IEEE P802.11  
Wireless LANs

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| CC23 CR Annex C | | | | |
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Abstract

This submission proposes resolutions of comments received from TGax comment collection 23.   
(The proposed change is based on TGax Draft 0.5.)

* CIDs: 150, 1020, 2201 (3 CID)

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 150 | 1.01 | 1 | Annex C and Annex B need to be updated. | As in comment. | Revised-  Agree in principal.  TGax editor makes changes as shown in the as specified in 11-16/1354r0. |
| 1020 | 66.38 | 25.13.1 | dot11IntraPPDUPowerSaveOptionActivated is not defined yet. | Define it in Annex C. | Revised-  Agree in principal.  TGax editor makes changes as shown in the as specified in 11-16/1354r0. |
| 2201 |  |  | There are several MIB parameters that are used but not defined. ex. dot11HighEfficiencyOptionImplemented, dot11HEOptionImplemented (these two should be either one), dot11TWTOptionActivated, dot11TWTGroupingSupport, dot11HEControlFieldOptionImplemented, dot11ULMUOFDMAOptionImplemented, dot11ULMUMIMOOptionImplemented, dot11ROMIOptionImplemented, dot11DynamicFragmentation, dot11AMPDUwithMultipleTIDOptionImplemented, dot11IntraPPDUPowerSaveOptionActivated | Define the MIB parameters in Annex C. Also revisit whether the features are mandatory or option (or necessary) and delete or add the parameters as necessary. | Revised-  Agree in principal.  TGax editor makes changes as shown in the as specified in 11-16/1354r0. |

***TGax editor: change Annex C as the following:***

ASN.1 encoding of the MAC and PHY MIB

* MIB Detail

(#1123)dot11smt OBJECT IDENTIFIER ::= { ieee802dot11 1 }

…

-- dot11STACivicLocationConfigTable::= { dot11smt 37 }

-- dot11HEStationConfigTable::= { dot11smt <ANA> }

-- dot11PPEThresholdsMappingsTable::= { dot11smt <ANA> }

…

Dot11StationConfigEntry ::= SEQUENCE

{

…,

dot11FutureChannelGuidanceActivated TruthValue,

dot11HEOptionImplemented TruthValu~~l~~e,

}

…

Insert the following after the dot11FutureChannelGuidanceActivated OBJECT-TYPE element in the Dot11StationConfig TABLE:

dot11HEOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates whether the entity is HE Capable."

::= { dot11StationConfigEntry <ANA>}

…

~~Insert the following (after getting some sucker to validate MIB compilation, etc.):~~

~~Dot11HEStationConfigEntry ::= SEQUENCE~~

~~{~~

~~dot11HEDynamicFragmentationImplemented, TruthValue~~

~~}~~

Insert the following after the dot11S1GStationConfig TABLE:

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* dot11HEStationConfig TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

dot11HEStationConfigTable OBJECT-TYPE

SYNTAX SEQUENCE OF Dot11HEStationConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Station Configuration attributes. In tabular form to allow for multiple instances on an agent."

::= { dot11smt <ANA> }

dot11HEStationConfigEntry OBJECT-TYPE

SYNTAX Dot11HEStationConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry (conceptual row) in the dot11HEStationConfig Table.

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

INDEX { ifIndex }

::= { dot11HEStationConfigTable 1 }

Dot11HEStationConfigEntry ::=

SEQUENCE {

dot11HEULMUResponseSchedulingOptionImplemented TruthValue,

dot11ULMUMIMOOptionImplemented TruthValue,

dot11OFDMARandomAccessOptionImlemented TruthValue,

dot11HEControlFieldOptionImplemented TruthValue,

dot11OMIOptionImplemented TruthValue,

dot11HEMCSFeedbackOptionImplemented TruthValue,

dot11HEDynamicFragmentationImplemented TruthValue,

dot11AMPDUwithMultipleTIDOptionImplemented TruthValue,

dot11MPDUAskedforAckInMultiTIDAMPDU TruthValue,

dot11DurationRTSThreshold Unsigned32,

dot11PPEThresholdsRequired TruthValue,

dot11IntraPPDUPowerSaveOptionActivated TruthValue

}

***TGax editor: replace “dot11ULOFDMARandomAccessOptionImlemented” with “dot11OFDMARandomAccessOptionImlemented” through TGax Draft 0.5 (1 occurrence at P138 L29).***

***TGax editor: replace “dot11HEROMIOptionImplemented” with “dot11OMIOptionImplemented” through TGax Draft 0.5 (1 occurrence at P101 L26).***

***TGax editor: replace “dot11MultiTIDAMPDUImplemented” with “dot11AMPDUwithMultipleTIDOptionImplemented” through TGax Draft 0.5 (1 occurrence at P156 L17).***

dot11HEULMUResponseSchedulingOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of receiving frames with an UL MU response scheduling A-Control field. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 1}

dot11ULMUMIMOOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of a full bandwidth UL MU-MIMO transmission. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 2}

dot11OFDMARandomAccessOptionImlemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of an OFDMA random access operation. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 3}

dot11HEControlFieldOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of receiving the HE variant HT Control field. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 4}

dot11OMIOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of generating frames with an OMI A-Control field. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 5}

dot11HEMCSFeedbackOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates the MCS feed back capability supported by the station implementation."

DEFVAL { false }

::= { dot11HEStationConfigEntry 6}

dot11HEDynamicFragmentationImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the STA implementation is

capable of receiving dynamic fragments. The capability is disabled,

otherwise"

DEFVAL { false }

::= { dot11HEStationConfigEntry 7}

dot11AMPDUwithMultipleTIDOptionImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of generating an A-MPDU that contains QoS Data frames with two or more different TID values. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 8}

dot11MPDUAskedforAckInMultiTIDAMPDU OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of receiving a multi-TID A-MPDU that can solicit either Ack or BlockAck, or both. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 9}

dot11DurationRTSThreshold OBJECT-TYPE

SYNTAX Unsigned32 (0..1023)

UNITS "32 microseconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This is a control variable.

It is written by an external management entity or by the MAC upon receiving duration-based RTS threshold notification frame.

Changes take effect as soon as practical in the implementation.

This attribute indicates the duration of the transmission or TXOP above which an RTS/CTS handshake is performed. Value zero means the RTS should be always used for TxOP transmission. Value 1023 means this feature is disabled"

DEFVAL { 1023 }

::= { dot11HEStationConfigEntry 10}

dot11PPEThresholdsRequired OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that Post-FEC Padding and Packet Extension Thresholds exist and are provided in dot11PPEThresholdsTable(#1313)."

DEFVAL { false }

::= { dot11HEStationConfigEntry 11}

dot11IntraPPDUPowerSaveOptionActivated OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is capable of Intra PPDU Power Save operation. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11HEStationConfigEntry 12}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* End of dot11HEStationConfigTable TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

~~dot11HEDynamicFragmentationImplemented OBJECT-TYPE~~

~~SYNTAX TruthValue~~

~~MAX-ACCESS read-only~~

~~STATUS current~~

~~DESCRIPTION~~

~~"This is a capability variable.~~

~~Its value is determined by device capabilities.~~

~~This attribute, when true, indicates that the STA implementation is~~

~~capable of receiving dynamic fragments. The capability is disabled,~~

~~otherwise"~~

~~DEFVAL { false }~~

~~::= { dot11HEStationConfigEntry <XX>}~~

~~dot11PPEThresholdsRequired OBJECT-TYPE~~

~~SYNTAX TruthValue~~

~~MAX-ACCESS read-only~~

~~STATUS current~~

~~DESCRIPTION~~

~~"This is a capability variable.~~

~~Its value is determined by device capabilities.~~

~~This attribute, when true, indicates that Post-FEC Padding and Packet Extension Thresholds exist and are provided in dot11PPEThresholdsTable(#1313)."~~

~~DEFVAL { false }~~

~~::= { dot11StationConfigEntry <ANA>}(#1481)~~

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* dot11PPEThresholdsMappings TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

dot11PPEThresholdsMappingsTable OBJECT-TYPE

SYNTAX SEQUENCE OF Dot11PPEThresholdsMappingsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Conceptual table for PPE Thresholds Mappings. The MIB supports the

ability to share separate PPE Thresholds for each NSS/RU pair. The

Thresholds Mappings Table contains one entry for each NSS/RU pair

and contains two fields for each entry: PPET8 and PPET16. The PPE

Thresholds mappings are logically WRITE-ONLY. Attempts to read the

entries in this table return unsuccessful status and values of null or 0.

The default value for all PPET8 fields is NONE."

REFERENCE "IEEE Std 802.11-<year>, 25.13 (HE PPDU post FEC padding and packet extension)(#1632)"

::= { dot11smt ~~4~~ <ANA> }

…

dot11PPEThresholdsMappingRUIndex OBJECT-TYPE

SYNTAX Integer

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index of the RU value portion of the NSS/RU pair for which the values

from this Thresholds mapping entry are to be used. The index values

map to an RU as follows: RU Index of 0 is ~~996~~ 242 tones, 1 is 448 tones,

2 is ~~TBD~~ 996 tones, 3 is ~~reserved~~ 2x996 tones."

::= { dot11PPEThresholdsMappingsEntry 3 }

…

Insert the following compliance objects after the dot11S1GComplianceGroup objec

dot11HEComplianceGroup OBJECT-GROUP

OBJECTS {

~~dot11HEDynamicFragmentationImplemented}~~

dot11HEULMUResponseSchedulingOptionImplemented,

dot11ULMUMIMOOptionImplemented,

dot11OFDMARandomAccessOptionImlemented,

dot11HEControlFieldOptionImplemented,

dot11OMIOptionImplemented,

dot11HEMCSFeedbackOptionImplemented,

dot11HEDynamicFragmentationImplemented,

dot11AMPDUwithMultipleTIDOptionImplemented,

dot11MPDUAskedforAckInMultiTIDAMPDU,

dot11DurationRTSThreshold,

dot11PPEThresholdsRequired,

dot11IntraPPDUPowerSaveOptionActivated}

STATUS current

DESCRIPTION

"Attributes that configure the HE Group for IEEE 802.11."

::= { dot11Groups ~~<XX>~~ <ANA> }(#1481)

~~(#576)Insert the following:~~

~~dot11DurationRTSThreshold OBJECT-TYPE~~

~~SYNTAX Unsigned16 (0..1023)~~

~~UNITS "32 microseconds"~~

~~MAX-ACCESS read-write~~

~~STATUS current~~

~~DESCRIPTION~~

~~"This is a control variable.~~

~~It is written by an external management entity or by the MAC upon receiving duration-based RTS threshold notification frame.~~

~~Changes take effect as soon as practical in the implementation.~~

~~This attribute indicates the duration of the transmission or TXOP above which an RTS/CTS handshake is performed. Value zero means the RTS should be always used for TxOP transmission. Value 1023 means this feature is disabled"~~

~~DEFVAL { 1023 }~~

~~::= { Dot11OperationEntry <ANA> }~~

Insert the following after dot11S1GCompliance:

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* Compliance Statements – HE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

dot11HECompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"This object class provides the objects from the IEEE 802.11

MIB used to operate at high efficiency."

MODULE -- this module

MANDATORY-GROUPS { dot11HEComplianceGroup }

-- OPTIONAL-GROUPS { }

::= { dot11Compliances <ANA> }