

**Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units
(MAUs)
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Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines objects for managing IEEE 802.3 Medium Attachment Units (MAUs). This memo obsoletes [RFC 3636](#). It amends that specification by moving MAU type OBJECT-IDENTITY definitions and relevant textual conventions into a separate Internet Assigned Number Authority (IANA) maintained MIB module. In addition, management information is added to enable support for Ethernet in the First Mile

(EFM) and 10GBASE-CX4 MAUs.

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1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines objects for managing IEEE 802.3 Medium Attachment Units (MAUs).

The previous version of this memo, [RFC 3636](#) [[RFC3636](#)], defined a single MIB module. This memo splits the original MIB module into two, putting frequently updated object identities and textual conventions into a separate, IANA-maintained MIB module, in order to decrease re-issues of the basic MIB module.

The first version of the IANA-maintained MIB module also extends the list of managed objects to support Ethernet in the First Mile (EFM) and 10GBASE-CX4 interfaces.

Ethernet technology, as defined by the 802.3 Working Group of the IEEE, continues to evolve, with scalable increases in speed, new types of cabling and interfaces, and new features. This evolution may require changes in the managed objects in order to reflect this new functionality. This document, as with other documents issued by this working group, reflects a certain stage in the evolution of Ethernet technology. In the future, this document might be revised, or new documents might be issued by the Ethernet Interfaces and Hub MIB Working Group, in order to reflect the evolution of Ethernet technology.

2. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to [section 7 of RFC 3410](#) [[RFC3410](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

3. Overview

Instances of these object types represent attributes of an IEEE 802.3 MAU. Several types of MAUs are defined in the IEEE 802.3 CSMA/CD standard [[IEEE802.3](#)]. These MAUs may be connected to IEEE 802.3 repeaters or to 802.3 (Ethernet-like) interfaces. For convenience this document refers to these devices as "repeater MAUs" and "interface MAUs."

The definitions presented here are based on [Section 30.5](#), "Layer Management for 10 Mb/s, 100 Mb/s, 1000 Mb/s and 10 Gb/s Medium Attachment Units (MAUs)", [Section 30.6](#), "Management for link Auto-Negotiation", and Annex 30A, "GDMO Specifications for 802.3 managed object classes" of IEEE Std. 802.3, 2002 edition [[IEEE802.3](#)], as amended by IEEE Std. 802.3ae-2002 [[IEEE802.3ae](#)], IEEE Std. 802.3ah-2004 [[IEEE802.3ah](#)] and IEEE Std. 802.3ak-2004 [[IEEE802.3ak](#)]. This specification is intended to provide for management of all types of Ethernet/802.3 MAUs.

3.1. Relationship to [RFC 3636](#)

The management definitions provided in this memo are intended to be a superset of those defined by [RFC 3636](#) [[RFC3636](#)].

In order to decrease re-issues of this document due to the new MAU type and/or Jack type introduction, all relevant object identities and textual conventions have been moved to a separate, IANA-maintained MIB module IANA-MAU-MIB, the first version of which is defined in this memo. Thus when a new MAU type and/or Jack type is defined by the IEEE 802.3 working group, only the IANA-maintained module needs to be revised, leaving the basic MAU-MIB module defined in this memo unchanged.

In addition, the new definitions are added to the IANA-maintained MIB module, to support Ethernet in the First Mile (EFM) and 10GBASE-CX4 interfaces, defined in IEEE Std 802.3ah-2004 [[IEEE802.3ah](#)] and IEEE Std 802.3ak-2004 [[IEEE802.3ak](#)] respectively.

It should be noted that the changes made in this revision will not be entirely backward-compatible with MIB modules that currently import MAU type object identity descriptors from the MAU-MIB; such modules will need to be revised to import those DESCRIPTORS from the IANA-MAU-MIB. Similarly, any management applications that process the object identity definitions (e.g., to present the DESCRIPTION text to a user) will need to be get those definitions from the IANA-MAU-MIB instead of the MAU-MIB. While it is true that changes that require such adjustments are not strictly compliant with the SMIV2 rules governing MIB module revisions (see [[RFC2578](#)] [Section 10](#)), in this

case continued high maintenance costs that would result from not making these changes made the deviation from the rules justified. It should be noted that the working group was not able to find any examples of MIB modules or management applications that would actually be negatively affected by the changes.

3.2. Relationship to [RFC 2668](#)

[RFC 3636](#) was a replacement for [RFC 2668](#) [[RFC2668](#)]. [RFC 3636](#) included all of the objects contained in [RFC 2668](#), plus new and updated definitions to provide management support for 10 Gb/s devices.

3.3. Relationship to [RFC 2239](#)

[RFC 2668](#) was a replacement for [RFC 2239](#) [[RFC2239](#)]. [RFC 2668](#) defined a superset of that defined by [RFC 2239](#), which contained all of the objects defined in [RFC 2239](#), plus several new ones which provide additional capabilities. The new objects provided management support for:

- o management of 1000 Mb/s devices
- o management of PAUSE negotiation
- o management of remote fault status

3.4. Relationship to [RFC 1515](#)

[RFC 2239](#) was a replacement for [RFC 1515](#) [[RFC1515](#)]. [RFC 2239](#) defined a superset of [RFC 1515](#) which contained all of the objects defined in [RFC 1515](#), plus several new ones which provided additional capabilities. The new objects in [RFC 2239](#) provided management support for:

- o management of 100 Mb/s devices
- o auto-negotiation on interface MAUs
- o jack management

3.5. Relationship to other MIBs

It is assumed that an agent implementing this MIB will also implement (at least) the 'system' group defined in the SNMPv2 MIB [[RFC3418](#)]. The following sections identify other MIBs that such an agent should implement.

3.5.1. Relationship to the Interfaces MIB

The sections of this document that define interface MAU-related objects specify an extension to the Interfaces MIB [[RFC2863](#)]. An agent implementing these interface-MAU related objects MUST also implement the relevant groups of the ifCompliance3 MODULE-COMPLIANCE statement of the Interface MIB. The value of the object ifMauIfIndex is the same as the value of 'ifIndex' used to instantiate the interface to which the given MAU is connected.

It is REQUIRED that an agent implementing the interface-MAU related objects in this MIB will also fully comply with the dot3Compliance2 MODULE-COMPLIANCE statement of the Ethernet-like Interfaces MIB, [[RFC3635](#)]. Furthermore, when the interface-MAU related objects are used to manage a 10GBASE-W PHY -- i.e., when ifMauType is equal to dot3MauType10GigBaseW or any other 10GBASE-W variant -- then the agent MUST also support the Ethernet WAN Interface Sublayer (WIS) MIB [[RFC3637](#)] and must follow the interface layering model specified therein. In that case the value of the object ifMauIfIndex is the same as the value of 'ifIndex' for the layer at the top of the stack, i.e., for the ifTable entry that has 'ifType' equal to ethernetCsmacd(6). If the interface-MAU related objects are used to manage a PHY that allows the MAU type to be changed dynamically, then the agent SHALL create ifTable, ifStackTable, and ifInvStackTable entries that pertain to the WIS when ifMauDefaultType is changed to a 10GBASEW variant (i.e., one of dot3MauType10GigBaseW, dot3MauType10GigBaseEW, dot3MauType10GigBaseLW, or dot3MauType10GigBaseSW) from any other type, and shall destroy the WIS-related entries when ifMauDefaultType is changed to a non-10GBASE-W type. The agent SHALL also change the values of 'ifConnectorPresent' and 'ifHighSpeed' in the ifTable entry indexed by ifMauIfIndex as specified in [[RFC3635](#)] and [[RFC3637](#)] when ifMauDefaultType is manipulated in this way but SHALL NOT otherwise alter that entry.

(Note that repeater ports are not represented as interfaces in the Interface MIB.)

3.5.2. Relationship to the 802.3 Repeater MIB module

The section of this document that defines repeater MAU-related objects specifies an extension to the 802.3 Repeater MIB defined in [[RFC2108](#)]. An agent implementing these repeater-MAU related objects MUST also comply with the snmpRptrModCompl compliance statement of the 802.3 Repeater MIB module.

The values of 'rpMauGroupIndex' and 'rpMauPortIndex' used to instantiate a repeater MAU variable SHALL be the same as the values

of 'rpPtrPortGroupIndex' and 'rpPtrPortIndex' used to instantiate the port to which the given MAU is connected.

3.6. Management of Internal MAUs

In some situations, a MAU can be "internal" -- i.e., its functionality is implemented entirely within a device. For example, a managed repeater may contain an internal repeater-MAU and/or an internal interface-MAU through which management communications originating on one of the repeater's external ports pass in order to reach the management agent associated with the repeater. Such internal MAUs may or may not be managed. If they are managed, objects describing their attributes should appear in the appropriate MIB subtree: dot3RpMauBasicGroup for internal repeater-MAUs and dot3IfMauBasicGroup for internal interface-MAUs.

3.7. Management of IEEE 802.3 Managed Objects

IEEE 802.3 Managed Object	Corresponding SNMP Object
oMAU	
.aMAUID	rpMauIndex or ifMauIndex or broadMauIndex
.aMAUType	rpMauType or ifMauType
.aMAUTypeList	ifMauTypeListBits
.aMediaAvailable	rpMauMediaAvailable or ifMauMediaAvailable
.aLoseMediaCounter	rpMauMediaAvailableStateExits or ifMauMediaAvailableStateExits
.aJabber	rpMauJabberState and rpMauJabberingStateEnters or ifMauJabberState and ifMauJabberingStateEnters
.aMAUAdminState	rpMauStatus or ifMauStatus
.aBbMAUXmtRcvSplitType	broadMauXmtRcvSplitType
.aBroadbandFrequencies	broadMauXmtCarrierFreq and broadMauTranslationFreq
.aFalseCarriers	rpMauFalseCarriers or ifMauFalseCarriers
.acResetMAU	rpMauStatus or ifMauStatus
.acMAUAdminControl	rpMauStatus or ifMauStatus
.nJabber	rpMauJabberTrap or ifMauJabberTrap
oAutoNegotiation	
.aAutoNegID	ifMauIndex
.aAutoNegAdminState	ifMauAutoNegAdminStatus

.aAutoNegRemoteSignalling	ifMauAutoNegRemoteSignalling	
.aAutoNegAutoConfig	ifMauAutoNegConfig	
.aAutoNegLocalTechnologyAbility	ifMauAutoNegCapabilityBits	
.aAutoNegAdvertisedTechnologyAbi	ifMauAutoNegAdvertisedBits and	
lity	ifMauAutoNegRemoteFaultAdverti	
	sed	
.aAutoNegReceivedTechnologyAbili	ifMauAutoNegReceivedBits and	
ty	ifMauAutoNegRemoteFaultReceive	
	d	
.acAutoNegRestartAutoConfig	ifMauAutoNegRestart	
.acAutoNegAdminControl	ifMauAutoNegAdminStatus	
+-----+	+-----+	+-----+

Table 1

The following IEEE 802.3 managed objects have not been included in this MIB for the following reasons.

+-----+ IEEE 802.3 Managed Object +-----+	+-----+ Corresponding SNMP Object +-----+
oMAU	
.aIdleErrorCount	Only useful for 100BaseT2,
	which is not widely
	implemented.
oAutoNegotiation	
.aAutoNegLocalSelectorAbility	Only needed for support of
	isoethernet (802.9a), which
	is not supported by this
	MIB.
.aAutoNegAdvertisedSelectorAbility	
.aAutoNegReceivedSelectorAbility	
+-----+	+-----+

Table 2

[3.8.](#) Addition of new MAU Types

[3.8.1.](#) dot3MauType OBJECT-IDENTITIES

The dot3MauType OBJECT IDENTIFIER and its OBJECT-IDENTITY definitions has been moved from the MAU-MIB into the IANA-maintained IANA-MAU-MIB, first version of which is defined in this memo.

When a new IEEE 802.3 MAU is defined, IANA can re-issue a version of IANA-MAU-MIB with the new dot3MauType OBJECT-IDENTITY and its matching IANAifMauTypeListBits textual convention value and, possibly, with a new IANAifJackType value.

An Expert Review, as defined in [RFC 2434](#) [[RFC2434](#)], is REQUIRED for the addition of the new MAU and/or Jack types.

In some cases new MAU types may require additional managed objects or may have side effects on the behavior of existing managed objects. In such cases a standards-track specification (which may be a new document or a revision of this document) is also REQUIRED. Any such document is REQUIRED to note any special properties of the MAU types that it defines - for example, side effects on the ifStackTable as noted in this document for 10GBASE-W MAUs.

[3.8.2.](#) IANAifMauTypeListBits Textual Convention

The syntax of ifMauTypeListBits is changed to be a textual convention, such that the enumerated integer values are now defined in the textual convention, IANAifMauTypeListBits, which can be re-specified (with additional values) in the IANA-maintained MIB module, without issuing a new version of this document.

[3.8.3.](#) JackType Textual Convention

The JackType Textual Convention has been deprecated in favor of IANAifJackType defined in the IANA-maintained MIB module, so the new Jack types can be added (when defined by IEEE 802.3) without issuing a new version of this document.

[4.](#) MAU MIB Definitions

```
MAU-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
Counter32, Integer32, Counter64,
```

```
OBJECT-TYPE, MODULE-IDENTITY, NOTIFICATION-TYPE, mib-2
```

```
FROM SNMPv2-SMI          -- RFC 2578
```

```
TruthValue, AutonomousType, TEXTUAL-CONVENTION
```

```
FROM SNMPv2-TC          -- RFC 2579
```

```
OBJECT-GROUP, MODULE-COMPLIANCE, NOTIFICATION-GROUP
```

```
FROM SNMPv2-CONF        -- RFC 2580
```

```
InterfaceIndex
```

```
FROM IF-MIB             -- RFC 2863
```

```
IANAifMauTypeListBits, IANAifJackType
```

```
FROM IANA-MAU-MIB       -- RFC 3636bis
```

```
-- EdNote: Replace RFC 3636bis above with the URL of the
```

```
-- actual IANA-maintained module & remove this note.
```

```
;
```


mauMod MODULE-IDENTITY

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DESCRIPTION

"Management information for 802.3 MAUs.

The following reference is used throughout this MIB module:

[IEEE 802.3 Std] refers to:

IEEE Std 802.3, 2002 Edition: 'IEEE Standard
for Information technology -

Telecommunications and information exchange
between systems - Local and metropolitan
area networks - Specific requirements -

Part 3: Carrier sense multiple access with
collision detection (CSMA/CD) access method
and physical layer specifications', as
amended by IEEE Std 802.3ae-2002:

'Amendment: Media Access Control (MAC)
Parameters, Physical Layer, and Management
Parameters for 10 Gb/s Operation', August,
2002.

Of particular interest is Clause 30, '10Mb/s, 100Mb/s, 1000Mb/s and 10 Gb/s Management'.

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REVISION "200510240000Z" -- Oct 24, 2005

DESCRIPTION "Updated to reference IANA maintained textual conventions for MAU types and jack types, instead of using internally defined values.

This version is published as RFC XXXX."

-- EdNote: Replace XXXX with the actual RFC number

-- & remove this note.

REVISION "200309190000Z" -- September 19, 2003

DESCRIPTION "Updated to include support for 10 Gb/s MAUs. This resulted in the following revisions:

- Added OBJECT-IDENTITY definitions for 10 gigabit MAU types
- Added fiberLC jack type to JackType TC
- Extended ifMauTypeListBits with bits for the 10 gigabit MAU types
- Added enumerations to ifMauMediaAvailable, and updated its DESCRIPTION to reflect behaviour at 10 Gb/s
- Added 64-bit version of ifMauFalseCarriers and added mauIfGrpHCStats object group to contain the new object
- Deprecated mauModIfCompl2 and replaced it with mauModIfCompl3, which includes the new object group

This version published as [RFC 3636](#)."

REVISION "199908240400Z" -- August 24, 1999

DESCRIPTION "This version published as [RFC 2668](#). Updated to include support for 1000 Mb/sec MAUs and flow control negotiation."

REVISION "199710310000Z" -- October 31, 1997

DESCRIPTION "Version published as [RFC 2239](#)."

REVISION "199309300000Z" -- September 30, 1993

DESCRIPTION "Initial version, published as [RFC 1515](#)."

::= { snmpDot3MauMgt 6 }


```
snmpDot3MauMgt OBJECT IDENTIFIER ::= { mib-2 26 }
```

```
-- Textual Conventions
```

```
JackType ::= TEXTUAL-CONVENTION
```

```
    STATUS      deprecated
```

```
    DESCRIPTION "***** THIS TC IS DEPRECATED *****"
```

```

        This TC has been deprecated in favour of
        IANAifJackType.
```

```

        Common enumeration values for repeater
        and interface MAU jack types."
```

```
SYNTAX      INTEGER {
                                other(1),
                                rj45(2),
                                rj45S(3), -- rj45 shielded
                                db9(4),
                                bnc(5),
                                fAUI(6),  -- female aui
                                mAUI(7),  -- male aui
                                fiberSC(8),
                                fiberMIC(9),
                                fiberST(10),
                                telco(11),
                                mtrj(12), -- fiber MT-RJ
                                hssdc(13), -- fiber channel style-2
                                fiberLC(14)
                        }
```

```
dot3RpMauBasicGroup
```

```
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 1 }
```

```
dot3IfMauBasicGroup
```

```
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 2 }
```

```
dot3BroadMauBasicGroup
```

```
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 3 }
```

```
-- OIDs under the following branch are reserved for
```

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

```
--          { snmpDot3MauMgt 4 }
```

```
dot3IfMauAutoNegGroup
```

```
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 5 }
```

```
-- the following OID is the MODULE-IDENTITY value
```

```
-- for this MIB module:  { snmpDot3MauMgt 6 }
```

```
-- the following OID is the MODULE-IDENTITY value
```



```
-- for the IANA-MAU-MIB: { snmpDot3MauMgt 7 }

--
-- The Basic Repeater MAU Table
--

rpMauTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF RpMauEntry
    MAX-ACCESS  not-accessible
    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   INTEGER,
        rpMauMediaAvailableStateExits Counter32,
        rpMauJabberState      INTEGER,
        rpMauJabberingStateEnters Counter32,
        rpMauFalseCarriers    Counter32
    }

rpMauGroupIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  read-only -- read-only since originally an
                          -- SMIV1 index
    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 `rpPtrGroupIndex`."

REFERENCE "Reference [RFC 2108](#), `rpPtrGroupIndex`."
 ::= { rpMauEntry 1 }

`rpMauPortIndex` OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)
MAX-ACCESS read-only -- read-only since originally an
-- SMIV1 index
STATUS current
DESCRIPTION "This variable uniquely identifies the repeater
port within group `rpMauGroupIndex` to which the
MAU described by this entry is connected."
REFERENCE "Reference [RFC 2108](#), `rpPtrPortIndex`."
 ::= { rpMauEntry 2 }

`rpMauIndex` OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)
MAX-ACCESS read-only -- read-only since originally an
-- SMIV1 index
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 802.3 Std], 30.5.1.1.1, `aMAUID`."
 ::= { rpMauEntry 3 }

`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 802.3 Std], 30.5.1.1.2, `aMAUType`."


```
::= { rpMauEntry 4 }
```

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, 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 802.3 Std], 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 INTEGER {
 other(1),
 unknown(2),
 available(3),
 notAvailable(4),
 remoteFault(5),
 invalidSignal(6),
 remoteJabber(7),
 remoteLinkLoss(8),
 remoteTest(9),
 offline(10),
 autoNegError(11)
 }

MAX-ACCESS read-only

STATUS current

DESCRIPTION "If the MAU is a link or fiber type (FOIRL, 10BASE-T, 10BASE-F) then this is equivalent to the link test fail state/low light function. For an AUI or a coax (including broadband) MAU this indicates whether or not loopback is detected on the DI circuit. The value of this attribute persists between packets for MAU types AUI, 10BASE5, 10BASE2, 10BROAD36, and 10BASE-FP.

The value other(1) is returned if the mediaAvailable state is not one of 2 through 11.

The value unknown(2) is returned when the MAU's true state is unknown; for example, when it is being initialized. At power-up or following a reset, the value of this attribute will be

unknown for AUI, coax, and 10BASE-FP MAUs. For these MAUs loopback will be tested on each transmission during which no collision is detected. If DI is receiving input when D0 returns to IDL after a transmission and there has been no collision during the transmission then loopback will be detected. The value of this attribute will only change during non-collided transmissions for AUI, coax, and 10BASE-FP MAUs.

For 100Mbps and 1000Mbps MAUs, the enumerations match the states within the respective link integrity state diagrams, fig 32-16, 23-12 and 24-15 of sections [32](#), [23](#) and [24](#) of [[IEEE802.3](#)]. Any MAU which implements management of auto-negotiation will map remote fault indication to remote fault.

The value available(3) indicates that the link, light, or loopback is normal. The value notAvailable(4) indicates link loss, low light, or no loopback.

The value remoteFault(5) indicates that a fault has been detected at the remote end of the link. This value applies to 10BASE-FB, 100BASE-T4 Far End Fault Indication and non-specified remote faults from a system running auto-negotiation. The values remoteJabber(7), remoteLinkLoss(8), and remoteTest(9) SHOULD be used instead of remoteFault(5) where the reason for remote fault is identified in the remote signaling protocol.

The value invalidSignal(6) indicates that an invalid signal has been received from the other end of the link. invalidSignal(6) applies only to MAUs of type 10BASE-FB.

Where an IEEE Std 802.3-2002 clause 22 MII is present, a logic one in the remote fault bit (reference [section 22.2.4.2.8](#) of that document) maps to the value remoteFault(5), and a logic zero in the link status bit (reference [section 22.2.4.2.10](#) of that document) maps to the value notAvailable(4). The value notAvailable(4) takes precedence over the value remoteFault(5).

Any MAU that implements management of clause 37 Auto-Negotiation will map the received Remote Fault (RF1 and RF2) bit values for Offline to offline(10), Link Failure to remoteFault(5) and Auto-Negotiation Error to autoNegError(11)."

REFERENCE "[IEEE 802.3 Std], 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 rpPtrMonitorPortLastChange."

REFERENCE "[IEEE 802.3 Std], 30.5.1.1.5,
aLoseMediaCounter.
[RFC 2108](#), rpPtrMonitorPortLastChange"
 ::= { 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 MUST always 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 802.3 Std], 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 1000Mbps types, this counter will always
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 rpPtrMonitorPortLastChange."
REFERENCE "[IEEE 802.3 Std], 30.5.1.1.6,
aJabber.jabberCounter.
[RFC 2108](#), rpPtrMonitorPortLastChange"
::= { 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, and
dot3MauType100BaseFX and all 1000Mbps types.

For all other MAU types, this counter will
always 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 rpPtrMonitorPortLastChange."
REFERENCE  "[IEEE 802.3 Std], 30.5.1.1.10, aFalseCarriers.
           RFC 2108, rpPtrMonitorPortLastChange"
 ::= { 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
                  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 INTEGER,
        ifMauMediaAvailableStateExits Counter32,
        ifMauJabberState   INTEGER,
        ifMauJabberingStateEnters Counter32,
        ifMauFalseCarriers Counter32,
        ifMauTypeList      Integer32,
        ifMauDefaultType   AutonomousType,
        ifMauAutoNegSupported TruthValue,
        ifMauTypeListBits  IANAIfMauTypeListBits,
        ifMauHCFFalseCarriers Counter64
    }

ifMauIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
```



```
MAX-ACCESS  read-only  -- read-only since originally an
                        -- SMiv1 index
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  read-only  -- read-only since originally an
                        -- SMiv1 index
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 802.3 Std], 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 802.3 Std], 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, 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 802.3 Std], 30.5.1.1.7, aMAUAdminState, 30.5.1.2.2, acMAUAdminControl, and 30.5.1.2.1, acResetMAU."

::= { ifMauEntry 4 }

ifMauMediaAvailable OBJECT-TYPE

SYNTAX INTEGER {
 other(1),
 unknown(2),
 available(3),
 notAvailable(4),
 remoteFault(5),
 invalidSignal(6),
 remoteJabber(7),
 remoteLinkLoss(8),
 remoteTest(9),
 offline(10),
 autoNegError(11),
 pmdLinkFault(12),
 wisFrameLoss(13),
 wisSignalLoss(14),
 pcsLinkFault(15),
 excessiveBER(16),
 dxsLinkFault(17),
 pxsLinkFault(18)
 }

MAX-ACCESS read-only

STATUS current

DESCRIPTION "If the MAU is a link or fiber type (FOIRL, 10BASE-T, 10BASE-F) then this is equivalent to the link test fail state/low light function. For an AUI or a coax (including broadband) MAU this indicates whether or not loopback is detected on the DI circuit. The value of this attribute persists between packets for MAU types AUI, 10BASE5, 10BASE2, 10BROAD36, and 10BASE-FP.

The value other(1) is returned if the mediaAvailable state is not one of 2 through 18.

The value unknown(2) is returned when the MAU's true state is unknown; for example, when it is being initialized. At power-up or following a reset, the value of this attribute will be unknown for AUI, coax, and 10BASE-FP MAUs. For

these MAUs loopback will be tested on each transmission during which no collision is detected. If DI is receiving input when D0 returns to IDL after a transmission and there has been no collision during the transmission then loopback will be detected. The value of this attribute will only change during non-collided transmissions for AUI, coax, and 10BASE-FP MAUs.

For 100Mbps and 1000Mbps MAUs, the enumerations match the states within the respective link integrity state diagrams, fig 32-16, 23-12 and 24-15 of sections [32](#), [23](#) and [24](#) of [[IEEE802.3](#)]. Any MAU which implements management of auto-negotiation will map remote fault indication to remote fault.

The value available(3) indicates that the link, light, or loopback is normal. The value notAvailable(4) indicates link loss, low light, or no loopback.

The value remoteFault(5) indicates that a fault has been detected at the remote end of the link. This value applies to 10BASE-FB, 100BASE-T4 Far End Fault Indication and non-specified remote faults from a system running auto-negotiation. The values remoteJabber(7), remoteLinkLoss(8), and remoteTest(9) SHOULD be used instead of remoteFault(5) where the reason for remote fault is identified in the remote signaling protocol. The value invalidSignal(6) indicates that an invalid signal has been received from the other end of the link. invalidSignal(6) applies only to MAUs of type 10BASE-FB.

Where an IEEE Std 802.3-2002 clause 22 MII is present, a logic one in the remote fault bit (reference [section 22.2.4.2.8](#) of that document) maps to the value remoteFault(5), and a logic zero in the link status bit (reference [section 22.2.4.2.10](#) of that document) maps to the value notAvailable(4). The value notAvailable(4) takes precedence over the value remoteFault(5).

Any MAU that implements management of clause 37 Auto-Negotiation will map the received RF1 and

RF2 bit values for Offline to offline(10), Link Failure to remoteFault(5) and Auto-Negotiation Error to autoNegError(11).

For 10 Gb/s, the enumerations map to the states within the Reconciliation Sublayer state diagram as follows:

NoFault maps to the enumeration 'available(3)'

LocalFault maps to the enumeration

'notAvailable(4)'

RemoteFault maps to the enumeration

'remoteFault(5)'

The enumerations 'pmdLinkFault(12)', 'wisFrameLoss(13)', 'wisSignalLoss(14)', 'pcsLinkFault(15)', 'excessiveBER(16)', and 'dxsLinkFault(17)' and 'pxsLinkFault(18)' should be used instead of the enumeration 'notAvailable(4)' where the reason for the local fault can be identified through the use of the MDIO Interface. Where multiple reasons for the local fault state can be identified only the highest precedence error should be reported. The precedence in descending order is as follows:

```
pxsLinkFault
pmdLinkFault
wisFrameLoss
wisSignalLoss
pcsLinkFault
excessiveBER
dxsLinkFault"
```

REFERENCE "[IEEE 802.3 Std], 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 802.3 Std], 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 MUST always  
                  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 802.3 Std], 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 always  
                  indicate zero for MAUs of type dot3MauTypeAUI  
                  and those of speeds above 10Mbps.  
  
                  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 802.3 Std], 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 always 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 802.3 Std], 30.5.1.1.10, aFalseCarriers. RFC 2863, ifCounterDiscontinuityTime."``::= { ifMauEntry 9 }``ifMauTypeList` OBJECT-TYPE`SYNTAX Integer32``MAX-ACCESS read-only``STATUS deprecated``DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"`

This object has been deprecated in favour of `ifMauTypeListBits`.

A value that uniquely identifies the set of possible IEEE 802.3 types that the MAU could be. The value is a sum which initially takes the value zero. Then, for each type capability of this MAU, 2 raised to the power noted below is added to the sum. For example, a MAU which has the capability to be only 10BASE-T would have a value of 512 (2^{*9}). In contrast, a MAU which supports both 10Base-T (full duplex) and 100BASE-TX (full duplex) would have a value of

$((2^{11}) + (2^{16}))$ or 67584.

The powers of 2 assigned to the capabilities are these:

Power	Capability
0	other or unknown
1	AUI
2	10BASE-5
3	FOIRL
4	10BASE-2
5	10BASE-T duplex mode unknown
6	10BASE-FP
7	10BASE-FB
8	10BASE-FL duplex mode unknown
9	10BROAD36
10	10BASE-T half duplex mode
11	10BASE-T full duplex mode
12	10BASE-FL half duplex mode
13	10BASE-FL full duplex mode
14	100BASE-T4
15	100BASE-TX half duplex mode
16	100BASE-TX full duplex mode
17	100BASE-FX half duplex mode
18	100BASE-FX full duplex mode
19	100BASE-T2 half duplex mode
20	100BASE-T2 full duplex mode

If auto-negotiation is present on this MAU, this object will map to ifMauAutoNegCapability."

::= { ifMauEntry 10 }

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.

NOTE TO IMPLEMENTORS: 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 MUST ensure 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 802.3 Std], 30.5.1.1.1, aMAUID, and 22.2.4.1.4."

::= { ifMauEntry 11 }

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 12 }

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 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 13 }

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
                  always 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 802.3 Std], 30.5.1.1.10, aFalseCarriers.
                  RFC 2863, ifCounterDiscontinuityTime."
 ::= { ifMauEntry 14 }

-- 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 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,
        ifMauAutoNegCapability        Integer32,
        ifMauAutoNegCapAdvertised     Integer32,
        ifMauAutoNegCapReceived       Integer32,
        ifMauAutoNegRestart           INTEGER,
        ifMauAutoNegCapabilityBits    BITS,
        ifMauAutoNegCapAdvertisedBits BITS,
        ifMauAutoNegCapReceivedBits   BITS,
        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 which 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.

                NOTE TO IMPLEMENTORS: When
                ifMauAutoNegAdminStatus transitions from enabled

```


to disabled, the agent implementation MUST ensure 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 802.3 Std], 30.6.1.1.2,
aAutoNegAdminState 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 802.3 Std], 30.6.1.1.3,
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 28.2.3.1 of [IEEE 802.3 Std]."

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.4,
aAutoNegAutoConfig."

::= { ifMauAutoNegEntry 4 }

ifMauAutoNegCapability OBJECT-TYPE

SYNTAX Integer32
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This object has been deprecated in favour of
ifMauAutoNegCapabilityBits.

A value that uniquely identifies the set of capabilities of the local auto-negotiation entity. The value is a sum which initially takes the value zero. Then, for each capability of this interface, 2 raised to the power noted below is added to the sum. For example, an interface which has the capability to support only 100Base-TX half duplex would have a value of 32768 (2^{15}). In contrast, an interface which supports both 100Base-TX half duplex and 100Base-TX full duplex would have a value of 98304 ($(2^{15}) + (2^{16})$).

The powers of 2 assigned to the capabilities are these:

Power	Capability
0	other or unknown
(1-9)	(reserved)
10	10BASE-T half duplex mode
11	10BASE-T full duplex mode
12	(reserved)
13	(reserved)
14	100BASE-T4
15	100BASE-TX half duplex mode
16	100BASE-TX full duplex mode
17	(reserved)
18	(reserved)
19	100BASE-T2 half duplex mode
20	100BASE-T2 full duplex mode

Note that interfaces that support this MIB may have capabilities that extend beyond the scope of this MIB."

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.5,
aAutoNegLocalTechnologyAbility."
::= { ifMauAutoNegEntry 5 }

ifMauAutoNegCapAdvertised OBJECT-TYPE
SYNTAX Integer32

MAX-ACCESS read-write
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This object has been deprecated in favour of
ifMauAutoNegCapAdvertisedBits.

A value that uniquely identifies the set of
capabilities advertised by the local
auto-negotiation entity. Refer to
ifMauAutoNegCapability for a description of the
possible values of this object.

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

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.6,
aAutoNegAdvertisedTechnologyAbility."
::= { ifMauAutoNegEntry 6 }

ifMauAutoNegCapReceived OBJECT-TYPE

SYNTAX Integer32
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This object has been deprecated in favour of
ifMauAutoNegCapReceivedBits.

A value that uniquely identifies the set of
capabilities received from the remote
auto-negotiation entity. Refer to
ifMauAutoNegCapability for a description of the
possible values of this object.

Note that interfaces that support this MIB may
be attached to remote auto-negotiation entities
which have capabilities beyond the scope of this
MIB."

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.7,
aAutoNegReceivedTechnologyAbility."
::= { ifMauAutoNegEntry 7 }

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 802.3 Std], 30.6.1.2.1,
acAutoNegRestartAutoConfig."
::= { ifMauAutoNegEntry 8 }

ifMauAutoNegCapabilityBits OBJECT-TYPE

SYNTAX BITS {
 bOther(0), -- other or unknown
 b10baseT(1), -- 10BASE-T half duplex mode
 b10baseTFD(2), -- 10BASE-T full duplex mode
 b100baseT4(3), -- 100BASE-T4
 b100baseTX(4), -- 100BASE-TX half duplex mode
 b100baseTXFD(5), -- 100BASE-TX full duplex mode
 b100baseT2(6), -- 100BASE-T2 half duplex mode
 b100baseT2FD(7), -- 100BASE-T2 full duplex mode
 bfdxPause(8), -- PAUSE for full-duplex links
 bfdxAPause(9), -- Asymmetric PAUSE for full-duplex
 -- links
 bfdxSPause(10), -- Symmetric PAUSE for full-duplex
 -- links
 bfdxBPause(11), -- Asymmetric and Symmetric PAUSE for
 -- full-duplex links
 b1000baseX(12), -- 1000BASE-X, -LX, -SX, -CX half
 -- duplex mode
 b1000baseXFD(13), -- 1000BASE-X, -LX, -SX, -CX full
 -- duplex mode
 b1000baseT(14), -- 1000BASE-T half duplex mode
 b1000baseTFD(15) -- 1000BASE-T full duplex mode
}
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 capabilities that are listed above."

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.5, aAutoNegLocalTechnologyAbility."

::= { ifMauAutoNegEntry 9 }

ifMauAutoNegCapAdvertisedBits OBJECT-TYPE

SYNTAX BITS {

 bOther(0), -- other or unknown

 b10baseT(1), -- 10BASE-T half duplex mode

 b10baseTFD(2), -- 10BASE-T full duplex mode

 b100baseT4(3), -- 100BASE-T4

 b100baseTX(4), -- 100BASE-TX half duplex mode

 b100baseTXFD(5), -- 100BASE-TX full duplex mode

 b100baseT2(6), -- 100BASE-T2 half duplex mode

 b100baseT2FD(7), -- 100BASE-T2 full duplex mode

 bFdxPause(8), -- PAUSE for full-duplex links

 bFdxAPause(9), -- Asymmetric PAUSE for full-duplex links

 bFdxSPause(10), -- Symmetric PAUSE for full-duplex links

 bFdxBPause(11), -- Asymmetric and Symmetric PAUSE for full-duplex links

 b1000baseX(12), -- 1000BASE-X, -LX, -SX, -CX half duplex mode

 b1000baseXFD(13), -- 1000BASE-X, -LX, -SX, -CX full duplex mode

 b1000baseT(14), -- 1000BASE-T half duplex mode

 b1000baseTFD(15) -- 1000BASE-T full duplex mode

}

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 capabilities that are listed above."

REFERENCE "[IEEE 802.3 Std], 30.6.1.1.6, aAutoNegAdvertisedTechnologyAbility."


```
::= { ifMauAutoNegEntry 10 }
```

ifMauAutoNegCapReceivedBits OBJECT-TYPE

```
SYNTAX      BITS {
    bOther(0),          -- other or unknown
    b10baseT(1),        -- 10BASE-T half duplex mode
    b10baseTFD(2),      -- 10BASE-T full duplex mode
    b100baseT4(3),      -- 100BASE-T4
    b100baseTX(4),      -- 100BASE-TX half duplex mode
    b100baseTXFD(5),    -- 100BASE-TX full duplex mode
    b100baseT2(6),      -- 100BASE-T2 half duplex mode
    b100baseT2FD(7),    -- 100BASE-T2 full duplex mode
    bFdxPause(8),       -- PAUSE for full-duplex links
    bFdxAPause(9),      -- Asymmetric PAUSE for full-duplex
                        -- links
    bFdxSPause(10),     -- Symmetric PAUSE for full-duplex
                        -- links
    bFdxBPAuse(11),     -- Asymmetric and Symmetric PAUSE for
                        -- full-duplex links
    b1000baseX(12),     -- 1000BASE-X, -LX, -SX, -CX half
                        -- duplex mode
    b1000baseXFD(13),   -- 1000BASE-X, -LX, -SX, -CX full
                        -- duplex mode
    b1000baseT(14),     -- 1000BASE-T half duplex mode
    b1000baseTFD(15)    -- 1000BASE-T full duplex mode
}
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
which have capabilities beyond the scope of this
MIB. This is indicated by returning the bit
value bOther in addition to any bit values for
capabilities that are listed above."
REFERENCE   "[IEEE 802.3 Std], 30.6.1.1.7,
aAutoNegReceivedTechnologyAbility."
::= { ifMauAutoNegEntry 11 }
```

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 1000Mbps MAUs."
REFERENCE     "[IEEE 802.3 Std], 30.6.1.1.6,
               aAutoNegAdvertisedTechnologyAbility."
 ::= { ifMauAutoNegEntry 12 }
```

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 1000Mbps
               MAUs."
REFERENCE     "[IEEE 802.3 Std], 30.6.1.1.7,
               aAutoNegReceivedTechnologyAbility."
 ::= { ifMauAutoNegEntry 13 }
```

--

-- The Basic Broadband MAU Table

--

broadMauBasicTable OBJECT-TYPE

```
SYNTAX        SEQUENCE OF BroadMauBasicEntry
MAX-ACCESS    not-accessible
STATUS        deprecated
DESCRIPTION   "***** THIS OBJECT IS DEPRECATED *****"
```

This entire table has been deprecated. There have been no reported implementations of this table, and it is unlikely that there ever will be. IEEE recommends that broadband MAU types should not be used for new installations.

Table of descriptive and status information about the broadband MAUs connected to interfaces."

```
::= { dot3BroadMauBasicGroup 1 }
```


broadMauBasicEntry OBJECT-TYPE

SYNTAX BroadMauBasicEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

An entry in the table, containing information about a single broadband MAU."

INDEX { broadMauIfIndex,
broadMauIndex
}

::= { broadMauBasicTable 1 }

BroadMauBasicEntry ::=

SEQUENCE {

broadMauIfIndex	InterfaceIndex,
broadMauIndex	Integer32,
broadMauXmtRcvSplitType	INTEGER,
broadMauXmtCarrierFreq	Integer32,
broadMauTranslationFreq	Integer32

}

broadMauIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex

MAX-ACCESS read-only -- read-only since originally an
-- SMIV1 index

STATUS deprecated

DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This variable uniquely identifies the interface to which the MAU described by this entry is connected."

REFERENCE "Reference [RFC 2863](#), ifIndex."

::= { broadMauBasicEntry 1 }

broadMauIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS read-only -- read-only since originally an
-- SMIV1 index

STATUS deprecated

DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This variable uniquely identifies the MAU connected to interface broadMauIfIndex that is described by this entry."

REFERENCE "[IEEE 802.3 Std], 30.5.1.1.1, aMAUID."

::= { broadMauBasicEntry 2 }

broadMauXmtRcvSplitType OBJECT-TYPE

SYNTAX INTEGER {
 other(1),
 single(2),
 dual(3)
}
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This object indicates the type of frequency multiplexing/cabling system used to separate the transmit and receive paths for the 10BROAD36 MAU.

The value other(1) is returned if the split type is not either single or dual.

The value single(2) indicates a single cable system. The value dual(3) indicates a dual cable system, offset normally zero."

REFERENCE "[IEEE 802.3 Std], 30.5.1.1.8,
aBbMAUXmitRcvSplitType."
::= { broadMauBasicEntry 3 }

broadMauXmtCarrierFreq OBJECT-TYPE

SYNTAX Integer32
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This variable indicates the transmit carrier frequency of the 10BROAD36 MAU in MHz/4; that is, in units of 250 kHz."

REFERENCE "[IEEE 802.3 Std], 30.5.1.1.9,
aBroadbandFrequencies.xmitCarrierFrequency."
::= { broadMauBasicEntry 4 }

broadMauTranslationFreq OBJECT-TYPE

SYNTAX Integer32
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION "***** THIS OBJECT IS DEPRECATED *****"

This variable indicates the translation offset frequency of the 10BROAD36 MAU in MHz/4; that is, in units of 250 kHz."

REFERENCE "[IEEE 802.3 Std], 30.5.1.1.9,


```
        aBroadbandFrequencies.translationFrequency."
 ::= { broadMauBasicEntry 5 }

-- Notifications for use by 802.3 MAUs

snmpDot3MauTraps OBJECT IDENTIFIER ::= { snmpDot3MauMgt 0 }

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

                   The agent MUST throttle the generation of
                   consecutive rpMauJabberTraps so that there is at
                   least a five-second gap between them."
    REFERENCE     "[IEEE 802.3 Mgt], 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 MUST throttle the generation of
                   consecutive ifMauJabberTraps so that there is at
                   least a five-second gap between them."

    REFERENCE     "[IEEE 802.3 Mgt], 30.5.1.3.1, nJabber
                   notification."
 ::= { snmpDot3MauTraps 2 }

-- Conformance information

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

-- Object groups

mauRpGrpBasic OBJECT-GROUP
```



```
OBJECTS      { rpMauGroupIndex,
                rpMauPortIndex,
                rpMauIndex,
                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      { ifMauIfIndex,
                ifMauIndex,
                ifMauType,
                ifMauStatus,
                ifMauMediaAvailable,
                ifMauMediaAvailableStateExits,
                ifMauJabberState,
                ifMauJabberingStateEnters
              }
STATUS       current
DESCRIPTION  "Basic conformance group for MAUs attached to
              interfaces.  This group also provides a
              conformance specification for RFC 1515
              implementations."
 ::= { mauModObjGrps 4 }
```


mauIfGrp100Mbs OBJECT-GROUP

```
OBJECTS      { ifMauFalseCarriers,
                ifMauTypeList,
                ifMauDefaultType,
                ifMauAutoNegSupported
              }
```

```
STATUS       deprecated
```

```
DESCRIPTION  "***** THIS GROUP IS DEPRECATED *****"
```

Conformance group for MAUs attached to
interfaces with 100 Mb/s capability.

This object group has been deprecated in favor
of mauIfGrpHighCapacity."

```
::= { mauModObjGrps 5 }
```

mauIfGrpJack OBJECT-GROUP

```
OBJECTS      { ifJackType }
STATUS       current
```

```
DESCRIPTION  "Conformance group for MAUs attached to
              interfaces with managed jacks."
```

```
::= { mauModObjGrps 6 }
```

mauIfGrpAutoNeg OBJECT-GROUP

```
OBJECTS      { ifMauAutoNegAdminStatus,
                ifMauAutoNegRemoteSignaling,
                ifMauAutoNegConfig,
                ifMauAutoNegCapability,
                ifMauAutoNegCapAdvertised,
                ifMauAutoNegCapReceived,
                ifMauAutoNegRestart
              }
```

```
STATUS       deprecated
```

```
DESCRIPTION  "***** THIS GROUP IS DEPRECATED *****"
```

Conformance group for MAUs attached to
interfaces with managed auto-negotiation.

This object group has been deprecated in favor
of mauIfGrpAutoNeg2."

```
::= { mauModObjGrps 7 }
```

mauBroadBasic OBJECT-GROUP

```
OBJECTS      { broadMauIfIndex,
                broadMauIndex,
                broadMauXmtRcvSplitType,
                broadMauXmtCarrierFreq,
```



```
        broadMauTranslationFreq
    }
    STATUS      deprecated
    DESCRIPTION "***** THIS GROUP IS DEPRECATED *****"
```

Conformance group for broadband MAUs attached to interfaces.

This object group is deprecated. There have been no reported implementations of this group, and it was felt to be unlikely that there will be any future implementations."

```
::= { mauModObjGrps 8 }
```

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 9 }
```

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 10 }
```

mauIfGrpAutoNeg1000Mbps OBJECT-GROUP

```
    OBJECTS      { ifMauAutoNegRemoteFaultAdvertised,
                    ifMauAutoNegRemoteFaultReceived
                  }
```

```
    STATUS      current
```

```
    DESCRIPTION "Conformance group for 1000Mbps MAUs attached to
                  interfaces with managed auto-negotiation."
```

```
::= { mauModObjGrps 11 }
```



```
mauIfGrpHCStats OBJECT-GROUP
    OBJECTS      { ifMauHCFALSECarriers }
    STATUS       current
    DESCRIPTION   "Conformance for high capacity statistics for
                  MAUs attached to interfaces"
    ::= { mauModObjGrps 12 }

-- 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 }

-- Compliances

mauModRpCompl MODULE-COMPLIANCE
    STATUS       deprecated
    DESCRIPTION   "***** THIS COMPLIANCE IS DEPRECATED *****
                  Compliance for MAUs attached to repeater
                  ports.

                  This compliance is deprecated and replaced by
                  mauModRpCompl2, which corrects an oversight by
                  allowing rpMauStatus to be implemented
                  read-only."

    MODULE -- this module
        MANDATORY-GROUPS { mauRpGrpBasic }

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

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

        GROUP      rpMauNotifications
```



```
DESCRIPTION "Implementation of this group is recommended
             for MAUs attached to repeater ports."
 ::= { mauModCompls 1 }
```

```
mauModIfCompl MODULE-COMPLIANCE
```

```
STATUS      deprecated
```

```
DESCRIPTION "***** THIS COMPLIANCE IS DEPRECATED *****
```

```
             Compliance for MAUs attached to interfaces.
             This compliance is deprecated and replaced by
             mauModIfCompl2."
```

```
MODULE -- this module
```

```
MANDATORY-GROUPS { mauIfGrpBasic }
```

```
GROUP      mauIfGrp100Mbs
```

```
DESCRIPTION "Implementation of this optional group is
             recommended for MAUs which have 100Mb/s
             capability."
```

```
GROUP      mauIfGrpJack
```

```
DESCRIPTION "Implementation of this optional group is
             recommended for MAUs which have one or more
             external jacks."
```

```
GROUP      mauIfGrpAutoNeg
```

```
DESCRIPTION "Implementation of this group is mandatory
             for MAUs which support managed
             auto-negotiation."
```

```
GROUP      mauBroadBasic
```

```
DESCRIPTION "Implementation of this group is mandatory
             for broadband MAUs."
```

```
GROUP      ifMauNotifications
```

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

```
 ::= { mauModCompls 2 }
```

```
mauModIfCompl2 MODULE-COMPLIANCE
```

```
STATUS      deprecated
```

```
DESCRIPTION "***** THIS COMPLIANCE IS DEPRECATED *****
```

```
             Compliance for MAUs attached to interfaces.
```

```
             This compliance is deprecated and replaced by
             mauModIfCompl3."
```



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

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

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

  GROUP      mauIfGrpAutoNeg2
  DESCRIPTION "Implementation of this group is mandatory
               for MAUs which support managed
               auto-negotiation."

  GROUP      mauIfGrpAutoNeg1000Mbps
  DESCRIPTION "Implementation of this group is mandatory
               for MAUs which have 1000Mb/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."
 ::= { mauModCompls 3 }

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 SNMP-REPEATER-MIB (RFC 2108)."
```

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

  GROUP      mauRpGrp100Mbs
```


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

GROUP mauRpGrpJack

DESCRIPTION "Implementation of this optional group is recommended for MAUs which 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 4 }

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 EtherLike-MIB ([RFC3635](#)).

MODULE -- this module

MANDATORY-GROUPS { mauIfGrpBasic }

GROUP mauIfGrpHighCapacity

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

GROUP mauIfGrpHCStats

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

GROUP mauIfGrpJack

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


```
GROUP          mauIfGrpAutoNeg2
DESCRIPTION    "Implementation of this group is mandatory
               for MAUs which support managed
               auto-negotiation."

GROUP          mauIfGrpAutoNeg1000Mbps
DESCRIPTION    "Implementation of this group is mandatory
               for MAUs which have 1000Mb/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."
::= { mauModCompls 5 }
```

END

5. IANA-maintained MAU TC Definitions

IANA-MAU-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-IDENTITY, mib-2

FROM SNMPv2-SMI

TEXTUAL-CONVENTION

FROM SNMPv2-TC

;

ianaMauMIB MODULE-IDENTITY

LAST-UPDATED "200510240000Z" -- Oct 24, 2005

ORGANIZATION "IANA"

CONTACT-INFO " Internet Assigned Numbers Authority

Postal: ICANN

4676 Admiralty Way, Suite 330

Marina del Rey, CA 90292

Tel: +1 310 823 9358

E-Mail: iana@iana.org"

DESCRIPTION

"This MIB module defines dot3MauType OBJECT-IDENTITIES and IANAifMauListBits and IANAifJackType Textual Conventions, specifying enumerated values of the ifMauTypeListBits and ifJackType objects respectively, defined in the MAU-MIB.

It is intended that each new MAU type and/or Jack type defined by the IEEE 802.3 working group and approved for publication in a revision of IEEE Std 802.3 will be added to this MIB module, provided that it is suitable for being managed by the base objects in the MAU-MIB. An Expert Review, as defined in [RFC 2434](#) [[RFC2434](#)], is REQUIRED for such additions.

The following reference is used throughout this MIB module:

[IEEE 802.3 Std] refers to:

IEEE Std 802.3, 2002 Edition: 'IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements -

Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications', as amended by the following specifications:
IEEE Std 802.3ae-2002:

'Amendment: Media Access Control (MAC) Parameters, Physical Layer, and Management Parameters for 10 Gb/s Operation', August 2002;

IEEE Std 802.3ak-2004:

'Amendment: Media Access Control (MAC) Parameters, Physical Layer, and Management Parameters for 10 Gb/s Operation, Type 10GBASE-CX4', March 2004;

IEEE Std 802.3ah-2004:

'Amendment: Media Access Control Parameters, Physical Layers and Management Parameters for Subscriber Access Networks', September 2004;.

This reference should be updated as appropriate when new MAU types and/or Jack types are added to this MIB module.

Copyright (C) The Internet Society (2005).

The initial version of this MIB module was published in RFC XXXX; for full legal notices see the RFC itself.

Supplementary information may be available at:

<http://www.ietf.org/copyrights/ianamib.html>"

REVISION "200510240000Z" -- Oct 24, 2005

DESCRIPTION "Initial version of this MIB as published in RFC XXX."


```
-- EdNote: Replace XXXX with the actual RFC number & remove this note
::= { mib-2 snmpDot3MauMgt(26) 7 } -- mauMod+1
```

```
-- Textual Conventions
```

```
IANAifMauTypeListBits ::= TEXTUAL-CONVENTION
```

```
STATUS      current
```

```
DESCRIPTION
```

"This data type is used as the syntax of the ifMauTypeListBits object in the (updated) definition of MAU-MIB's ifMauTable.

The most recent version of this textual convention is available in the on-line version of this MIB module on the IANA web site.

Requests for new values should be made to IANA via email (iana@iana.org).

Note that changes in this textual convention SHALL be synchronized with relevant changes in the dot3MauType OBJECT-IDENTITIES."

```
SYNTAX      BITS {
```

bOther(0),	-- other or unknown
bAUI(1),	-- AUI
b10base5(2),	-- 10BASE-5
bFoir1(3),	-- FOIRL
b10base2(4),	-- 10BASE-2
b10baseT(5),	-- 10BASE-T duplex mode unknown
b10baseFP(6),	-- 10BASE-FP
b10baseFB(7),	-- 10BASE-FB
b10baseFL(8),	-- 10BASE-FL duplex mode unknown
b10broad36(9),	-- 10BROAD36
b10baseTHD(10),	-- 10BASE-T half duplex mode
b10baseTFD(11),	-- 10BASE-T full duplex mode
b10baseFLHD(12),	-- 10BASE-FL half duplex mode
b10baseFLFD(13),	-- 10BASE-FL full duplex mode
b100baseT4(14),	-- 100BASE-T4
b100baseTXHD(15),	-- 100BASE-TX half duplex mode
b100baseTXFD(16),	-- 100BASE-TX full duplex mode
b100baseFXHD(17),	-- 100BASE-FX half duplex mode
b100baseFXFD(18),	-- 100BASE-FX full duplex mode
b100baseT2HD(19),	-- 100BASE-T2 half duplex mode
b100baseT2FD(20),	-- 100BASE-T2 full duplex mode
b1000baseXHD(21),	-- 1000BASE-X half duplex mode
b1000baseXFD(22),	-- 1000BASE-X full duplex mode
b1000baseLXHD(23),	-- 1000BASE-LX half duplex mode


```
    b1000baseLXFD(24), -- 1000BASE-LX full duplex mode
    b1000baseSXHD(25), -- 1000BASE-SX half duplex mode
    b1000baseSXFD(26), -- 1000BASE-SX full duplex mode
    b1000baseCXHD(27), -- 1000BASE-CX half duplex mode
    b1000baseCXFD(28), -- 1000BASE-CX full duplex mode
    b1000baseTHD(29),  -- 1000BASE-T half duplex mode
    b1000baseTFD(30),  -- 1000BASE-T full duplex mode

    b10GbaseX(31),      -- 10GBASE-X
    b10GbaseLX4(32),    -- 10GBASE-LX4
    b10GbaseR(33),      -- 10GBASE-R
    b10GbaseER(34),     -- 10GBASE-ER
    b10GbaseLR(35),     -- 10GBASE-LR
    b10GbaseSR(36),     -- 10GBASE-SR
    b10GbaseW(37),      -- 10GBASE-W
    b10GbaseEW(38),     -- 10GBASE-EW
    b10GbaseLW(39),     -- 10GBASE-LW
    b10GbaseSW(40),     -- 10GBASE-SW
    -- new since RFC 3636
    b10GbaseCX4(41),    -- 10GBASE-CX4
    b2BaseTL(42),       -- 2BASE-TL
    b10PassTS(43),      -- 10PASS-TS
    b100BaseBX10D(44),  -- 100BASE-BX10D
    b100BaseBX10U(45),  -- 100BASE-BX10U
    b100BaseLX10(46),   -- 100BASE-LX10
    b1000BaseBX10D(47), -- 1000BASE-BX10D
    b1000BaseBX10U(48), -- 1000BASE-BX10U
    b1000BaseLX10(49),  -- 1000BASE-LX10
    b1000BasePX10D(50), -- 1000BASE-PX10D
    b1000BasePX10U(51), -- 1000BASE-PX10U
    b1000BasePX20D(52), -- 1000BASE-PX20D
    b1000BasePX20U(53)  -- 1000BASE-PX20U
}
```

IANAifJackType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Common enumeration values for repeater and interface MAU jack types. This data type is used as the syntax of the ifJackType and rpJackType objects in the (updated) definition of MAU-MIB's ifJackTable and RpJackTable respectively.

The most recent version of this textual convention is available in the on-line version of this MIB module on the IANA web site.

Requests for new values should be made to IANA via email (iana@iana.org)."


```
SYNTAX      INTEGER {
    other(1),
    rj45(2),
    rj45S(3),      -- rj45 shielded
    db9(4),
    bnc(5),
    fAUI(6),      -- female aui
    mAUI(7),      -- male aui
    fiberSC(8),
    fiberMIC(9),
    fiberST(10),
    telco(11),
    mtrj(12),      -- fiber MT-RJ
    hssdc(13),      -- fiber channel style-2
    fiberLC(14),
    -- new since RFC 3636
    cx4(15)      -- IB4X for 10GBASE-CX4
}

-- OBJECT IDENTITIES for MAU types
-- (see rpMauType and ifMauType of MAU-MIB for usage)
-- The following definitions has been moved from RFC 3636 and
-- no longer appear in its revision.

dot3MauType OBJECT IDENTIFIER ::= { mib-2 snmpDot3MauMgt(26) 4 }

dot3MauTypeAUI OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "no internal MAU, view from AUI"
    REFERENCE    "[IEEE 802.3 Std.], Section 7"
    ::= { dot3MauType 1 }

dot3MauType10Base5 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "thick coax MAU"
    REFERENCE    "[IEEE 802.3 Std.], Section 7"
    ::= { dot3MauType 2 }

dot3MauTypeFoir1 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "FOIRL MAU"
    REFERENCE    "[IEEE 802.3 Std.], Section 9.9"
    ::= { dot3MauType 3 }

dot3MauType10Base2 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "thin coax MAU"
    REFERENCE    "[IEEE 802.3 Std.], Section 10"
```



```
::= { dot3MauType 4 }
```

```
dot3MauType10BaseT OBJECT-IDENTITY
```

```
STATUS      current
```

```
DESCRIPTION "UTP MAU.
```

```
    Note that it is strongly recommended that
    agents return either dot3MauType10BaseTHD or
    dot3MauType10BaseTFD if the duplex mode is
    known. However, management applications should
    be prepared to receive this MAU type value from
    older agent implementations."
```

```
REFERENCE   "[IEEE 802.3 Std.], Section 14"
```

```
::= { dot3MauType 5 }
```

```
dot3MauType10BaseFP OBJECT-IDENTITY
```

```
STATUS      current
```

```
DESCRIPTION "passive fiber MAU"
```

```
REFERENCE   "[IEEE 802.3 Std.], Section 16"
```

```
::= { dot3MauType 6 }
```

```
dot3MauType10BaseFB OBJECT-IDENTITY
```

```
STATUS      current
```

```
DESCRIPTION "sync fiber MAU"
```

```
REFERENCE   "[IEEE 802.3 Std.], Section 17"
```

```
::= { dot3MauType 7 }
```

```
dot3MauType10BaseFL OBJECT-IDENTITY
```

```
STATUS      current
```

```
DESCRIPTION "async fiber MAU.
```

```
    Note that it is strongly recommended that
    agents return either dot3MauType10BaseFLHD or
    dot3MauType10BaseFLFD if the duplex mode is
    known. However, management applications should
    be prepared to receive this MAU type value from
    older agent implementations."
```

```
REFERENCE   "[IEEE 802.3 Std.], Section 18"
```

```
::= { dot3MauType 8 }
```

```
dot3MauType10Broad36 OBJECT-IDENTITY
```

```
STATUS      current
```

```
DESCRIPTION "broadband DTE MAU.
```

```
    Note that 10BROAD36 MAUs can be attached to
    interfaces but not to repeaters."
```

```
REFERENCE   "[IEEE 802.3 Std.], Section 11"
```

```
::= { dot3MauType 9 }
```

```
----- new since RFC 1515:
```

```
dot3MauType10BaseTHD OBJECT-IDENTITY
```



```
STATUS      current
DESCRIPTION "UTP MAU, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 14"
::= { dot3MauType 10 }

dot3MauType10BaseTFD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "UTP MAU, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 14"
::= { dot3MauType 11 }

dot3MauType10BaseFLHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "async fiber MAU, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 18"
::= { dot3MauType 12 }

dot3MauType10BaseFLFD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "async fiber MAU, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 18"
::= { dot3MauType 13 }

dot3MauType100BaseT4 OBJECT-IDENTITY
STATUS      current
DESCRIPTION "4 pair category 3 UTP"
REFERENCE   "[IEEE 802.3 Std.], Section 23"
::= { dot3MauType 14 }

dot3MauType100BaseTXHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "2 pair category 5 UTP, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 25"
::= { dot3MauType 15 }

dot3MauType100BaseTXFD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "2 pair category 5 UTP, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 25"
::= { dot3MauType 16 }

dot3MauType100BaseFXHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "X fiber over PMT, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 26"
::= { dot3MauType 17 }

dot3MauType100BaseFXFD OBJECT-IDENTITY
```



```
STATUS      current
DESCRIPTION "X fiber over PMT, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 26"
::= { dot3MauType 18 }

dot3MauType100BaseT2HD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "2 pair category 3 UTP, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 32"
::= { dot3MauType 19 }

dot3MauType100BaseT2FD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "2 pair category 3 UTP, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 32"
::= { dot3MauType 20 }

----- new since RFC 2239:
dot3MauType1000BaseXHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "PCS/PMA, unknown PMD, half duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 36"
::= { dot3MauType 21 }

dot3MauType1000BaseXFD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "PCS/PMA, unknown PMD, full duplex mode"
REFERENCE   "[IEEE 802.3 Std.], Section 36"
::= { dot3MauType 22 }

dot3MauType1000BaseLXHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "Fiber over long-wavelength laser, half duplex
mode"
REFERENCE   "[IEEE 802.3 Std.], Section 38"
::= { dot3MauType 23 }

dot3MauType1000BaseLXFD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "Fiber over long-wavelength laser, full duplex
mode"
REFERENCE   "[IEEE 802.3 Std.], Section 38"
::= { dot3MauType 24 }

dot3MauType1000BaseSXHD OBJECT-IDENTITY
STATUS      current
DESCRIPTION "Fiber over short-wavelength laser, half
duplex mode"
```



```
REFERENCE    "[IEEE 802.3 Std.], Section 38"
::= { dot3MauType 25 }

dot3MauType1000BaseSXFDD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Fiber over short-wavelength laser, full
                  duplex mode"
    REFERENCE    "[IEEE 802.3 Std.], Section 38"
    ::= { dot3MauType 26 }

dot3MauType1000BaseCXHD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Copper over 150-Ohm balanced cable, half
                  duplex mode"
    REFERENCE    "[IEEE 802.3 Std.], Section 39"
    ::= { dot3MauType 27 }

dot3MauType1000BaseCXFD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Copper over 150-Ohm balanced cable, full
                  duplex mode"
    REFERENCE    "[IEEE 802.3 Std.], Section 39"
    ::= { dot3MauType 28 }

dot3MauType1000BaseTHD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Four-pair Category 5 UTP, half duplex mode"
    REFERENCE    "[IEEE 802.3 Std.], Section 40"
    ::= { dot3MauType 29 }

dot3MauType1000BaseTFD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Four-pair Category 5 UTP, full duplex mode"
    REFERENCE    "[IEEE 802.3 Std.], Section 40"
    ::= { dot3MauType 30 }

----- new since RFC 2668:
dot3MauType10GigBaseX OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "X PCS/PMA, unknown PMD."
    REFERENCE    "[IEEE 802.3 Std.], Section 48"
    ::= { dot3MauType 31 }

dot3MauType10GigBaseLX4 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "X fiber over WDM optics"
    REFERENCE    "[IEEE 802.3 Std.], Section 53"
    ::= { dot3MauType 32 }
```



```
dot3MauType10GigBaseR OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "R PCS/PMA, unknown PMD."
    REFERENCE   "[IEEE 802.3 Std.], Section 49"
    ::= { dot3MauType 33 }

dot3MauType10GigBaseER OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "R fiber over 1550 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 34 }

dot3MauType10GigBaseLR OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "R fiber over 1310 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 35 }

dot3MauType10GigBaseSR OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "R fiber over 850 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 36 }

dot3MauType10GigBaseW OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "W PCS/PMA, unknown PMD."
    REFERENCE   "[IEEE 802.3 Std.], Section 49 and 50"
    ::= { dot3MauType 37 }

dot3MauType10GigBaseEW OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "W fiber over 1550 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 38 }

dot3MauType10GigBaseLW OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "W fiber over 1310 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 39 }

dot3MauType10GigBaseSW OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "W fiber over 850 nm optics"
    REFERENCE   "[IEEE 802.3 Std.], Section 52"
    ::= { dot3MauType 40 }
```


----- new since [RFC 3636](#):

dot3MauType10GigBaseCX4 OBJECT-IDENTITY

STATUS current

DESCRIPTION "X copper over 8 pair 100-Ohm balanced cable"

REFERENCE "[IEEE 802.3 Std.], [Section 54](#)"

::= { dot3MauType 41 }

dot3MauType2BaseTL OBJECT-IDENTITY

STATUS current

DESCRIPTION "Voice grade UTP copper, up to 2700m "

REFERENCE "[IEEE 802.3 Std.], Sections [61](#) and [63](#)"

::= { dot3MauType 42 }

dot3MauType10PassTS OBJECT-IDENTITY

STATUS current

DESCRIPTION "Voice grade UTP copper, up to 750m"

REFERENCE "[IEEE 802.3 Std.], Sections [61](#) and [62](#)"

::= { dot3MauType 43 }

dot3MauType100BaseBX10D OBJECT-IDENTITY

STATUS current

DESCRIPTION "One single-mode fiber OLT"

REFERENCE "[IEEE 802.3 Std.], [Section 58](#)"

::= { dot3MauType 44 }

dot3MauType100BaseBX10U OBJECT-IDENTITY

STATUS current

DESCRIPTION "One single-mode fiber ONU"

REFERENCE "[IEEE 802.3 Std.], [Section 58](#)"

::= { dot3MauType 45 }

dot3MauType100BaseLX10 OBJECT-IDENTITY

STATUS current

DESCRIPTION "Two fiber"

REFERENCE "[IEEE 802.3 Std.], [Section 58](#)"

::= { dot3MauType 46 }

dot3MauType1000BaseBX10D OBJECT-IDENTITY

STATUS current

DESCRIPTION "One single-mode fiber OLT"

REFERENCE "[IEEE 802.3 Std.], [Section 59](#)"

::= { dot3MauType 47 }

dot3MauType1000BaseBX10U OBJECT-IDENTITY

STATUS current

DESCRIPTION "One single-mode fiber ONU"

REFERENCE "[IEEE 802.3 Std.], [Section 59](#)"

::= { dot3MauType 48 }


```
dot3MauType1000BaseLX10 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "Two fiber 10km"
    REFERENCE    "[IEEE 802.3 Std.], Section 59"
    ::= { dot3MauType 49 }

dot3MauType1000BasePX10D OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "One single-mode fiber OMP OLT 10km"
    REFERENCE    "[IEEE 802.3 Std.], Section 60"
    ::= { dot3MauType 50 }

dot3MauType1000BasePX10U OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "One single-mode fiber OMP ONU 10km"
    REFERENCE    "[IEEE 802.3 Std.], Section 60"
    ::= { dot3MauType 51 }

dot3MauType1000BasePX20D OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "One single-mode fiber OMP OLT 20km"
    REFERENCE    "[IEEE 802.3 Std.], Section 60"
    ::= { dot3MauType 52 }

dot3MauType1000BasePX20U OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION  "One single-mode fiber OMP ONU 20km"
    REFERENCE    "[IEEE 802.3 Std.], Section 60"
    ::= { dot3MauType 53 }
```

END

6. Security Considerations

There are a number of management objects defined in this MIB that have a MAX-ACCESS clause of read-write. Setting these objects can have a serious effect on the operation of the network, including:

- o enabling or disabling a MAU
- o changing a MAU's default type
- o enabling, disabling or restarting autonegotiation

- o modifying the capabilities that a MAU advertizes during autonegotiation.

Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. In some environments it may be undesirable to allow unauthorized parties to access statistics or status information about individual links in a network. It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPSec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB module.

It is recommended that the implementors consider the security features as provided by the SNMPv3 framework (see [[RFC3410](#)], [section 8](#)), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Furthermore, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

[7.](#) IANA Considerations

This document defines first version of the IANA-maintained MIB module. It is intended that each new MAU type and/or Jack type defined by the IEEE 802.3 working group and approved for publication in a revision of IEEE Std 802.3 will be added to the IANA-maintained module. An Expert Review, as defined in [RFC 2434](#) [[RFC2434](#)], is REQUIRED.

8. Acknowledgments

This document was produced by the IETF Ethernet Interfaces and Hub MIB Working Group, whose efforts were greatly advanced by the contributions of the following people:

Mike Heard

John Flick

Dan Romascanu

This document is based on the Proposed Standard MAU MIB, [RFC 3636](#) [[RFC3636](#)], edited by John Flick of Hewlett-Packard, and produced by the Ethernet Interfaces and Hub MIB Working Group. It extends that document by moving the object identities and textual conventions for MAU types into a IANA-maintained MIB module. In addition, support is provided for the EFM and 10GBASE-CX4 MAUs as defined in [[IEEE802.3ah](#)] and [[IEEE802.3ak](#)] respectively.

[RFC 3636](#), in turn, was based on the Proposed Standard MAU MIB, [RFC 2668](#) [[RFC2668](#)], edited by John Flick of Hewlett-Packard and Andrew Smith, then of Extreme Networks, and produced by the Ethernet Interfaces and Hub MIB Working Group. It extends that document by providing support for 10 Gb/s MAUs as defined in [[IEEE802.3ae](#)].

[RFC 2668](#), in turn, was based on the Proposed Standard MAU MIB, [RFC 2239](#) [[RFC2239](#)], edited by Kathryn de Graaf, then of 3Com, and Dan Romascanu, then of Madge Networks, and produced by the Ethernet Interfaces and Hub MIB Working Group. It extended that document by providing support for 1000 Mb/sec MAUs as defined in [[IEEE802.3](#)].

[RFC 2239](#), in turn, was based on the Proposed Standard MAU MIB, [RFC 1515](#) [[RFC1515](#)], edited by Donna McMaster, then of SynOptics Communications, Keith McCloghrie, then of Hughes LAN Systems, and Sam Roberts, then of Farallon Computing, and produced by the Hub MIB Working Group. It extends that document by providing support for 100 Mb/sec MAUs, full duplex MAUs, and auto-negotiation, as defined in [[IEEE802.3](#)].

9. References

9.1. Normative References

[[IEEE802.3](#)]

IEEE, "IEEE Standard for Information technology - Telecommunications and information exchange between

systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications", IEEE Std 802.3-2002, March 2002.

[IEEE802.3ae]

IEEE, "IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications - Media Access Control (MAC) Parameters, Physical Layer and Management Parameters for 10 Gb/s Operation", IEEE Std 802.3ae-2002, August 2002.

[IEEE802.3ah]

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