Changes to IEEE Std. 802.11-1997 to Address Requests for Interpretation

Abstract: This submission provides detailed changes required to be made to IEEE Std 802.11-1997 to resolve the requests for interpretation from Matt Fischer, Johnny Zweig, Bob O'Hara, Anil Sanwalka, and Henri Moelard.

Directions to the editor **are in bold type.**

1. **In clause 7.3.2.3, replace "**particular set**" with "**current set (aCurrentSet)**", "**individual pattern**" with "**current pattern (aCurrentPattern)**", and "**current channel index**" with "**current index (aCurrentIndex)**". Add the following statement to the end of the clause: "**The description of the attributes used in this clause can be found in clause 14.8.2.1.**"**
2. **In clause 14.8.2.1.39, replace "**26 patterns**" with "**78 patterns**", "**what pattern the station is using to determine the hopping sequence.**" with "**the *x* value used in the equation for $f_x(i)$ in clause 14.6.8 to calculate the current channel number.**", and "**1 to 26**" with "**0 to 77**".**
3. **In clause 14.8.2.1.40, replace "**defines what index the station will use to determine the next hop channel number**" with "**is the *i* value used in the equation for $f_x(i)$ in clause 14.6.8 to calculate the current channel number**", and "**1 to 26**" with "**1 to 79**".**
4. **In clause 14.6.8, replace "**72**" in set 3 for North America/most of Europe with "**71**".**
5. **In clause 6.2.1.3, replace the following text in item k): replace "**the key referenced by aWEPDefaultKeyID or a specific key mapping is null**" with "**cannot encrypt with a null key**".**
6. **In clause 10.3.10.1 in the Description column of the BSSBasicRateSet, add "**and transmit**" after "**must be able to receive**".**
7. **In clause 7.3.2.2, replace "**all the rates which this STA is capable of receiving**" with "**the rates in the OperationalRateSet as described in the MLME_Join.request and MLME_Start.request primitives**".**
8. **In clause 11.4, delete all text in this clause, delete all of it subclauses and replace with the following text: "**The MIB comprises the managed objects, attributes, actions and notifications required to properly manage a station. The definition of these managed objects, attributes, actions and notifications, as well as their structure, is presented in Annex D.**"**
9. **In clause 13, delete all text in this clause, delete all of it subclauses and replace with the following text: "**The MIB comprises the managed objects, attributes, actions and notifications required to properly manage a station. The definition of these managed objects, attributes, actions and notifications, as well as their structure, is presented in Annex D.**"**
10. **In Annex D, delete all text in this clause and replace it with the text on the following pages.**

```
-- ************************************************************************
-- * 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
        MODULE-COMPLIANCE, OBJECT-GROUP         FROM SNMPv2-CONF
        ifIndex                                 FROM RFC1213-MIB;

-- ************************************************************************
-- *  MODULE IDENTITY
-- ************************************************************************
    ieee802dot11 MODULE-IDENTITY
    LAST-UPDATED "9712020000Z"
    ORGANIZATION "IEEE 802.11"
    CONTACT-INFO
           "WG E-mail: stds-802-11@ieee.org

                Chair: Vic Hayes
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                      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 }

-- ************************************************************************
-- *  Major sections
-- ************************************************************************
--  Station ManagemenT (SMT) Attributes
    --  DEFINED AS "The SMT object class provides the necessary support at the
    --  station to manage the processes in the station such that the
    --  station may work cooperatively as a part of an IEEE 802.11 network.";

    dot11smt OBJECT IDENTIFIER ::=   {ieee802dot11 1}

      --  dot11smt GROUPS
      --  dot11StationConfigTable            ::= {dot11smt 1}
      --  dot11AuthenticationAlgorithmsTable ::= {dot11smt 2}
      --  dot11WEPDefaultKeysTable           ::= {dot11smt 3}
      --  dot11WEPKeyMappingsTable           ::= {dot11smt 4}
      --  dot11PrivacyTable                  ::= {dot11smt 5}
      --  dot11SMTnotification               ::= {dot11smt 6}
```

```
--  MAC Attributes
    --  DEFINED AS "The MAC object class provides the necessary support
    --  for the access control, generation, and verification of frame check
    --  sequences, and proper delivery of valid data to upper layers.";

    dot11mac OBJECT IDENTIFIER ::=   {ieee802dot11 2}

      --  MAC GROUPS
      --  reference IEEE Std 802.1f-1993
         --  dot11OperationTable   ::=    {dot11mac 1}
         --  dot11CountersTable    ::=    {dot11mac 2}
         --  dot11GroupAddressesTable ::=    {dot11mac 3}

--  Resource Type ID
      dot11res OBJECT IDENTIFIER ::=   {ieee802dot11 3}
      dot11resAttribute OBJECT IDENTIFIER ::=  {dot11res 1 }

--  PHY Attributes
    --  DEFINED AS "The PHY object class provides the necessary support
    --  for required PHY operational information that may vary from PHY
    --  to PHY and from STA to STA to be communicated to upper layers."

   dot11phy OBJECT IDENTIFIER ::=   {ieee802dot11 4}

    --  phy GROUPS
    --  dot11PhyOperationTable    ::=  {dot11phy 1}
    --  dot11MPDUMaxLength        ::=  {dot11phy 2}
    --  dot11PhyAntennaTable      ::=  {dot11phy 3}
    --  dot11PhyTxPowerTable      ::=  {dot11phy 4}
    --  dot11PhyFHSSTable         ::=  {dot11phy 5}
    --  dot11PhyDSSSTable         ::=  {dot11phy 6}
    --  dot11PhyIRTable           ::=  {dot11phy 7}
    --  dot11RegDomainsSupportTable     ::=  {dot11phy 8}
    --  dot11AntennasListTable          ::=  {dot11phy 9}
    --  dot11SupportedDataRatesTxTable  ::=  {dot11phy 10}
    --  dot11SupportedDataRatesRxTable  ::=  {dot11phy 11}


-- ****************************************************************
-- *  Textual conventions from 802 definitions
-- ****************************************************************
    WEPKeytype ::= OCTET STRING (SIZE (5))

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

-- ****************************************************************
-- *  SMT Station Config Group 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 dot11StationConfiggrp 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 }

Dot11StationConfigEntry ::=
        SEQUENCE {
         dot11StationID                          MacAddress,
             dot11MediumOccupancyLimit               Integer32,
             dot11CFPollable                         INTEGER,
             dot11AuthenticationType                 Integer32,
             dot11CFPPeriod                          Integer32,
             dot11CFPMaxDuration                     Integer32,
             dot11AuthenticationResponseTimeOut      Integer32,
             dot11WEPUndecryptableCount              Counter32,
             dot11PrivacyOptionImplemented       INTEGER
              }

dot11StationID OBJECT-TYPE
        SYNTAX MacAddress
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The purpose of dot11StationID is to allow a manager to rename
            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 }

dot11MediumOccupancyLimit OBJECT-TYPE
        SYNTAX Integer32
        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 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 }

dot11AuthenticationType OBJECT-TYPE
        SYNTAX Integer32 (1..2)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "This attribute shall indicate the authentication algorithms
        acceptable to the STA during the authentication sequence. The
        value of this attribute shall be selected from the set in the
        aAuthenticationAlgorithms attribute.  The default value of
        this attribute shall be {1}."

        REFERENCE "IEEE Std 802.11-1997, 8.3.1"
    ::= { dot11StationConfigEntry 4 }

dot11CFPPeriod OBJECT-TYPE
        SYNTAX Integer32
        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 5 }

dot11CFPMaxDuration OBJECT-TYPE
        SYNTAX Integer32
        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 6 }

dot11AuthenticationResponseTimeOut OBJECT-TYPE
        SYNTAX Integer32
        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 7 }

dot11WEPUndecryptableCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
        "This counter shall increment when a frame is received with
        the WEP subfield of the Frame Control field set to one and the
        WEPOn value for the key mapped to the TA's MAC address
        indicates that the frame should not have been encrypted or
        that frame is discarded due to the receiving STA not
        implementing the privacy option."
    ::= {  dot11StationConfigEntry 8 }

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 9 }



-- ****************************************************************
-- *    End of dot11StationConfig  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    AuthenticationAlgorithms  TABLE
-- ****************************************************************
dot11AuthenticationAlgorithmsTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11AuthenticationAlgorithmsEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "This (conceptual) table of attributes shall be a set of
            all the authentication algorithms supported by the
            stations.  The following are the default values and the
            associated algorithm:
                Value = 1: Open System
                Value = 2: Shared Key"
        REFERENCE "IEEE Std 802.11-1997, 7.3.1.1"
    ::= {  dot11smt 2 }

dot11AuthenticationAlgorithmsEntry OBJECT-TYPE
        SYNTAX Dot11AuthenticationAlgorithmsEntry
        MAX-ACCESS not-accessible
```

```
        STATUS current
        DESCRIPTION

            "An Entry (conceptual row) in the Authentication
            Algorithms Table.

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

        INDEX { ifIndex,
              dot11AuthenticationAlgorithmsIndex}
    ::= {  dot11AuthenticationAlgorithmsTable  1 }

Dot11AuthenticationAlgorithmsEntry ::= SEQUENCE {
            dot11AuthenticationAlgorithmsIndex      Integer32,
            dot11Algorithm      INTEGER}


dot11AuthenticationAlgorithmsIndex OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxillary variable used to indentify instances
            of the columnar objects in the Authentication Algorithms Table."
    ::= {  dot11AuthenticationAlgorithmsEntry 1 }

dot11Algorithm OBJECT-TYPE
        SYNTAX INTEGER {  openSystem (1),   sharedKey (2) }
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "This attribute shall be a set of all the authentication
        algorithms supported by the STAs. The following are the
        default values and the associated algorithm.
        Value = 1: Open System
        Value = 2: Shared Key"

    ::= {  dot11AuthenticationAlgorithmsEntry 2 }

-- ****************************************************************
-- *    End of AuthenticationAlgorithms  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    WEPDefaultKeys  TABLE
-- ****************************************************************
dot11WEPDefaultKeysTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11WEPDefaultKeysEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Conceptual table for WEP default keys.  This table shall
            contain the four WEP default secret key values
            corresponding to the four possible KeyID values.  The WEP
            default secret keys are logically WRITE-ONLY.  Attempts to
            read the entries in this table shall return unsuccessful
```

```
            status and values of null or zero.  The default value of
            each WEP default key shall be null."

        REFERENCE "IEEE Std 802.11-1997, 8.3.2"
    ::= {  dot11smt 3 }

dot11WEPDefaultKeysEntry OBJECT-TYPE
        SYNTAX Dot11WEPDefaultKeysEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "An Entry (conceptual row) in the WEP Default Keys Table.

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

        INDEX {ifIndex, dot11WEPDefaultKeyIndex}
    ::= {  dot11WEPDefaultKeysTable  1 }

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

dot11WEPDefaultKeyIndex OBJECT-TYPE
        SYNTAX Integer32 (0..3)
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxillary variable used to identify instances
            of the columnar objects in the WEP Default Keys Table."
    ::= {  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 }

-- ****************************************************************
-- *    End of WEPDefaultKeys  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    WEPKeyMappings  TABLE
-- ****************************************************************
dot11WEPKeyMappingsTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11WEPKeyMappingsEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "Conceptual table for WEP Key Mappings.  The MIB supports
            the ability to share a separate WEP key for each RA/TA
            pair.  The Key Mappings Table contains zero or one entry
            for each MAC address and contains two fields for each
            entry: WEPOn and the corresponding WEP key.  The WEP key
            mappings are logically WRITE-ONLY.  Attempts to read the
```

```
            entries in this table shall return unsuccessful status and
            values of null or zero.  The default value for all WEPOn
            fields is false."
        REFERENCE "IEEE Std 802.11-1997, 8.3.2"
    ::= {  dot11smt 4 }

dot11WEPKeyMappingsEntry OBJECT-TYPE
        SYNTAX Dot11WEPKeyMappingsEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "An Entry (conceptual row) in the WEP Key Mappings Table.

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

        INDEX {ifIndex, dot11WEPKeyMappingIndex}
    ::= {  dot11WEPKeyMappingsTable  1 }

Dot11WEPKeyMappingsEntry ::= SEQUENCE {
            dot11WEPKeyMappingIndex     Integer32,
            dot11WEPKeyMappingAddress       MacAddress,
            dot11WEPKeyMappingWEPOn INTEGER,
            dot11WEPKeyMappingWEPkey    WEPKeytype }

dot11WEPKeyMappingIndex OBJECT-TYPE
        SYNTAX Integer32 (0..4)
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxillary variable used to identify instances
            of the columnar objects in the WEP Key Mappings Table."
    ::= {  dot11WEPKeyMappingsEntry 1 }

dot11WEPKeyMappingAddress OBJECT-TYPE
        SYNTAX MacAddress
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION
            "The MAC address of the STA for which the values from this
            key mapping entry are to be used."
    ::= {  dot11WEPKeyMappingsEntry 2 }

dot11WEPKeyMappingWEPOn OBJECT-TYPE
        SYNTAX 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 }

dot11WEPKeyMappingWEPkey OBJECT-TYPE
        SYNTAX WEPKeytype
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION
            "A WEP secret key value OCTET STRING (SIZE(5))."
```

```
    ::= {  dot11WEPKeyMappingsEntry 4 }

-- ****************************************************************
-- *    End of WEPKeyMappings  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11Privacygrp  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 dot11Privacygrp 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               Integer32,
             dot11WEPKeyMappingLength           Integer32,
             dot11ExcludeUnencrypted            INTEGER,
             dot11WEPICVErrorCount              Integer32,
             dot11WEPExcludedCount              Integer32}


dot11PrivacyInvoked OBJECT-TYPE
        SYNTAX INTEGER {   true (1),   false (2) }
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "When this attribute is true, it shall indicate that the IEEE
        802.11 WEP mechanism is used for transmitting frames of type
        Data. The default value of this attribute shall be false."
    ::= {  dot11PrivacyEntry 1 }

dot11WEPDefaultKeyID  OBJECT-TYPE
        SYNTAX 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 }

dot11WEPKeyMappingLength  OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The maximum number of tuples that dot11WEPKeyMappings can hold."
        REFERENCE "IEEE Std 802.11-1997, 8.3.2"
    ::= {  dot11PrivacyEntry 3 }

dot11ExcludeUnencrypted  OBJECT-TYPE
        SYNTAX INTEGER {  true (1),  false (2) }
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "When this attribute is true, the STA shall not indicate at
        the MAC service interface received MSDUs that have the WEP
        subfield of the Frame Control field equal to zero. When this
        attribute is false, the STA may accept MSDUs that have the WEP
        subfield of the Frame Control field equal to zero. The default
        value of this attribute shall be false."

    ::= {  dot11PrivacyEntry 4 }

dot11WEPICVErrorCount  OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "This counter shall increment when a frame is received with the
            WEP subfield of the Frame Control field set to one and the value
            of the ICV as received in the frame does not match the ICV value
            that is calculated for the contents of the received frame."
    ::= {  dot11PrivacyEntry 5 }

dot11WEPExcludedCount  OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "This counter shall increment when a frame is received with the
            WEP subfield of the Frame Control field set to zero and the value
            of aExcludeUnencrypted causes that frame to be discarded."
    ::= {  dot11PrivacyEntry 6 }

-- ****************************************************************
-- *    End of dot11Privacy  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    SMT notification Objects
-- ****************************************************************
    dot11SMTnotification OBJECT IDENTIFIER ::= { dot11smt 6 }
```

```
dot11Disassociate NOTIFICATION-TYPE
        OBJECTS { ifIndex, dot11StationID }
        STATUS current
        DESCRIPTION

        "The disassociate notification shall be sent when the STA
        receives a Disassociate frame. The value of the notification
        shall be the BSSID of the BSS from which the Disassociate
        frame was 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 1 }

-- ****************************************************************
-- *    End of SMT notification Objects
-- ****************************************************************

-- ****************************************************************
-- *    MAC Attribute Templates
-- ****************************************************************

-- ****************************************************************
-- *    dot11Operationgrp  TABLE
-- ****************************************************************
dot11OperationTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11OperationEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group contains MAC attributes pertaining to the operation
            of the MAC.  This has been implemented as a table in order
            to allow for multiple instantiations on an agent."

    ::= {  dot11mac 1 }

dot11OperationEntry OBJECT-TYPE
        SYNTAX Dot11OperationEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11OperationEntry Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11OperationTable 1 }

Dot11OperationEntry ::= SEQUENCE {
            dot11MACAddress                 MacAddress,
            dot11RTSThreshold               Integer32,
            dot11ShortRetryLimit            Integer32,
            dot11LongRetryLimit             Integer32,
            dot11FragmentationThreshold     Integer32,
```

```
            dot11MaxTransmitMSDULifetime    Integer32,
            dot11MaxReceiveLifetime         Integer32,
            dot11ManufacturerID             DisplayString,
            dot11ProductID                  DisplayString}


dot11MACAddress OBJECT-TYPE
        SYNTAX MacAddress
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
                "Unique MAC Address assigned to the STA."
    ::= {  dot11OperationEntry 1 }

dot11RTSThreshold OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "This attribute shall indicate the number of bytes in an MPDU,
        below which an RTS/CTS handshake shall not be performed. An
        RTS/CTS handshake shall be performed at the beginning of any
        frame exchange sequence where the MPDU is of type Data or
        Management, the MPDU has an individual address in the Address1
        field, and the length of the MPDU is equal to or larger than
        this threshold. (For additional details, refer to Table 21 in
        9.7.) Setting this attribute to be larger than the maximum
        MSDU size shall have the effect of turning off the RTS/CTS
        handshake for frames of Data or Management type transmitted by
        this STA. Setting this attribute to zero shall have the effect
        of turning on the RTS/CTS handshake for all frames of Data or
        Management type transmitted by this STA. The default value of
        this attribute shall be 3000."

    ::= {  dot11OperationEntry 2 }

dot11ShortRetryLimit OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "This attribute shall indicate the maximum number of
        transmission attempts of a frame, the length of which is less
        than or equal to aRTSThreshold, that shall be made before a
        failure condition is indicated. The default value of this
        attribute shall be 7."

    ::= {  dot11OperationEntry 3 }

dot11LongRetryLimit OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "This attribute shall indicate the maximum number of
        transmission attempts of a frame, the length of which is
        greater than aRTSThreshold, that shall be made before a
```

```
        failure condition is indicated. The default value of this
        attribute shall be 4."

    ::= {  dot11OperationEntry 4 }

dot11FragmentationThreshold OBJECT-TYPE
        SYNTAX Integer32
        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. The
        default value for this attribute shall be equal to
        aMPDUMaxLength of the attached PHY and shall never exceed
        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 }

dot11MaxTransmitMSDULifetime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

        "The MaxTransmitMSDULifetime shall be the elapsed time in TU,
        after the initial transmission of an MSDU, after which further
        attempts to transmit the MSDU shall be terminated. The default
        value of this attribute shall be 512."

    ::= {  dot11OperationEntry 6 }

dot11MaxReceiveLifetime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The MaxReceiveLifetime shall be the elapsed time in TU,
            after the initial reception of a fragmented MMPDU or MSDU,
            after which further attempts to reassemble the MMPDU or
            MSDU shall be terminated. The default value shall be
            512."
    ::= {  dot11OperationEntry 7 }

dot11ManufacturerID OBJECT-TYPE
        SYNTAX DisplayString
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The ManufacturerID shall include, at a minimum, the name
            of the manufacturer.  It may include additional
            information at the manufacturer's discretion.  The default
            value of this attribute shall be null."
```

```
    ::= {  dot11OperationEntry 8 }

dot11ProductID OBJECT-TYPE
        SYNTAX DisplayString
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The ProductID shall include, at a minimum, an identifier
            that is unique to the manufacturer.  It may include
            additional information at the manufacturer's discretion.
            The default value of this attribute shall be null."

    ::= {  dot11OperationEntry 9 }

-- ****************************************************************
-- *    End of dot11OperationEntry  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11Counters TABLE
-- ****************************************************************
dot11CountersTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11CountersEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group containing attributes that are MAC counters.
            Implemented as a table to allow for multiple
            instantiations on an agent."

    ::= {  dot11mac 2 }

dot11CountersEntry OBJECT-TYPE
        SYNTAX Dot11CountersEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11CountersEntry Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11CountersTable 1 }

Dot11CountersEntry ::= SEQUENCE {
            dot11TransmittedFragmentCount       Counter32,
            dot11MulticastTransmittedFrameCount     Counter32,
            dot11FailedCount    Counter32,
            dot11RetryCount Counter32,
            dot11MultipleRetryCount Counter32,
            dot11FrameDuplicateCount    Counter32,
            dot11RTSSuccessCount    Counter32,
            dot11RTSFailureCount    Counter32,
            dot11ACKFailureCount    Counter32,
            dot11ReceivedFragmentCount  Counter32,
            dot11MulticastReceivedFrameCount    Counter32,
            dot11FCSErrorCount      Counter32}
```

```
dot11TransmittedFragmentCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall be incremented for each successfully
            delivered fragment of type Data or Management."

    ::= {  dot11CountersEntry 1 }

dot11MulticastTransmittedFrameCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment only when the
            multicast/broadcast bit is set in the destination MAC
            address of a transmitted frame."

    ::= {  dot11CountersEntry 2 }

dot11FailedCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "This counter shall increment when a frame is not transmitted
        due to the number of transmit attempts exceeding either the
        aShortRetryLimit or aLongRetryLimit."

    ::= {  dot11CountersEntry 3 }

dot11RetryCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when a frame is successfully
            transmitted after one or more retransmissions."
    ::= {  dot11CountersEntry 4 }

dot11MultipleRetryCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when a frame is successfully
            transmitted after more than one retransmission."

    ::= {  dot11CountersEntry 5 }

dot11FrameDuplicateCount  OBJECT-TYPE
        SYNTAX Counter32
```

```
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when a frame is received
            that the Sequence Control field indicates is a
            duplicate."

    ::= {  dot11CountersEntry 6 }

dot11RTSSuccessCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when a CTS is received in
            response to an RTS."
        ::= {  dot11CountersEntry 7 }

dot11RTSFailureCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION


        "This counter shall increment when a CTS is not received in
        response to an RTS."

    ::= { dot11CountersEntry 8 }

dot11ACKFailureCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when an ACK is not received
            when expected."

    ::= {  dot11CountersEntry 9 }

dot11ReceivedFragmentCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall be incremented for each successfully
            received fragment of type Data or Management."

    ::= {  dot11CountersEntry 10 }

dot11MulticastReceivedFrameCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
```

```
            "This counter shall increment when a frame is received
            with the multicast/broadcast bit set in the destination
            MAC address."
    ::= {  dot11CountersEntry 11 }

dot11FCSErrorCount OBJECT-TYPE
        SYNTAX Counter32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "This counter shall increment when an FCS error is
            detected in a received frame."

    ::= {  dot11CountersEntry 12 }

-- ****************************************************************
-- *    End of dot11CountersEntry  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    GroupAddresses  TABLE
-- ****************************************************************
dot11GroupAddressesTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11GroupAddressesEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "A conceptual table containing a set of MAC addresses
            identifying the multicast addresses for which this STA
            will receive frames.  The default value of this attribute
            shall be null."

    ::= {  dot11mac 3 }

dot11GroupAddressesEntry OBJECT-TYPE
        SYNTAX Dot11GroupAddressesEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An Entry (conceptual row) in the Group Addresses Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex, dot11GroupAddressesIndex}
    ::= {  dot11GroupAddressesTable  1 }

Dot11GroupAddressesEntry ::= SEQUENCE {
            dot11GroupAddressesIndex    Integer32,
            dot11Address                MacAddress,
            dot11GroupAddressesStatus   RowStatus}

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

```
            of the columnar objects in the Group Addresses Table."
    ::= {  dot11GroupAddressesEntry 1 }

dot11Address OBJECT-TYPE
        SYNTAX MacAddress
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION
            "MAC address identifying a multicast addresses
            from which this STA will receive frames."
    ::= {  dot11GroupAddressesEntry 2 }

dot11GroupAddressesStatus 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 Group
            Addresses Table."

        DEFVAL {active}
    ::= {  dot11GroupAddressesEntry 3 }
-- ****************************************************************
-- *    End of GroupAddress  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    Resource Type Attribute Templates
-- ****************************************************************
dot11ResourceTypeIDName OBJECT-TYPE
        SYNTAX DisplayString (SIZE(4))
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "Contains the name of the Resource Type ID managed object.
            The attribute is read-only and always contains the value
            RTID.  This attribute value shall not be used as a naming
            attribute for any other managed object class."

        REFERENCE "IEEE Std 802.1F-1993, Clause A.7"
        DEFVAL {"RTID"}
    ::= {  dot11resAttribute 1 }

-- ****************************************************************
-- *    aResourceInfo  TABLE
-- ****************************************************************
dot11ResourceInfoTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11ResourceInfoEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Provides a means of indicating, in data readable from a
            managed object, information that identifies the source of
            the implementation."

        REFERENCE "IEEE Std 802.1F-1993, Clause A.7"
```

```
    ::= {  dot11resAttribute 2 }

dot11ResourceInfoEntry OBJECT-TYPE
        SYNTAX Dot11ResourceInfoEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11ResourceInfo Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11ResourceInfoTable 1 }

Dot11ResourceInfoEntry ::= SEQUENCE {
            dot11manufacturerOUI OCTET STRING,
            dot11manufacturerName    DisplayString,
            dot11manufacturerProductName     DisplayString,
            dot11manufacturerProductVersion      DisplayString}


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

dot11manufacturerName OBJECT-TYPE
        SYNTAX DisplayString
        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
        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
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "Printable string used to identify the manufacturer's product
            version of the resource.  Maximum string length is 128 octets."
    ::= {  dot11ResourceInfoEntry 4 }

-- ****************************************************************
-- *    End of dot11ResourceInfo  TABLE
-- ****************************************************************
```

```
-- ****************************************************************
-- *   PHY Attribute Templates
-- ****************************************************************

-- ****************************************************************
-- *    dot11PhyOperationGroup  TABLE
-- ****************************************************************
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
        Station ID to allow for multiple instantiations on an
        Agent."

    ::= {  dot11phy 1 }

dot11PhyOperationEntry OBJECT-TYPE
        SYNTAX Dot11PhyOperationEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyOperationGroup Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyOperationTable 1 }

Dot11PhyOperationEntry ::= SEQUENCE {
            dot11PHYType    INTEGER,
            dot11CurrentRegDomain   Integer32,
            dot11SlotTime Integer32,
            dot11CCATime    Integer32,
            dot11RxTxTurnaroundTime Integer32,
            dot11TxPLCPDelay Integer32,
            dot11RxTxSwitchTime Integer32,
            dot11TxRampOnTime Integer32,
            dot11TxRFDelay Integer32,
            dot11SIFSTime Integer32,
            dot11RxRFDelay Integer32,
            dot11RxPLCPDelay Integer32,
            dot11MACProcessingDelay Integer32,
            dot11TxRampOffTime Integer32,
            dot11PreambleLength Integer32,
            dot11PLCPHeaderLength Integer32,
            dot11MPDUDurationFactor Integer32,
            dot11AirPropagationTime Integer32,
            dot11TempType   INTEGER,
            dot11CWmin      Integer32,
            dot11CWmax      Integer32}

dot11PHYType OBJECT-TYPE
        SYNTAX INTEGER {fhss(1), dsss(2), irbaseband(3)}
        MAX-ACCESS read-only
```

```
        STATUS current
        DESCRIPTION

        "This is an 8-bit integer value that identifies the PHY type
        supported by the attached PLCP and PMD. Currently defined
        values and their corresponding PHY types are:

        FHSS 2.4 GHz = 01 , DSSS 2.4 GHz = 02, IR Baseband = 03"

    ::= {  dot11PhyOperationEntry 1 }

dot11CurrentRegDomain OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The current regulatory domain this instance of the PMD is
            supporting.  This octet corresponds to one of the
            RegDomains listed in dot11RegDomainsSupported."

    ::= {   dot11PhyOperationEntry 2 }

dot11SlotTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The time in microseconds that the MAC will use for defining
        the PIFS and DIFS periods. The Slot- Time is defined as a
        function of the following the equation:

        CCATime + RxTxTurnaroundTime + AirPropagationTime +
aMACProcessingDelay.

        AirPropagationTime is defined as 1 ´s."

        ::= {   dot11PhyOperationEntry 3 }

dot11CCATime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The minimum time in microseconds the CCA mechanism has
            available to assess the medium within every time slot to
            determine whether the medium is busy or idle."

    ::= { dot11PhyOperationEntry 4 }

dot11RxTxTurnaroundTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The maximum time in microseconds that the PHY requires to
        change from receiving to transmitting the start of the first
```

```
        symbol. The following equation is used to derive the
        RxTxTurnaroundTime:

        aTxPLCPDelay + aRxTxSwitchTime + aTxRampOnTime + aTxRFDelay."

    ::= {   dot11PhyOperationEntry 5 }


dot11TxPLCPDelay OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
        "The nominal time in microseconds the PLCP uses to deliver a symbol
         from the MAC interface to the transmit data path of the PMD"
     ::= { dot11PhyOperationEntry 6 }


dot11RxTxSwitchTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
        "The nominal time in microseconds the PMD takes to switch from
        Receive to Transmit"
    ::= { dot11PhyOperationEntry 7 }


dot11TxRampOnTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The maximum time in microseconds the PMD takes to turn the
        Transmitter on"

    ::= { dot11PhyOperationEntry 8 }


dot11TxRFDelay OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The nominal time in microseconds between the issuance of a
        PMD-DATA.request to the PMD and the start of the corresponding
        symbol at the air interface. The start of a symbol is defined
        to be 1/2 symbol period prior to the center of the symbol for
        FH, or 1/2 chip period prior to the center of the first chip
        of the symbol for DS, or 1/2 slot time prior to the center of
        the corresponding slot for IR."

    ::= { dot11PhyOperationEntry 9 }


dot11SIFSTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
```

```
        STATUS current
        DESCRIPTION

        "The nominal time in microseconds that the MAC and PHY will
        require to receive the last symbol of a frame at the air
        interface, process the frame, and respond with the first
        symbol on the air interface of the earliest possible response
        frame. The following equation is used to determine the
        SIFSTime:

        aRxRFDelay + aRxPLCPDelay + aDOT11MACProcessingDelay +
        aRxTxTurnaroundTime"

    ::= {   dot11PhyOperationEntry 10 }


dot11RxRFDelay OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The nominal time in microseconds between the end of a symbol
        at the air interface to the issuance of a PMD-DATA.indicate to
        the PLCP. The end of a symbol is defined to be 1/2 symbol
        period after the center of the symbol for FH, or 1/2 chip
        period after the center of the last chip of the symbol for DS,
        or 1/2 slot time after the center of the corresponding slot
        for IR."

    ::= { dot11PhyOperationEntry 11 }


dot11RxPLCPDelay OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The nominal time in microseconds that the PLCP uses to deliver
        a bit from the PMD receive path to the MAC"

        ::= {   dot11PhyOperationEntry 12 }


dot11MACProcessingDelay OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The nominal time in microseconds that the MAC uses to
            process a frame and prepare a response to the frame."

    ::= {   dot11PhyOperationEntry 13 }

dot11TxRampOffTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
```

```
        DESCRIPTION

        "The nominal time in nanoseconds that the PMD takes to turn
        the Transmit Power Amplifier off"

    ::= {   dot11PhyOperationEntry 14 }


dot11PreambleLength OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The current PHY's Preamble Length in microseconds. If the
        actual value of the length of the modulated pre- amble is not
        an integral number of microseconds, the value shall be rounded
        up to the next higher value."
    ::= {   dot11PhyOperationEntry 15 }


dot11PLCPHeaderLength OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The current PHY's PLCP Header Length in microseconds. If the
        actual value of the length of the mod- ulated header is not an
        integral number of microseconds, the value shall be rounded up
        to the next higher value."

    ::= {   dot11PhyOperationEntry 16 }


dot11MPDUDurationFactor OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The overhead added by the PHY to the MPDU as it is
        transmitted through the wireless medium."

    ::= {   dot11PhyOperationEntry 17 }


dot11AirPropagationTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The anticipated time it takes a transmitted signal to go from
        the transmitting station to the receiving station."

    ::= {   dot11PhyOperationEntry 18 }


dot11TempType OBJECT-TYPE
```

```
        SYNTAX INTEGER {type1(1), type2(2), 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. Cur- rently 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 19 }

dot11CWmin OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
        "The minimum size of the contention window, in units of aSlotTime."

    ::= {   dot11PhyOperationEntry 20 }

dot11CWmax OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "The maximum size of the contention window, in units of
        aSlotTime."

    ::= {   dot11PhyOperationEntry 21 }


-- ****************************************************************
-- *    End of dot11PhyOperationGroup  TABLE
-- ****************************************************************

dot11MPDUMaxLength OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The maximum number of octets in a MPDU that can be
            conveyed by a PLCPPDU."

    ::= {  dot11phy 2 }


-- ****************************************************************
-- *    dot11PhyAntennaGroup  TABLE
-- ****************************************************************
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 STA ID to allow for mulitple instances on
            an Dot11ent."

    ::= {  dot11phy 3}

dot11PhyAntennaEntry OBJECT-TYPE
        SYNTAX Dot11PhyAntennaEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyAntennaGroup Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyAntennaTable 1 }

Dot11PhyAntennaEntry ::= SEQUENCE {
             dot11CurrentTxAntenna  Integer32,
             dot11DiversitySupport  INTEGER}

dot11CurrentTxAntenna OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The current antenna being used to transmit.  This value
        is one of the values appearing in
        dot11SupportedTx-Antennas."

    ::= {  dot11PhyAntennaEntry 1 }

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 dot11DiversitySelec- tionRx.

        X'02'-diversity is not supported.

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

-- ************************************************************************
```

```
-- *    End of dot11PhyAntennaGroup  TABLE
-- ************************************************************************

-- ************************************************************************
-- *    dot11PhyTxPowerGroup  TABLE
-- ************************************************************************
dot11PhyTxPowerTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyTxPowerEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group of attributes for dot11PhyTxPowerGroup.  Implemented
            as a table indexed on STA ID to allow for mulitple
            instances on an Agent."

    ::= {  dot11phy 4}

dot11PhyTxPowerEntry OBJECT-TYPE
        SYNTAX Dot11PhyTxPowerEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyTxPowerGroup Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyTxPowerTable 1 }

Dot11PhyTxPowerEntry ::= SEQUENCE {
            dot11NumberSupportedPowerLevels  Integer32,
            dot11TxPowerLevel1      Integer32,
            dot11TxPowerLevel2      Integer32,
            dot11TxPowerLevel3      Integer32,
            dot11TxPowerLevel4      Integer32,
            dot11TxPowerLevel5      Integer32,
            dot11TxPowerLevel6      Integer32,
            dot11TxPowerLevel7      Integer32,
            dot11TxPowerLevel8      Integer32,
            dot11CurrentTxPowerLevel    Integer32}

dot11NumberSupportedPowerLevels OBJECT-TYPE
        SYNTAX Integer32 (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 Integer32
        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 Integer32
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The transmit output power for LEVEL2 in mW."
    ::= {   dot11PhyTxPowerEntry 3 }

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

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

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

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

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

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

dot11CurrentTxPowerLevel OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
```

```
        STATUS current
        DESCRIPTION

            "The TxPowerLevel N currently being used to transmit data.
            Some PHYs also use this value to determine the receiver
            sensitivity requirements for CCA."

    ::= {   dot11PhyTxPowerEntry 10 }

-- ****************************************************************
-- *    End of dot11PhyTxPowerGroup  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11PhyFHSSGroup  TABLE
-- ****************************************************************
dot11PhyFHSSTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyFHSSEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group of attributes for dot11PhyFHSSGroup.  Implemented as a
            table indexed on STA ID to allow for mulitple instances on
            an Agent."

    ::= {  dot11phy 5 }

dot11PhyFHSSEntry OBJECT-TYPE
        SYNTAX Dot11PhyFHSSEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyFHSSGroup Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyFHSSTable 1 }

Dot11PhyFHSSEntry ::= SEQUENCE {
             dot11HopTime   Integer32,
             dot11CurrentChannelNumber  Integer32,
             dot11MaxDwellTime  Integer32,
             dot11CurrentDwellTime  Integer32,
             dot11CurrentSet    Integer32,
             dot11CurrentPattern    Integer32,
             dot11CurrentIndex  Integer32}

dot11HopTime OBJECT-TYPE
        SYNTAX Integer32
        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 Integer32
        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 Integer32
        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 Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current time in Kms that the transmitter shall operate
            on a single channel, as set by the MAC.  Default is 19 TU."
    ::= {   dot11PhyFHSSEntry 4 }

dot11CurrentSet OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current set of patterns the PHY
            LME is using to determine the hop sequence. "
    ::= {   dot11PhyFHSSEntry 5 }

dot11CurrentPattern OBJECT-TYPE
        SYNTAX Integer32
        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 Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The current index value the PHY LME is using to determine
            the CurrentChannelNumber."

    ::= {   dot11PhyFHSSEntry 7 }

-- ****************************************************************
-- *    End of dot11PhyFHSS  TABLE
-- ****************************************************************

-- ****************************************************************
```

```
-- *    dot11PhyDSSSEntry  TABLE
-- ***************************************************************************
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 mulitple instances on
            an Agent."

    ::= {  dot11phy 6 }

dot11PhyDSSSEntry OBJECT-TYPE
        SYNTAX Dot11PhyDSSSEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyDSSSEntry Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyDSSSTable 1 }

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

dot11CurrentChannel OBJECT-TYPE
        SYNTAX Integer32
        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 INTEGER { edonly (1), csonly(2), edandcs (3)}
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "A list of the DSSS PHY CCA modes that are
            supported. Valid values are:

            energy detect only (ED_ONLY) = 01,

            carrier sense only (CS_ONLY) = 02,

            carrier sense and energy detect (ED_and_CS)= 03"
    ::= {   dot11PhyDSSSEntry 2 }

dot11CurrentCCAMode OBJECT-TYPE
        SYNTAX INTEGER { edonly (1), csonly(2), edandcs (3)}
        MAX-ACCESS read-only
```

```
        STATUS current
        DESCRIPTION
            "The current CCA method in operation.   Valid values are:
                energy detect only (ED_ONLY) = 01,
                carrier sense only (CS_ONLY) = 02,
                carrier sense and energy detect (ED_and_CS)= 03."
::= {   dot11PhyDSSSEntry 3 }

dot11EDThreshold OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The current Energy Detect Threshold being used by the DSSS PHY."
    ::= {   dot11PhyDSSSEntry 4}

-- ****************************************************************
-- *    End of dot11PhyDSSSEntry  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11PhyIRGroup  TABLE
-- ****************************************************************
dot11PhyIRTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11PhyIREntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "Group of attributes for dot11PhyIREntry.  Implemented as a
            table indexed on ifIndex to allow for mulitple instances on
            an Agent."

    ::= {  dot11phy 7 }

dot11PhyIREntry OBJECT-TYPE
        SYNTAX Dot11PhyIREntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11PhyIRGroup Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex}
    ::= {  dot11PhyIRTable 1 }

Dot11PhyIREntry ::= SEQUENCE {
             dot11CCAWatchdogTimerMax       Integer32,
             dot11CCAWatchdogCountMax       Integer32,
             dot11CCAWatchdogTimerMin       Integer32,
             dot11CCAWatchdogCountMin       Integer32}

dot11CCAWatchdogTimerMax OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
```

```
            "This parameter, together with CCAWatchdogCountMax,
            determines when energy detected in the channel can be
            ignored."

    ::= {   dot11PhyIREntry 1 }

dot11CCAWatchdogCountMax OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "This parameter, together with CCAWatchdogTimerMax,
            determines when energy detected in the channel can be
            ignored."

    ::= {   dot11PhyIREntry 2 }

dot11CCAWatchdogTimerMin OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

            "The minimum value to which CCAWatchdogTimerMax can be
            set."

    ::= {   dot11PhyIREntry 3 }

dot11CCAWatchdogCountMin OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
            "The minimum value to which CCAWatchdogCount can be set."
    ::= {   dot11PhyIREntry 4 }

-- ****************************************************************
-- *    End of dot11PhyIRGroup  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11RegDomainsSupported  TABLE
-- ****************************************************************
dot11RegDomainsSupportedTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11RegDomainsSupportEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "There are different operational requirements dependent on
            the regulatory domain.  This attribute list describes the
            regulatory domains the PLCP and PMD support in this
            implementation.  Currently de- fined values and their
            corresponding Regulatory Domains are:

            FCC (USA) = X'10', DOC (Canada) = X'20', ETSI (most of
            Europe) = X'30', Spain = X'31', France = X'32', MKK
            (Japan) = X'40', list terminator = X'00'"
```

```
    ::= {   dot11phy 8}

dot11RegDomainsSupportEntry OBJECT-TYPE
        SYNTAX Dot11RegDomainsSupportEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11RegDomainsSupport Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex, dot11RegDomainsSupportIndex}
    ::= {  dot11RegDomainsSupportedTable 1 }

Dot11RegDomainsSupportEntry ::= SEQUENCE {
             dot11RegDomainsSupportIndex    Integer32,
             dot11RegDomainsSupportValue    INTEGER}

dot11RegDomainsSupportIndex OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxillary variable used to indentify instances
            of the columnar objects in the RegDomainsSupport Table."
    ::= {  dot11RegDomainsSupportEntry 1 }

dot11RegDomainsSupportValue OBJECT-TYPE

        SYNTAX INTEGER {fcc(16), doc(32), etsi(48), spain (49), france
        (50), mkk (64), terminator (0)}
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "There are different operational requirements dependent on
            the regulatory domain.  This attribute list describes the
            regulatory domains the PLCP and PMD support in this
            implementation.  Currently de- fined values and their
            corresponding Regulatory Domains are:

            FCC (USA) = X'10', DOC (Canada) = X'20', ETSI (most of
            Europe) = X'30', Spain = X'31', France = X'32', MKK
            (Japan) = X'40', list terminator = X'00'"
    ::= {  dot11RegDomainsSupportEntry 2 }

-- ****************************************************************
-- *    End of dot11RegDomainsSupported  TABLE
-- ****************************************************************

-- ****************************************************************
-- *    dot11AntennasList  TABLE
-- ****************************************************************
dot11AntennasListTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11AntennasListEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "This attribute represent a table of 3 columns, where each
            column respresents a list.  The three lists are:
```

```
                    SupportedTxAntennas
                    SupportedRxAntennas
                    DiversitySelectRx
                Each list can contain one or more antennas where each
                antenna is define as an integer starting with
                antenna 1 to antenna N, where N  <= 255."
    ::= {   dot11phy 9 }

dot11AntennasListEntry OBJECT-TYPE
        SYNTAX Dot11AntennasListEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "An entry in the dot11AntennasList Table.

            ifIndex - Each 802.11 interface is represented by an
            ifEntry.  Interface tables in this MIB module are indexed
            by ifIndex."
        INDEX {ifIndex, dot11AntennasListIndex}
    ::= {  dot11AntennasListTable 1 }

Dot11AntennasListEntry ::= SEQUENCE {
             dot11AntennasListIndex    Integer32,
             dot11SupportedTxAntenna   Integer32,
             dot11SupportedRxAntenna   Integer32,
             dot11DiversitySelectionRx  Integer32 }

dot11AntennasListIndex OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The auxillary variable used to indentify instances
            of the columnar objects in the dot11AntennasList Table."
    ::= {  dot11AntennasListEntry 1 }

dot11SupportedTxAntenna OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION

            " An antenna that can be used as the transmit antenna.
            One entry in the SupportedTxAntennas list. Each antenna is
            represented by an integer, starting with antenna 1, and
            through antenna N, where N <= 255."

    ::= {  dot11AntennasListEntry 2 }

dot11SupportedRxAntenna OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION

            " An antenna that can be used as the receive antenna.  One
            element in the SupportedRxAntenna list.Each antenna is
            represented by an integer, starting with antenna 1, and
            through antenna N, where N <= 255."
```

```
    ::= {  dot11AntennasListEntry 3 }

dot11DiversitySelectionRx OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-create
        STATUS current
        DESCRIPTION

            "This attribute represents an antenna that can be used as
            receive antenna.  Each antenna is represented by an
            integer starting with antenna 1, and through antenna N,
            where N <= 255."

    ::= {  dot11AntennasListEntry 4 }

-- ****************************************************************
-- *    End of dot11AntennasList  TABLE
-- ****************************************************************


-- ****************************************************************
-- *    SupportedDataRatesTx  TABLE
-- ****************************************************************
dot11SupportedDataRatesTxTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11SupportedDataRatesTxEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "The Transmit bit rates supported by the PLCP and PMD,
            represented by a count from 00h-7fh, corresponding to data
            rates in increments of 500Kb/s from 0 to 63.5 Mb/s subject
            to limitations of each individual PHY."

    ::= {  dot11phy 10 }

dot11SupportedDataRatesTxEntry OBJECT-TYPE
        SYNTAX Dot11SupportedDataRatesTxEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "An Entry (conceptual row) in the dot11SupportedDataRatesTx
            Table.

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

        INDEX {ifIndex, dot11SupportedDataRatesTxIndex}

    ::= {  dot11SupportedDataRatesTxTable  1 }

Dot11SupportedDataRatesTxEntry ::= SEQUENCE {
            dot11SupportedDataRatesTxIndex  Integer32,
            dot11SupportedDataRatesTxValue  Integer32}

dot11SupportedDataRatesTxIndex OBJECT-TYPE
        SYNTAX Integer32 (0..8)
        MAX-ACCESS not-accessible
```

```
        STATUS current
        DESCRIPTION

            "Index object which identifies which data rate to access.
            Range is 0..8."

    ::= {  dot11SupportedDataRatesTxEntry 1 }

dot11SupportedDataRatesTxValue OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

            "The Transmit bit rates supported by the PLCP and PMD,
            represented by a count from 00h-7fh, corresponding to data
            rates in increments of 500Kb/s from 0 to 63.5 Mb/s subject
            to limitations of each individual PHY."

    ::= {  dot11SupportedDataRatesTxEntry 2 }

-- ****************************************************************
-- *    End of dot11SupportedDataRatesTx  TABLE
-- ****************************************************************


-- ****************************************************************
-- *    SupportedDataRatesRx  TABLE
-- ****************************************************************
dot11SupportedDataRatesRxTable OBJECT-TYPE
        SYNTAX SEQUENCE OF Dot11SupportedDataRatesRxEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "The receive bit rates supported by the PLCP and PMD,
            represented by a count from 00h-7fh, corresponding to data
            rates in increments of 500Kb/s from 0 to 63.5 Mb/s."

    ::= {  dot11phy 11 }

dot11SupportedDataRatesRxEntry OBJECT-TYPE
        SYNTAX Dot11SupportedDataRatesRxEntry
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION

            "An Entry (conceptual row) in the
        dot11SupportedDataRatesRx Table.

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

        INDEX {ifIndex, dot11SupportedDataRatesRxIndex}

    ::= {  dot11SupportedDataRatesRxTable  1 }

Dot11SupportedDataRatesRxEntry ::= SEQUENCE {
            dot11SupportedDataRatesRxIndex  Integer32,
            dot11SupportedDataRatesRxValue  Integer32}
```

```
dot11SupportedDataRatesRxIndex OBJECT-TYPE
        SYNTAX Integer32 (0..8)
        MAX-ACCESS not-accessible
        STATUS current
        DESCRIPTION
            "Index object which identifies which data rate to access.
            Range is 0..8."
    ::= {  dot11SupportedDataRatesRxEntry 1 }

dot11SupportedDataRatesRxValue OBJECT-TYPE
        SYNTAX Integer32 (0..255)
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION
            "The receive bit rates supported by the PLCP and PMD,
            represented by a count from 00h-7fh, corresponding to data
            rates in increments of 500Kb/s from 0 to 63.5 Mb/s."
    ::= {  dot11SupportedDataRatesRxEntry 2 }

-- ****************************************************************
-- *    End of dot11SupportedDataRatesRx  TABLE
-- ****************************************************************

-- ****************************************************************
-- *   conformance information
-- ****************************************************************

dot11Conformance  OBJECT IDENTIFIER ::= { ieee802dot11 5 }
dot11Groups  OBJECT IDENTIFIER ::= { dot11Conformance 1 }
dot11Compliances  OBJECT IDENTIFIER ::= { dot11Conformance 2 }

-- ****************************************************************
-- *   compliance statements
-- ****************************************************************
dot11Compliance MODULE-COMPLIANCE
        STATUS  current
        DESCRIPTION
            "The compliance statement for SNMPv2 entities
            that implement the IEEE 802.11 MIB."

  MODULE  -- this module
    MANDATORY-GROUPS {
        dot11SMTbase,
        dot11MACbase,
        dot11SmtAuthenticationAlgorithms, dot11MacGroupAddresses,
        dot11ResourceTypeID, dot11PhyOperationComplianceGroup,
        dot11PhyAntennaComplianceGroup, dot11PhyTxPowerComplianceGroup,
    dot11PhyRegDomainsSupportGroup,
        dot11PhyAntennasListGroup, dot11PhyRateGroup }

   GROUP dot11PhyDSSSComplianceGroup
          DESCRIPTION
              "Implementation of this group is required when object
        dot11PHYType has the value of dsss.  This group is
        mutually exlusive with the groups dot11PhyIRComplianceGroup and
        dot11PhyFHSSComplianceGroup."

    GROUP dot11PhyIRComplianceGroup
          DESCRIPTION
```

```
            "Implementation of this group is required when object
        dot11PHYType has the value of irbaseband.  This group is
        mutually exlusive with the groups dot11PhyDSSSComplianceGroup and
        dot11PhyFHSSComplianceGroup."


    GROUP dot11PhyFHSSComplianceGroup
           DESCRIPTION
               "Implementation of this group is required when object
        dot11PHYType has the value of fhss.  This group is
        mutually exlusive with the groups dot11PhyDSSSComplianceGroup and
        dot11PhyIRComplianceGroup."


    -- OPTIONAL-GROUPS { dot11SMTprivacy, dot11MACStatistics
    --                   dot11CountersGroup   }

    ::= { dot11Compliances 1 }

-- ****************************************************************
-- *   Groups - units of conformance
-- ****************************************************************
dot11SMTbase OBJECT-GROUP
        OBJECTS { dot11StationID, dot11MediumOccupancyLimit,
             dot11CFPollable,
             dot11AuthenticationType,
             dot11CFPPeriod,
             dot11CFPMaxDuration,
             dot11AuthenticationResponseTimeOut,
             dot11WEPUndecryptableCount
             }
        STATUS current
        DESCRIPTION
         "The SMT object class provides the necessary support at the
         STA to manage the processes in the STA such that the STA may
         work cooperatively as a part of an IEEE 802.11 network."
    ::= {dot11Groups 1   }

dot11SMTprivacy OBJECT-GROUP
        OBJECTS { dot11PrivacyInvoked,
                dot11WEPKeyMappingLength, dot11ExcludeUnencrypted,
                dot11WEPICVErrorCount , dot11WEPExcludedCount ,
                dot11WEPUndecryptableCount,
                dot11PrivacyOptionImplemented,
                dot11WEPDefaultKeyID,
                dot11WEPDefaultKeyIndex,
                dot11WEPDefaultKeyValue,
                dot11WEPKeyMappingIndex, dot11WEPKeyMappingWEPOn,
                dot11WEPKeyMappingWEPkey , dot11WEPKeyMappingAddress }

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

dot11MACbase OBJECT-GROUP

            OBJECTS { dot11MACAddress, dot11Address,
                              dot11GroupAddressesIndex,
```

```
                        dot11GroupAddressesStatus,
                    dot11RTSThreshold, dot11ShortRetryLimit,
                    dot11LongRetryLimit, dot11FragmentationThreshold,
                    dot11MaxTransmitMSDULifetime,
                    dot11MaxReceiveLifetime, dot11ManufacturerID,
                    dot11ProductID

                    }
        STATUS current
        DESCRIPTION
         "The MAC object class provides the necessary support for the
         access control, generation, and verification of frame check
         sequences, and proper delivery of valid data to upper
         layers."
    ::= {dot11Groups 3 }


dot11MACStatistics OBJECT-GROUP

        OBJECTS { dot11RetryCount, dot11MultipleRetryCount,
            dot11RTSSuccessCount, dot11RTSFailureCount,
            dot11ACKFailureCount, dot11FrameDuplicateCount }

        STATUS current
        DESCRIPTION
            "The MACStatistics package provides extended statistical
            information on the operation of the MAC.  This
            package is completely optional."
    ::= {dot11Groups 4 }

dot11ResourceTypeID OBJECT-GROUP
        OBJECTS { dot11ResourceTypeIDName, dot11manufacturerOUI,
            dot11manufacturerName, dot11manufacturerProductName,
            dot11manufacturerProductVersion }
        STATUS current
        DESCRIPTION

                "Attributes used to identify a STA, its manufacturer,
                and various product names and versions."

    ::= {dot11Groups 5  }

dot11SmtAuthenticationAlgorithms OBJECT-GROUP
        OBJECTS {
            dot11AuthenticationAlgorithmsIndex,
            dot11Algorithm}
        STATUS current
        DESCRIPTION
                "Authentication Algorithm Table."
    ::= {dot11Groups 6 }

dot11MacGroupAddresses OBJECT-GROUP
        OBJECTS {  dot11GroupAddressesIndex, dot11Address }
        STATUS current
        DESCRIPTION
            "Set of Group Addresses for AP."
    ::= {dot11Groups 7  }


dot11PhyOperationComplianceGroup OBJECT-GROUP
```

```
        OBJECTS { dot11PHYType, dot11CurrentRegDomain, dot11TempType,
             dot11CCATime, dot11MACProcessingDelay ,
            dot11SlotTime,
            dot11RxTxTurnaroundTime,
            dot11TxPLCPDelay,
            dot11RxTxSwitchTime,
            dot11TxRampOnTime,
            dot11TxRFDelay,
            dot11SIFSTime,
            dot11RxRFDelay,
            dot11RxPLCPDelay,
            dot11TxRampOffTime,
            dot11PreambleLength,
            dot11PLCPHeaderLength,
            dot11MPDUDurationFactor,
            dot11AirPropagationTime,
            dot11CWmin, dot11CWmax}
        STATUS current
        DESCRIPTION
            "PHY layer operations attributes."
    ::= { dot11Groups 8 }


dot11PhyAntennaComplianceGroup OBJECT-GROUP
        OBJECTS {dot11CurrentTxAntenna, dot11DiversitySupport}
        STATUS current
        DESCRIPTION
            "Attributes for Data Rates for IEEE 802.11."
    ::= { dot11Groups 9 }

dot11PhyTxPowerComplianceGroup OBJECT-GROUP
        OBJECTS {dot11NumberSupportedPowerLevels, dot11TxPowerLevel1,
            dot11TxPowerLevel2, dot11TxPowerLevel3, dot11TxPowerLevel4,
            dot11TxPowerLevel5, dot11TxPowerLevel6, dot11TxPowerLevel7,
            dot11TxPowerLevel8, dot11CurrentTxPowerLevel }
        STATUS current
        DESCRIPTION
            "Attributes for Control and Management of Access Point power."
    ::= { dot11Groups 10 }

dot11PhyFHSSComplianceGroup OBJECT-GROUP

        OBJECTS {dot11HopTime, dot11CurrentChannelNumber, dot11MaxDwellTime,
        dot11CurrentDwellTime, dot11CurrentSet, dot11CurrentPattern,
    dot11CurrentIndex}

        STATUS current
        DESCRIPTION

            "Attributes that configure the Frequency Hopping for IEEE
            802.11."

    ::= { dot11Groups 11 }

dot11PhyDSSSComplianceGroup OBJECT-GROUP

        OBJECTS {dot11CurrentChannel, dot11CCAModeSupported,
    dot11CurrentCCAMode, dot11EDThreshold}

        STATUS current
```

```
        DESCRIPTION
            "Attributes that configure the DSSS for IEEE 802.11."
    ::= { dot11Groups 12 }

dot11PhyIRComplianceGroup OBJECT-GROUP
        OBJECTS {dot11CCAWatchdogTimerMax, dot11CCAWatchdogCountMax,
        dot11CCAWatchdogTimerMin, dot11CCAWatchdogCountMin}
        STATUS current
        DESCRIPTION
            "Attributes that configure the DSSS for IEEE 802.11."
    ::= { dot11Groups 13 }

dot11PhyRegDomainsSupportGroup OBJECT-GROUP
        OBJECTS {dot11RegDomainsSupportIndex, dot11RegDomainsSupportValue}
        STATUS current
        DESCRIPTION
            "Attributes that specify the supported Regulation Domains."
    ::= { dot11Groups 14}

dot11PhyAntennasListGroup OBJECT-GROUP
        OBJECTS { dot11AntennasListIndex, dot11SupportedTxAntenna,
             dot11SupportedRxAntenna, dot11DiversitySelectionRx }
        STATUS current
        DESCRIPTION
            "Attributes that specify the supported Regulation Domains."
    ::= { dot11Groups 15 }

dot11PhyRateGroup OBJECT-GROUP
        OBJECTS {dot11SupportedDataRatesTxValue,
            dot11SupportedDataRatesRxValue, dot11MPDUMaxLength,
        dot11SupportedDataRatesTxIndex,
        dot11SupportedDataRatesRxIndex}
        STATUS current
        DESCRIPTION
            "Attributes for Data Rates for IEEE 802.11."
    ::= { dot11Groups 16 }


dot11CountersGroup OBJECT-GROUP
        OBJECTS {
                    dot11TransmittedFragmentCount   ,
                    dot11MulticastTransmittedFrameCount ,
                    dot11FailedCount, dot11ReceivedFragmentCount,
                    dot11MulticastReceivedFrameCount    ,
                    dot11FCSErrorCount  }

        STATUS current
        DESCRIPTION
            "Attributes from the dot11Countersgrp that are not described
            in the dot11MACStatistics group.  These objects are
            mandatory."
    ::= {dot11Groups 17 }

-- ****************************************************************
-- *   End of 80211 MIB
-- ****************************************************************
END
```