IEEE P802.11
Wireless LANs

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| LB279 Comment Resolution EHT MAC and PHY Part 1 |
| Date: 2024-01-08 |
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Abstract

This submission proposes to address the following CIDs 1296, 1300, 1304, 1312, 1316, changes are relative to Draft P802.11be\_D4.0, Draft P802.11REVme\_D4.2, and Draft P802.11bk D1.0.

Revisions:

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 TGbk Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

**The text preceded by “Discussion” is not part of the adopted changes.**

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| **1296** | 80.06 | 35.14 | What is " 320 MHz mode"? | Clarify | **Revised**TGbk editor, make the changes identified in document: |
| **1300** | 81 | 36.2.2 | "indicating" is a bit vague | Delete the cited text | **Reject**Indicate is common usage in MAC/PHY interface as it is simply a generic interface definition. |
| **1304** | 81 | 36.2.2 | Precedence of things like "Format is EHT\_MU or EHT\_TB and RANGING\_FLAG is present " is not clear | Add commas to clarify, e.g. "Format is EHT\_MU or EHT\_TB, and RANGING\_FLAG is present " | **Revised**TGbk editor, make the changes identified in document: |
| **1312** | 83.05 | 36.2.3a | "The LTFVECTOR is carried in a PHY-RXLTFSEQUENCE.request for the PHY 6 of a STA to receive an EHT Ranging NDP or an EHT TB Ranging NDP. " is not clear. How does carrying the LTFVECTOR make it possible for a PHY to receive an NDP? You can always receive an NDP | Clarify | **Reject**Receiving and EHT Ranging NDP is similar to receiving a trigger based PPDU where the SIG field does not carry all the required information. In this case especially secure LTF sequence is needed for demodulation. |
| **1316** | 84.01 | 36.2.3a | "Set to one" should be "Set to 1" -- but also, when will it be set to anything else? | As it says in the comment | **Revised**TGbk editor, make the changes identified in document: |

1. ***Discussion (CID 1296):***
2. Sentence adds rule that NPD-A preceding an EHT Ranging NDP (320 MHz) needs to be sent in legacy or EHT format. Since NDP-A has to span same bandwidth as NDP, it will also be 320 MHz and the given formats are the only ones that can. Redundant due to baseline.

35.14 PPDU format, BW, MCS, NSS, and DCM selection rules

35.14.2 PPDU format selection

***Insert the following paragraph for NDPA (#*202305-03)**

A Ranging NDP Announcement frame for 320 MHz mode shall be transmitted in a non-HT Duplicate PPDU or EHT MU PPDU.

1. ***(CID 1296) TGbk Editor: Change Clause 35.14.2 (p.80 in 11bk) as follows (delete added text):***

35.14 PPDU format, BW, MCS, NSS, and DCM selection rules

35.14.2 PPDU format selection

**36.2 EHT PHY service interface**

**36.2.1 Introduction**

36.2.2 **TXVECTOR and RXVECTOR parameters**

1. ***(CID 1304) TGbk Editor: Change Table 36.1 (p.80 in 11bk) as follows (add commas to clarify statements of the type “(A or B) and C” to “either A or B, and C”):***
2. ***Change the existing rows for parameters “APEP\_LENGHT” and “PSDU\_LENGTH”. Insert new ros at end of Table 36-1 (but before the notes) as follows (#*202305-08*)***

**Table 36-1—TXVECTOR and RXVECTOR parameters**

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| --- | --- | --- | --- | --- |
| **Parameter** | **Condition** | **Value** | **TXVECTOR** | **RXVECTOR** |
| APEP\_LENGTH | FORMAT isEHT\_MU or EHT\_TB | Integer.If 0 and FORMAT is EHT\_MU, indicates an EHT sounding NDP or EHT Ranging NDP. If 0 and FORMAT is EHT\_TB, indicates an EHT TB Ranging NDP.Otherwise, indicates the number of octets in the range 1 to aPSDUMaxLength in the A-MPDU pre-EOF padding (see Table 36-70 (EHT PHY characteristics)) that is carried in the PSDU. | MU | N |
| FORMAT is PHY\_VER\_UNKNOWN | Not present. |
| Otherwise | See corresponding entry in Table 21-1 (TXVECTOR and RXVECTOR parameters) or Table 27-1 (TXVECTOR and RXVECTOR parameters). |
| PSDU\_LENGTH | FORMAT is EHT\_MU or EHT\_TB  | Indicates the number of octets in the PSDU in the range 0 to aPSDUMaxLength octets (see Table 36-70 (EHT PHY characteristics)). A value of 0 indicates an EHT sounding NDP, an EHT Ranging NDP or an EHT TB Ranging NDP. | N | Y |
| FORMAT is PHY\_VER\_UNKNOWN | Not present. |
| Otherwise | See corresponding entry in Table 21-1 (TXVECTOR and RXVECTOR parameters) or Table 27-1 (TXVECTOR and RXVECTOR parameters). |
|  | (…existing fields…) |
| NUM\_USERS | FORMAT is EHT\_MU and RANGING\_FLAG is present | If SECURE\_LTF\_FLAG is 0, set to 1. If SECURE\_LTF\_FLAG is 1, indicating the number of users of an EHT Ranging NDP with secure EHT-LTF. If NUM\_USERS is larger than 1, NUM\_STS, LTF\_REP and LTF\_KEY are arrays with number of entries equal to NUM\_USERS  | Y | N |
| FORMAT is either EHT\_MU or HE\_TB,and RANGING\_FLAG is not present | Not present. |
| Otherwise | See corresponding entry in Table 21-1 (TXVECTOR and RXVECTOR parameters) or Table 27-1 (TXVECTOR and RXVECTOR parameters). |
| (…existing fields…) |
| TIME\_OF\_DEPARTURE\_REQUESTED | Format is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is present | Enumerated type:True indicates that the MAC entity requests that the PHY entity measures and reports time of departure parameters corresponding to the time when the first frame energy is sent by the transmitting port. False indicates that the MAC entity requests that the PHY entity neither measures nor reports time of departure parameters. | O | N |
| Format is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is not present  | Not present |
| Otherwise | See corresponding entry in Table 21-1 (TXVECTOR and RXVECTOR parameters) or Table 27-1 (TXVECTOR and RXVECTOR parameters). |
| LTF\_KEY | FORMAT is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is present and SECURE\_LTF\_FLAG is 1 | Contains the *rsta-ltf-key* or ista-ltf-key (See [11.21.6.4.5.4](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#H11o21o6o4o5o4)) when the secure EHT-LTFs are used (see [11.21.6.4.5](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#H11o21o6o4o5)).   | Y | N |
| Otherwise | Not present  |
| LTF\_IV | FORMAT is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is present and SECURE\_LTF\_FLAG is 1 | Contains the *ltf-iv* (See [11.21.6.4.5.4](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#H11o21o6o4o5o4)) used to generate the secure EHT-LTFs | Y | N |
| Otherwise | Not present  |
| LTF\_REP | FORMAT is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is present  | Indicate the number of EHT-LTF repetitions.  | Y | N |
| Otherwise | Not present  |
| RANGING\_FLAG  | FORMAT is EHT\_MU | If present, indicates the PPDU is an EHT Ranging NDP. Not present otherwise. | O | N |
| FORMAT is EHT\_TB | If present, indicates the PPDU is an EHT TB Ranging NDP.Not present otherwise. | O | N |
| Otherwise | Not present. | N | N |
| SECURE\_LTF\_FLAG | FORMAT is either EHT\_MU or EHT\_TB, and the RANGING\_FLAG is present. | Set to 1 when the EHT Ranging NDP or EHT TB Ranging NDP will use secure EHT-LTF.Set to 0 otherwise. | Y | N |
| Otherwise | Not present.  |
| TX\_WINDOW\_FLAG | FORMAT is either EHT\_MU or EHT\_TB, and RANGING\_FLAG is present and SECURE\_LTF\_FLAG is 1 | Set to 1 when the secure EHT-LTF of an EHT Ranging NDP or EHT TB Ranging NDP will use the optional frequency domain Tx window.Set to 0 otherwise. | Y | N |
|  | Otherwise | Not present.  |

36.2.3 TRIGVECTOR parameters

***Insert the following subclause at the end of the 36.2.3: (#*202305-09*)***

36.2.3a LTFVECTOR parameters

1. The LTFVECTOR is carried in a PHY-RXLTFSEQUENCE.request for the PHY of a STA to receive an EHT Ranging NDP or an EHT TB Ranging NDP. The parameters in Table [36-2a](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#T36o2a) (LTFVECTOR parameters) are defined as part of the LTFVECTOR parameter list in the PHY-RXLTFSEQUENCE.request primitive.
2. ***(CID 1316) TGbk Editor: Change Table 36.2a (p.84 in 11bk) as follows (change entries for SECURE\_LTF\_FLAG and TX\_WINDOW\_FLAG):***

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| --- |
| 1. Table 36-2a—LTFVECTOR parameters
 |
| Parameter | Value |
| LTF\_NSTS | Indicate the number of space-time streams in the following EHT Ranging NDP or the following EHT TB Ranging NDP.  |
| LTF\_REP | Indicate the number of EHT-LTF repetitions in the following EHT Ranging NDP or the following EHT TB Ranging NDP.  |
| SECURE\_LTF\_FLAG | Set to 1 when the EHT Ranging NDP or EHT TB Ranging NDP uses secure EHT-LTF.Set to 0 otherwise. |
| LTF\_KEY | Included when SECURE\_LTF\_FLAG is set to 1.Contains the *rsta-ltf-key* or *ista-ltf-key* (See [11.21.6.4.5.4](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#H11o21o6o4o5o4) (Overview of secure LTF octet stream generation)) when receiving the secure EHT-LTFs .  |
| LTF\_IV | Included when SECURE\_LTF\_FLAG is set to 1.Contains the *ltf-iv* (See [11.21.6.4.5.4](file:///C%3A%5CUsers%5Cnxf57284%5CDocuments%5CIEEE%5CDraft%20P802.11bk_D1.0.docx#H11o21o6o4o5o4) (Overview of secure LTF 0ctet stream generation)) for secure EHT-LTFs or null otherwise.  |
| LTF\_OFFSET | Included when SECURE\_LTF\_FLAG is set to 1.Indicates the number of EHT-LTF to skip before beginning to process the EHT-LTF symbols.  |
| TX\_WINDOW\_FLAG | Included when SECURE\_LTF\_FLAG is set to 1.Set to 1 when the secure EHT-LTF of an EHT Ranging NDP or EHT TB Ranging NDP will use the optional frequency domain Tx Window. Set to 0 otherwise. |