IEEE P802.11
Wireless LANs

Ballot result and summary of major changes to IEEE 802.11/D4 Rev.

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Author: Vic Hayes
Lucent technologies
Zadelstede 1-10
3431 JZ Nieuwegein, the Netherlands
Phone: +31 30 609 7528
Fax: +31 30 609 7556
e-Mail: vichayes@lucent.com

Ballot result

The LMSC ballot on IEEE P802.11 closed on May 13, 1998 with the following result:

90	Number of eligible people in Ballot Group
68	Affirmative votes
0	Negative votes
4	Abstention votes
72	Votes = 80 % Returned (75 % required)
	5 % Abstebtion
68	Affirmative votes
0	Negative votes
68	Votes = 100 % Affirmative

5 voters submitted comment

These comments were addressed and the disposition of the comment is contained in doc.: 98/213.
The resolution resulted in changes, some of which can be considered to be technical. The full file is available in doc.: 802.11rev/D5.1.

The major changes are summarised in the remainder of this document.

List of major changes made in IEEE P802.11rev

Addition of new notification and other objects related to disassociation and authentication:

```
dot11Deauthenticate NOTIFICATION-TYPE
        OBJECTS { ifIndex, dot11DeauthenticateReason,
             dot11DeauthenticateStation }
        STATUS current
        DESCRIPTION

        "The deauthenticate notification shall be sent when the STA
        sends a Deauthentication frame. The value of the notification
        shall include the MAC address of the MAC to which the Deauthentication
        frame was sent and the reason for the deauthentication.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."

    ::= { dot11SMTnotification 0 2 }

dot11AuthenticateFail NOTIFICATION-TYPE
        OBJECTS { ifIndex, dot11AuthenticateFailStatus,
             dot11AuthenticateFailStation }
        STATUS current
        DESCRIPTION

        "The authenticate failure notification shall be sent when the STA
        sends an Authentication frame with a status code other than
        “successful”. The value of the notification
        shall include the MAC address of the MAC to which the Authentication
        frame was sent and the reason for the authentication failure.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."

::= { dot11SMTnotification 0 3 }

dot11DisassociateReason OBJECT-TYPE
            SYNTAX INTEGER(0..65535)
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the most recently transmitted Reason
                  Code in a Disassociation frame.  If no Disassociation frame
                  has been transmitted, the value of this attribute shall be
                  0.”

            REFERENCE “IEEE Std 802.11-1997, 7.3.1.7"
      ::= { dot11StationConfigEntry 15 }

dot11DisassociateStation OBJECT-TYPE
            SYNTAX MacAddress
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the MAC address from the Address 1
                  field of the most recently transmitted Disassociation frame.
                  If no Disassociation frame has been transmitted, the value
                  of this attribute shall be 0."
      ::= { dot11StationConfigEntry 16 }

dot11DeauthenticateReason OBJECT-TYPE
            SYNTAX INTEGER(0..65535)
```

```
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the most recently transmitted Reason
                  Code in a Deauthentication frame.  If no Deauthentication
                  frame has been transmitted, the value of this attribute
                  shall be 0."

            REFERENCE “IEEE Std 802.11-1997, 7.3.1.7"
      ::= { dot11StationConfigEntry 17 }

dot11DeauthenticateStation OBJECT-TYPE
            SYNTAX MacAddress
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the MAC address from the Address 1
                  field of the most recently transmitted Deauthentication
                  frame.  If no Deauthentication frame has been transmitted,
                  the value of this attribute shall be 0."
      ::= { dot11StationConfigEntry 18 }

dot11AuthenticateFailStatus OBJECT-TYPE
            SYNTAX INTEGER(0..65535)
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the most recently transmitted Status
                  Code in a failed Authentication frame.  If no failed
                  Authentication frame has been transmitted, the value of this
                  attribute shall be 0."

            REFERENCE “IEEE Std 802.11-1997, 7.3.1.9"
      ::= { dot11StationConfigEntry 19 }

dot11AuthenticateFailStation OBJECT-TYPE
            SYNTAX MacAddress
            MAX-ACCESS read-only
            STATUS current
            DESCRIPTION
                  "This attribute holds the MAC address from the Address 1
                  field of the most recently transmitted failed Authentication
                  frame.  If no failed Authentication frame has been
                  transmitted, the value of this attribute shall be 0."
      ::= { dot11StationConfigEntry 20 }
```

Clarification of the WEP secret key and IV

102. In the ninth paragraph of 8.2.3, replace the sentence “The 64-bit PRNG seed is formed using the secret key as the most significant 40 bits and the initialization vector (IV) as the least significant 24 bits.” **with** “The PRNG seed is 64 bits. Bits 0 through 23 of the IV correspond to bits 0 through 23 of the PRNG seed, respectively. Bits 0 through 39 of the secret key correspond to bits 24 through 63 of the PRNG seed, respectively. The bit and octet numbering conventions in 7.1.1 apply to the PRNG seed, secret key, and the IV. The numbering of the octets of the PRNG seed corresponds to that of the RC4 key.”

Deprecation of dot11StationID

```
Dot11StationConfigEntry ::=
        SEQUENCE {
         dot11StationID                          MacAddress,
             dot11MediumOccupancyLimit               INTEGERInteger32,
             dot11CFPollable                         TruthValueINTEGER,
```

```
            dot11CFPPeriod                          INTEGERInteger32,
            dot11CFPMaxDuration                     INTEGERInteger32,
            dot11AuthenticationResponseTimeOut      INTEGERInteger32,
            dot11PrivacyOptionImplemented       INTEGER,
            dot11PowerManagementMode                INTEGER,
            dot11DesiredSSID                    OCTET STRING,
            dot11DesiredBSSType                 INTEGER,
            dot11OperationalRateSet             OCTET STRING,
            dot11BeaconPeriod                   INTEGERInteger32,
            dot11DTIMPeriod                     INTEGERInteger32,
            dot11AssociationResponseTimeOut     INTEGERInteger32,
            dot11DisassociateReason             INTEGER,
            dot11DisassociateStation            MacAddress,

            dot11DeauthenticateReason           INTEGER,
            dot11DeauthenticateStation          MacAddress,
            dot11AuthenticateFailStatus         INTEGER,
            dot11AuthenticateFailStation        MacAddress }

dot11StationID OBJECT-TYPE
        SYNTAX MacAddress
        MAX-ACCESS read-write
        STATUS deprecatedcurrent
        DESCRIPTION

            "The purpose of dot11StationID is to allow a manager to identify
            a station for its own purposes.  This attribute provides
            for that eventuality while keeping the true MAC address
            independent.  Its syntax is MAC address and default value
            is the station's assigned, unique MAC address."

    ::= { dot11StationConfigEntry 1 }
```

Setting ranges in the MIB on many attributes to minimize storage requirements

Change the Registration of notification objects in the MIB to comply with SMIv2

The changes on the latter 2 items, and editorial changes, are provided on the next pages.

19. In 11.2.1.1 and 11.2.1.9, replace the first occurrence of "aListenInterval ~~MIB attribute~~**" with "**the ListenInterval parameter of the MLME-Associate.request primitive**". Replace the second occurrence of** "aListenInterval" **in 11.2.1.9 with** "ListenInterval".

26. In 14.6.8, replace "72**" in set 3 for North America/most of Europe with "**71**" and replace** "$f_x(I)$" with "$f_x(i)$".

34. In 15.3.2, Table 58, change:

"dot11CCAModeSupport**" into "**dot11CCAModeSupported**"**
"dot11SupportTxAntennas**" into "**dot11SupportedTxAntenna**"**
"dot11SupportRxAntennas**" into "**dot11SupportedRxAntenna**"**
"dot11DiversitySelectRx**" into "**dot11DiversitySelectionRx**"**
"agPhyOperationGroup**" into "**dot11PhyOperationComplianceGroup**"**
"agPhyRateGroup**" into "**dot11Phy~~SupportedData~~Rates~~Group~~**"**
"agPhyAntennaGroup**" into "**dot11PhyAntennaComplianceGroup**"**
"agPhyTxPowerGroup**" into "**dot11PhyTxPowerComplianceGroup**"**
"agPhyDSSSGroup**" into "**dot11PhyDSSSComplianceGroup**"**
"agAntennasListGroup**" into "**dot11AntennasListGroup**"**

36. In 16.4, Table 74, delete the rows of the following attributes:

and add a row to Table 74

dot11PhyTempType	X'01'	Static	Identical for all conformant PHY

```
-- ************************************************************************
-- * IEEE 802.11 Management Information Base
-- ************************************************************************
IEEE802dot11-MIB DEFINITIONS ::= BEGIN
    IMPORTS
        MODULE-IDENTITY, OBJECT-TYPE,
        NOTIFICATION-TYPE,Integer32, Counter32  FROM SNMPv2-SMI
        DisplayString , MacAddress, RowStatus   FROM SNMPv2-TC
        TruthValue                              FROM SNMPv2-TC
        MODULE-COMPLIANCE, OBJECT-GROUP         FROM SNMPv2-CONF
        ifIndex                                 FROM RFC1213-MIB;

-- ************************************************************************
-- *  MODULE IDENTITY
-- ************************************************************************
    ieee802dot11 MODULE-IDENTITY
    LAST-UPDATED "9805280000Z~~9801300000Z~~"
    ORGANIZATION "IEEE 802.11"
    CONTACT-INFO
           "WG E-mail: stds-802-11@ieee.org

                Chair: Vic Hayes
              Postal: Lucent Technologies, Inc.
                      Zadelstede 1-10
                      Nieuwegein, Netherlands
                      3431 JZ
                 Tel: +31 30 609 7528
                 Fax: +31 30 231 6233
```

```
                E-mail: vichayes@lucent.com

                Editor: Bob O'Hara
                Postal: Informed Technology, Inc.
                        151A Charles Street
                        New York, NY 10014 USA
                   Tel: +1 212 463 7937
                   Fax: +1 212 645 6719
                E-mail: bob@informed-technology.com"
    DESCRIPTION
        "The MIB module for IEEE 802.11 entities.
        iso(1).member-body(2).us(840).ieee802dot11(10036)"
    ::= { 1 2 840 10036 }

-- ****************************************************************
-- *  MIB attribute OBJECT-TYPE definitions follow
-- ****************************************************************

-- ****************************************************************
-- *  SMT Station Config  Table
-- ****************************************************************
dot11StationConfigTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11StationConfigEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "Station Configuration attributes.  In tablular form to
            allow for multiple instances on an agent."
    ::= {  dot11smt 1 }

dot11StationConfigEntry OBJECT-TYPE
        SYNTAX Dot11StationConfigEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "An entry in the dot11StationConfig~~grp~~ Table.  It is
            possible for there to be multiple IEEE 802.11 interfaces
            on one agent, each with its unique MAC address. The
            relationship between an IEEE 802.11 interface and an
            interface in the context of the Internet-standard MIB is
            one-to-one.  As such, the value of an ifIndex object
            instance can be directly used to identify corresponding
            instances of the objects defined herein.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."


        INDEX {ifIndex}
    ::= {  dot11StationConfigTable 1 }


dot11MediumOccupancyLimit OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..1000)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "This attribute shall indicate the maximum amount of time,
            in TU, that a point coordinator may control the usage of
            the wireless medium without relinquishing control for long
            enough to allow at least one instance of DCF access to the
            medium.  The default value of this attribute shall be 100,
            and the maximum value shall be 1000."

```

```
    ::= { dot11StationConfigEntry 2 }

dot11CFPollable OBJECT-TYPE
        SYNTAX TruthValue~~INTEGER { true(1), false (2) }~~
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "When this attribute is true, it shall indicate that the STA
        is able to respond to a CF-Poll with a data frame within a
        SIFS time. This attribute shall be false if the STA is not
        able to respond to a CF-Poll with a data frame within a SIFS
        time."

    ::= { dot11StationConfigEntry 3 }

dot11CFPPeriod OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The attribute shall describe the number of DTIM intervals
            between the start of CFPs.  It is modified by
            MLME-START.request primitive."

::= {  dot11StationConfigEntry 4 }

dot11CFPMaxDuration OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..65535)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "The attribute shall describe the maximum duration of the CFP
        in TU that may be generated by the PCF. It is modified by
        MLME-START.request primitive."

::= {  dot11StationConfigEntry 5 }

dot11AuthenticationResponseTimeOut OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (1..4294967295)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "This attribute shall specify the number of TU that a
            responding STA should wait for the next frame in the
            authentication sequence."

    ::= {  dot11StationConfigEntry 6 }

dot11PrivacyOptionImplemented OBJECT-TYPE
        SYNTAX INTEGER {   true (1),   false (2) }
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This attribute, when true, shall indicate that the IEEE
             802.11 WEP option is implemented.  The default value of
             this attribute shall be false."

    ::= {  dot11StationConfigEntry 7 }

dot11PowerManagementMode OBJECT-TYPE
            SYNTAX INTEGER { active(1), powersave(2) }
            MAX-ACCESS read-write
```

```
            STATUS current
            DESCRIPTION
                  "This attribute shall specify the power management
                   mode of the STA. When set to active, it shall indicate
                   that the station is not in power-save mode. When set
                   to powersave, it shall indicate that the station is
                   in power-save mode. The power management mode is
                   transmitted in all frames according to the rules
                   in  7.1.3.1.7."
      ::= { dot11StationConfigEntry 8 }

dot11DesiredSSID OBJECT-TYPE
            SYNTAX OCTET STRING (SIZE(0..32))
            MAX-ACCESS read-write
            STATUS current
            DESCRIPTION
                  "This attribute reflects the Service Set ID used
                  in the DesiredSSID parameter of the most recent
                  MLME_Scan.request.  This value may be modified
                  by an external management entity and used by the
                  local SME to make decisions about the Scanning process."
      ::= { dot11StationConfigEntry 9 }

dot11BeaconPeriod OBJECT-TYPE
            SYNTAX INTEGERInteger32 (1..65535)
            MAX-ACCESS read-write
            STATUS current
            DESCRIPTION
                  "This attribute shall specify the number of TU that a
                   station shall use for scheduling Beacon transmissions.
                   This value is transmitted in Beacon and Probe Response
                   frames."
      ::= { dot11StationConfigEntry 12 }

dot11DTIMPeriod OBJECT-TYPE
            SYNTAX INTEGERInteger32 (1..255)
            MAX-ACCESS read-write
            STATUS current
            DESCRIPTION
                  "This attribute shall specify the number of beacon
                   intervals that shall elapse between transmission of
                   Beacons frames containing a TIM element whose DTIM
                   Count field is 0. This value is transmitted in
                   the DTIM Period field of Beacon frames."
      ::= { dot11StationConfigEntry 13 }

dot11AssociationResponseTimeOut OBJECT-TYPE
            SYNTAX INTEGERInteger32(1..4294967295)
            MAX-ACCESS read-write
            STATUS current
            DESCRIPTION
                  "This attribute shall specify the number of TU that a
                   requesting STA should wait for a response to a
                   transmitted association-request MMPDU."
      ::= { dot11StationConfigEntry 14 }


Dot11AuthenticationAlgorithmsEntry ::= SEQUENCE {
            dot11AuthenticationAlgorithmsIndex      Integer32,
            dot11AuthenticationAlgorithm      INTEGER,
            dot11AuthenticationAlgorithmsEnable       TruthValueINTEGER,
            dot11AuthenticationAlgorithmsStatus       RowStatus }

dot11AuthenticationAlgorithmsEnable  OBJECT-TYPE
        SYNTAX TruthValueINTEGER { true(1), false (2) }
        MAX-ACCESS read-create
```

```
        STATUS current
        DESCRIPTION

        "This attribute, when true at a station, shall enable the acceptance
        of the authentication algorithm described in the corresponding table
        entry in authentication frames received by the station that have odd
        authentication sequence numbers.  The default value of this attribute
        shall be 1 for the Open System table entry and 2 for all other table
        entries."

    ::= {  dot11AuthenticationAlgorithmsEntry 3 }

~~dot11AuthenticationAlgorithmsStatus OBJECT-TYPE~~
~~        SYNTAX RowStatus~~
~~        MAX-ACCESS read-create~~
~~        STATUS current~~
~~        DESCRIPTION~~

~~            "The status column used for creating, modifying, and~~
~~            deleting instances of the columnar objects in the Authentication~~
~~            Algorithms Table."~~

~~        DEFVAL {active}~~
~~    ::= { dot11AuthenticationAlgorithmsEntry 4 }~~

Dot11WEPDefaultKeysEntry ::= SEQUENCE {
            dot11WEPDefaultKeyIndex     INTEGER~~Integer32~~,
            dot11WEPDefaultKeyValue     WEPKeytype}

dot11WEPDefaultKeyIndex OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (1..4)
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxiliary~~auxillary~~ variable used to identify instances
            of the columnar objects in the WEP Default Keys Table.
            The value of this variable is equal to the WEPDefaultKeyID + 1"
    ::= {  dot11WEPDefaultKeysEntry 1 }

dot11WEPDefaultKeyValue OBJECT-TYPE
        SYNTAX WEPKeytype
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "A WEP default secret key value~~ OCTET STRING (SIZE(5))~~."
    ::= {  dot11WEPDefaultKeysEntry 2 }

Dot11WEPKeyMappingsEntry ::= SEQUENCE {
            dot11WEPKeyMappingIndex     Integer32,
            dot11WEPKeyMappingAddress       MacAddress,
            dot11WEPKeyMappingWEPOn TruthValue~~INTEGER~~,
            dot11WEPKeyMappingValue~~WEPkey~~    WEPKeytype,
            dot11WEPKeyMappingStatus      RowStatus }

dot11WEPKeyMappingWEPOn OBJECT-TYPE
        SYNTAX TruthValue~~INTEGER {   true(1),   false(2) }~~
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION
            "Boolean as to whether WEP is to be used when communicating
            with the dot11WEPKeyMappingAddress STA."
    ::= {  dot11WEPKeyMappingsEntry 3 }

dot11WEPKeyMappingValue~~WEPkey~~ OBJECT-TYPE
        SYNTAX WEPKeytype
        MAX-ACCESS read-create
        STATUS current
```

```
        DESCRIPTION
            "A WEP secret key value~~ OCTET STRING (SIZE(5))~~."
    ::= {  dot11WEPKeyMappingsEntry 4 }


-- ****************************************************************
-- *    dot11Privacy~~grp~~Table  TABLE                             *
-- ****************************************************************
dot11PrivacyTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PrivacyEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group containing attributes concerned with IEEE 802.11
            Privacy.  Created as a table to allow multiple
            instantiations on an agent."

    ::= {  dot11smt 5 }

dot11PrivacyEntry OBJECT-TYPE
        SYNTAX Dot11PrivacyEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PrivacyTable~~grp~~ Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PrivacyTable 1 }

Dot11PrivacyEntry ::= SEQUENCE {
             dot11PrivacyInvoked                INTEGER,
             dot11WEPDefaultKeyID               INTEGER~~Integer32~~,
             dot11WEPKeyMappingLength           Integer32,
             dot11ExcludeUnencrypted            INTEGER,
             dot11WEPICVErrorCount              Integer32,
             dot11WEPExcludedCount              Integer32}


dot11WEPDefaultKeyID  OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..3)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "This attribute shall indicate the use of the first,
            second, third, or fourth element of the WEPDefaultKeys
            array when set to values of zero, one, two, or three.  The
            default value of this attribute shall be 0."
        REFERENCE "IEEE Std 802.11-1997, 8.3.2"
    ::= {  dot11PrivacyEntry 2 }

dot11Disassociate NOTIFICATION-TYPE
        OBJECTS { ifIndex, dot11DisassociateReason,
             dot11DisassociateStation~~dot11StationID~~ }
        STATUS current
        DESCRIPTION

        "The disassociate notification shall be sent when the STA
        sends~~receives~~ a Disassociation~~e~~ frame. The value of the notification
        shall include~~be~~ the MAC address~~StationID~~ of the MAC to~~on~~ which the
Disassociation~~e~~
        frame was sent and the reason for the disassociation~~received~~.
```

```
            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."

        REFERENCE "IEEE Std 802.11-1997, 11.4.5.1.1"
    ::= { dot11SMTnotification 0 1 }

-- ****************************************************************
-- *    dot11OperationTablegrp  TABLE
-- ****************************************************************

Dot11OperationEntry ::= SEQUENCE {
            dot11MACAddress                 MacAddress,
            dot11RTSThreshold               INTEGERInteger32,
            dot11ShortRetryLimit            INTEGERInteger32,
            dot11LongRetryLimit             INTEGERInteger32,
            dot11FragmentationThreshold     INTEGERInteger32,
            dot11MaxTransmitMSDULifetime    INTEGERInteger32,
            dot11MaxReceiveLifetime         INTEGERInteger32,
            dot11ManufacturerID             DisplayString,
            dot11ProductID                  DisplayString}


dot11RTSThreshold OBJECT-TYPE
        SYNTAX INTEGERInteger32 (0..2347)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

dot11ShortRetryLimit OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

dot11LongRetryLimit OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

dot11FragmentationThreshold OBJECT-TYPE
        SYNTAX INTEGERInteger32 (256..2346)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "This attribute shall specify the current maximum size, in
        octets, of the MPDU that may be delivered to the PHY. An MSDU
        shall be broken into fragments if its size exceeds the value
        of this attribute after adding MAC headers and trailers. An MSDU or
        MMPDU shall be fragmented when the resulting frame has an individual
        address in the Address1 field, and the length of the frame is equal
        to or larger than this threshold. The default value for this
        attribute shall be the lesser of 2346 or the equal to aMPDUMaxLength
        of the attached PHY and shall never exceed the lesser of 2346 or the
        aMPDUMaxLength of the attached PHY. The value of this attribute shall
        never be less than 256. The default value of this attribute is 2346."

    ::= {  dot11OperationEntry 5 }

dot11MaxReceiveLifetime OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..4294967295)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
```

```
dot11GroupAddressesIndex OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxiliary~~auxillary~~ variable used to identify~~indentify~~


dot11manufacturerOUI OBJECT-TYPE
        SYNTAX OCTET STRING (SIZE(3))
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "Takes the value of an organizationally unique identifier."
    ::= {  dot11ResourceInfoEntry 1 }

dot11manufacturerName OBJECT-TYPE
        SYNTAX DisplayString (SIZE(0..128))
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "A printable string used to identify the manufacturer of the
            resource.  Maximum string length is 128 octets."
    ::= {  dot11ResourceInfoEntry 2 }

dot11manufacturerProductName OBJECT-TYPE
        SYNTAX DisplayString (SIZE(0..128))
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "A printable string used to identify the manufacturer's product
            name of the resource.  Maximum string length is 128 octets."
    ::= {  dot11ResourceInfoEntry 3 }

dot11manufacturerProductVersion OBJECT-TYPE
        SYNTAX DisplayString (SIZE(0..128))
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

dot11PhyOperationTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyOperationEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

        "PHY level attributes concerned with
        operation.  Implemented as a table indexed on
        ifIndex~~Station ID~~ to allow for multiple instantiations on an
        Agent."

    ::= {  dot11phy 1 }

dot11TempType OBJECT-TYPE
        SYNTAX INTEGER {Temp~~t~~Type1(1), Temp~~t~~Type2(2), Temp~~t~~Type3(3)}
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "There are different operating temperature requirements
        dependent on the anticipated environmental conditions. This
        attribute describes the current PHY's operating temperature
        range capability. Currently defined values and their
        corresponding temperature ranges are:

        Type 1 = X'01'-Commercial range of 0 to 40 degrees C,
```

```
        Type 2 = X'02'-Industrial range of -20 to 55 degrees C,

        Type 3 = X'03'-Industrial range of -30 to 70 degrees C."

    ::= {   dot11PhyOperationEntry 3 }



dot11PhyAntennaTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyAntennaEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group of attributes for PhyAntenna.  Implemented as a
            table indexed on ifIndex to allow for multiplemulitple instances
on
            an Dot11agent."

    ::= {  dot11phy 2}

dot11DiversitySupport OBJECT-TYPE
        SYNTAX INTEGER {fixedlist(1), notsupported(2), dynamic(3)}
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "This implementation's support for diversity, encoded as:

        X'01'-diversity is available and is performed over the fixed
            list of antennas defined in dot11DiversitySelectionRx.

        X'02'-diversity is not supported.

        X'03'-diversity is supported and control of diversity is also
            available, in which case the attribute
            adot11DiversitySelectionRx can be dynamically modified by the
            LME."
    ::= {  dot11PhyAntennaEntry 2 }

Dot11PhyTxPowerEntry ::= SEQUENCE {
            dot11NumberSupportedPowerLevels  INTEGERInteger32,
            dot11TxPowerLevel1      INTEGERInteger32,
            dot11TxPowerLevel2      INTEGERInteger32,
            dot11TxPowerLevel3      INTEGERInteger32,
            dot11TxPowerLevel4      INTEGERInteger32,
            dot11TxPowerLevel5      INTEGERInteger32,
            dot11TxPowerLevel6      INTEGERInteger32,
            dot11TxPowerLevel7      INTEGERInteger32,
            dot11TxPowerLevel8      INTEGERInteger32,
            dot11CurrentTxPowerLevel    INTEGERInteger32}

dot11NumberSupportedPowerLevels OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..8)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The number of power levels supported by the PMD.
            This attribute can have a value of 1 to 8."
    ::= {  dot11PhyTxPowerEntry 1 }

dot11TxPowerLevel1 OBJECT-TYPE
        SYNTAX INTEGERInteger32 (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
```

```
            "The transmit output power for LEVEL1 in mW.
            This is also the default power level."
    ::= {   dot11PhyTxPowerEntry 2 }

dot11TxPowerLevel2 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL2 in mW."
    ::= {   dot11PhyTxPowerEntry 3 }

dot11TxPowerLevel3 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL3 in mW."
    ::= {   dot11PhyTxPowerEntry 4 }

dot11TxPowerLevel4 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL4 in mW."
    ::= {   dot11PhyTxPowerEntry 5 }

dot11TxPowerLevel5 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0.10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL5 in mW."
    ::= {   dot11PhyTxPowerEntry 6 }

dot11TxPowerLevel6 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL6 in mW."
    ::= {   dot11PhyTxPowerEntry 7 }

dot11TxPowerLevel7 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL7 in mW."
    ::= {   dot11PhyTxPowerEntry 8 }

dot11TxPowerLevel8 OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (0..10000)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL8 in mW."
    ::= {   dot11PhyTxPowerEntry 9 }

dot11CurrentTxPowerLevel OBJECT-TYPE
        SYNTAX INTEGER~~Integer32~~ (1..8)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

Dot11PhyFHSSEntry ::= SEQUENCE {
```

```
            dot11HopTime   INTEGERInteger32,
            dot11CurrentChannelNumber  INTEGERInteger32,
            dot11MaxDwellTime  INTEGERInteger32,
            dot11CurrentDwellTime  INTEGERInteger32,
            dot11CurrentSet    INTEGERInteger32,
            dot11CurrentPattern    INTEGERInteger32,
            dot11CurrentIndex  INTEGERInteger32}

dot11HopTime OBJECT-TYPE
        SYNTAX INTEGERInteger32 (224)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The time in microseconds for the PMD to change from
            channel 2 to channel 80"
    ::= {   dot11PhyFHSSEntry 1 }

dot11CurrentChannelNumber OBJECT-TYPE
        SYNTAX INTEGERInteger32 (0..99)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
        "The current channel number of the frequency output by the RF
        synthesizer"
    ::= {   dot11PhyFHSSEntry 2 }

dot11MaxDwellTime OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..65535)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The maximum time in TU that the transmitter
            is permitted to operate on a single channel."
    ::= {   dot11PhyFHSSEntry 3 }

dot11CurrentDwellTime OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..65535)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current time in TU that the transmitter shall operate
            on a single channel, as set by the MAC.  Default is 19 TU."
    ::= {   dot11PhyFHSSEntry 4 }

dot11CurrentSet OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current set of patterns the PHY
            LME is using to determine the hopping sequence. "
    ::= {   dot11PhyFHSSEntry 5 }

dot11CurrentPattern OBJECT-TYPE
        SYNTAX INTEGERInteger32 (0..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current pattern the PHY LME is
            using to determine the hop sequence."
    ::= {   dot11PhyFHSSEntry 6 }

dot11CurrentIndex OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
```

```
dot11PhyDSSSTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyDSSSEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Entry of attributes for dot11PhyDSSSEntry.  Implemented as a
            table indexed on ifIndex allow for multiplemulitple instances on
            an Agent."

    ::= {  dot11phy 5 }

Dot11PhyDSSSEntry ::= SEQUENCE {
             dot11CurrentChannel    INTEGERInteger32,
             dot11CCAModeSupported  INTEGERInteger32,
             dot11CurrentCCAMode    INTEGERInteger32,
             dot11EDThreshold   Integer32}

dot11CurrentChannel OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..14)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current operating frequency channel of the DSSS
            PHY. Valid channel numbers are as defined in 15.4.6.2"
    ::= {   dot11PhyDSSSEntry 1 }

dot11CCAModeSupported OBJECT-TYPE
        SYNTAX INTEGERInteger32 (1..7)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "dot11CCAModeSupported is a bit-significant value, representing
all of the CCA modes supported by the PHY.  Valid values are:

            energy detect only (ED_ONLY) = 01,
            carrier sense only (CS_ONLY) = 02,
            carrier sense and energy detect (ED_and_CS)= 04

            or the logical sum of any of these values."
    ::= {   dot11PhyDSSSEntry 2 }

dot11CurrentCCAMode OBJECT-TYPE
        SYNTAX INTEGERInteger32 {ED_ONLY(1), CS_ONLY(2), ED_and_CS(4)}
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
dot11WEPKeyMappingWEPOn,
                dot11WEPKeyMappingValueWEPkey , dot11WEPKeyMappingAddress,
                dot11WEPKeyMappingStatus }

        STATUS current
        DESCRIPTION
            "The SMTPrivacy package is a set of attributes that shall be
            present if WEP is implemented in the STA."
    ::= {dot11Groups 2 }

dot11PhyIRComplianceGroup OBJECT-GROUP
        OBJECTS {dot11CCAWatchdogTimerMax, dot11CCAWatchdogCountMax,
        dot11CCAWatchdogTimerMin, dot11CCAWatchdogCountMin}
        STATUS current
        DESCRIPTION
            "Attributes that configure the baseband IRDSSS for IEEE 802.11."
    ::= { dot11Groups 12 }
```

103. In 9.3.3.3, add the following text before the last sentence of the third paragraph :
"MaxMPDUTime is the time to transmit the maximum-sized MAC frame, expanded by WEP, plus the time to transmit any PHY preamble, header, trailer, and expansion bits, if any."

104. In 10.3 and all of its subclauses, replace every occurrence of "1 through 127" **with** "2 through 127"**.**