IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comment Resolution for CC36 related to IEEE 802.11be Annex B (PICS) | | | | |
| Date: 2021-10-11 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Rajat Pushkarna | Panasonic Corp. |  |  | rajat.pushkarna@sg.panasonic.com |
| Rojan Chitrakar | Panasonic Corp. |  |  |  |
| Alfred Asterjadhi | Qualcomm |  |  |  |

Abstract

This document includes proposed resolutions to CIDs 4206, 4281, 5533, 6672, 6748, 7287 related to Annex B

R0: Initial draft

R1: Minor changes based on feedback from members offline.

R2: Minor changes based on feedback from members offline.

C

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | **Clause** | **Comment** | **Proposed Changes** | **Resolutions** |
|  |  |  |  |  |  |
| 4206 | 284 | 35.3.17.1 | This is part of EHT is my guess. So add EHT to the dot11"EHT"SoftAPMLDImplemented. Also please define this MIB variable in Annex C. And add respective entry to Annex B. | As in comment. | **Revised:**  Revised the MIB variable as suggested by the commentor in Annex C.  Added SoftAPMLD feature to as an EHT MAC feature in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 4206.** |
| 4281 | 274 | Annex B | Annex B is incomplete. Please complete. | As in comment. | **Revised:** Agree with the commentor to add Annex B. Added EHT MAC features in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 4281.** |
| 5533 | 579 | B.4.36a | Many EHT MAC features have been amended and accepted in the spec (e.g. multi-link operation, channel access, discovery, etc.) but we don't have PICS for the EHT MAC features yet. We need to have it upon the agreements in the next version of draft. | As in comment | **Revised:** Agree with the commentor to add Annex B. Added EHT MAC features in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 5533.** |
| 6672 | 579 | B.4 | MAC related PICS are missing Annex B | Please provide PICS for EHT MAC | **Revised:** Agree with the commentor to add Annex B. Added EHT MAC features in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 6672.** |
| 6748 | 579 | B.4 | EHT MAC related PICS are missing. | Add EHT MAC related PICS | **Revised:** Agree with the commentor to add Annex B. Added EHT MAC features in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 6748.** |
| 7287 | 579 | B.4.36a.2 | There should be a section B4.36a.3 with EHT MAC features | Add EHT MAC features to PICS | **Revised:** Agree with the commentor to add Annex B. Added EHT MAC features in Annex B.  **TGbe editor to make the changes shown in IEEE 802.11-21/1681r2 under all headings that include CID 7287.** |

**Annex B (**CIDs 4206, 4281, 5533, 6672, 6748, 7287)

(normative)

**Protocol Implementation Conformance Statement (PICS) – proforma**

***TGbe editor: Add the following sub-clause (B.2.2) to 11bf draft:***

**B.2.2 General abbreviation for Item and Support columns**

***Add the following items at the end of sub-clause B.2.2:***

EHTM Extremely High Throughput MAC

EHTP Extremely High Throughput PHY

**B.4.3 IUT configuration**

***TGbe editor: Change the table in B.4.3 as follows:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **IUT configuration** | **References** | **Status** | **Support** |
| CFEHT | EHT operation | Clause 35, 36 | O | Yes: No: N/A: |
| CFEHT2G4 | EHT operations in the 2.4 GHz band | Clause 36 | O.10 | Yes: No: N/A: |
| CFEHT5G | EHT operations in the 5 GHz band | Clause 36 | O.10 | Yes: No:  N/A: |
| CFEHT6G | EHT operations in the 6 GHz band | Clause 36 | O.10 | Yes: No:  N/A: |
| CFEHT20 | EHT operation as a 20 MHz-only non-AP EHT STA | Clause 36 | CFIndepSTA AND CFEHT: O.10 | Yes: No:  N/A: |
| CFEHT80 | EHT operation with capability of 80 MHz or wider channel width | Clause 36 | CFAP AND CFEHT: M CFIndepSTA AND CFEHT: O.10 | Yes: No:  N/A: |
| CFEHTMLD | EHT MLD operation | Clause 35 | CFEHT: M | Yes: No:  N/A: |
| CFEHTMLDAP | EHT AP MLD operation | Clause 35 | CFEHTMLD: M | Yes: No:  N/A: |
| CFEHTMLDnonAP | EHT non-AP MLD operation | Clause 35 | CFEHTMLD: M | Yes: No:  N/A: |
| CFEHTMobileAP | NSTR mobile AP MLD operation | Clause 35 | CFEHTMLD: O | Yes: No:  N/A: |

***TGbe editor: Add the following subclause (B.4.4.2) to 11be draft:***

**B.4.4.2 MAC frames**

***Insert the following rows at the end of the indicated sections of the table in B.4.4.2:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **MAC frame** | **References** | **Status** | **Support** |
|  | Is transmission of the following MAC frames supported? | …… |  | * Yes * No * N/A |
| FT57 | EHT Action frames | 9.6.34 | CFEHT: M | * Yes * No * N/A |
| FT57.1 | EHT Compressed Beamforming/CQI frame | 9.6.34.2 | CFEHT: M | * Yes * No * N/A |
| FT57.2 | EML Operating Mode Notification frame | 9.6.34.3 | (EHTM8.10 and EHTM8.11): M | * Yes * No * N/A |
| FT58 | Protected EHT Action frame | 9.6.35 | CFEHT: O | * Yes * No * N/A |
| FT58.1 | TID-To-Link Mapping Request frame | 9.6.35.2 | EHTM8.14: M | * Yes * No * N/A |
| FT58.2 | TID-To-Link Mapping Response frame | 9.6.35.3 | EHTM8.14: M | * Yes * No * N/A |
| FT58.3 | TID-To-Link Mapping Teardown frame | 9.6.35.4 | EHTM8.14: M | * Yes * No * N/A |
| FT58.4 | NSEP Priority Access Enable Request frame | 9.6.35.5 | (EHTM5 and  CFEHTnonAP): M | * Yes * No * N/A |
| FT58.5 | NSEP Priority Access Enable Response frame | 9.6.35.6 | (EHTM5 and  CFEHTAP): M | * Yes * No * N/A |
| FT58.6 | NSEP Priority Access Teardown frame | 9.6.35.7 | (EHTM5 and CFEHTnonAP): M | * Yes * No * N/A |
|  | Is reception of the following MAC frames supported? | …….. |  |  |
| FR58 | EHT Action frames | 9.6.34 | CFEHT: M | * Yes * No * N/A |
| FR58.1 | EHT Compressed Beamforming/CQI frame | 9.6.34.2 | CFEHT: M | * Yes * No * N/A |
| FR58.2 | EML Operating Mode Notification frame | 9.6.34.3 | CFEHTMLDAP:O | * Yes * No * N/A |
| FR59 | Protected EHT Action frame | 9.6.35 | CFEHT: O | * Yes * No * N/A |
| FR59.1 | TID-To-Link Mapping Request frame | 9.6.35.2 | EHTM8.14: M | * Yes * No * N/A |
| FR59.2 | TID-To-Link Mapping Response frame | 9.6.35.3 | EHTM8.14: M | * Yes * No * N/A |
| FR59.3 | TID-To-Link Mapping Teardown frame | 9.6.35.4 | EHTM8.14: M | * Yes * No * N/A |
| FR59.4 | NSEP Priority Access Enable Request frame | 9.6.35.5 | (EHTM5 and CFEHTAP): M | * Yes * No * N/A |
| FR59.5 | NSEP Priority Access Enable Response frame | 9.6.35.6 | (EHTM5 and CFEHTnonAP): M | * Yes * No * N/A |
| FR59.6 | NSEP Priority Access Teardown frame | 9.6.35.7 | (EHTM5 and CFEHTAP): M | * Yes * No * N/A |

**B.4.xx Extremely High Throughput (EHT) features**

***TGbe editor: Insert a new subclause at the end of B.4 as follows:***

**B.4.xx.x EHT MAC features**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Protocol Capability** | **References** | **Status** | **Support** |
|  | Are the following MAC protocol features supported? |  |  |  |
| EHTM1 | EHT capabilities signaling |  |  |  |
| EHTM1.1 | EHT Capabilities element | 9.4.2.295c (EHT Capabilities element) | CFEHT: M | * Yes * No * N/A |
| EHTM1.2 | Signaling of STA capabilities in Probe Request, (Re) Association Request frames | 9.3.3.5 (Association  Request  frame format),  9.3.3.7 (Reassociation  Request frame  format), 9.3.3.9  (Probe Request  frame format),  9.4.2.295c (EHT  Capabilities  element) | (CFEHT AND CFIndepSTA):M | * Yes * No * N/A |
| EHTM1.3 | Signaling of EHT STA capabilities and EHT BSS capabilities in Beacon, Probe Response, (Re)Association Response frames | 9.3.3.2 (Beacon  frame format),  9.3.3.6  (Association  Response  frame format),  9.3.3.8 (Reassociation  Response  frame format),  9.3.3.10 (Probe  Response  frame format),  9.4.2.295c (EHT  Capabilities  element) | (CFEHT AND CFAP): M | * Yes * No * N/A |
| EHTM1.4 | Signalling of EML capabilities with dot11EHTEMLSROptionImplemented or dot11EHTEMLMROptionImplemented equal to true | 9.3.3.2 (Beacon  frame format), 9.3.3.10 (Probe  Response  frame format), 9.3.3.7 (Reassociation  Request frame  format),  9.3.3.8 (Reassociation  Response  frame format) | CFEHTMLD: M | * Yes * No * N/A |
| EHTM1.5 | Signalling of MLD capabilities using MLD capabilies subfield present in the Common Info field of the Basic Multi-Link element. | 9.3.3.2 (Beacon  frame format), 9.3.3.10 (Probe  Response  frame format), 9.3.3.7 (Reassociation  Request frame  format),  9.3.3.8 (Reassociation  Response  frame format) | CFEHTMLD: M | * Yes * No * N/A |
| EHTM2 | Signaling of EHT operation | 9.4.2.295a (EHT Operation element) | (CFEHT AND CFAP): M | * Yes * No * N/A |
| EHTM3 | HE variant HT Control field |  |  |  |
| EHTM3.1 | EHT OM Control | 9.2.4.6a.8 (EHT OM Control) | CFEHT: M | * Yes * No * N/A |
| EHTM3.2 | SRS Control | 9.2.4.6a.9 (SRS Control) | CFEHT: O | * Yes * No * N/A |
| EHTM3.3 | AAR Control | 9.2.4.6a.10 (AAR Control) | CFEHT: O | * Yes * No * N/A |
| EHTM4 | Restricted TWT | 35.7 | CFEHT: O | * Yes * No * N/A |
| EHTM5 | NSEP priority access | 35.14 | CFEHT: O | * Yes * No * N/A |
| EHTM6 | Triggered TXOP sharing procedure | 35.2.1.3 | CFEHT: O | * Yes * No * N/A |
| EHTM7 | EHT BSS Operation |  |  |  |
| EHTM7.1 | EHT BSS 6 GHz operation | 35.13.1 | CFEHT6G: M | * Yes * No * N/A |
| EHTM7.2 | Preamble puncturing operation | 35.13.2 | CFAP: O and CFEHT: M | * Yes * No * N/A |
| EHTM8 | EHT MLD features |  |  |  |
| EHTM8.1 | Multi-Link discovery procedures | 35.3.4 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.2 | Multi-link (re)setup procedure | 35.3.5 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.3 | Multi-link BlockAck procedure | 35.3.7 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.4 | Link management procedure with default TID-to-link mapping | 35.3.6 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.5 | Multi-link sequence number spaces | 35.3.7 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.6 | BSS parameter critical update procedure | 35.3.9 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.7 | Multi-link power management | 35.3.11 | CFEHTMLD: M | * Yes * No * N/A |
| EHTM8.8 | PPDU end time alignment | 35.3.15.5 | EHTM8.13: M | * Yes * No * N/A |
| EHTM8.9 | Multi-link group addressed frame delivery | 35.3.14 | CFEHTMLDAP: M | * Yes * No * N/A |
| EHTM8.10 | EMLSR mode | 35.3.16 | CFEHTMLD: O | * Yes * No * N/A |
| EHTM8.11 | EMLMR mode | 35.3.17 | CFEHTMLD: O | * Yes * No * N/A |
| EHTM8.12 | Start time sync PPDUs medium access | 35.3.15.6 | CFEHTMLD: O | * Yes * No * N/A |
| EHTM8.13 | NSTR mobile AP MLD operation | 35.3.19 | CFEHTMobileAP: M | * Yes * No * N/A |
| EHTM8.14 | TID-to-link mapping negotiation | 35.3.6 | CFEHTMLD: O | * Yes * No * N/A |
| EHTM8.15 | TDLS procedure in multi-link operation | 35.3.20 | CFEHTMLDnonAP: O | * Yes * No * N/A |
| EHTM8.16 | Multi-link SCS procedure | 35.3.21 | CFEHTMLDnonAP: O | * Yes * No * N/A |
| EHTM8.17 | Proxy ARP service in AP MLDs | 35.3.22 | CFEHTMLDAP: O | * Yes * No * N/A |
| EHTM9 | EHT sounding protocol | 35.5 | CFEHT: M | * Yes * No * N/A |

**Annex C**

(normative)

**ASN.1 encoding of the MAC and PHY MIB**

**C.3 MIB Detail (CID 4206)**

***Please revise the following MIB objects as follows in the Editor’s note:***

* dot11EHTMobileAPMLDImplemented

***Change Dot11StationConfigEntry as follows :***

{

(#4206) dot11EHTMobileAPMLDImplemented, TruthValue,

}

***Insert the following after the dot11BSSMaxIdlePeriodIndicationByNonAPSTA OBJECT-TYPE in the dot11StationConfig TABLE:***

dot11EHTMobileAPMLDImplemented OBJECT-TYPE (#4206)

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

“This is a capability variable.

Its value is determined by device capabilities.

The attribute, when true, indicates the ability of the STA to support the Mobile AP capability. If the attribute is false, the STA does not support Mobile AP capability.”

**SP: Do you agree to the resolutions provided in the document 11-21/1681r2 for the following CIDs: 4206, 4281, 5533, 6672, 6748, 7287 for inclusion in the latest 11be draft?**