

REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
bBandSplitType(75)};

**bBbMAUXmitRcvSplitType BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.5.1.1.8;

**aBroadbandFrequencies ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
BbandFrequency;  
MATCHES FOR EQUALITY;  
BEHAVIOUR bBroadbandFrequencies;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
bBandFrequencies(76)};

**bBroadbandFrequencies BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.5.1.1.9;

**aFalseCarriers ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.aCMCounter;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR bFalseCarriers;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
falseCarriers(77)};

**bFalseCarriers BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.5.1.1.10;

**30A.6.3 MAU actions**

**acResetMAU ACTION**

BEHAVIOUR bResetMAU;  
MODE CONFIRMED;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) action(9)  
resetMAU(9)};

**bResetMAU BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.5.1.2.1;

**acMAUAdminControl ACTION**

BEHAVIOUR bMAUAdminControl;  
 WITH INFORMATION SYNTAX IEEE802Dot3-MgmtAttributeModule.AdminState;  
 MODE CONFIRMED;  
 REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) action(9)  
 mauAdminCtrl(10)};

**bMAUAdminControl BEHAVIOUR**

DEFINED AS See "BEHAVIOUR DEFINED AS" in 30.5.1.2.2;

**30A.6.4 MAU notifications****nJabber NOTIFICATION**

BEHAVIOUR bJabberNotification;  
 WITH INFORMATION SYNTAX IEEE802Dot3-MgmtAttributeModule.Jabber;  
 ;  
 REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) notification(10)  
 jabber(5)};

**bJabberNotification BEHAVIOUR**

DEFINED AS See "BEHAVIOUR DEFINED AS" in 30.5.1.3.1;

**30A.7 AutoNegotiation managed object class****30A.7.1 AutoNegotiation, formal definition**

oAutoNegotiation MANAGED OBJECT CLASS

DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;

CHARACTERIZED BY

    pAutoNeg

        ATTRIBUTES

PACKAGE	
aAutoNegID	GET,
aAutoNegAdminState	GET,
aAutoNegRemoteSignaling	GET,
aAutoNegAutoConfig	GET-SET,
aAutoNegLocalTechnologyAbility	GET,
aAutoNegAdvertisedTechnologyAbility	GET-SET,
aAutoNegReceivedTechnologyAbility	GET,
aAutoNegLocalSelectorAbility	GET,
aAutoNegAdvertisedSelectorAbility	GET-SET,
aAutoNegReceivedSelectorAbility	GET;

        ACTIONS

        acAutoNegRestartAutoConfig,  
 acAutoNegAdminControl;

        ;

    ;

REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30)}

managedObjectClass(3) autoNegObjectClass(7));

**nbAutoNeg-mauName** NAME BINDING

SUBORDINATE OBJECT CLASS oMAU;  
NAMED BY SUPERIOR OBJECT CLASS --(of oMAU)  
oMAU AND SUBCLASSES;  
--{1.2.840.10006.30.3.6}

WITH ATTRIBUTE aMAUID;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) nameBinding(6)  
autoNeg-mauName(11)};

### 30A.7.2 Auto-Negotiation attributes

#### **aAutoNegID ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.OneOfName;  
MATCHES FOR EQUALITY;  
BEHAVIOUR bAutoNegID;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegID(78)};

#### **bAutoNegID BEHAVIOUR**

DEFINED AS See "BEHAVIOUR DEFINED AS" in 30.6.1.1.1;

#### **aAutoNegAdminState ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
AutoNegAdminState;  
MATCHES FOR EQUALITY;  
BEHAVIOUR bAutoNegAdminState;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegAdminState(79)};

#### **bAutoNegAdminState BEHAVIOUR**

DEFINED AS See "BEHAVIOUR DEFINED AS" in 30.6.1.1.2;

#### **aAutoNegRemoteSignaling ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
AutoNegRemoteSignalingDetect;  
MATCHES FOR EQUALITY;  
BEHAVIOUR bAutoNegRemoteSignaling;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegRemoteSignaling(80)};

#### **bAutoNegRemoteSignaling BEHAVIOUR**

DEFINED AS See "BEHAVIOUR DEFINED AS" in 30.6.1.1.3;

**aAutoNegAutoConfig ATTRIBUTE**

WITH ATTRIBUTE SYNTAX	IEEE802Dot3-MgmtAttributeModule. AutoNegAutoConfig;
MATCHES FOR BEHAVIOUR	EQUALITY; bAutoNegAutoConfig;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgmt(30) attribute(7) autoNegAutoConfig(81)};

**bAutoNegAutoConfig BEHAVIOUR**

DEFINED AS	See “BEHAVIOUR DEFINED AS” in 30.6.1.1.4;
------------	---

**aAutoNegLocalTechnologyAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX	IEEE802Dot3-MgmtAttributeModule. AutoNegTechnologyList;
MATCHES FOR BEHAVIOUR	EQUALITY, ORDERING; bAutoNegLocalTechnologyAbility;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgmt(30) attribute(7) autoNegLocalTechnologyAbility(82)};

**bAutoNegLocalTechnologyAbility BEHAVIOUR**

DEFINED AS	See “BEHAVIOUR DEFINED AS” in 30.6.1.1.5;
------------	---

**aAutoNegAdvertisedTechnologyAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX	IEEE802Dot3-MgmtAttributeModule. AutoNegTechnologyList;
MATCHES FOR BEHAVIOUR	EQUALITY, ORDERING; bAutoNegAdvertisedTechnologyAbility;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgmt(30) attribute(7) autoNegAdvertisedTechnologyAbility(83)};

**bAutoNegAdvertisedTechnologyAbility BEHAVIOUR**

DEFINED AS	See “BEHAVIOUR DEFINED AS” in 30.6.1.1.6;
------------	---

**aAutoNegReceivedTechnologyAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX	IEEE802Dot3-MgmtAttributeModule. AutoNegTechnologyList;
MATCHES FOR BEHAVIOUR	EQUALITY, ORDERING; bAutoNegReceivedTechnologyAbility;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgmt(30) attribute(7)



autoNegReceivedTechnologyAbility(84));

#### **bAutoNegReceivedTechnologyAbility BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.6.1.1.7;

#### **aAutoNegLocalSelectorAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
AutoNegSelectorList;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR bAutoNegLocalSelectorAbility;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegLocalSelectorAbility(85)};

#### **bAutoNegLocalSelectorAbility BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.6.1.1.8;

#### **aAutoNegAdvertisedSelectorAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
AutoNegSelectorList;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR bAutoNegAdvertisedSelectorAbility;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegAdvertisedSelectorAbility(86)};

#### **bAutoNegAdvertisedSelectorAbility BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.6.1.1.9;

#### **aAutoNegReceivedSelectorAbility ATTRIBUTE**

WITH ATTRIBUTE SYNTAX IEEE802Dot3-MgmtAttributeModule.  
AutoNegSelectorList;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR bAutoNegReceivedSelectorAbility;  
REGISTERED AS {iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) attribute(7)  
autoNegReceivedSelectorAbility(87)};

#### **bAutoNegReceivedSelectorAbility BEHAVIOUR**

DEFINED AS See “BEHAVIOUR DEFINED AS” in 30.6.1.1.10;

### **30A.7.3 AutoNegotiation actions**

**acAutoNegRestartAutoConfig ACTION**

BEHAVIOUR	bAutoNegRestartAutoConfig;
MODE	CONFIRMED;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) action(9) autoNegRestartAutoConfig(11)};

**bAutoNegRestartAutoConfig BEHAVIOUR**

DEFINED AS	See “BEHAVIOUR DEFINED AS” in 30.6.1.2.1;
------------	---

**acAutoNegAdminControl ACTION**

BEHAVIOUR	bAutoNegAdminControl;
WITH INFORMATION SYNTAX	IEEE802Dot3-MgmtAttributeModule. AutoNegAdminState;
MODE	CONFIRMED;
REGISTERED AS	{iso(1) std(0) iso8802(8802) csma(3) csmacdmgt(30) action(9) autoNegAdminCtrl(12)};

**bAutoNegAdminControl BEHAVIOUR**

DEFINED AS	See “BEHAVIOUR DEFINED AS” in 30.6.1.2.2;
------------	---

**30A.8 ResourceTypeID managed object class****30A.8.1 ResourceTypeID, formal definition**

- Implementation of this managed object in accordance with the definition contained in IEEE Std 802.1F-1993 is a conformance requirement of this standard.
- NOTE—A single instance of the Resource Type ID managed object exists within the oMACEntity managed object class, a single instance of the Resource Type ID managed object exists within the oRepeater managed object class, and a single instance of the Resource Type ID managed object exists within the oMAU managed object class conditional on the presence of an MII.
- The managed object itself is contained in IEEE Std 802.1F-1993, therefore only name bindings appear in this standard;

nbResourceTypeID-mac	NAME BINDING
SUBORDINATE OBJECT CLASS	“IEEE802.1F”:oResourceTypeID;
NAMED BY SUPERIOR OBJECT CLASS	oMACEntity;
WITH ATTRIBUTE	“IEEE802.1F”:aResourceTypeIDName;
REGISTERED AS	{iso(1) member-body(2) us(840) 802dot3(10006) csmacdmgt(30) nameBinding(6) resourceTypeID-mac(12)};
nbResourceTypeID-repeater	NAME BINDING

SUBORDINATE OBJECT CLASS      “IEEE802.1F”:oResourceTypeID;  
NAMED BY SUPERIOR OBJECT CLASS  
oRepeater AND SUBCLASSES;  
WITH ATTRIBUTE                   “IEEE802.1F”:aResourceTypeIDName;  
REGISTERED AS                   {iso(1) member-body(2) us(840) 802dot3(10006) csmacdmgt(30)  
                                  nameBinding(6) resourceTypeID-repeater(13)};  
nbResourceTypeID-mau                   NAME BINDING  
SUBORDINATE OBJECT CLASS      “IEEE802.1F”:oResourceTypeID;  
NAMED BY SUPERIOR OBJECT CLASS  
oMAU AND SUBCLASSES;  
WITH ATTRIBUTE                   “IEEE802.1F”:aResourceTypeIDName;  
REGISTERED AS                   {iso(1) member-body(2) us(840) 802dot3(10006) csmacdmgt(30)  
                                  nameBinding(6) resourceTypeID-mau(14)};

## Annex 30B

(normative)

### GDMO and ASN.1 definitions for management

#### 30B.1 Common attributes template

##### aCMCounter ATTRIBUTE

DERIVED FROM	“ISO/IEC 10165-5”:genericWrappingCounter;
BEHAVIOUR	bCMCounter;
REGISTERED AS	{iso(1) member-body(2) us(840) 802dot3(10006) csmacdmgt(30) attribute(7) cmCounter(88)};

##### bCMCounter BEHAVIOUR

DEFINED AS	Wraps at one of two sizes. Size is conditional. Wraps at 32 bits, that is this counter reaches its maximum value at $2^{32}-1$ (i.e., approximately $4.294 \times 10^9$ ) and then rolls over to zero on the next increment, if maximum increment rate from zero causes a rollover in 58 min or more. Wraps at 64 bits, that is this counter reaches its maximum value at $2^{64}-1$ (i.e., approximately $1.844 \dots \times 10^{19}$ ) and then rolls over to zero on the next increment, if maximum increment rate from zero would cause a 32 bit counter to roll over in less than 58 min. The counter that this is derived from initializes to zero. Initialization to zero is not a requirement of this standard;
------------	--

#### 30B.2 ASN.1 module for CSMA/CD managed objects

This ASN.1 module defines the ASN.1 types and subtypes that are referred to immediately after the WITH ATTRIBUTE SYNTAX construct in this clause’s uses of the attribute template defined in ISO/IEC 10165-4: 1992, Guidelines for the definition of managed objects (GDMO).

```
IEEE802Dot3-MgmtAttributeModule {iso(1) member-body(2) us(840) 802dot3(10006) global(1)
asn1Module(2) commonDefinitions(0) version(2)} DEFINITIONS IMPLICIT TAGS ::= BEGIN
```

EXPORTS--*everything*

IMPORTS--*implicitly imports ISO 8824: 1990*

```
MACAddress
FROM IEEE802CommonDefinitions
{iso(1) member-body(2) us(840) ieee802dot1partF(10011)
asn1Module(2) commonDefinitions(0) version1(0)};
```

```
AdminState ::= ENUMERATED {
other (1), --undefined
```

This is an Archive IEEE Standard. It has been superseded by a later version of this standard.

389

```
unknown          (2),    --initializing, true state not yet known
operational      (3),    --powered and connected
standby          (4),    --inactive but on
shutdown         (5),    --similar to power down
}
```

AttemptArray ::= SEQUENCE OF aCMCounter--array [1..attempt limit - 1]

```
AutoNegAdminState ::= ENUMERATED {
  disabled        (1),
  enabled         (2)
}
```

```
AutoNegAutoConfig ::= ENUMERATED {
  other           (1),
  configuring     (2),
  complete        (3),
  disabled        (4),
  parallel detect fail (5)
}
```

```
AutoNegRemoteSignalingDetect ::= ENUMERATED {
  detected        (1),
  notdetected     (2)
}
```

```
AutoNegSelector ::= ENUMERATED {
  other           (1),    --undefined
  ethernet        (2),    --802.3
  isoethernet     (3),    --802.9
}
```

AutoNegSelectorList ::= SEQUENCE OF AutoNegSelector

```
AutoNegTechnology ::= ENUMERATED {
  global          (0),    --reserved for future use.
  other           (1),    --undefined
  unknown         (2),    --initializing, true ability not yet known.
  10BASE-T        (14),   --10BASE-T as defined in clause 14
  100BASE-T4      (23),   --100BASE-T4 as defined in clause 23
  100BASE-TX      (25),   --100BASE-TX as defined in clause 25
  10BASE-TFD      (142),  --Full-duplex 10BASE-T
  100BASE-TXFD    (252),  --Full-duplex 100BASE-TX
  isoethernet     (8029)  --802.9 ISLAN-16T
}
```

AutoNegTechnologyList ::= SEQUENCE OF AutoNegTechnology

```
AutoPartitionState ::= ENUMERATED {
  autoPartitioned (1),
  notAutoPartitioned (2)
}
```

```
BbandFrequency ::= SEQUENCE {
  xmitCarrierFrequency [1] INTEGER , --Frequency in MHz times 4 (250 kHz resolution)
  translationFrequency [2] INTEGER --Frequency in MHz times 4 (250 kHz resolution)
}
```

```
BbandXmitRcvSplitType ::= ENUMERATED {
    other          (1),    --undefined
    single         (2),    --single-cable system
    dual           (3),    --dual-cable system, offset normally zero
}
```

```
BitString ::= BIT STRING (SIZE (1..1024))
```

```
Jabber ::= SEQUENCE {
    jabberFlag      [1]    JabberFlag,
    jabberCounter   [2]    JabberCounter
}
```

```
JabberFlag ::= ENUMERATED {
    other          (1),    --undefined
    unknown        (2),    --initializing, true state not yet known
    normal         (3),    --state is true or normal
    fault          (4),    --state is false, fault or abnormal
}
```

```
JabberCounter ::= INTEGER (0..232-1)
```

```
MauTypeList ::= SEQUENCE OF TypeValue
```

```
MediaAvailState ::= ENUMERATED {
    other          (1),    --undefined
    unknown        (2),    --initializing, true state not yet known
    available      (3),    --link or light normal, loopback normal
    not available  (4),    --link loss or low light, no loopback
    remote fault   (5),    --remote fault with no detail
    invalid signal (6),    --invalid signal, applies only to 10BASE-FB
    remote jabber  (7),    --remote fault, reason known to be jabber
    remote link loss (8),  --remote fault, reason known to be far-end link loss
    remote test    (9),    --remote fault, reason known to be test
}
```

```
MIIDetect ::= ENUMERATED {
    unknown          (1),
    presentNothingConnected (2),
    presentConnected (3),
    absent           (4)
}
```

```
MulticastAddressList ::= SEQUENCE OF MACAddress
```

```
OneOfName ::= INTEGER (1..1024)
```

```
PhyTypeList ::= SEQUENCE OF PhyTypeValue
```

```
PhyTypeValue ::= ENUMERATED {
    other          (1),    --undefined:
    unknown        (2),    --initializing, true state or type not yet known
}
```

none	(3),	--MII present and nothing connected
10 Mb/s	(7),	--clause 7 10 Mb/s Manchester
100BASE-T4	(23),	--clause 23 100 Mb/s 8B/6T
100BASE-X	(24)	--clause 24 100 Mb/s 4B/5B
}		

PortAdminState ::= ENUMERATED {  
disabled (1),  
enabled (2)  
}

RepeaterHealthData ::= OCTET STRING (SIZE (0..255))

RepeaterHealthInfo ::= SEQUENCE {  
repeaterHealthState [1] RepeaterHealthState,  
repeaterHealthText [2] RepeaterHealthText OPTIONAL,  
repeaterHealthData [3] RepeaterHealthData OPTIONAL  
}

RepeaterHealthState ::= ENUMERATED {  
other (1), --undefined or unknown  
ok (2), --no known failures  
repeaterFailure (3), --known to have a repeater-related failure  
groupFailure (4), --known to have a group-related failure  
portFailure (5), --known to have a port-related failure  
generalFailure (6) --has a failure condition, unspecified type  
}

RepeaterType ::= ENUMERATED {  
other (1), --See 20.2.2.3:  
unknown (2), --initializing, true state or type not yet known  
10 Mb/s (9), --clause 9 10 Mb/s Baseband repeater  
100 Mb/sClassI (271), --clause 27 class I 100 Mb/s Baseband repeater  
100 Mb/sClassII (272), --clause 27 class II 100 Mb/s Baseband repeater  
802.9a (99) --Integrated services repeater  
}

RepeaterHealthText ::= PrintableString (SIZE (0..255))

TrueFalse ::= BOOLEAN

TypeList ::= SEQUENCE OF TypeValue

TypeValue ::= ENUMERATED {  
global (0), --undefined  
other (1), --undefined  
unknown (2), --initializing, true state not yet known  
AUI (7), --no internal MAU, view from AUI  
10BASE5 (8), --Thick coax MAU as specified in clause 8  
FOIRL (9), --FOIRL MAU as specified in 9.9  
10BAS (10), --Thin coax MAU as specified in clause 10  
10BROAD36 (11), --Broadband DTE MAU as specified in clause 11  
10BASE-T (14), --UTP MAU as specified in clause 14  
10BASE-FP (16), --Passive fiber MAU, specified in clause 16  
10BASE-FB (17), --Synchronous fiber MAU, specified in clause 17  
}

10BASE-FL	(18),	--Asynchronous fiber MAU, specified in clause 18
100BASE-T4	(23),	--Four-pair Category 3 UTP as specified in clause 23
100BASE-TX	(25),	--Two-pair Category 5 UTP as specified in clause 25
100BASE-FX	(26),	--X fiber over PMD as specified in clause 26
802.9a	(99)	--Integrated services MAU as specified in IEEE Std 802.9 ISLAN-16T
}		

END