### IEEE P802.11Wireless LANs

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| 11ax D3.2 MAC Comment Resolution for Miscellaneous CIDs |
| Date: 2018-11-07 |
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Abstract

This submission proposes resolutions for comments of TGax Draft D3.2 with the following CIDs:

15158, 15803, 15804, 16026, 16041, 16103, 16144, 16160, 16161, 16184, 16211, 16255

Revisions:

* Rev 0: Initial version of the document.

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 D3.2 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax D3.2 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.***

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| **CID** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 15158 | Albert Petrick | 203.05 | 10.3.1 | Under 1st criteria if an HE AP that "is NOT a TXOP holder" shall update the NAV if all 3 conditions are met.The 2nd criteria if an HE AP "is a TXOP holder" shall update the NAV if all 4 conditions are met. 3 of the 4 conditions are the same in both criteria. | Simplify the text by eliminating redundant conditions for resetting the NAV | Rejected – The two paragraphs are combined at one time, but at the end people prefer complete description with clarity. We keep the style due to this reason.  |
| 15803 | Joseph Levy | 33.22 | 3.2 | Define what a High Efficacy (HE) non-AP STA is, as this term is used throughout the amendment. This is a key term for the amendment and defining it in 4.3.14a is not adequate. | Provide a definition | Rejected – HT or VHT STA is also not defined in 3.2. The modifier placed before STA is well understood to be modifiers for physical and operational characteristics. Please see the texts below. *In IEEE Std 802.11, the addressable unit is a station (STA). Physical and operational characteristics are defined by modifiers that are placed in front of the term STA.*  |
| 15804 | Joseph Levy | 33.22 | 3.2 | Define what a High Efficacy (HE) AP is, as this term is used throughout the amendment | Provide a definition | Rejected – HT or VHT AP is also not defined in 3.2. The modifier placed before STA is well understood to be modifiers for physical and operational characteristics. Please see the texts below. *In IEEE Std 802.11, the addressable unit is a station (STA). Physical and operational characteristics are defined by modifiers that are placed in front of the term STA.* |
| 16026 | Mark RISON |  |  | PPDUs don't have a MAC header, in general | In 10.22.2.8 change "When the Duration field value in the MAC header of an HE TB PPDU is set to 0," to "When the Duration field in the MAC header of MPDUs in an HE TB PPDU is set to 0,". In 27.11.5 change "the Duration field in the MAC header of the response PPDU is set based on the Dura-tion field in the MAC header of the soliciting PPDU" to "the Duration field in the MAC header of MPDUs in the response PPDU is set based on the Duration field in the MAC header of the MPDUs in the soliciting PPDU" | Revised –We revise in the current location of D3.2 based on the suggestion. TGax editor to make the changes shown in 11-18/1800r0 under all headings that include CID 16026. |
| 16041 | Mark RISON |  |  | There is no such thing as "unsuccessful reception" of a frame: either a frame is received, or it is not | Delete "successfully" and "successful" before "rece" throughout | Rejected – “successfully receive(s)” are used throughput the baseline. For example,*If an originator successfully receives a BlockAck frame in response to a BlockAckReq frame, the originatorshall maintain block ack state as defined in 10.24.3.* |
| 16103 | Mark RISON |  |  | It is not clear whether an HE ER SU PPDU is a type of HE SU PPDU, i.e. whether rules that apply to HE SU PPDUs also apply to HE ER SU PPDUs | State that all rules that apply to HE SU PPDUs apply to HE ER SU PPDUs except where explicitly so indicated | Rejected – HE SU PPDU and HE ER SU PPDU are different types of HE PPDU. See 28.1.4 PPDU formats. |
| 16144 | Mark RISON |  |  | It is not clear whether a GCR MU-BAR is a type of MU-BAR (cf. BlockAckReq v. Basic BlockAckReq v. Compressed BlockAckReq); see also constructs like "a GCR MU-BAR Trigger frame or MU-BAR Trigger frame" and "The Trigger Type of the Trigger frame is either MU-BAR or GCR MU-BAR" | Prefix "MU-BAR" with "Basic" throughout, where not prefixed with "GCR" | Rejected – MU-BAR Trigger frame is a variant of Trigger frame. GCR MU-BAR is another variant of Trigger frame. There is no need to prefix MU-BAR with “basic.” |
| 16160 | Mark RISON |  |  | "An HE AP may operate an ER BSS in addition to a non-HT BSS. An ER BSS, when present, shall operate independent of the non-HT BSS and shall have a BSSID different from the non-HT BSS operated by the AP." is written as if an AP is a physical device. But it's not, in the 802.11 standards, it's a logical concept, and one that corresponds to exactly one BSS and BSSID | Change the cited text to "An HE AP may operate an ER BSS collocated with an AP operating a non-HT BSS. An ER BSS shall operate independently of any collocated non-HT BSS (including having a different BSSID)." | Revised –Agree in principle with the commenter. We revise the sentence based on the suggestion from the commenter. TGax editor to make the changes shown in 11-18/1800r0 under all headings that include CID 16160. |
| 16161 | Mark RISON |  |  | "An ER BSS may have larger coverage area." -- this is not an implementation option | Change the cited text to a "NOTE---An ER BSS is expected to have a larger coverage area than a non-ER BSS." | Revised–Agree in principle with the commenter. TGax editor to make the changes shown in 11-18/1800r0 under all headings that include CID 16161. |
| 16184 | Mark RISON |  |  | "a frame with the duration information indicated by a Duration field in the PSDU of the PPDU with the RXVECTOR parameter TXOP\_DURATION" (4 instances: 10.3.2.4 2x, 27.2.4 2x) is not clear | Change the sentence for each of the 6 instances to "An MPDU with duration information is not received" | Rejected –In baseline, the duration information is described together with the frame. Using “frame” is a better option than “MPDU”. Spec texts are shown below.*The duration information is also available in the MAC headers of all frames (M53)other than (11ah)PV1 MAC frames and PS-Poll frames* |
| 16211 | Mark RISON |  |  | An MPDU delimiter with a Length field of 0 indicates that the A-MPDU subframe does not contain an MPDU. Hence most of the discussion of non-zero length MPDU delimiters is spurious | Change " nonzero length MPDU delimiters" to "MPDUs" in 9.7.3; delete "of the non-zero length MPDU" (2x) and "nonzero length" in 27.4.2; delete "nonzero length" (2x) in 27.5.3.4 and fix the article; change "nonzero length A-MPDU subframe" to "MPDU" (3x) in 27.10.2 and fix the article; change "a nonzero length A-MPDU subframe" to "an MPDU" in 27.10.3 | Rejeceted –In 9.7.3, the original text is *There are at least two nonzero length MPDU delimiters in the A-MPDU of which at least one has the EOF field equal to 1*The EOF field setting requires the description of non-zero length MPDU delimiters. In 27.4.2, we have similar considerations. In 27.5.3.4, we have similar considerations. In 27.10.2, we have similar considerations. In 27.10.3, we have the following texts. *The STA shall not add an A-MPDU subframe with the EOF field set to 1 and with the MPDU Length field set to 0 before an A-MPDU subframe with a nonzero MPDU Length field (see 10.13.7 (Setting the EOF field of the MPDU delimiter) and 27.10.4.3 (Ack-enabled multi-TID A-MPDU operation)).*It seems that the original text is already revised with a better way.  |
| 16255 | Mark RISON | 253.00 | 27 | The protection rules for HE ER PPDUs are not specified. This was rejected under CID 12736 because "It is generally up to the TXOP holder to decide if RTS frame or MU-RTS Trigger frame will be used for protection at the start of the TXOP. Hence, the spec does not need to mandate the protection operation when an HE ER SU PPDU is transmitted." However, the point is to protect non-ER STAs (including non-HE STAs) from the ER SU PPDUs, not protecting the TXOP per se | Add a subclause "Protection" stating "A TXOP holder that transmits an HE ER PPDU in a TXOP shall transmit an RTS frame or MU-RTS Trigger frame at the start of the TXOP." | Rejected –RTS frame or MU-RTS frame is used to protect the TXOP from the non-ER STAs. Note that HE ER SU PPDU is not the first attempt from 802.11 to have long range transmission. For example, STBC frame can also be used to support longer range, but there is no mandatory requirement for the TXOP that transmits STBC frame to transmit RTS frame.  |

**Discussion:** *None.*

**Propose:** Revised for CID 16026 per discussion and editing instructions in 11-18/1800r0.

***TGax editor: Change 10.24.2.9 TXOP limits as follows: (Track change on)***

* TXOP limits

(..existing texts…)

If(#15283) the Duration field value in the MAC header of the MPDU(s) in(#16026) an HE TB PPDU is set to 0, the HE TB PPDU shall not include any frames that solicit a control response frame from the AP.

***TGax editor: Change 27.11.5 TXOP\_DURATION as follows: (Track change on)***

**27.11.5 TXOP\_DURATION**

NOTE 2—For a TXOP responder, the Duration field in the MAC header of the MPDU(s) in(#16026) the response PPDU is set based on the Duration field in the MAC header of the MPDU(s) in(#16026) the soliciting PPDU as described in 9.2.5.7 (Setting for control response frames) or 9.2.5.8 (Setting for other response frames).

***TGax editor: Change 27.16.5 ER beacon generation in an ER BSS as follows: (Track change on)***

* ER beacon generation in an ER BSS

An ER Beacon frame is a Beacon frame carried in HE ER SU PPDU (242-tone RU or high frequency 106-tone RU in P20) format to provide additional link budget of downlink transmission to compensate the link budget imbalance between downlink and uplink due to introduction of UL OFDMA transmission. An HE AP may operate an ER BSS, and the AP may be collocated with another AP operating (#16160) a non-HT BSS. An ER BSS, if(#15453) present, shall operate independently(#16623) of the collocated non-HT BSS, and the AP operating the ER BSS shall have a BSSID different from the AP operating the non-HT BSS(#16160). (#16161)

NOTE – An ER BSS is expected to have larger coverage area than a non-HT BSS.(#16161)