

IEEE8023-MAU-MIB DEFINITIONS ::= BEGIN

IMPORTS

```
Counter32, Integer32, Counter64, Unsigned32,
OBJECT-TYPE, MODULE-IDENTITY, NOTIFICATION-TYPE, org
FROM SNMPv2-SMI          -- RFC 2578
TruthValue, AutonomousType
FROM SNMPv2-TC          -- RFC 2579
OBJECT-GROUP, MODULE-COMPLIANCE, NOTIFICATION-GROUP
FROM SNMPv2-CONF        -- RFC 2580
InterfaceIndex
FROM IF-MIB             -- RFC 2863
IANAifMauTypeListBits, IANAifMauMediaAvailable,
IANAifMauAutoNegCapBits, IANAifJackType
FROM IANA-MAU-MIB
-- http://www.iana.org/assignments/ianamau-mib
;
```

ieee8023mauMIB MODULE-IDENTITY

```
LAST-UPDATED "201304110000Z" -- April 11, 2013
ORGANIZATION
  "IEEE 802.3 working group"
CONTACT-INFO
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```

DESCRIPTION

"Management information for 802.3 MAUs."

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 4836."

```
::= { org ieee(111) standards-association-numbers-series-standards(2)
      lan-man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 13 }
```

ieee8023snmpDot3MauMgt OBJECT IDENTIFIER ::= { ieee8023mauMIB 1 }

dot3RpMauBasicGroup

OBJECT IDENTIFIER ::= { ieee8023snmpDot3MauMgt 1 }

dot3IfMauBasicGroup

OBJECT IDENTIFIER ::= { ieee8023snmpDot3MauMgt 2 }

-- The following object is a placeholder

-- to preserve the arc assignments that follow it.

dot3PlaceholderGroup

OBJECT IDENTIFIER ::= { ieee8023snmpDot3MauMgt 3 }

-- OIDs under the following branch are reserved for

-- the IANA-MAU-MIB to assign as MAU type values:

-- { ieee8023snmpDot3MauMgt 4 }

dot3IfMauAutoNegGroup

OBJECT IDENTIFIER ::= { ieee8023snmpDot3MauMgt 5 }

--

-- The Basic Repeater MAU Table

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rpMauTable OBJECT-TYPE

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SYNTAX      SEQUENCE OF RpMauEntry
MAX-ACCESS  not-accessible
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STATUS      current
DESCRIPTION "Table of descriptive and status information
            about the MAU(s) attached to the ports of a
            repeater."
 ::= { dot3RpMauBasicGroup 1 }

rpMauEntry OBJECT-TYPE
SYNTAX      RpMauEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "An entry in the table, containing information
            about a single MAU."
INDEX       { rpMauGroupIndex,
              rpMauPortIndex,
              rpMauIndex
            }
 ::= { rpMauTable 1 }

RpMauEntry ::=
SEQUENCE {
    rpMauGroupIndex      Integer32,
    rpMauPortIndex       Integer32,
    rpMauIndex           Integer32,
    rpMauType            AutonomousType,
    rpMauStatus          INTEGER,
    rpMauMediaAvailable  IANAifMauMediaAvailable,
    rpMauMediaAvailableStateExits Counter32,
    rpMauJabberState     INTEGER,
    rpMauJabberingStateEnters Counter32,
    rpMauFalseCarriers   Counter32
}

rpMauGroupIndex OBJECT-TYPE
SYNTAX      Integer32 (1..2147483647)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "This variable uniquely identifies the group
            containing the port to which the MAU described
            by this entry is connected.

            Note: In practice, a group will generally be
            a field-replaceable unit (i.e., module, card,
            or board) that can fit in the physical system
            enclosure, and the group number will correspond
            to a number marked on the physical enclosure.

            The group denoted by a particular value of this
            object is the same as the group denoted by the
            same value of rpMauGroupIndex."
REFERENCE   "RFC 2108, rpMauGroupIndex."
 ::= { rpMauEntry 1 }

rpMauPortIndex OBJECT-TYPE
SYNTAX      Integer32 (1..2147483647)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "This variable uniquely identifies the repeater
            port within group rpMauGroupIndex to which the
            MAU described by this entry is connected."
REFERENCE   "RFC 2108, rpMauPortIndex."
 ::= { rpMauEntry 2 }

rpMauIndex OBJECT-TYPE
SYNTAX      Integer32 (1..2147483647)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "This variable uniquely identifies the MAU
            described by this entry from among other
            MAUs connected to the same port
            (rpMauPortIndex)."
REFERENCE   "IEEE Std 802.3, 30.5.1.1.1, aMAUID."
 ::= { rpMauEntry 3 }

```

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rpMauType OBJECT-TYPE
    SYNTAX      AutonomousType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "This object identifies the MAU type. Values for
                standard IEEE 802.3 MAU types are defined in the
                IANA maintained IANA-MAU-MIB module, as
                OBJECT-IDENTITIES of dot3MauType.
                If the MAU type is unknown, the object identifier
                zeroDotZero is returned."
    REFERENCE   "IEEE Std 802.3, 30.5.1.1.2, aMAUType."
    ::= { rpMauEntry 4 }

```

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rpMauStatus OBJECT-TYPE
    SYNTAX      INTEGER {
                other(1),
                unknown(2),
                operational(3),
                standby(4),
                shutdown(5),
                reset(6)
            }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION "The current state of the MAU. This object may
                be implemented as a read-only object by those
                agents and MAUs that do not implement software
                control of the MAU state. Some agents may not
                support setting the value of this object to some
                of the enumerated values.

                The value other(1) is returned if the MAU is in
                a state other than one of the states 2 through
                6.
                The value unknown(2) is returned when the MAU's
                true state is unknown; for example, when it is
                being initialized.

                A MAU in the operational(3) state is fully
                functional; it operates, and passes signals to its
                attached DTE or repeater port in accordance to
                its specification.

                A MAU in standby(4) state forces DI and CI to
                idle, and the media transmitter to idle or fault,
                if supported. Standby(4) mode only applies to
                link type MAUs. The state of
                rpMauMediaAvailable is unaffected.

                A MAU in shutdown(5) state assumes the same
                condition on DI, CI, and the media transmitter,
                as though it were powered down or not connected.
                The MAU may return other(1) value for the
                rpMauJabberState and rpMauMediaAvailable objects
                when it is in this state. For an AUI, this
                state will remove power from the AUI.

                Setting this variable to the value reset(6)
                resets the MAU in the same manner as a
                power-off, power-on cycle of at least one-half
                second would. The agent is not required to
                return the value reset(6).

                Setting this variable to the value
                operational(3), standby(4), or shutdown(5)
                causes the MAU to assume the respective state,
                except that setting a mixing-type MAU or an AUI
                to standby(4) will cause the MAU to enter the
                shutdown state."
    REFERENCE   "IEEE Std 802.3, 30.5.1.1.7, aMAUAdminState,
                30.5.1.2.2, acMAUAdminControl, and 30.5.1.2.1,
                acResetMAU."
    ::= { rpMauEntry 5 }

```

rpMauMediaAvailable OBJECT-TYPE  
SYNTAX IANAifMauMediaAvailable  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "This object identifies Media Available state of the MAU, complementary to the rpMauStatus. Values for the standard IEEE 802.3 Media Available states are defined in the IANA maintained IANA-MAU-MIB module, as IANAifMauMediaAvailable TC."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.4, aMediaAvailable."  
 ::= { rpMauEntry 6 }

rpMauMediaAvailableStateExits OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A count of the number of times that rpMauMediaAvailable for this MAU instance leaves the state available(3).  
  
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 rpMauMonitorPortLastChange."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.5, ~~aLoseMediaCounter~~, RFC 2108, rpMauMonitorPortLastChange"  
 ::= { rpMauEntry 7 }

rpMauJabberState OBJECT-TYPE  
SYNTAX INTEGER {  
    other(1),  
    unknown(2),  
    noJabber(3),  
    jabbering(4)  
}  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "The value other(1) is returned if the jabber state is not 2, 3, or 4. The agent shall return other(1) for MAU type dot3MauTypeAUI.  
  
The value unknown(2) is returned when the MAU's true state is unknown; for example, when it is being initialized.  
  
If the MAU is not jabbering the agent returns noJabber(3). This is the 'normal' state.  
  
If the MAU is in jabber state the agent returns the jabbering(4) value."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.6, ~~aJabber.jabberFlag~~."  
 ::= { rpMauEntry 8 }

rpMauJabberingStateEnters OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A count of the number of times that mauJabberState for this MAU instance enters the state jabbering(4). For MAUs of type dot3MauTypeAUI, dot3MauType100BaseT4, dot3MauType100BaseTX, dot3MauType100BaseFX, and all 1000 Mb/s types, this counter will indicate zero.  
  
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 rpMauMonitorPortLastChange."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.6, ~~aJabber.jabberCounter~~, RFC 2108, rpMauMonitorPortLastChange"  
 ::= { rpMauEntry 9 }

```

rpMauFalseCarriers OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "A count of the number of false carrier events
                during IDLE in 100BASE-X links. This counter
                does not increment at the symbol rate. It can
                increment after a valid carrier completion at a
                maximum rate of once per 100 ms until the next
                carrier event.

                This counter increments only for MAUs of type
                dot3MauType100BaseT4, dot3MauType100BaseTX,
                dot3MauType100BaseFX, and all 1000 Mb/s types.

                For all other MAU types, this counter will
                indicate zero.

                The approximate minimum time for rollover of
                this counter is 7.4 hours.

                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 rpMauPortLastChange."
    REFERENCE   "IEEE Std 802.3, 30.5.1.1.10, aFalseCarriers-
                RFC 2108, rpMauPortLastChange"
    ::= { rpMauEntry 10 }

-- The rpJackTable applies to MAUs attached to repeaters
-- which have one or more external jacks (connectors).
rpJackTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF RpJackEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "Information about the external jacks attached
                to MAUs attached to the ports of a repeater."
    ::= { dot3RpMauBasicGroup 2 }

rpJackEntry OBJECT-TYPE
    SYNTAX      RpJackEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "An entry in the table, containing information
                about a particular jack."
    INDEX       { rpMauGroupIndex,
                rpMauPortIndex,
                rpMauIndex,
                rpJackIndex
                }
    ::= { rpJackTable 1 }

RpJackEntry ::=
    SEQUENCE {
        rpJackIndex      Integer32,
        rpJackType       IANAifJackType
    }

rpJackIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "This variable uniquely identifies the jack
                described by this entry from among other jacks
                attached to the same MAU (rpMauIndex)."
    ::= { rpJackEntry 1 }

rpJackType OBJECT-TYPE
    SYNTAX      IANAifJackType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "The jack connector type, as it appears on the

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        outside of the system."
 ::= { rpJackEntry 2 }

--
-- The Basic Interface MAU Table
--
ifMauTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IfMauEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "Table of descriptive and status information
                about MAU(s) attached to an interface."
    ::= { dot3IfMauBasicGroup 1 }

ifMauEntry OBJECT-TYPE
    SYNTAX      IfMauEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "An entry in the table, containing information
                about a single MAU."
    INDEX       { ifMauIfIndex,
                  ifMauIndex
                }
    ::= { ifMauTable 1 }

IfMauEntry ::=
    SEQUENCE {
        ifMauIfIndex      InterfaceIndex,
        ifMauIndex        Integer32,
        ifMauType          AutonomousType,
        ifMauStatus        INTEGER,
        ifMauMediaAvailable IANAifMauMediaAvailable,
        ifMauMediaAvailableStateExits Counter32,
        ifMauJabberState   INTEGER,
        ifMauJabberingStateEnters Counter32,
        ifMauFalseCarriers Counter32,
        ifMauDefaultType   AutonomousType,
        ifMauAutoNegSupported TruthValue,
        ifMauTypeListBits  IANAifMauTypeListBits,
        ifMauHCFalseCarriers Counter64,
        ifMauPCSCodingViolations Counter64,
        ifMauFECAbility     INTEGER,
        ifMauFECMode        INTEGER,
        ifMauFECCorrectedBlocks Counter64,
        ifMauFECUnCorrectableBlocks Counter64,
        ifMauSNROpMarginChn1A Integer32,
        ifMauSNROpMarginChn1B Integer32,
        ifMauSNROpMarginChn1C Integer32,
        ifMauSNROpMarginChn1D Integer32,
        ifMauEEESupportList IANAifMauTypeListBits,
        ifMauEEELDFastRetrainCount Counter32,
        ifMauEEELPFastRetrainCount Counter32,
        ifMauTimeSyncCapabilityTX TruthValue,
        ifMauTimeSyncCapabilityRX TruthValue,
        ifMauTimeSyncDelayTXmax Integer32,
        ifMauTimeSyncDelayTXmin Integer32,
        ifMauTimeSyncDelayRXmax Integer32,
        ifMauTimeSyncDelayRXmin Integer32
    }

ifMauIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "This variable uniquely identifies the interface
                to which the MAU described by this entry is
                connected."
    REFERENCE   "RFC 2863, ifIndex"
    ::= { ifMauEntry 1 }

ifMauIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible

```

STATUS current  
DESCRIPTION "This variable uniquely identifies the MAU described by this entry from among other MAUs connected to the same interface (ifMauIfIndex)."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.1, ~~aMAUID.~~"  
 ::= { ifMauEntry 2 }

ifMauType OBJECT-TYPE

SYNTAX AutonomousType  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "This object identifies the MAU type. Values for standard IEEE 802.3 MAU types are defined in the IANA maintained IANA-MAU-MIB module, as OBJECT-IDENTITIES of dot3MauType. If the MAU type is unknown, the object identifier zeroDotZero is returned.

This object represents the operational type of the MAU, as determined by either 1) the result of the Auto-Negotiation function or 2) if Auto-Negotiation is not enabled or is not implemented for this MAU, by the value of the object ifMauDefaultType. In case 2), a set to the object ifMauDefaultType will force the MAU into the new operating mode."

REFERENCE "IEEE Std 802.3, 30.5.1.1.2, ~~aMAUType.~~"  
 ::= { ifMauEntry 3 }

ifMauStatus OBJECT-TYPE

SYNTAX INTEGER {  
 other(1),  
 unknown(2),  
 operational(3),  
 standby(4),  
 shutdown(5),  
 reset(6)  
 }

MAX-ACCESS read-write  
STATUS current

DESCRIPTION "The current state of the MAU. This object may be implemented as a read-only object by those agents and MAUs that do not implement software control of the MAU state. Some agents may not support setting the value of this object to some of the enumerated values.

The value other(1) is returned if the MAU is in a state other than one of the states 2 through 6.

The value unknown(2) is returned when the MAU's true state is unknown; for example, when it is being initialized.

A MAU in the operational(3) state is fully functional; it operates, and passes signals to its attached DTE or repeater port in accordance to its specification.

A MAU in standby(4) state forces DI and CI to idle and the media transmitter to idle or fault, if supported. Standby(4) mode only applies to link type MAUs. The state of ifMauMediaAvailable is unaffected.

A MAU in shutdown(5) state assumes the same condition on DI, CI, and the media transmitter, as though it were powered down or not connected. The MAU may return other(1) value for the ifMauJabberState and ifMauMediaAvailable objects when it is in this state. For an AUI, this state will remove power from the AUI.

Setting this variable to the value reset(6) resets the MAU in the same manner as a power-off, power-on cycle of at least one-half second would. The agent is not required to return the value reset(6).

Setting this variable to the value operational(3), standby(4), or shutdown(5) causes the MAU to assume the respective state, except that setting a mixing-type MAU or an AUI to standby(4) will cause the MAU to enter the shutdown state."

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.7, aMAUAdminState,~~  
~~30.5.1.2.2, aeMAUAdminControl, and 30.5.1.2.1,~~  
~~acResetMAU."~~

::= { ifMauEntry 4 }

ifMauMediaAvailable OBJECT-TYPE

SYNTAX IANAifMauMediaAvailable

MAX-ACCESS read-only

STATUS current

DESCRIPTION "This object identifies Media Available state of the MAU, complementary to the ifMauStatus. Values for the standard IEEE 802.3 Media Available states are defined in the IANA maintained IANA-MAU-MIB module, as IANAifMauMediaAvailable TC."

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.4, aMediaAvailable."~~

::= { ifMauEntry 5 }

ifMauMediaAvailableStateExits OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A count of the number of times that ifMauMediaAvailable for this MAU instance leaves the state available(3).

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."

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.5, aLoseMediaCounter,~~  
RFC 2863, ifCounterDiscontinuityTime."

::= { ifMauEntry 6 }

ifMauJabberState OBJECT-TYPE

SYNTAX INTEGER {  
    other(1),  
    unknown(2),  
    noJabber(3),  
    jabbering(4)  
}

MAX-ACCESS read-only

STATUS current

DESCRIPTION "The value other(1) is returned if the jabber state is not 2, 3, or 4. The agent shall return other(1) for MAU type dot3MauTypeAUI.

The value unknown(2) is returned when the MAU's true state is unknown; for example, when it is being initialized.

If the MAU is not jabbering the agent returns noJabber(3). This is the 'normal' state.

If the MAU is in jabber state the agent returns the jabbering(4) value."

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.6, aJabber.jabberFlag."~~

::= { ifMauEntry 7 }

ifMauJabberingStateEnters OBJECT-TYPE

SYNTAX Counter32



MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A count of the number of times that mauJabberState for this MAU instance enters the state jabbering(4). This counter will indicate zero for MAUs of type dot3MauTypeAUI and those of speeds above 10 Mb/s.

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."

REFERENCE "IEEE Std 802.3, 30.5.1.1.6, ~~aJabber.jabberCounter-~~ RFC 2863, ifCounterDiscontinuityTime."

::= { ifMauEntry 8 }

ifMauFalseCarriers OBJECT-TYPE

SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A count of the number of false carrier events during IDLE in 100BASE-X and 1000BASE-X links.

For all other MAU types, this counter will indicate zero. This counter does not increment at the symbol rate.

It can increment after a valid carrier completion at a maximum rate of once per 100 ms for 100BASE-X and once per 10us for 1000BASE-X until the next CarrierEvent.

This counter can roll over very quickly. A management station is advised to poll the ifMauHCFALSECarriers instead of this counter in order to avoid loss of information.

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."

REFERENCE "IEEE Std 802.3, 30.5.1.1.10, ~~aFalseCarriers-~~ RFC 2863, ifCounterDiscontinuityTime."

::= { ifMauEntry 9 }

ifMauDefaultType OBJECT-TYPE

SYNTAX AutonomousType  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION "This object identifies the default administrative baseband MAU type to be used in conjunction with the operational MAU type denoted by ifMauType.

The set of possible values for this object is the same as the set defined for the ifMauType object.

This object represents the administratively-configured type of the MAU. If Auto-Negotiation is not enabled or is not implemented for this MAU, the value of this object determines the operational type of the MAU. In this case, a set to this object will force the MAU into the specified operating mode.

If Auto-Negotiation is implemented and enabled for this MAU, the operational type of the MAU is determined by Auto-Negotiation, and the value of this object denotes the type to which the MAU will automatically revert if/when Auto-Negotiation is later disabled.

It may be necessary to provide for underlying hardware implementations which do not follow the exact behavior specified above.

In particular, when ifMauAutoNegAdminStatus transitions from enabled to disabled, the agent implementation shall verify that the operational type of the MAU (as reported by ifMauType) correctly transitions to the value specified by this object, rather than continuing to operate at the value earlier determined by the Auto-Negotiation function."

REFERENCE "IEEE Std 802.3, 30.5.1.1.1, ~~aMAUID,~~ and 22.2.4.1.4."  
::= { ifMauEntry 10 }

ifMauAutoNegSupported OBJECT-TYPE

SYNTAX TruthValue  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "This object indicates whether or not Auto-Negotiation is supported on this MAU."  
::= { ifMauEntry 11 }

ifMauTypeListBits OBJECT-TYPE

SYNTAX IANAifMauTypeListBits  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A value that uniquely identifies the set of possible IEEE 802.3 types that the MAU could be. If Auto-Negotiation is present on this MAU, this ~~object will map~~object maps to ifMauAutoNegCapabilityBits.

Note that this MAU may be capable of operating as a MAU type that is beyond the scope of this MIB. This is indicated by returning the bit value bOther in addition to any bit values for standard capabilities that are listed in the IANAifMauTypeListBits TC."

::= { ifMauEntry 12 }

ifMauHCFALSECarriers OBJECT-TYPE

SYNTAX Counter64  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A count of the number of false carrier events during IDLE in 100BASE-X and 1000BASE-X links.

For all other MAU types, this counter will indicate zero. This counter does not increment at the symbol rate.

This counter is a 64-bit version of ifMauFalseCarriers. Since the 32-bit version of this counter can roll over very quickly, management stations are advised to poll the 64-bit version instead, in order to avoid loss of information.

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."

REFERENCE "IEEE Std 802.3, 30.5.1.1.10, ~~aFalseCarriers-~~ RFC 2863, ifCounterDiscontinuityTime."  
::= { ifMauEntry 13 }

ifMauPCSCodingViolations OBJECT-TYPE

SYNTAX Counter64  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "Generalized nonresettable counter. This counter has a maximum increment rate of 25 000 000 counts per second for 100 Mb/s implementations and 125 000 000 counts per second for 1000 Mb/s implementations.

For 100 Mb/s operation it is a count of the number of events that cause the PHY to indicate 'Data reception with errors' on the MII (see ~~IEEE Std 802.3~~ IEEE Std 802.3, Table 22-2).

For 1000 Mb/s operation it is a count of the number of events that cause the PHY to indicate 'Data reception error' or 'Carrier Extend Error' on the GMII (see IEEE Std 802.3, Table 35-2). The contents of this attribute is undefined when FEC is operating."

REFERENCE "IEEE Std 802.3, 30.5.1.1.14 ~~aPCSCodingViolations~~."  
 ::= {ifMauEntry 14}

ifMauFECAbility OBJECT-TYPE

SYNTAX INTEGER {  
 unknown(1),  
 supported(2),  
 notsupported(3)  
 }

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A read-only value that indicates if the PHY supports an optional FEC sublayer for forward error correction (see IEEE Std 802.3, 65.2 and IEEE Std 802.3, Clause 74, Clause 91, and Clause 108).

If an ~~IEEE Std 802.3 Clause 45~~ IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then this attribute will map to the FEC capability register (see IEEE Std 802.3, 45.2.10.2 or 45.2.1.107~~45.2.8.2~~)."

REFERENCE "IEEE Std 802.3, 30.5.1.1.15 ~~aFECAbility~~."  
 ::= {ifMauEntry 15}

ifMauFECMode OBJECT-TYPE

SYNTAX INTEGER {  
 unknown(1),  
 disabled(2),  
 enabled(3),  
 baseREnabled(4),  
 rsFecEnabled(5)  
 }

MAX-ACCESS read-write

STATUS current

DESCRIPTION "A read-write value that indicates the mode of operation of the optional FEC sublayer for forward error correction (see IEEE Std 802.3, 65.2 and IEEE Std 802.3, Clause 74, Clause 91, and clause 108).

~~A GET operation returns the current mode of operation of the PHY. A SET operation changes the mode of operation of the PHY to the indicated value. The enumerations 'baseREnabled' and 'rsFecEnabled' are only used for 25GBASE-CR, 25GBASE-CR-S, 25GBASE-KR, and 25GBASE-KR-S PHYs where operation in the no-FEC mode maps to the enumeration 'disabled', operation in the BASE-R FEC mode maps to the enumeration 'baseREnabled', and operation in the RS-FEC mode maps to the enumeration 'rsFecEnabled' (see IEEE Std 802.3, 110.6 and 111.6). A GET operation returns the current mode of operation~~

~~of the PHY. A SET operation changes the mode of operation of the PHY to the indicated value. When IEEE Std 802.3 Clause 73 Auto-Negotiation is enabled a SET operation is not allowed and a GET operation maps to the variable FEC-enabled in Clause 74.~~

If an ~~IEEE Std 802.3 Clause 45~~ IEEE Std 802.3, Clause 45 MDIO Interface ~~to the PCS is present,~~ this attribute maps to the FEC enable bit or to the RS-FEC enable bit in the appropriate FEC control register based upon the PHY type and the FEC operating mode (see IEEE Std 802.3, 45.2.10.3, 45.2.1.108, and 45.2.1.116). ~~then this object will map to the FEC~~

~~control register (see IEEE Std 802.3 45.2.8.3) for 1000BASE-PX or FEC enable bit in the BASE-R FEC control register (see IEEE Std 802.3 45.2.1.90)."~~  
REFERENCE "~~IEEE Std 802.3, 30.5.1.1.16-aFECMode.~~"  
::= {ifMauEntry 16}

ifMauFECCorrectedBlocks OBJECT-TYPE

SYNTAX Counter64  
MAX-ACCESS read-only  
STATUS deprecated  
DESCRIPTION

\*\*\*\*\* THIS OBJECT IS DEPRECATED \*\*\*\*\*

Generalized nonresettable counter. This counter has a maximum increment rate of 1 200 000 counts per second for 1000 Mb/s implementations, and 5 000 000 counts per second for 10 Gb/s implementations.

For 1000BASE-PX PHYs or 10GBASE-R PHYs, a count of corrected FEC blocks. This counter will not increment for other PHY types.

Increment the counter by one for each received block that is corrected by the FEC function in the PHY.

~~If a Clause 45 MDIO-If IEEE Std 802.3, Clause 45 MDIO~~ Interface to the PCS is present, then this ~~object will map~~object maps to the FEC corrected blocks counter (see IEEE Std 802.3, 45.2.8.5 and 45.2.1.91)"

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.17-aFECCorrectedBlocks.~~"  
::= {ifMauEntry 17}

ifMauFECUncorrectableBlocks OBJECT-TYPE

SYNTAX Counter64  
MAX-ACCESS read-only  
STATUS deprecated  
DESCRIPTION

\*\*\*\*\* THIS OBJECT IS DEPRECATED \*\*\*\*\*

Generalized nonresettable counter. This counter has a maximum increment rate of 1 200 000 counts per second for 1000 Mb/s implementations, and 5 000 000 counts per second for 10 Gb/s implementations.

For ~~1000BASE-PX, 10/25/40/50/100/200/400GBASE-R, 100GBASE-P, 10GBASE-PR, or 10/1GBASE-PRX PHYs~~~~1000BASE-PX PHYs or 10GBASE-R PHYs~~, a count of uncorrectable FEC blocks. This counter will not increment for other PHY types.

Increment the counter by one for each received block that is determined to be uncorrectable by the FEC function in the PHY.

~~If a Clause 45 MDIO-If IEEE Std 802.3, Clause 45 MDIO~~ Interface to the PCS is present, then this ~~object will map~~object maps to the FEC uncorrectable blocks counter (see ~~IEEE Std 802.3 45.2.8.6 and 45.2.1.92)~~IEEE Std 802.3, 45.2.8.6 and 45.2.1.92)"

REFERENCE "~~IEEE Std 802.3, 30.5.1.1.18-aFECUncorrectableBlocks.~~"  
::= {ifMauEntry 18}

ifMauSNROpMarginChnlA OBJECT-TYPE

SYNTAX Integer32 (-127..127)  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"The current SNR operating margin measured at the slicer input for channel A for the 10GBASE-T PMA. It is reported in units of 0.1 dB to an accuracy of 0.5 dB within the range of -12.7 dB to 12.7 dB.

If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the SNR operating margin channel A register (see IEEE Std 802.3, 45.2.1.~~6581~~)."

REFERENCE "IEEE Std 802.3, 30.5.1.1.19-aSNROpMarginChnlA."  
::= {ifMauEntry 19}

ifMauSNROpMarginChnlB OBJECT-TYPE  
SYNTAX Integer32 (-127..127)  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "The current SNR operating margin measured at the slicer input for channel B for the 10GBASE-T PMA. It is reported in units of 0.1 dB to an accuracy of 0.5 dB within the range of -12.7 dB to 12.7 dB. If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the SNR operating margin channel B register (see IEEE Std 802.3, 45.2.1.6682)."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.20-aSNROpMarginChnlB."  
 ::= { ifMauEntry 20 }

ifMauSNROpMarginChnlC OBJECT-TYPE  
SYNTAX Integer32 (-127..127)  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "The current SNR operating margin measured at the slicer input for channel C for the 10GBASE-T PMA. It is reported in units of 0.1 dB to an accuracy of 0.5 dB within the range of -12.7 dB to 12.7 dB. If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the SNR operating margin channel C register (see IEEE Std 802.3, 45.2.1.6783)."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.21-aSNROpMarginChnlC."  
 ::= { ifMauEntry 21 }

ifMauSNROpMarginChnlD OBJECT-TYPE  
SYNTAX Integer32 (-127..127)  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "The current SNR operating margin measured at the slicer input for channel D for the 10GBASE-T PMA. It is reported in units of 0.1 dB to an accuracy of 0.5 dB within the range of -12.7 dB to 12.7 dB. If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the SNR operating margin channel D register (see IEEE Std 802.3, 45.2.1.6884)."  
REFERENCE "IEEE Std 802.3, 30.5.1.1.22-aSNROpMarginChnlD."  
 ::= { ifMauEntry 22 }

ifMauEEESupportList OBJECT-TYPE  
SYNTAX IANAifMauTypeListBits  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "A read-only list of the possible PHY types for which the underlying system supports Energy-Efficient Ethernet (EEE) as defined in ~~IEEE Std 802.3~~IEEE Std 802.3, Clause 78. ~~If IEEE Std 802.3, Clause 28 or Clause 73 Auto-Negotiation Is present, then this attribute maps to the local technology ability or advertised ability of the local device "~~  
REFERENCE "IEEE Std 802.3, 30.5.1.1.23-aEEESupportList."  
 ::= { ifMauEntry 23 }

ifMauEEELDFastRetrainCount OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "~~A count of the number of fast retrains initiated by the local device. This counter can be derived from fr tx counter (see IEEE Std 802.3, 55.4.5.4, 113.4.5.4, and 126.4.5.4). If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute Can be derived from the LD fast retrain count register (see IEEE Std 802.3, 45.2.1.94.2). A count of the number of 10GBASE-T fast retrains initiated by the local device. The indication reflects the state of the PHY event counter (see IEEE Std 802.3, 45.2.1.78.2 and 55.4.5.1.)"~~

REFERENCE "IEEE Std 802.3, 30.5.1.1.24-~~aLDFastRetrainCount.~~"  
 ::= { ifMauEntry 24 }

ifMauEELPFastRetrainCount OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION ""A count of the number of fast retrains initiated by the link partner. This counter can be derived from fr rx counter (see IEEE Std 802.3, 55.4.5.4, 113.4.5.4, and 126.4.5.4). If IEEE Std 802.3, Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute can be derived from the LP fast retrain count register (see IEEE Std 802.3, 45.2.1.94.1)."

~~A count of the number of 10GBASE-T fast retrains initiated by the link partner. The indication reflects the state of the PHY event counter (see IEEE Std 802.3, 45.2.1.78.1 and 55.4.5.1.)"~~

REFERENCE "IEEE Std 802.3, 30.5.1.1.25-~~aLPFastRetrainCount.~~"  
 ::= { ifMauEntry 25 }

ifMauTimeSyncCapabilityTX OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION "This object indicates whether or not transmit Time Sync is supported on this MAU."

REFERENCE "IEEE Std 802.3, 30.13.1.1-~~aTimeSyncCapabilityTX.~~"  
 ::= { ifMauEntry 26 }

ifMauTimeSyncCapabilityRX OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION "This object indicates whether or not receive Time Sync is supported on this MAU."

REFERENCE "IEEE Std 802.3, 30.13.1.2-~~aTimeSyncCapabilityRX.~~"  
 ::= { ifMauEntry 27 }

ifMauTimeSyncDelayTXmax OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION "The maximum data delay as specified in IEEE Std 802.3, 90.7, expressed in units of ns.

If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to PMA/PMD, WIS, PCS, PHY XS, DTE XS and/or TC is present, then the value stored in this attribute represents the maximum transmit path data delay values, consisting of the sum of the values of the registers in the instantiated sublayers (for each MMD, in case of multiple instances)"

REFERENCE "IEEE Std 802.3, 30.13.1.3-~~aTimeSyncDelayTXmax.~~"  
 ::= { ifMauEntry 28 }

ifMauTimeSyncDelayTXmin OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION "The minimum data delay as specified in IEEE Std 802.3, 90.7, expressed in units of ns.

If an ~~IEEE Std 802.3 Clause 45~~IEEE Std 802.3, Clause 45 MDIO Interface to PMA/PMD, WIS, PCS, PHY XS, DTE XS and/or TC is present, then the value stored in this attribute represents the minimum transmit path data delay values, consisting of the sum of the values of the registers in the instantiated sublayers (for each MMD, in case of multiple instances)"

REFERENCE "IEEE Std 802.3, 30.13.1.4-~~aTimeSyncDelayTXmin.~~"  
 ::= { ifMauEntry 29 }

```

ifMauTimeSyncDelayRXmax OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "The maximum data delay as specified in IEEE Std 802.3,
                90.7, expressed in units of ns.

                If an IEEE Std 802.3 Clause 45IEEE Std 802.3, Clause 45 MDIO Interface to
                PMA/PMD, WIS, PCS, PHY XS, DTE XS and/or TC is
                present, then the value stored in this attribute
                represents the maximum receive path data delay
                values, consisting of the sum of the values of the
                registers in the instantiated sublayers (for each MMD,
                in case of multiple instances)"
    REFERENCE   "IEEE Std 802.3, 30.13.1.5-aTimeSyncDelayRXmax."
    ::= { ifMauEntry 30 }

ifMauTimeSyncDelayRXmin OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "The minimum data delay as specified in IEEE Std 802.3,
                90.7, expressed in units of ns.

                If an IEEE Std 802.3 Clause 45IEEE Std 802.3, Clause 45 MDIO Interface to
                PMA/PMD, WIS, PCS, PHY XS, DTE XS and/or TC is
                present, then the value stored in this attribute
                represents the minimum receive path data delay
                values, consisting of the sum of the values of the
                registers in the instantiated sublayers (for each MMD,
                in case of multiple instances)"
    REFERENCE   "IEEE Std 802.3, 30.13.1.6-aTimeSyncDelayRXmin."
    ::= { ifMauEntry 31 }

-- The ifJackTable applies to MAUs attached to interfaces
-- which have one or more external jacks (connectors).

ifJackTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IfJackEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "Information about the external jacks attached
                to MAUs attached to an interface."
    ::= { dot3IfMauBasicGroup 2 }

ifJackEntry OBJECT-TYPE
    SYNTAX      IfJackEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "An entry in the table, containing information
                about a particular jack."
    INDEX       { ifMauIfIndex,
                ifMauIndex,
                ifJackIndex
                }
    ::= { ifJackTable 1 }

IfJackEntry ::=
    SEQUENCE {
        ifJackIndex      Integer32,
        ifJackType       IANAifJackType
    }

ifJackIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "This variable uniquely identifies the jack
                described by this entry from among other jacks
                attached to the same MAU."
    ::= { ifJackEntry 1 }

```

```

ifJackType OBJECT-TYPE
    SYNTAX      IANAifJackType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "The jack connector type, as it appears on the
                outside of the system."
    ::= { ifJackEntry 2 }

--
-- The MAU Per-PCS Lane Statistics Table
--

ifMauPerPCSLaneStatsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IfMauPerPCSLaneStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "Table of Per-PCS lane status information
                about MAUs attached to an interface."
    ::= { dot3IfMauBasicGroup 3 }

ifMauPerPCSLaneStatsEntry OBJECT-TYPE
    SYNTAX      IfMauPerPCSLaneStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "An entry in the table, containing information
                about a single PCS lane."
    INDEX       { ifMauIfIndex,
                  ifMauIndex,
                  ifPCSLaneIndex
                }
    ::= { ifMauPerPCSLaneStatsTable 1 }

IfMauPerPCSLaneStatsEntry ::=
    SEQUENCE {
        ifPCSLaneIndex          Unsigned32,
        ifMauPPLFECCorrectedBlocks Counter64,
        ifMauPPLFECUncorrectableBlocks Counter64,
        ifMauBIPErrorCount      Counter32,
        ifMauPCStoPHYLaneMapping Unsigned32
    }

ifPCSLaneIndex OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "This object provides the identification of the
                PCS lane for which this ifMauPerPCSLaneStatsEntry
                is applicable. This object can hold an integer value
                from 0 to N-1, where N is the total number of PCS
                lanes supported by the given PCS. "
    ::= { ifMauPerPCSLaneStatsEntry 1 }

ifMauPPLFECCorrectedBlocks OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "Generalized nonresettable counter. This counter has a
                maximum increment rate of 1 200 000 counts per second
                for 1000 Mb/s implementations, 5 000 000 counts per
                second for 10 Gb/s and 40 Gb/s implementations, and
                2 500 000 counts per second for 100 Gb/s implementations.

```

For 1000BASE-PX, 10/25/40/50/100/200/400GBASE-R, 100GBASE-P, 10GBASE-PR, or 10/1GBASE-PRX PHYs that support FEC across the MDI, an array of corrected FEC block counters. The counters do not increment for other PHY types. The indices of this array (0 to N - 1) denote the FEC sublayer instance number where N is the number of FEC sublayer instances in use.

The number of FEC sublayer instances in use is set to one for PHYs that do not use PCS lanes or use a single FEC instance for all lanes. Each element of this array



~~contains a count of corrected FEC blocks for that FEC sublayer instance. For 1000BASE-PX, 10/40/100GBASE-R PHYs, a count of corrected FEC blocks received on the PSC lane identified by ifPCSLaneIndex object. This counter will not increment for other PHY types.~~

~~Increment the counter by one for each FEC block received across the MDI that is corrected by the FEC function in the PHY for the corresponding lane or FEC sublayer instance. Increment the counter by one for each received block that is corrected by the FEC function in the PHY for the corresponding lane identified by the ifPCSLaneIndex object.~~

~~If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is present, then this object maps to the FEC corrected blocks counter for PSC lane number n, identified by the ifPCSLaneIndex object~~

~~If a Clause 45 MDIO Interface to the PCS is present, (see IEEE Std 802.3, 45.2.10.5 and 45.2.1.109 for 10GBASE-R, 45.2.3.41 for 10GBASE-PR and 10/1GBASE-PRX, 45.2.1.131 for BASE-R, 45.2.1.118 for RS-FEC, 45.2.3.62 for PCS FEC, and 45.2.1.227 for SC-FEC). then this object will map to the FEC corrected blocks counter for PCS lane number n, identified by the ifPCSLaneIndex object (see IEEE Std 802.3 45.2.8.5, 45.2.1.91, and 45.2.1.93).~~"

REFERENCE "~~IEEE Std 802.3~~ IEEE Std 802.3, 30.5.1.1.17"

::= { ifMauPerPCSLaneStatsEntry 2 }

ifMauPPLFECUncorrectableBlocks OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Generalized nonresettable counter. This counter has a maximum increment rate of 1 200 000 counts per second for 1000 Mb/s implementations, 5 000 000 counts per second for 10 Gb/s and 40 Gb/s implementations, and 2 500 000 counts per second for 100 Gb/s implementations.

~~For 1000BASE-PX, 10/25/40/50/100/200/400GBASE-R, 100GBASE-P, 10GBASE-PR, or 10/1GBASE-PRX PHYs that support FEC across the MDI, an array of uncorrectable FEC block counters. The counters do not increment for other PHY types. The indices of this array (0 to N - 1) denote the FEC sublayer instance number where N is the number of FEC sublayer instances in use.~~

~~The number of FEC sublayer instances in use is set to one for PHYs that do not use PCS lanes or use a single FEC instance for all lanes. Each element of this array contains a count of uncorrectable FEC blocks for that FEC sublayer instance.~~

~~For 1000BASE-PX, 10/40/100GBASE-R PHYs, a count of uncorrectable FEC blocks received on the PSC lane identified by ifPCSLaneIndex object. This counter will not increment for other PHY types.~~

~~Increment the counter by one for each FEC block that is determined to be uncorrectable by the FEC function in the PHY for the corresponding lane or FEC sublayer instance. Identified by the ifPCSLaneIndex object.~~

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

~~then this object will map~~ object maps to the FEC uncorrectable blocks counter for PSC lane number n, identified by the ifPCSLaneIndex object

~~(see IEEE Std 802.3 45~~ IEEE Std 802.3, 45.2.10.6 and 45.2.1.110 for 10GBASE-R, 45.2.3.42 for 10GBASE-PR and 10/1GBASE-PRX, 45.2.1.149 for BASE-R, 45.2.1.119 for RS-FEC, 45.2.3.63 for PCS FEC, and

45.2.1.228 for SC-FEC-2.8.6, 45.2.1.92, and 45.2.1.94)."  
REFERENCE "~~IEEE Std 802.3-IEEE Std 802.3~~, 30.5.1.1.18"  
::= { ifMauPerPCSLaneStatsEntry 3 }

ifMauBIPErrorCount OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "Generalized nonresettable counter. This counter  
has a maximum increment rate of 10 000 counts per  
second for 40 Gb/s and 50 Gb/s implementations and  
5 000 counts  
per second for 100 Gb/ s implementations.

~~For 40/50/100GBASE-R PHYs and and 100GBASE-P PHYs,  
an array of BIP error counters. The counters do not  
increment for other PHY types. The indices of this  
array (0 to n - 1) denote the PCS lane number where  
n is the number of PCS lanes in use. Each element of  
this array contains a count of BIP errors for that  
PCS lane.~~

~~a count of BIP errors on the  
PCS lane identified by ifPCSLaneIndex object. This  
counter will not increment for other PHY types.~~

Increment the counter by one for each BIP error  
detected during alignment marker removal in the  
PCS identified by the ifPCSLaneIndex object.

~~If a Clause 45 MDIO If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is  
present, then this object will mapobject maps to the BIP error  
counter for PCS lane number n, identified by the  
ifPCSLaneIndex object  
(see IEEE Std 802.3, 45.2.3.47 and 45.2.3.4845.2.3.44 and 45.2.3.45)."~~

REFERENCE "IEEE Std 802.3, 30.5.1.1.11"  
::= { ifMauPerPCSLaneStatsEntry 4 }

ifMauPCStoPHYLaneMapping OBJECT-TYPE  
SYNTAX Unsigned32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "~~For 40/50/100/200/400GBASE-R PHYs and 100GBASE-P PHYs,  
an array of PCS lane identifiers. The indices of this  
array (0 to n - 1) denote the service interface lane  
number where n is the number of PCS lanes in use. Each  
element of this array contains the PCS lane number for  
the PCS lane that has been detected in the  
corresponding service interface lane. For 40/100GBASE-R PHYs, an array of PCS lane  
identifiers. The indices of this array (0 to n?1)  
denote the service interface lane number where n is  
the number of PCS lanes in use. Each element of  
this array contains the PCS lane number for the PCS  
lane that has been detected in the corresponding  
service interface lane.~~

~~If a Clause 45 MDIO If IEEE Std 802.3, Clause 45 MDIO Interface to the PCS is  
present, then this object will mapobject maps to the Lane  
mapping register for PCS lane number n, identified  
by the ifPCSLaneIndex object~~

~~(see IEEE Std 802.3-45IEEE Std 802.3, 45.2.3.49 and 45.2.3.50-2.3.46 and 45.2.3.47)."~~  
REFERENCE "~~IEEE Std 802.3-IEEE Std 802.3~~, 30.5.1.1.12"  
::= { ifMauPerPCSLaneStatsEntry 5 }

--  
-- The MAU Auto-Negotiation Table  
--

ifMauAutoNegTable OBJECT-TYPE  
SYNTAX SEQUENCE OF IfMauAutoNegEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION "Configuration and status objects for the

Auto-Negotiation function of MAUs attached to interfaces.

The ifMauAutoNegTable applies to systems in which Auto-Negotiation is supported on one or more MAUs attached to interfaces. Note that if Auto-Negotiation is present and enabled, the ifMauType object reflects the result of the Auto-Negotiation function."

```
::= { dot3IfMauAutoNegGroup 1 }
```

ifMauAutoNegEntry OBJECT-TYPE

```
SYNTAX      IfMauAutoNegEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "An entry in the table, containing configuration
            and status information for the Auto-Negotiation
            function of a particular MAU."
INDEX       { ifMauIfIndex,
              ifMauIndex
            }
::= { ifMauAutoNegTable 1 }
```

IfMauAutoNegEntry ::=

```
SEQUENCE {
    ifMauAutoNegAdminStatus      INTEGER,
    ifMauAutoNegRemoteSignaling  INTEGER,
    ifMauAutoNegConfig           INTEGER,
    ifMauAutoNegRestart          INTEGER,
    ifMauAutoNegCapabilityBits   IANAifMauAutoNegCapBits,
    ifMauAutoNegCapAdvertisedBits IANAifMauAutoNegCapBits,
    ifMauAutoNegCapReceivedBits  IANAifMauAutoNegCapBits,
    ifMauAutoNegRemoteFaultAdvertised INTEGER,
    ifMauAutoNegRemoteFaultReceived INTEGER
}
```

ifMauAutoNegAdminStatus OBJECT-TYPE

```
SYNTAX      INTEGER {
                enabled(1),
                disabled(2)
            }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION "Setting this object to enabled(1) will cause
            the interface that has the Auto-Negotiation
            signaling ability to be enabled.
```

If the value of this object is disabled(2) then the interface will act as it would if it had no Auto-Negotiation signaling. Under these conditions, an IEEE 802.3 MAU will immediately be forced to the state indicated by the value of the object ifMauDefaultType.

When ifMauAutoNegAdminStatus transitions from enabled to disabled, the agent implementation shall verify that the operational type of the MAU (as reported by ifMauType) correctly transitions to the value specified by the ifMauDefaultType object, rather than continuing to operate at the value earlier determined by the Auto-Negotiation function."

```
REFERENCE  "IEEE Std 802.3, 30.6.1.1.2, acAutoNegAdminState,
            and 30.6.1.2.2, acAutoNegAdminControl."
```

```
::= { ifMauAutoNegEntry 1 }
```

ifMauAutoNegRemoteSignaling OBJECT-TYPE

```
SYNTAX      INTEGER {
                detected(1),
                notdetected(2)
            }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "A value indicating whether the remote end of
```

the link is using Auto-Negotiation signaling. It takes the value detected(1) if and only if, during the previous link negotiation, FLP Bursts were received."

REFERENCE "IEEE Std 802.3, 30.6.1.1.3~~r~~  
~~aAutoNegRemoteSignaling.~~"  
 ::= { ifMauAutoNegEntry 2 }

ifMauAutoNegConfig OBJECT-TYPE

SYNTAX INTEGER {  
 other(1),  
 configuring(2),  
 complete(3),  
 disabled(4),  
 parallelDetectFail(5)  
 }

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A value indicating the current status of the Auto-Negotiation process. The enumeration parallelDetectFail(5) maps to a failure in parallel detection as defined in IEEE Std 802.3, 28.2.3.1 ~~of~~  
~~IEEE Std 802.3.~~"

REFERENCE "IEEE Std 802.3, 30.6.1.1.4, ~~aAutoNegAutoConfig.~~"  
 ::= { ifMauAutoNegEntry 4 }

ifMauAutoNegRestart OBJECT-TYPE

SYNTAX INTEGER {  
 restart(1),  
 norestart(2)  
 }

MAX-ACCESS read-write

STATUS current

DESCRIPTION "If the value of this object is set to restart(1) then this will force Auto-Negotiation to begin link renegotiation. If Auto-Negotiation signaling is disabled, a write to this object has no effect.  
Setting the value of this object to norestart(2) has no effect."

REFERENCE "IEEE Std 802.3, 30.6.1.2.1~~r~~  
~~acAutoNegRestartAutoConfig.~~"  
 ::= { ifMauAutoNegEntry 5 }

ifMauAutoNegCapabilityBits OBJECT-TYPE

SYNTAX IANAifMauAutoNegCapBits

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A value that uniquely identifies the set of capabilities of the local Auto-Negotiation entity. Note that interfaces that support this MIB may have capabilities that extend beyond the scope of this MIB.

Note that the local Auto-Negotiation entity may support some capabilities beyond the scope of this MIB. This is indicated by returning the bit value bOther in addition to any bit values for standard capabilities that are listed in the IANAifMauAutoNegCapBits TC."

REFERENCE "IEEE Std 802.3, 30.6.1.1.5~~r~~  
~~aAutoNegLocalTechnologyAbility.~~"  
 ::= { ifMauAutoNegEntry 6 }

ifMauAutoNegCapAdvertisedBits OBJECT-TYPE

SYNTAX IANAifMauAutoNegCapBits

MAX-ACCESS read-write

STATUS current

DESCRIPTION "A value that uniquely identifies the set of capabilities advertised by the local Auto-Negotiation entity.

Capabilities in this object that are not available in ifMauAutoNegCapabilityBits cannot be enabled.

Note that the local Auto-Negotiation entity may advertise some capabilities beyond the scope of this MIB. This is indicated by returning the bit value bOther in addition to any bit values for standard capabilities that are listed in the IANAifMauAutoNegCapBits TC."

REFERENCE "IEEE Std 802.3, 30.6.1.1.67  
~~aAutoNegAdvertisedTechnologyAbility."~~  
 ::= { ifMauAutoNegEntry 7 }

ifMauAutoNegCapReceivedBits OBJECT-TYPE

SYNTAX IANAifMauAutoNegCapBits

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A value that uniquely identifies the set of capabilities received from the remote Auto-Negotiation entity.

Note that interfaces that support this MIB may be attached to remote Auto-Negotiation entities that have capabilities beyond the scope of this MIB. This is indicated by returning the bit value bOther in addition to any bit values for standard capabilities that are listed in the IANAifMauAutoNegCapBits TC."

REFERENCE "IEEE Std 802.3, 30.6.1.1.77  
~~aAutoNegReceivedTechnologyAbility."~~  
 ::= { ifMauAutoNegEntry 8 }

ifMauAutoNegRemoteFaultAdvertised OBJECT-TYPE

SYNTAX INTEGER {  
noError(1),  
offline(2),  
linkFailure(3),  
autoNegError(4)  
}

MAX-ACCESS read-write

STATUS current

DESCRIPTION "A value that identifies any local fault indications that this MAU has detected and will advertise at the next Auto-Negotiation interaction for 1000 Mb/s MAUs."

REFERENCE "IEEE Std 802.3, 30.6.1.1.67  
~~aAutoNegAdvertisedTechnologyAbility."~~  
 ::= { ifMauAutoNegEntry 9 }

ifMauAutoNegRemoteFaultReceived OBJECT-TYPE

SYNTAX INTEGER {  
noError(1),  
offline(2),  
linkFailure(3),  
autoNegError(4)  
}

MAX-ACCESS read-only

STATUS current

DESCRIPTION "A value that identifies any fault indications received from the far end of a link by the local Auto-Negotiation entity for 1000 Mb/s MAUs."

REFERENCE "IEEE Std 802.3, 30.6.1.1.77  
~~aAutoNegReceivedTechnologyAbility."~~  
 ::= { ifMauAutoNegEntry 10 }

-- Placeholder to preserve module structure and assignments

dot3Placeholder OBJECT-TYPE

SYNTAX INTEGER {  
placeholder(1)  
}

MAX-ACCESS read-only

STATUS current

```

DESCRIPTION  "A placeholder object to preserve the assignments
              that follow in the module. The assignment was given
              to the object broadMauBasicTable in earlier
              versions of this module. Preserving the assignments that
              follow is considered important because they are used for
              the IANA-MAU-MIB to assign as MAU type values."
REFERENCE    "none"
::= { dot3PlaceholderGroup 1 }

-- Notifications for use by 802.3 MAUs

snmpDot3MauTraps OBJECT IDENTIFIER ::= { ieee8023snmpDot3MauMgt 0 }

rpMauJabberTrap NOTIFICATION-TYPE
  OBJECTS      { rpMauJabberState }
  STATUS       current
  DESCRIPTION  "This trap is sent whenever a managed repeater
              MAU enters the jabber state.

              The agent shall limit the generation of
              consecutive rpMauJabberTraps so that there is at
              least a five-second gap between them."
  REFERENCE   "IEEE Std 802.3, 30.5.1.3.1, nJabber-notification."
  ::= { snmpDot3MauTraps 1 }

ifMauJabberTrap NOTIFICATION-TYPE
  OBJECTS      { ifMauJabberState }
  STATUS       current
  DESCRIPTION  "This trap is sent whenever a managed interface
              MAU enters the jabber state.

              The agent shall limit the generation of
              consecutive ifMauJabberTraps so that there is at
              least a five-second gap between them."
  REFERENCE   "IEEE Std 802.3, 30.5.1.3.1, nJabber-notification."
  ::= { snmpDot3MauTraps 2 }

-- Conformance statements

mauModConf
  OBJECT IDENTIFIER ::= { ieee8023mauMIB 2 }
mauModCompls
  OBJECT IDENTIFIER ::= { mauModConf 1 }
mauModObjGrps
  OBJECT IDENTIFIER ::= { mauModConf 2 }
mauModNotGrps
  OBJECT IDENTIFIER ::= { mauModConf 3 }

-- Object groups
mauRpGrpBasic OBJECT-GROUP
  OBJECTS      { rpMauType,
              rpMauStatus,
              rpMauMediaAvailable,
              rpMauMediaAvailableStateExits,
              rpMauJabberState,
              rpMauJabberingStateEnters
              }
  STATUS       current
  DESCRIPTION  "Basic conformance group for MAUs attached to
              repeater ports. This group is also the
              conformance specification for RFC 1515
              implementations."
  ::= { mauModObjGrps 1 }

mauRpGrp100Mbs OBJECT-GROUP
  OBJECTS      { rpMauFalseCarriers }
  STATUS       current
  DESCRIPTION  "Conformance group for MAUs attached to
              repeater ports with 100 Mb/s or greater
              capability."
  ::= { mauModObjGrps 2 }

```

```

mauRpGrpJack OBJECT-GROUP
OBJECTS      { rpJackType }
STATUS       current
DESCRIPTION  "Conformance group for MAUs attached to
             repeater ports with managed jacks."
::= { mauModObjGrps 3 }

mauIfGrpBasic OBJECT-GROUP
OBJECTS      { ifMauType,
             ifMauStatus,
             ifMauMediaAvailable,
             ifMauMediaAvailableStateExits,
             ifMauJabberState,
             ifMauJabberingStateEnters,
             dot3Placeholder
             }
STATUS       current
DESCRIPTION  "Basic conformance group for MAUs attached to
             interfaces. This group also provides a
             conformance specification for RFC 1515
             implementations."
::= { mauModObjGrps 4 }

mauIfGrpJack OBJECT-GROUP
OBJECTS      { ifJackType }
STATUS       current
DESCRIPTION  "Conformance group for MAUs attached to
             interfaces with managed jacks."
::= { mauModObjGrps 5 }

mauIfGrpHighCapacity OBJECT-GROUP
OBJECTS      { ifMauFalseCarriers,
             ifMauTypeListBits,
             ifMauDefaultType,
             ifMauAutoNegSupported
             }
STATUS       current
DESCRIPTION  "Conformance group for MAUs attached to
             interfaces with 100 Mb/s or greater capability."
::= { mauModObjGrps 6 }

mauIfGrpAutoNeg2 OBJECT-GROUP
OBJECTS      { ifMauAutoNegAdminStatus,
             ifMauAutoNegRemoteSignaling,
             ifMauAutoNegConfig,
             ifMauAutoNegCapabilityBits,
             ifMauAutoNegCapAdvertisedBits,
             ifMauAutoNegCapReceivedBits,
             ifMauAutoNegRestart
             }
STATUS       current
DESCRIPTION  "Conformance group for MAUs attached to
             interfaces with managed Auto-Negotiation."
::= { mauModObjGrps 7 }

mauIfGrpAutoNeg1000Mbps OBJECT-GROUP
OBJECTS      { ifMauAutoNegRemoteFaultAdvertised,
             ifMauAutoNegRemoteFaultReceived
             }
STATUS       current
DESCRIPTION  "Conformance group for 1000 Mb/s MAUs attached to
             interfaces with managed Auto-Negotiation."
::= { mauModObjGrps 8 }

mauIfGrpHCStats OBJECT-GROUP
OBJECTS      { ifMauHCFALSECarriers,
             ifMauPCSCodingViolations
             }
STATUS       current
DESCRIPTION  "Conformance for high capacity statistics for
             MAUs attached to interfaces."
::= { mauModObjGrps 9 }

```

```

mauIfGrpFEC OBJECT-GROUP
  OBJECTS      { ifMauFECAbility,
                 ifMauFECMode,
                 ifMauFECCorrectedBlocks,
                 ifMauFECUnCorrectableBlocks
               }
  STATUS       current
  DESCRIPTION  "Conformance for FEC capable
               MAUs attached to interfaces."
  ::= { mauModObjGrps 10 }

mauIfGrpSNR OBJECT-GROUP
  OBJECTS      { ifMauSNROpMarginChnlA,
                 ifMauSNROpMarginChnlB,
                 ifMauSNROpMarginChnlC,
                 ifMauSNROpMarginChnlD
               }
  STATUS       current
  DESCRIPTION  "Conformance for SNR operating margin reporting
               MAUs attached to interfaces."
  ::= { mauModObjGrps 11 }

mauIfGrpEEE OBJECT-GROUP
  OBJECTS      { ifMauEEESupportList,
                 ifMauEEELDFastRetrainCount,
                 ifMauEEELPFastRetrainCount
               }
  STATUS       current
  DESCRIPTION  "Conformance EEE support and Fast Retrain count
               reporting MAUs attached to interfaces."
  ::= { mauModObjGrps 12 }

mauIfGrpTimeSync OBJECT-GROUP
  OBJECTS      { ifMauTimeSyncCapabilityTX,
                 ifMauTimeSyncCapabilityRX,
                 ifMauTimeSyncDelayTXmax,
                 ifMauTimeSyncDelayTXmin,
                 ifMauTimeSyncDelayRXmax,
                 ifMauTimeSyncDelayRXmin
               }
  STATUS       current
  DESCRIPTION  "Conformance Time Sync support and delay
               reporting MAUs attached to interfaces."
  ::= { mauModObjGrps 13 }

mauIfGrpPerPCSLaneStats OBJECT-GROUP
  OBJECTS      { ifMauPPLFECCorrectedBlocks,
                 ifMauPPLFECCorrectableBlocks,
                 ifMauBIPErrorCount,
                 ifMauPCStoPHYLaneMapping
               }
  STATUS       current
  DESCRIPTION  "Conformance Per-PCS lane statistics
               reporting MAUs attached to interfaces."
  ::= { mauModObjGrps 14 }

-- Notification groups

rpMauNotifications NOTIFICATION-GROUP
  NOTIFICATIONS { rpMauJabberTrap }
  STATUS       current
  DESCRIPTION  "Notifications for repeater MAUs."
  ::= { mauModNotGrps 1 }

ifMauNotifications NOTIFICATION-GROUP
  NOTIFICATIONS { ifMauJabberTrap }
  STATUS       current
  DESCRIPTION  "Notifications for interface MAUs."
  ::= { mauModNotGrps 2 }

-- Compliance statements

mauModRpCompl2 MODULE-COMPLIANCE

```



```
STATUS      current
DESCRIPTION "Compliance for MAUs attached to repeater
ports.

Note that compliance with this compliance
statement requires compliance with the
snmpRpTrModCompl MODULE-COMPLIANCE statement of
the IEEE8023-SNMP-REPEATER-MIB defined in Clause 7."
```

```
MODULE -- this module
MANDATORY-GROUPS { mauRpGrpBasic }

GROUP      mauRpGrp100Mbs
DESCRIPTION "Implementation of this optional group is
recommended for MAUs that have 100 Mb/s or
greater capability."

GROUP      mauRpGrpJack
DESCRIPTION "Implementation of this optional group is
recommended for MAUs that have one or more
external jacks."

GROUP      rpMauNotifications

DESCRIPTION "Implementation of this group is recommended
for MAUs attached to repeater ports."

OBJECT      rpMauStatus
MIN-ACCESS  read-only
DESCRIPTION "Write access is not required."
::= { mauModCompls 1 }
```

```
mauModIfCompl3 MODULE-COMPLIANCE
STATUS      current
DESCRIPTION "Compliance for MAUs attached to interfaces.

Note that compliance with this compliance
statement requires compliance with the
ifCompliance3 MODULE-COMPLIANCE statement of the
IF-MIB (RFC 2863) and the dot3Compliance2
MODULE-COMPLIANCE statement of the
IEEE8023-EtherLike-MIB defined in Clause 10."
```

```
MODULE -- this module
MANDATORY-GROUPS { mauIfGrpBasic }

GROUP      mauIfGrpHighCapacity
DESCRIPTION "Implementation of this optional group is
recommended for MAUs that have 100 Mb/s
or greater capability."

GROUP      mauIfGrpHCStats
DESCRIPTION "Implementation of this group is mandatory
for MAUs that have 1000 Mb/s capacity, and
is recommended for MAUs that have 100 Mb/s
capacity."

GROUP      mauIfGrpJack
DESCRIPTION "Implementation of this optional group is
recommended for MAUs that have one or more
external jacks."

GROUP      mauIfGrpAutoNeg2
DESCRIPTION "Implementation of this group is mandatory
for MAUs that support managed
Auto-Negotiation."

GROUP      mauIfGrpAutoNeg1000Mbps
DESCRIPTION "Implementation of this group is mandatory
for MAUs that have 1000 Mb/s or greater
capability and support managed
Auto-Negotiation."

GROUP      ifMauNotifications
DESCRIPTION "Implementation of this group is recommended
for MAUs attached to interfaces."
```

```
OBJECT      ifMauStatus
MIN-ACCESS  read-only
DESCRIPTION "Write access is not required."
GROUP      mauIfGrpFEC
DESCRIPTION "Implementation of this optional group is
            recommended for MAUs that incorporate FEC."
GROUP      mauIfGrpSNR
DESCRIPTION "Implementation of this optional group is
            recommended for MAUs that report SNR operating
            margin."
GROUP      mauIfGrpEEE
DESCRIPTION "Implementation of this group is
            mandatory for MAUs that support EEE."
GROUP      mauIfGrpTimeSync
DESCRIPTION "Implementation of this group is
            mandatory for MAUs that support Time Sync"
GROUP      mauIfGrpPerPCSLaneStats
DESCRIPTION "Implementation of this group is
            mandatory for MAUs that report per-PCS lane
            statistics."
::= { mauModCompls 2 }
```

END