U/D/U/D/x B

 profile25(25) ETSI TS 101 270-1 Pex.P1.M2 U/D/U/D/x B

 profile26(26) ETSI TS 101 270-1 Pex.P2.M2 U/D/U/D/x B

 profile27(27) ITU-T G.993.1 F.1.2.1 x/D/U/D/U Annex F

 profile28(28) ITU-T G.993.1 F.1.2.2 x/D/U/D/U Annex F

 profile29(29) ITU-T G.993.1 F.1.2.3 x/D/U/D/U Annex F

 profile30(30) ANSI T1.424 FTTCab.M1 (ext.) x/D/U/D/U/D Annex A

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

 "

 REFERENCE

 "IEEE Std 802.3, Annex 62A"

 ::= { efmCuPme10PProfileEntry 3 }

 efmCuPme10PUPBOReferenceProfile OBJECT-TYPE

 SYNTAX INTEGER {

 profile0(0),

 profile1(1),

 profile2(2),

 profile3(3),

 profile4(4),

 profile5(5),

 profile6(6),

 profile7(7),

 profile8(8),

 profile9(9)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The 10PASS-TS PME Upstream Power Back-Off (UPBO) Reference

 PSD Profile, as specified in 802.3 Annex 62A, table 62A-3.

 Possible values are:

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

 Profile Name Reference PSD

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

 profile0(0) no profile

 profile1(1) ANSI T1.424 Noise A M1

 profile2(2) ANSI T1.424 Noise A M2

 profile3(3) ANSI T1.424 Noise F M1

 profile4(4) ANSI T1.424 Noise F M2

 profile5(5) ETSI TS 101 270-1 Noise A&B

 profile6(6) ETSI TS 101 270-1 Noise C

 profile7(7) ETSI TS 101 270-1 Noise D

 profile8(8) ETSI TS 101 270-1 Noise E

 profile9(9) ETSI TS 101 270-1 Noise F

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

 "

 REFERENCE

 "IEEE Std 802.3, Annex 62A.3.5"

 ::= { efmCuPme10PProfileEntry 4 }

 efmCuPme10PBandNotchProfiles OBJECT-TYPE

 SYNTAX BITS {

 profile0(0),

 profile1(1),

 profile2(2),

 profile3(3),

 profile4(4),

 profile5(5),

 profile6(6),

 profile7(7),

 profile8(8),

 profile9(9),

 profile10(10),

 profile11(11)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The 10PASS-TS PME Egress Control Band Notch Profile bitmap,

 as specified in IEEE Std 802.3 Annex 62A, table 62A-4. Possible

 values are:

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

 Profile Name G.991.3 T1.424 TS 101 270-1 StartF EndF

 table table table (MHz) (MHz)

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

 profile0(0) no profile

 profile1(1) F-5 #01 - - 1.810 1.825

 profile2(2) 6-2 15-1 17 1.810 2.000

 profile3(3) F-5 #02 - - 1.907 1.912

 profile4(4) F-5 #03 - - 3.500 3.575

 profile5(5) 6-2 - 17 3.500 3.800

 profile6(6) - 15-1 - 3.500 4.000

 profile7(7) F-5 #04 - - 3.747 3.754

 profile8(8) F-5 #05 - - 3.791 3.805

 profile9(9) 6-2 - 17 7.000 7.100

 profile10(10) F-5 #06 15-1 - 7.000 7.300

 profile11(11) 6-2 15-1 1 10.100 10.150

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

 Any combination of profiles can be specified by ORing

 individual profiles, for example, a value of 0x2230 selects

 profiles 2, 6, 10, and 11."

 REFERENCE

 "IEEE Std 802.3, Annex 62A.3.5"

 ::= { efmCuPme10PProfileEntry 5 }

 efmCuPme10PPayloadDRateProfile OBJECT-TYPE

 SYNTAX INTEGER {

 profile5(5),

 profile10(10),

 profile15(15),

 profile20(20),

 profile25(25),

 profile30(30),

 profile50(50),

 profile70(70),

 profile100(100),

 profile140(140),

 profile200(200)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The 10PASS-TS PME Downstream Payload Rate Profile, as

 specified in IEEE Std 802.3 Annex 62A. Possible values are:

 profile5(5) - 2.5 Mb/s

 profile10(10) - 5 Mb/s

 profile15(15) - 7.5 Mb/s

 profile20(20) - 10 Mb/s

 profile25(25) - 12.5 Mb/s

 profile30(30) - 15 Mb/s

 profile50(50) - 25 Mb/s

 profile70(70) - 35 Mb/s

 profile100(100) - 50 Mb/s

 profile140(140) - 70 Mb/s

 profile200(200) - 100 Mb/s

 Each value represents a target for the PME's Downstream

 Payload Bitrate as seen at the MII. If the payload rate of

 the selected profile cannot be achieved based on the loop

 environment, bandplan, and PSD mask, the PME initialization

 shall fail."

 REFERENCE

 "IEEE Std 802.3, Annex 62A.3.6"

 ::= { efmCuPme10PProfileEntry 6 }

 efmCuPme10PPayloadURateProfile OBJECT-TYPE

 SYNTAX INTEGER {

 profile5(5),

 profile10(10),

 profile15(15),

 profile20(20),

 profile25(25),

 profile30(30),

 profile50(50),

 profile70(70),

 profile100(100)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The 10PASS-TS PME Upstream Payload Rate Profile, as specified

 in 802.3 Annex 62A. Possible values are:

 profile5(5) - 2.5 Mb/s

 profile10(10) - 5 Mb/s

 profile15(15) - 7.5 Mb/s

 profile20(20) - 10 Mb/s

 profile25(25) - 12.5 Mb/s

 profile30(30) - 15 Mb/s

 profile50(50) - 25 Mb/s

 profile70(70) - 35 Mb/s

 profile100(100) - 50 Mb/s

 Each value represents a target for the PME's Upstream Payload

 Bitrate as seen at the MII. If the payload rate of the

 selected profile cannot be achieved based on the loop

 environment, bandplan, and PSD mask, the PME initialization

 shall fail."

 REFERENCE

 "IEEE Std 802.3, Annex 62A.3.6"

 ::= { efmCuPme10PProfileEntry 7 }

 efmCuPme10PProfileRowStatus OBJECT-TYPE

 SYNTAX RowStatus

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "This object controls creation, modification, or deletion of

 the associated entry in efmCuPme10PProfileTable per the

 semantics of RowStatus.

 If an active entry is referenced via efmCuAdminProfile or

 efmCuPmeAdminProfile, the entry shall remain 'active' until

 all references are removed.

 An 'active' entry shall not be modified. In order to modify

 an existing entry, it shall be taken out of service (by setting

 this object to 'notInService'), modified, and set 'active'

 again."

 ::= { efmCuPme10PProfileEntry 8 }

 efmCuPme10PStatusTable OBJECT-TYPE

 SYNTAX SEQUENCE OF EfmCuPme10PStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table provides status information of EFMCu 10PASS-TS

 PMEs (modems).

 This table contains live data from the equipment. As such,

 it is not persistent."

 ::= { efmCuPme10P 2 }

 efmCuPme10PStatusEntry OBJECT-TYPE

 SYNTAX EfmCuPme10PStatusEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the EFMCu 10PASS-TS PME Status table."

 INDEX { ifIndex }

 ::= { efmCuPme10PStatusTable 1 }

 EfmCuPme10PStatusEntry ::=

 SEQUENCE {

 efmCuPme10PFECCorrectedBlocks Counter32,

 efmCuPme10PFECUncorrectedBlocks Counter32

 }

 efmCuPme10PFECCorrectedBlocks OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of received and corrected Forward Error Correction

 (FEC) codewords in this 10PASS-TS PME.

 This object maps to the aPMEFECCorrectedBlocks attribute in

 Clause 30.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present,

 then this object maps to the 10P FEC correctable errors

 register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.25, 30.11.2.1.8"

 ::= { efmCuPme10PStatusEntry 1 }

 efmCuPme10PFECUncorrectedBlocks OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of received uncorrectable FEC codewords in this

 10PASS-TS PME.

 This object maps to the aPMEFECUncorrectableBlocks attribute

 in Clause 30.

 If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present,

 then this object maps to the 10P FEC uncorrectable errors

 register.

 Discontinuities in the value of this counter can occur at

 re-initialization of the management system, and at other times

 as indicated by the value of ifCounterDiscontinuityTime,

 defined in IF-MIB."

 REFERENCE

 "IEEE Std 802.3, 45.2.1.26, 30.11.2.1.9"

 ::= { efmCuPme10PStatusEntry 2 }

 --

 -- Conformance statements

 --

 efmCuGroups OBJECT IDENTIFIER ::= { efmCuConformance 1 }

 efmCuCompliances OBJECT IDENTIFIER ::= { efmCuConformance 2 }

 -- Object Groups

 efmCuBasicGroup OBJECT-GROUP

 OBJECTS {

 efmCuPAFSupported,

 efmCuAdminProfile,

 efmCuTargetDataRate,

 efmCuTargetSnrMgn,

 efmCuAdaptiveSpectra,

 efmCuPortSide,

 efmCuFltStatus

 }

 STATUS current

 DESCRIPTION

 "A collection of objects representing management information

 common for all types of EFMCu ports."

 ::= { efmCuGroups 1 }

 efmCuPAFGroup OBJECT-GROUP

 OBJECTS {

 efmCuPeerPAFSupported,

 efmCuPAFCapacity,

 efmCuPeerPAFCapacity,

 efmCuPAFAdminState,

 efmCuPAFDiscoveryCode,

 efmCuPAFRemoteDiscoveryCode,

 efmCuNumPMEs

 }

 STATUS current

 DESCRIPTION

 "A collection of objects supporting optional PME

 Aggregation Function (PAF) and PAF discovery in EFMCu ports."

 ::= { efmCuGroups 2 }

 efmCuPAFErrorsGroup OBJECT-GROUP

 OBJECTS {

 efmCuPAFInErrors,

 efmCuPAFInSmallFragments,

 efmCuPAFInLargeFragments,

 efmCuPAFInBadFragments,

 efmCuPAFInLostFragments,

 efmCuPAFInLostStarts,

 efmCuPAFInLostEnds,

 efmCuPAFInOverflows

 }

 STATUS current

 DESCRIPTION

 "A collection of objects supporting optional error counters

 of PAF on EFMCu ports."

 ::= { efmCuGroups 3 }

 efmCuPmeGroup OBJECT-GROUP

 OBJECTS {

 efmCuPmeAdminProfile,

 efmCuPmeOperStatus,

 efmCuPmeFltStatus,

 efmCuPmeSubTypesSupported,

 efmCuPmeAdminSubType,

 efmCuPmeOperSubType,

 efmCuPAFRemoteDiscoveryCode,

 efmCuPmeOperProfile,

 efmCuPmeSnrMgn,

 efmCuPmePeerSnrMgn,

 efmCuPmeLineAtn,

 efmCuPmePeerLineAtn,

 efmCuPmeEquivalentLength,

 efmCuPmeTCCodingErrors,

 efmCuPmeTCCrcErrors,

 efmCuPmeThreshLineAtn,

 efmCuPmeThreshSnrMgn

 }

 STATUS current

 DESCRIPTION

 "A collection of objects providing information about

 a 2BASE-TL/10PASS-TS PME."

 ::= { efmCuGroups 4 }

 efmCuAlarmConfGroup OBJECT-GROUP

 OBJECTS {

 efmCuThreshLowRate,

 efmCuLowRateCrossingEnable,

 efmCuPmeThreshLineAtn,

 efmCuPmeLineAtnCrossingEnable,

 efmCuPmeThreshSnrMgn,

 efmCuPmeSnrMgnCrossingEnable,

 efmCuPmeDeviceFaultEnable,

 efmCuPmeConfigInitFailEnable,

 efmCuPmeProtocolInitFailEnable

 }

 STATUS current

 DESCRIPTION

 "A collection of objects supporting configuration of alarm

 thresholds and notifications in EFMCu ports."

 ::= { efmCuGroups 5 }

 efmCuNotificationGroup NOTIFICATION-GROUP

 NOTIFICATIONS {

 efmCuLowRateCrossing,

 efmCuPmeLineAtnCrossing,

 efmCuPmeSnrMgnCrossing,

 efmCuPmeDeviceFault,

 efmCuPmeConfigInitFailure,

 efmCuPmeProtocolInitFailure

 }

 STATUS current

 DESCRIPTION

 "This group supports notifications of significant conditions

 associated with EFMCu ports."

 ::= { efmCuGroups 6 }

 efmCuPme2BProfileGroup OBJECT-GROUP

 OBJECTS {

 efmCuPme2BProfileDescr,

 efmCuPme2BRegion,

 efmCuPme2BsMode,

 efmCuPme2BMinDataRate,

 efmCuPme2BMaxDataRate,

 efmCuPme2BPower,

 efmCuPme2BConstellation,

 efmCuPme2BProfileRowStatus,

 efmCuPme2BsModeDescr,

 efmCuPme2BsModeRowStatus,

 efmCuPme2BEquivalentLength,

 efmCuPme2BMaxDataRatePam16,

 efmCuPme2BMaxDataRatePam32,

 efmCuPme2BReachRateRowStatus

 }

 STATUS current

 DESCRIPTION

 "A collection of objects that constitute a configuration

 profile for configuration of 2BASE-TL ports."

 ::= { efmCuGroups 7}

 efmCuPme10PProfileGroup OBJECT-GROUP

 OBJECTS {

 efmCuPme10PProfileDescr,

 efmCuPme10PBandplanPSDMskProfile,

 efmCuPme10PUPBOReferenceProfile,

 efmCuPme10PBandNotchProfiles,

 efmCuPme10PPayloadDRateProfile,

 efmCuPme10PPayloadURateProfile,

 efmCuPme10PProfileRowStatus

 }

 STATUS current

 DESCRIPTION

 "A collection of objects that constitute a configuration

 profile for configuration of 10PASS-TS ports."

 ::= { efmCuGroups 8 }

 efmCuPme10PStatusGroup OBJECT-GROUP

 OBJECTS {

 efmCuPme10PFECCorrectedBlocks,

 efmCuPme10PFECUncorrectedBlocks

 }

 STATUS current

 DESCRIPTION

 "A collection of objects providing status information

 specific to 10PASS-TS PMEs."

 ::= { efmCuGroups 9 }

 -- Compliance statements

 efmCuCompliance MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION

 "The compliance statement for 2BASE-TL/10PASS-TS interfaces.

 Compliance with the following external compliance statements

 is required:

 MIB module Compliance Statement

 ---------- --------------------

 IF-MIB ifCompliance3

 IEEE8023-EtherLike-MIB dot3Compliance2

 MAU-MIB mauModIfCompl3

 Compliance with the following external compliance statements

 is optional for implementations supporting PME Aggregation

 Function (PAF) with flexible cross-connect between the PCS

 and PME ports:

 MIB module Compliance Statement

 ---------- --------------------

 IF-INVERTED-STACK-MIB ifInvCompliance

 IF-CAP-STACK-MIB ifCapStackCompliance"

 MODULE -- this module

 MANDATORY-GROUPS {

 efmCuBasicGroup,

 efmCuPmeGroup,

 efmCuAlarmConfGroup,

 efmCuNotificationGroup

 }

 GROUP efmCuPme2BProfileGroup

 DESCRIPTION

 "Support for this group is only required for implementations

 supporting 2BASE-TL PHY."

 GROUP efmCuPme10PProfileGroup

 DESCRIPTION

 "Support for this group is only required for implementations

 supporting 10PASS-TS PHY."

 GROUP efmCuPAFGroup

 DESCRIPTION

 "Support for this group is only required for

 implementations supporting PME Aggregation Function (PAF)."

 GROUP efmCuPAFErrorsGroup

 DESCRIPTION

 "Support for this group is optional for implementations

 supporting PME Aggregation Function (PAF)."

 GROUP efmCuPme10PStatusGroup

 DESCRIPTION

 "Support for this group is optional for implementations

 supporting 10PASS-TS PHY."

 OBJECT efmCuPmeSubTypesSupported

 SYNTAX BITS {

 ieee2BaseTLO(0),

 ieee2BaseTLR(1),

 ieee10PassTSO(2),

 ieee10PassTSR(3)

 }

 DESCRIPTION

 "Support for all subtypes is not required. However, at

 least one value shall be supported."

 OBJECT efmCuPmeAdminSubType

 MIN-ACCESS read-only

 DESCRIPTION

 "Write access is not required (needed only for PMEs

 supporting more than a single subtype, e.g.,

 ieee2BaseTLO and ieee2BaseTLR or ieee10PassTSO and

 ieee10PassTSR)."

 OBJECT efmCuTargetSnrMgn

 MIN-ACCESS read-only

 DESCRIPTION

 "Write access is optional. For PHYs without write access,

 the target SNR margin shall be fixed at 5dB for 2BASE-TL

 and 6dB for 10PASS-TS."

 OBJECT efmCuAdaptiveSpectra

 MIN-ACCESS read-only

 DESCRIPTION

 "Write access is optional. For PHYs without write access,

 the default value should be false."

 ::= { efmCuCompliances 1 }

 END