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

### Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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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. This memo obsoletes [RFC 2239](#), "Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) using SMIV2". This memo extends that specification by including management information useful for the management of 1000 Mb/s MAUs.

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.

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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).

This memo also includes a MIB module. This MIB module extends the list of managed objects specified in the earlier version of this MIB: [RFC 2239](#) [[21](#)].

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 [[20](#)].

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802.3 MAU MIB

August 1999

## [2.](#) The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [1].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in STD 16, [RFC 1155](#) [2], STD 16, [RFC 1212](#) [3] and [RFC 1215](#) [4]. The second version, called SMIV2, is described in STD 58, [RFC 2578](#) [5], STD 58, [RFC 2579](#) [6] and STD 58, [RFC 2580](#) [7].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15, [RFC 1157](#) [8]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#) [9] and [RFC 1906](#) [10]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [10], [RFC 2572](#) [11] and [RFC 2574](#) [12].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15, [RFC 1157](#) [8]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [13].
- o A set of fundamental applications described in [RFC 2573](#) [14] and the view-based access control mechanism described in [RFC 2575](#) [15].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically equivalent, except where objects or events are omitted because no translation is possible (use of Counter64). Some machine readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

### [3.](#) Overview

#### [3.1.](#) Relationship to [RFC 2239](#)

This MIB is intended to be a superset of that defined by [RFC 2239](#) [21], which will go to historic status. This MIB includes all of the objects contained in that MIB, plus several new ones which provide additional capabilities. Implementors are encouraged to support all applicable conformance groups in order to make the best use of the new functionality provided by this MIB. The new objects provide management support for:

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

#### [3.2.](#) Relationship to [RFC 1515](#)

[RFC 2239](#) was a replacement for [RFC 1515](#) [22], which is now historic. [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

### [3.3.](#) MAU Management

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 [[16](#)]. 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, 100 & 1000 Mb/s Medium Attachment Units (MAUs)", and Annex 30A, "GDMO Specifications for 802.3 managed object classes" of IEEE Std. 802.3, 1998 edition [[16](#)]. That specification includes definitions for 10Mb/s, 100Mb/s and 1000Mb/s devices. This specification is intended to serve the same purpose: to provide for management of all types of Ethernet/802.3 MAUs.

### [3.4.](#) Relationship to Other MIBs

It is assumed that an agent implementing this MIB will also implement (at least) the 'system' group defined in MIB-II [[18](#)]. The following sections identify other MIBs that such an agent should implement.

#### [3.4.1.](#) Relationship to the Interfaces MIB.

The sections of this document that define interface MAU-related objects specify an extension to the Interfaces MIB [[19](#)]. An agent implementing these interface-MAU related objects MUST also implement the relevant groups of 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 expected that an agent implementing the interface-MAU related objects in this MIB will also implement the Ethernet-like Interfaces MIB, [[23](#)].

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

### [3.4.2.](#) Relationship to the 802.3 Repeater MIB

The section of this document that defines repeater MAU-related objects specifies an extension to the 802.3 Repeater MIB defined in [\[17\]](#). An agent implementing these repeater-MAU related objects MUST also implement the 802.3 Repeater MIB.

The values of 'rpMauGroupIndex' and 'rpMauPortIndex' used to instantiate a repeater MAU variable SHALL be the same as the values of 'rptrPortGroupIndex' and 'rptrPortIndex' used to instantiate the port to which the given MAU is connected.

### [3.5.](#) 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.

## [4.](#) Definitions

MAU-MIB DEFINITIONS ::= BEGIN

IMPORTS

Counter32, Integer32,  
OBJECT-TYPE, MODULE-IDENTITY, NOTIFICATION-TYPE,  
OBJECT-IDENTITY, mib-2  
FROM SNMPv2-SMI  
TruthValue, TEXTUAL-CONVENTION  
FROM SNMPv2-TC  
OBJECT-GROUP, MODULE-COMPLIANCE, NOTIFICATION-GROUP  
FROM SNMPv2-CONF;

mauMod MODULE-IDENTITY

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ORGANIZATION "IETF Ethernet Interfaces and Hub MIB  
Working Group"

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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, 1998 Edition: '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',  
September 1998.

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

REVISION "9908240400Z" -- August 24, 1999  
DESCRIPTION "This version published as [RFC 2668](#). Updated to include support for 1000 Mb/sec MAUs and flow control negotiation."

REVISION "9710310000Z" -- October 31, 1997  
DESCRIPTION "This version published as [RFC 2239](#)."

REVISION "9309300000Z" -- September 30, 1993  
DESCRIPTION "Initial version, published as [RFC 1515](#)."

::= { snmpDot3MauMgt 6 }

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

-- textual conventions

JackType ::= TEXTUAL-CONVENTION  
STATUS current  
DESCRIPTION "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
    }

dot3RpMauBasicGroup
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 1 }
dot3IfMauBasicGroup
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 2 }
dot3BroadMauBasicGroup
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 3 }

dot3IfMauAutoNegGroup
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 5 }

-- object identities for MAU types
-- (see rpMauType and ifMauType for usage)

dot3MauType
    OBJECT IDENTIFIER ::= { snmpDot3MauMgt 4 }

dot3MauTypeAUI OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "no internal MAU, view from AUI"
    ::= { dot3MauType 1 }

dot3MauType10Base5 OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "thick coax MAU (per 802.3 section 8)"
    ::= { dot3MauType 2 }
dot3MauTypeFoirl OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "FOIRL MAU (per 802.3 section 9.9)"
    ::= { dot3MauType 3 }

dot3MauType10Base2 OBJECT-IDENTITY
    STATUS      current

```

DESCRIPTION "thin coax MAU (per 802.3 [section 10](#))"  
 ::= { dot3MauType 4 }

dot3MauType10BaseT OBJECT-IDENTITY

STATUS current  
DESCRIPTION "UTP MAU (per 802.3 [section 14](#)).  
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."  
 ::= { dot3MauType 5 }

dot3MauType10BaseFP OBJECT-IDENTITY

STATUS current  
DESCRIPTION "passive fiber MAU (per 802.3 [section 16](#))"  
 ::= { dot3MauType 6 }

dot3MauType10BaseFB OBJECT-IDENTITY

STATUS current  
DESCRIPTION "sync fiber MAU (per 802.3 [section 17](#))"  
 ::= { dot3MauType 7 }

dot3MauType10BaseFL OBJECT-IDENTITY

STATUS current  
DESCRIPTION "async fiber MAU (per 802.3 [section 18](#))  
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."  
 ::= { dot3MauType 8 }

dot3MauType10Broad36 OBJECT-IDENTITY

STATUS current  
DESCRIPTION "broadband DTE MAU (per 802.3 [section 11](#)).  
Note that 10BROAD36 MAUs can be attached to  
interfaces but not to repeaters."  
 ::= { dot3MauType 9 }

----- new since [RFC 1515](#):

dot3MauType10BaseTHD OBJECT-IDENTITY

STATUS current  
DESCRIPTION "UTP MAU (per 802.3 [section 14](#)), half duplex  
mode"

::= { dot3MauType 10 }

dot3MauType10BaseTFD OBJECT-IDENTITY

STATUS current

DESCRIPTION "UTP MAU (per 802.3 [section 14](#)), full duplex mode"

::= { dot3MauType 11 }

dot3MauType10BaseFLHD OBJECT-IDENTITY

STATUS current

DESCRIPTION "async fiber MAU (per 802.3 [section 18](#)), half duplex mode"

::= { dot3MauType 12 }

dot3MauType10BaseFLFD OBJECT-IDENTITY

STATUS current

DESCRIPTION "async fiber MAU (per 802.3 [section 18](#)), full duplex mode"

::= { dot3MauType 13 }

dot3MauType100BaseT4 OBJECT-IDENTITY

STATUS current

DESCRIPTION "4 pair categ. 3 UTP (per 802.3 [section 23](#))"

::= { dot3MauType 14 }

dot3MauType100BaseTXHD OBJECT-IDENTITY

STATUS current

DESCRIPTION "2 pair categ. 5 UTP (per 802.3 [section 25](#)), half duplex mode"

::= { dot3MauType 15 }

dot3MauType100BaseTXFD OBJECT-IDENTITY

STATUS current

DESCRIPTION "2 pair categ. 5 UTP (per 802.3 [section 25](#)), full duplex mode"

::= { dot3MauType 16 }

dot3MauType100BaseFXHD OBJECT-IDENTITY

STATUS current

DESCRIPTION "X fiber over PMT (per 802.3 [section 26](#)), half duplex mode"

```

        ::= { dot3MauType 17 }
dot3MauType100BaseFXFD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "X fiber over PMT (per 802.3 section 26), full
                duplex mode"
        ::= { dot3MauType 18 }

dot3MauType100BaseT2HD OBJECT-IDENTITY
    STATUS      current

```

```

    DESCRIPTION "2 pair categ. 3 UTP (per 802.3 section 32),
                half duplex mode"
        ::= { dot3MauType 19 }

dot3MauType100BaseT2FD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "2 pair categ. 3 UTP (per 802.3 section 32),
                full duplex mode"
        ::= { dot3MauType 20 }

----- new since RFC 2239:

dot3MauType1000BaseXHD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "PCS/PMA (per 802.3 section 36), unknown PMD,
                half duplex mode"
        ::= { dot3MauType 21 }

dot3MauType1000BaseXFD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "PCS/PMA (per 802.3 section 36), unknown PMD,
                full duplex mode"
        ::= { dot3MauType 22 }

dot3MauType1000BaseLXHD OBJECT-IDENTITY
    STATUS      current
    DESCRIPTION "Fiber over long-wavelength laser (per 802.3
                section 38), half duplex mode"
        ::= { dot3MauType 23 }

dot3MauType1000BaseLXFD OBJECT-IDENTITY
    STATUS      current

```

DESCRIPTION "Fiber over long-wavelength laser (per 802.3  
[section 38](#)), full duplex mode"  
::= { dot3MauType 24 }

dot3MauType1000BaseSXHD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Fiber over short-wavelength laser (per 802.3  
[section 38](#)), half duplex mode"  
::= { dot3MauType 25 }

dot3MauType1000BaseSXFD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Fiber over short-wavelength laser (per 802.3  
[section 38](#)), full duplex mode"  
::= { dot3MauType 26 }

dot3MauType1000BaseCXHD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Copper over 150-Ohm balanced cable (per 802.3  
[section 39](#)), half duplex mode"  
::= { dot3MauType 27 }

dot3MauType1000BaseCXFD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Copper over 150-Ohm balanced cable (per 802.3  
[section 39](#)), full duplex mode"  
::= { dot3MauType 28 }

dot3MauType1000BaseTHD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Four-pair Category 5 UTP (per 802.3 [section 40](#)), half duplex mode"  
::= { dot3MauType 29 }

dot3MauType1000BaseTFD OBJECT-IDENTITY  
STATUS current  
DESCRIPTION "Four-pair Category 5 UTP (per 802.3 [section 40](#)), full duplex mode"  
::= { dot3MauType 30 }

-- 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

OBJECT IDENTIFIER,

rpMauStatus

INTEGER,

rpMauMediaAvailable

INTEGER,

rpMauMediaAvailableStateExits

Counter32,

rpMauJabberState

INTEGER,

rpMauJabberingStateEnters

Counter32,

rpMauFalseCarriers

Counter32

}

rpMauGroupIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS read-only

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 rptrGroupIndex."

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

rpMauPortIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS read-only

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](#), rptrPortIndex."  
::= { rpMauEntry 2 }

rpMauIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS read-only

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 OBJECT IDENTIFIER

MAX-ACCESS read-only

STATUS current

DESCRIPTION "This object identifies the MAU type. An initial set of MAU types are defined above. The assignment of OBJECT IDENTIFIERS to new types of MAUs is managed by the IANA. If the MAU type is unknown, the object identifier

unknownMauType OBJECT IDENTIFIER ::= { 0 0 }

is returned. Note that unknownMauType is a syntactically valid object identifier, and any conformant implementation of ASN.1 and the BER must be able to generate and recognize this value."

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 DO 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 [[16](#)]. 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 802.3u-1995 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        JackType
    }

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      JackType
    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      Integer32,
        ifMauIndex        Integer32,
        ifMauType          OBJECT IDENTIFIER,
        ifMauStatus        INTEGER,
        ifMauMediaAvailable INTEGER,
        ifMauMediaAvailableStateExits Counter32,

```

```

        ifMauJabberState                INTEGER,
        ifMauJabberingStateEnters        Counter32,
        ifMauFalseCarriers               Counter32,
        ifMauTypeList                   Integer32,
        ifMauDefaultType                 OBJECT IDENTIFIER,
        ifMauAutoNegSupported            TruthValue,
        ifMauTypeListBits                BITS
    }

ifMauIfIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "This variable uniquely identifies the interface
                to which the MAU described by this entry is
                connected."
    REFERENCE   "RFC 1213, ifIndex"
    ::= { ifMauEntry 1 }

ifMauIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  read-only
    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      OBJECT IDENTIFIER
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION "This object identifies the MAU type.  An
                initial set of MAU types are defined above.  The
                assignment of OBJECT IDENTIFIERS to new types of

```

MAUs is managed by the IANA. If the MAU type is unknown, the object identifier

unknownMauType OBJECT IDENTIFIER ::= { 0 0 }



is returned. Note that unknownMauType is a syntactically valid object identifier, and any conformant implementation of ASN.1 and the BER must be able to generate and recognize this value.

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)

```
    }
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 [[16](#)]. 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 802.3u-1995 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)."

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 2233](#), 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 dot1MauTypeAUI 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 2233](#), 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.

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 2233](#), ifCounterDiscontinuityTime."  
::= { ifMauEntry 9 }

ifMauTypeList OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS deprecated

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

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.

This object has been deprecated in favour of  
ifMauTypeListBits."  
 ::= { ifMauEntry 10 }

ifMauDefaultType OBJECT-TYPE  
SYNTAX OBJECT IDENTIFIER  
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 BITS {

bOther(0),	-- other or unknown
bAUI(1),	-- AUI
b10base5(2),	-- 10BASE-5
bFoirl(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
    }
    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 ifMauAutoNegCapability.

                    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 b0ther in addition to any bit values
                    for capabilities that are listed above."
    ::= { ifMauEntry 13 }

-- 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 }

```

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```
IfJackEntry ::=
    SEQUENCE {
        ifJackIndex          Integer32,
        ifJackType           JackType
    }

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

-- 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.

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."
    ::= { dot3IfMauAutoNegGroup 1 }

ifMauAutoNegEntry OBJECT-TYPE
    SYNTAX      IfMauAutoNegEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION "An entry in the table, containing configuration
```

INDEX and status information for the auto-negotiation function of a particular MAU."

```

{ 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 \*\*\*\*\*

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.

This object has been deprecated in favour of ifMauAutoNegCapabilityBits"

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 \*\*\*\*\*

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.

This object has been deprecated in favour of ifMauAutoNegCapAdvertisedBits"

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 \*\*\*\*\*

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.

This object has been deprecated in favour of ifMauAutoNegCapReceivedBits"

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 b0ther 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 {
    b0ther(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 {

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```

        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 *****

        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          Integer32,
        broadMauIndex            Integer32,
        broadMauXmtRcvSplitType  INTEGER,

```

```

        broadMauXmtCarrierFreq      Integer32,
        broadMauTranslationFreq      Integer32
    }

```

```

broadMauIfIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  read-only
    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 1213, ifIndex."
    ::= { broadMauBasicEntry 1 }

```

```

broadMauIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  read-only
    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 }

-- 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 current

DESCRIPTION "Compliance for MAUs attached to interfaces."

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."

```

```

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 }

```

END

## [5.](#) Intellectual Property

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## [6.](#) Acknowledgements

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## 8. 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:

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

SNMPv1 by itself is such an insecure environment. 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.

It is recommended that the implementers consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model [RFC 2574](#) [12] and the View-based Access Control Model [RFC 2575](#) [15] is recommended.

It is then a customer/user responsibility to ensure that the SNMP entity giving access to an instance of this MIB, is properly configured to give access to those objects only to those principals (users) that have legitimate rights to access them.

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802.3 MAU MIB

August 1999

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## Appendix

### Change Log

This section enumerates the changes made to [RFC 2239](#) to produce this document.

- (1) The MODULE-IDENTITY has been updated to reflect the changes in the MIB.
- (2) OBJECT-IDENTITY definitions have been added for gigabit MAU types.
- (3) The ifMauTypeList, ifMauAutoNegCapability, ifMauAutoNegCapAdvertised and ifMauAutoNegCapReceived objects have been deprecated and replaced by ifMauTypeListBits, ifMauAutoNegCapabilityBits, ifMauAutoNegCapAdvertisedBits and ifMauAutoNegCapReceivedBits.
- (4) Two new objects, ifMauAutoNegRemoteFaultAdvertised and ifMauAutoNegRemoteFaultReceived have been added.
- (5) Enumerations for 'offline' and 'autoNegError' have been added for the rpMauMediaAvailable and ifMauMediaAvailable objects.
- (6) The broadMauBasicTable and mauBroadBasic object group have been deprecated.
- (7) The mauIfGrp100Mbs and mauIfGrpAutoNeg object groups have been deprecated and replaced by mauIfGrpHighCapacity and mauIfGrpAutoNeg2.
- (8) A new object group, mauIfGrpAutoNeg1000Mbps, has been added.

- (9) The mauModIfCompl and mauModRpCompl compliances have been deprecated and replaced by mauModIfCompl2 and mauModRpCompl2.
- (10) Added section on relationship to [RFC 2239](#).
- (11) Updated the SNMP Network Management Framework boilerplate.

- (12) Refer to the Interfaces MIB, rather than the interfaces group of MIB-II.
- (13) Updated references to refer to latest edition of IEEE 802.3.
- (14) An intellectual property notice was added, as required by [RFC 2026](#).

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