IEEE P802.11
Wireless LANs

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| LB231 CID Resolutions Part 2 |
| Date: 2018-07-09 |
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Abstract

Proposed resolutions to LB231 CIDs 1204, 1971, 2279, 1470, 1748, 1749, and 1750.

Comments from LB231 -

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1204 | Adrian Stephens | 9.4.2.250.1 | "Each Extended Capabilities field is structured as defined in Figure 28."Congratulations on re-inventing the subelement.However, if you do use the sub-element, you avoid creating a novel concept, you re-use the existing concepts about extensibility, and what happens if you encounter an unknown subelement. | Replace these fields with "subelements" following the model of the baseline, e.g. in 9.4.2.22.14. |

Resolution: Revise - resolve as in CID 1946 for complete conversion to sub-element format.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1971 | Assaf Kasher | 9.4.2.250.2 | Beamforming Capabiity field format - no field for requested OFDM Symbols - similar to requested BRP SC blocks | Consdier adding the field for OFDM as TRN fields can be added to OFDM frames |

Resolution: Accept.

*Instruct the Editor to make the following changes to Section 9.4.2.250.2:*

9.4.2.250.2 Beamforming Capability subelement

The Beamforming Capability subelement is defined in Figure 39.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B4 | B5 B9 | B10 | B11 | B12 | B13 | B14 |
|  | Requested BRP SC Blocks | Requested BRP OFDM Symbols | MU-MIMO Supported | Reciprocal MU-MIMO Supported | SU-MIMO Supported | Grant Required | DMG TRN RX Only Capable |
| Bits: | 5 | 5 | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | B15 | B16 | B17 | B18 B19 | B20 | B21 B23 |
|  | First Path Training Supported | Hybrid Beamforming and MU-MIMO Supported | Hybrid Beamforming and SU-MIMO Supported | Largest Ng Supported | Dynamic Grouping Supported | Reserved |
| Bits: | 1 | 1 | 1 | 2 | 1 | 3 |

Figure 39—Beamforming Capability subelement format

The Requested BRP SC Blocks subfield indicates the minimum number of data SC blocks that the STA requests be included in a PPDU carrying a TRN field and transmitted to the STA. The value of this subfield ranges from 0 through aBRPminSCblocks inclusive.

The Requested BRP OFDM subfield indicates the minimum number of data OFDM symbols that the STA requests be included in an OFDM PHY PPDU carrying a TRN field and transmitted to the STA. The value of this subfield ranges from 0 through aBRPminOFDMblocks inclusive. If the STA does not support the OFDM PHY then this subfield is set to zero.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2279 | Li-Hsiang Sun | 9.4.2.250.1 | The definition of Max A-MPDU Length Exponent should be different from that of 11ad because 11ay A-MPDU may have EOF padding | Change to "Indicates the maximum length of A-MPDU pre-EOF padding that the STA can receive"Change the baseline 9.7.1, 7th paragraph as follows:"An A-MPDU pre-EOF padding refers to the contents of the A-MPDU up to, but not including, the EOF Padding field or the first A-MPDU subframe carrying a Block Ack Schedule frame with EOF subfield set to 1" |

Resolution: Reject

Discussion: This comment is a duplicate of 1867 which was rejected in document 18/0667r1 and Motion 440.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1470 | Christopher Hansen | 9.4.2.250 | EDMG Capabilities element is incomplete. | There are many optional features in the draft that do not have a corresponding field or sub-field in the EDMG. These need to be added. A contribution will be provided. |

Resolution: Reject

Discussion: Comment is withdrawn by the submitter.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1748 | Kazuyuki Sakoda | 9.4.2.250.2 | Subclause 9.4.2.250.2 defines a set of capability fields. These capabilities should be exposed to SME or external entity via MIB variable. | Please define capability MIB variable for capabilities defined in Beamforming Capabilities field. |
| 1749 | Kazuyuki Sakoda | 9.4.2.250.3 | Subclause 9.4.2.250.3 defines Antenna Polarization capablities. These capabilities should be exposed to SME or external entity via MIB variable. | Please define capability MIB variable for capabilities defined in Antenna Polarization Capability field. |
| 1750 | Kazuyuki Sakoda | 9.4.2.250.4 | Subclause 9.4.2.250.2 defines a set of PHY capability fields. These capabilities should be exposed to SME or external entity via MIB variable. | Please define capability MIB variable for capabilities defined in PHY Capability field. |

Resolution: Accept

*Instruct the Editor to add the following text to C3 MIB detail:*

***Instruct the Editor to add the following commnent at the end of the “PHY GROUPS” list in the “Major sections”of C.3 MIB detail:***

-- dot11EDMGBeamformingConfigTable ::= { dot11phy <ANA> }

***Instruct the Editor to add the following entries to Dot11PHYEDMGEntry in C.3 MIB detail:***

Dot11PHYEDMGEntry ::=

SEQUENCE {

dot11OFDMPHYImplemented TruthValue,

dot11OFDMPHYActivated TruthValue,

dot11CurrentChannelWidth INTEGER,

dot11CurrentChannelCenterFrequencyIndex0 Unsigned32,

dot11CurrentChannelCenterFrequencyIndex1 Unsigned32,

dot11CurrentPrimaryChannel Unsigned32,

dot11EDMGPolarizationCapability OCTET\_STRING,

 dot11EDMGSCMaxSUSpatialStreams Unsigned32,

 dot11EDMGOFDMMaxSUSpatialStreams Unsigned32,

 dot11EDMGNumConcurrentRFChains Unsigned32,

 dot11EDMGPhaseHoppingImplemented TruthValue,

 dot11EDMGOpenLoopPrecodingImplemented TruthValue,

 dot11EDMGDCMBPSKImplemented TruthValue,

 dot11EDMGShortCWPuncturedImplemented TruthValue,

 dot11EDMGShortCWSuperimposedImplemented TruthValue,

 dot11EDMGLongCWPuncturedImplemented TruthValue,

 dot11EDMGLongCWSuperimposedImplemented TruthValue,

 dot11EDMGNUCTXImplementedTruthValue,

 dot11EDMGNUCRXImplemented TruthValue,

 dot11EDMG8PSKImplemented TruthValue,

 dot11EDMGSTBCImplemented INTEGER,

 dot11EDMGAPPDUImplemented TruthValue

}

***Instruct the Editor to add the following entries at the end of Dot11PHYEDMGEntry in C.3 MIB detail:***

dot11EDMGPolarizationCapability OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..9))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.
Its value is determined by device capabilities.

This attribute indicates EDMG antenna polarization capabilities defined in the Antenna Polarization Capability field in the EDMG Capabilities element."

::= { dot11PHYEDMGEntry 7 }

dot11EDMGSCMaxSUSpatialStreams OBJECT-TYPE

SYNTAX Unsigned32 (1..8)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates number of supported spatial streams for EDMG SC PHY."

DEFVAL { 1 }

::= { dot11PHYEDMGEntry 8 }

dot11EDMGOFDMMaxSUSpatialStreams OBJECT-TYPE

SYNTAX Unsigned32 (1..8)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates number of supported spatial streams for EDMG OFDM PHY."

DEFVAL { 1 }

::= { dot11PHYEDMGEntry 9 }

dot11EDMGNumConcurrentRFChains OBJECT-TYPE

SYNTAX Unsigned32 (1..8)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates number of concurrent RF chains the EDMG PHY supports.."

DEFVAL { 1 }

::= { dot11PHYEDMGEntry 10 }

dot11EDMGPhaseHoppingImplemented 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 support for Phase Hopping."

DEFVAL { false }

::= { dot11PHYEDMGEntry 11 }

dot11EDMGOpenLoopPrecodingImplemented 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 support for Open Loop Precoding."

DEFVAL { false }

::= { dot11PHYEDMGEntry 12 }

dot11EDMGDCMBPSKImplemented 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 support for DCM Pi/2 BPSK."

DEFVAL { false }

::= { dot11PHYEDMGEntry 13 }

dot11EDMGShortCWPuncturedImplemented 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 support for Punctured short CW."

DEFVAL { false }

::= { dot11PHYEDMGEntry 14 }

dot11EDMGShortCWSuperimposedImplemented 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 support for Superimposed short CW."

DEFVAL { false }

::= { dot11PHYEDMGEntry 15 }

dot11EDMGLongCWPuncturedImplemented 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 support for Punctured Long CW."

DEFVAL { false }

::= { dot11PHYEDMGEntry 16 }

dot11EDMGLongCWSuperimposedImplemented 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 support for Superimposed Long CW."

DEFVAL { false }

::= { dot11PHYEDMGEntry 17 }

dot11EDMGNUCTXImplemented 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 support for NUC TX."

DEFVAL { false }

::= { dot11PHYEDMGEntry 18 }

dot11EDMGNUCRXImplemented 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 support for NUC RX."

DEFVAL { false }

::= { dot11PHYEDMGEntry 19 }

dot11EDMG8PSKImplemented 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 support for Pi/2 8PSK."

DEFVAL { false }

::= { dot11PHYEDMGEntry 20 }

dot11EDMGSTBCImplemented OBJECT-TYPE

 SYNTAX INTEGER { notSupported (0), singleStreamRx (1), oneOrMoreSteramRx (2) }

 MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates support for STBC."

DEFVAL { 0 }

::= { dot11PHYEDMGEntry 21 }

dot11EDMGAPPDUImplemented 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 support for A-PPDU."

DEFVAL { false }

::= { dot11PHYEDMGEntry 22 }

***Instruct the Editor to add the following tables (“dot11EDMGBeamformingConfigTable”) after the “dot11EdmgPhyTabe”to C3 MIB detail:***

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

-- \* dot11EDMGBeamformingConfigTable

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

dot11EDMGBeamformingConfigTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot11EDMGBeamformingConfigEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This is a Table management object.

 The dot11EDMGBeamformingConfig Table"

 ::= { dot11phy <ANA> }

Dot11EDMGBeamformingConfigEntry OBJECT-TYPE

 SYNTAX Dot11EDMGBeamformingConfigEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This is an entry in the dot11EDMGBeamformingConfigTable Table.

 ifIndex - Each IEEE 802.11 interface is represented by an ifEntry.

 Interface tables in this MIB module are indexed by ifIndex."

 INDEX { ifIndex }

 ::= { dot11EDMGBeamformingConfigTable 1 }

dot11EDMGBeamformingConfigEntry ::=

 SEQUENCE {

 dot11RequestedBRPSCBlocks Unsigned32,

 dot11RequestedBRPOFDMBlocks Unsigned32,

 dot11EDMGMIMOSupport INTEGER,

 dot11EDMGBFGrantRequired TruthValue,

 dot11DMGTRNRXOnly TruthValue,

 dot11FirstPathTraining TruthValue,

 dot11EDMGHybridMUMIMOImplemented TruthValue,

 dot11EDMGHybridSUMIMOImplemented TruthValue,

 dot11EDMGLargestNgSuported INTEGER,

 dot11EDMGDynamicGroupingImplemented TruthValue,

 }

dot11RequestedBRPSCBlocks OBJECT-TYPE

SYNTAX Unsigned32 (0..aBRPminSCblocks)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates the minimum number of data SC blocks that the STA requests be included in a PPDU carrying a TRN field and transmitted to the STA."

DEFVAL { 1 }

::= { dot11EDMGBeamformingConfigEntry 1 }

dot11RequestedBRPOFDMBlocks OBJECT-TYPE

SYNTAX Unsigned32 (0..aBRPminOFDMblocks)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

The attribute indicates the minimum number of data OFDM blocks that the STA requests be included in a PPDU carrying a TRN field and transmitted to the STA."

DEFVAL { 1 }

::= { dot11EDMGBeamformingConfigEntry 2 }

dot11EDMGMIMOSupport OBJECT-TYPE

SYNTAX INTEGER {notSupported (0), suMimoOnly (1), muAndSuMimo (2), reciprocalMuMimoAndSuMimo (3)}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates EDMG MIMO Capabilities."

DEFVAL { 0 }

::= { dot11EDMGBeamformingConfigEntry 3 }

 dot11EDMGBFGrantRequired 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 Beamforming Grant Required capability."

DEFVAL { false }

::= { dot11EDMGBeamformingConfigEntry 4 }

dot11EDMGBFDMGTRNRXOnly 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 EDMG Beamforming TRN RX Only Capabilities."

DEFVAL { false }

::= { dot11EDMGBeamformingConfigEntry 5 }

dot11EDMGBFFirstPathTrain 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 EDMG Beamforming First Path Training Supported."

DEFVAL { false }

::= { dot11EDMGBeamformingConfigEntry 6 }

dot11EDMGHybridMUMIMOImplemented 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 EDMG Hybrid BF MU-MIMO Capability."

DEFVAL { 0 }

::= { dot11EDMGBeamformingConfigEntry 7 }

dot11EDMGHybridSUMIMOImplemented 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 EDMG Hybrid BF SU-MIMO Capability."

DEFVAL { 0 }

::= { dot11EDMGBeamformingConfigEntry 8 }

dot11EDMGBFGrantLargestNgSupported OBJECT-TYPE

 SYNTAX INTEGER { 0..2 }

 MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute indicates largest value of Ng that the EDMG STA supports for the beamforming feedback matrix."

DEFVAL { 1 }

::= { dot11EDMGBeamformingConfigEntry 9 }

dot11EDMGBFDynamicGroupingImplemeneted 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 support for dynamic grouping."

DEFVAL { false }

::= { dot11EDMGBeamformingConfigEntry 10 }

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

-- \* End of dot11EDMGBeamformingConfigTable

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

***Instruct the Editor to change compliance statements for EDMG as follows in C.3 MIB detail:***

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

-- \* Compliance statements - EDMG

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

dot11EDMGCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"The compliance statement for SNMPv2 entities that implement

 the IEEE 802.11 MIB for EDMG operation."

MODULE -- this module

MANDATORY-GROUPS {

dot11EDMGComplianceGroup, dot11EDMGOperationsComplianceGroup,

 dot11EDMGPHYComplianceGroup, dot11EDMGBeamformingComplianceGroup

}

-- OPTIONAL-GROUPS { }

::= { dot11Compliances <ANA> }

***Instruct the Editor to add the following compliance group for EDMG PHY as follows in C.3 MIB detail:***

dot11EDMGPHYComplianceGroup OBJECT-GROUP

OBJECTS {

dot11EDMGPolarizationCapability,

 dot11EDMGSCMaxSUSpatialStreams,

 dot11EDMGOFDMMaxSUSpatialStreams,

 dot11EDMGNumConcurrentRFChains,

 dot11EDMGPhaseHoppingImplemented,

 dot11EDMGOpenLoopPrecodingImplemented,

 dot11EDMGDCMBPSKImplemented,

 dot11EDMGShortCWPuncturedImplemented,

 dot11EDMGShortCWSuperimposedImplemented,

 dot11EDMGLongCWPuncturedImplemented,

 dot11EDMGLongCWSuperimposedImplemented,

 dot11EDMGNUCTXImplemented,

 dot11EDMGNUCRXImplemented,

 dot11EDMG8PSKImplemented,

 dot11EDMGSTBCImplemented,

 dot11EDMGAPPDUImplemented

}

STATUS current

DESCRIPTION

"Attributes that configure the EDMG PHY for IEEE 802.11."

::= { dot11Groups <ANA> }

dot11EDMGBeamformingComplianceGroup OBJECT-GROUP

OBJECTS {

 dot11RequestedBRPSCBlocks,

 dot11RequestedBRPOFDMBlocks,

 dot11EDMGMIMOSupport,

 dot11EDMGBFGrantRequired,

 dot11DMGTRNRXOnly,

 dot11FirstPathTraining,

 dot11EDMGHybridMUMIMOImplemented,

 dot11EDMGHybridSUMIMOImplemented,

 dot11EDMGLargestNgSupported,

 dot11EDMGDynamicGroupingImplemented

}

STATUS current

DESCRIPTION

"Attributes that configure the EDMG Beamforming for IEEE 802.11."

::= { dot11Groups <ANA> }