IEEE P802.11
Wireless LANs

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| LB238 CR MAC Miscellaneous  |
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Abstract

This submission proposes resolutions of comments received from TGax LB238.

(The proposed change is based on TGax Draft 4.2.)

* CIDs: 20030, 20586, 20300, 20301, 20697, 20747, 20039, 20500 (8 CIDs)

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** |
| --- | --- | --- | --- | --- | --- |
| 20030 | 248.58 | 10.12 | Is the last sentence necessary? The previous two sentences capture the indication from recipient side and the action on the transmitted side. | As in comment | Revised- Agree in principle. The last sentence “Support for the reception of fragmented A-MSDUs is indicated with the A-MSDU Fragmentation Support field in the HE Capabilities element” is not necessary. TGax editor makes changes as specified in 11-19/1141r2 for CID 20030. |
| ***TGax Editor: Change 10.12 (A-MSDU operation) as the following (#20030):*** **10.12 A-MSDU operation** If the A-MSDU Fragmentation Support subfield in the MAC Capabilities Information field in the HE Capa-bilities element transmitted by the recipient STA is 0, then an An A-MSDU shall be carried, without frag-mentation, within a single QoS Data frame. If the A-MSDU Fragmentation Support subfield in the HE Capabilities element transmitted by the recipient STA is 1, then an A-MSDU may be fragmented and each fragment sent to the recipient in a QoS Data frame. ~~Support for the reception of fragmented A-MSDUs is indicated with the A-MSDU Fragmentation Support field in the HE Capabilities element.~~ |
| 20586 | 249.15 | 10.12 | "An HE STA shall not transmit an A-MSDU that is carried in a QoS Data frame for which no block ackagreement exists and that is part of an ack-enabled A-MPDU unless the recipient indicates support for A-MSDU by setting the A-MSDU In Ack-Enabled A-MPDU Support in the HE MAC Capabilities Informa-tion field of the HE Capabilities element to 1." garbled | Delete "for A-MSDU " in the cited text at the referenced location | Revised- Agree in principle. It is change to “for the reception of A-MSDU in an ack-enabled A-MPDU”. TGax editor makes changes as specified in 11-19/1141r2 for CID 20586. |
| ***TGax Editor: Change 10.12 (A-MSDU operation) as the following (#20586):*** **10.12 A-MSDU operation** An HE STA shall not transmit an A-MSDU that is carried in a QoS Data frame for which no block ack agreement exists and that is part of an ack-enabled A-MPDU unless the recipient indicates support for the reception of A-MSDU in an ack-enabled single-TID A-MPDU by setting the A-MSDU In Ack-Enabled A-MPDU Support in the HE MAC Capabilities Informa-tion field of the HE Capabilities element to 1.  |
| 20300 | 250.16 | 10.32.2 | The HE capabilites element doesn't include Maximum A-MPDU Length Exponent field.Delete the word "and HE Capabilites elements" | As in comment. | Revised- Agree in principle. The HE Capabilities element has the HE Maximum A-MPDU Length Exponent Extension field. TGax editor makes changes as specified in 11-19/1141r2 for CID 20300. |
| 20301 | 250.29 | 10.32.2 | The HE capabilites element doesn't include Maximum A-MPDU Length Exponent field.Delete the word "and HE Capabilites elements" | As in comment. | Revised- Agree in principle. The HE Capabilities element has the HE Maximum A-MPDU Length Exponent Extension field. TGax editor makes changes as specified in 11-19/1141r2 for CID 20301. |
| ***TGax Editor: Change 10.13.2 (A-MPDU length limit rules) as the following (#20300, 20301):*** * A-MPDU length limit rules

Change as follows:A STA indicates in the Maximum A‑MPDU Length Exponent field in its HT Capabilities element the maximum A‑MPDU length that it can receive in an HT PPDU. A STA indicates in the Maximum A-MPDU Length Exponent field in its VHT Capabilities element the maximum length of the A-MPDU pre-EOF padding that it can receive in a VHT PPDU. A DMG STA indicates in the Maximum A-MPDU Length Exponent field in its DMG Capabilities element the maximum A-MPDU length that it can receive. A STA indicates the maximum length of the A-MPDU pre-EOF padding that it can receive in an HE PPDU in the Maximum A-MPDU Length Exponent field in its HT Capabilities, VHT Capabilities~~, HE Capabilities~~ and HE 6 GHz Band Capabilities(#21158) elements (if present)(#20116) and the Maximum A-MPDU Length Exponent Extension field in its HE Capabilities element. The encoding of these fields is defined in Table 9-163 (Subfields of the A-MPDU Parameters field) for an HT PPDU and HE PPDU, in Table 9-249 (Subfields of the VHT Capabilities Information field) for a VHT PPDU and HE PPDU, ~~and~~ in Table 9-229 (Subfields of the A-MPDU Parameters subfield) for a DMG STA, and in 9.4.2.242 (HE Capabilities element) for an HE PPDU.A VHT STA that sets the Maximum A-MPDU Length Exponent field in its VHT Capabilities element to a value in the range 0 to 3 shall set the Maximum A-MPDU Length Exponent in its HT Capabilities to the same value. A VHT STA that sets the Maximum A-MPDU Length Exponent field in the VHT Capabilities element to a value larger than 3 shall set the Maximum A-MPDU Length Exponent in its HT Capabilities element to 3.Using the Maximum A-MPDU Length Exponent fields in the HT Capabilities, ~~and~~ VHT Capabilities, HE Capabilities and HE 6 GHz Band Capabilities(#21158) elements (if present)(#20116), the STA establishes at association the maximum length of an A-MPDU pre-EOF padding that can be sent to it. An HT STA shall be capable of receiving A-MPDUs of length up to the value indicated by the Maximum A-MPDU Length Exponent field in its HT Capabilities element. A VHT STA shall be capable of receiving A-MPDUs where the A-MPDU pre-EOF padding length is up to the value indicated by the Maximum A-MPDU Length Exponent field in its VHT Capabilities element. An HE STA shall be capable of receiving A-MPDUs where the A-MPDU pre-EOF padding length is up to the value indicated by the Maximum A-MPDU Length Exponent field in its HT Capabilities~~,~~ and VHT Capabilities elements, and the Maximum A-MPDU Length Exponent Extension field in its HE Capabilities element~~s~~ in the 2.4 GHz and 5 GHz bands. An HE STA shall be capable of receiving A-MPDUs where the A-MPDU pre-EOF padding length is up to the value indicated by the Maximum A-MPDU Length Exponent Extension field in the HE Capabilities element and the Maximum A-MPDU Length Exponent field in HE 6 GHz Band Capabilities(#21158) element in the 6 GHz band.(#20116)A STA shall not transmit an A-MPDU in an HT PPDU that is longer than the value indicated by the Maximum A-MPDU Length Exponent field in the HT Capabilities element received from the intended receiver. MPDUs in an A-MPDU carried in an HT PPDU shall be limited to a maximum length of 4095 octets. A STA shall not transmit an A-MPDU in a VHT PPDU where the A-MPDU pre-EOF padding length is longer than the value indicated by the Maximum A-MPDU Length Exponent field in the VHT Capabilities element received from the intended receiver. A DMG STA shall not transmit an A-MPDU that is longer than the value indicated by the Maximum A-MPDU Length Exponent field in the DMG Capabilities element received from the intended receiver. A STA shall not transmit an A-MPDU in an HE PPDU where the A-MPDU pre-EOF padding length is greater than the value indicated by the Maximum A-MPDU Length Exponent field in the HT Capabilities~~,~~ and VHT Capabilities elements, and the Maximum A-MPDU Length Exponent Extension field in its HE Capabilities elements received from the intended receiver in the 2.4 GHz and 5 GHz bands. A STA shall not transmit an A-MPDU in an HE PPDU where the A-MPDU pre-EOF padding length is greater than the value indicated by the Maximum A-MPDU Length Exponent Extension field in the HE Capabilities element and the Maximum A-MPDU Length Exponent field in the HE 6 GHz Band Capabilities(#21158) element received from the intended receiver in the 6 GHz band.(#20116) |
| 20697 |  |  | There needs to be a requirement on a 20 MHz-only non-AP HE STA to send an OMN on (re)association and channel switch to narrow its operating width to 20 MHz | As it says in the comment | Rejected- The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined. |
| 20747 |  |  | Re CID 16127: if the resolution is valid, then instead need to fix 8.3.5.2.2 "The STA\_INDEX parameter (identified as an element of the STA\_ID\_LIST parameter; see STA\_ID\_LISTparameter in Table 27-1 (TXVECTOR and RXVECTOR parameters) and 26.11.1 (STA\_ID\_LIST)) is pres-ent for an HE MU PPDU and indicates the STA or group of STAs that is the recipient of an RU to which theaccompanying DATA octet applies", 26.5.1.2 "An AP shall set one or more elements in the TXVECTOR parameter STA\_ID\_LIST, which represents thelist of STAs that are the recipients of the transmitted HE MU PPDU", 26.11.1 "Each element of the TXVECTOR parameter STA\_ID\_LIST identifies the STA or group of STAs that is therecipient of an RU in the HE MU PPDU.", 27.3.2.5 "in the Spatial Configuration field of User field in HE-SIG-B containing theSTA-ID of the designated MU-MIMO STA" + "The STA-ID field in each User field indicates the intended recipient user of the corre-sponding spatial streams and the RU.", which don't allow for the STA-ID to be that of the transmitter | As it says in the comment | Revised- Agree in principle. The description of 27.3.2.5 (Resource indication and User identification in an HE MU PPDU) is missing the STA-ID field encoding for UL ME MU PPDU transmission. TGax editor makes changes as specified in 11-19/1141r2 for CID 20747. |
| ***TGax Editor: Change 27.3.2.5 (Resource indication and User identification in an HE MU PPDU) as the following (#20747):*** **27.3.2.5 Resource indication and User identification in an HE MU PPDU**… In each HE-SIG-B content channel, the User fields are first ordered in the order of RUs (from lower frequency to higher frequency) as described by the RU Allocation field if the HE-SIG-B contains the Common field. If an RU has multiple User fields in an HE-SIG-B content channel, the User fields of the RU are ordered in the order of spatial stream index, from lower to higher spatial stream, as indicated in the Spatial Configuration field. If the UL/DL field in the HE-SIG-A field is set to 0, t~~T~~he STA-ID field in each User field indicates the intended recipient user of the corresponding spatial streams and the RU. Otherwise, it indicates the STA that transmits the PPDU in the corresponding spatial streams and the RU. |
| 20039 | 282.50 | 11.22.2.8 | Convoluted sentence - the logic is hard to follow - consider simplifying so that it is easy to follow. | Consider rewording to:"An AP shall not transmit frames to a non-AP HE STA during a TXOP, if it has received a BSS color in use event report from that non-AP HE STA with a nonzero BSS color in the Event Report field and the AP ignore an inter-BSS PPDU with the same BSS color value as the one carried in the Event Report field to obtain a TXOP by following the procedure in 26.10.2.2 (General operation with non-SRG OBSS PD level) and 26.10.2.3 (General operation with SRG OBSS PD level)" | REVISED- TGax Editor makes changes as the following for the cited sentence. "An AP shall not transmit frames to a non-AP HE STA during a TXOP, if it has received a BSS color in use event report from that non-AP HE STA with a nonzero BSS color in the Event Report field and the AP ignores an inter-BSS PPDU with the same BSS color value as the one carried in the Event Report field to obtain a TXOP by following the procedure in 26.10.2.2 (General operation with non-SRG OBSS PD level) and 26.10.2.3 (General operation with SRG OBSS PD level)" |
| 20500 | 338.12 | 26.5.3.4 | As CID 16448 pointed out, the UPH is not well-defined.  If a value of 3 is given for UPH at HE-MCS 7, does this mean that the tx power is 3 dB from the maximum that the PA can output for this HE-MCS, or does it mean that the power is 3 dB from where the transmitter thinks that EVM will be exceeded for this HE-MCS? | As it says in the comment; CID 16448 suggested to refine the meaning of "available power headroom" - with reference to what? To max PA power? To the point when TX EVM is expected to be exceeded? Or to what? | Rejected- The reference of the available power headroom can be any implementation specific constraint.  |