IEEE P802.11
Wireless LANs

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| LB271 CRs for CIDs 17051 and 17100 |
| Date: 2023-07-07 |
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Abstract

This submission includes the resolutions for the following 2 CIDs:

17051 17100.

The baseline document is P802.11be D3.2.

Revision history:

R0 – Initial version.

# CID: 17051

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed Resolution |
| 17051 | / | / | / | "frame carried by a PPDU" should be "frame carried in a PPDU" | Change throughout (about x66) | **Revised.** Agree with the commenter, and reflect the detail changes.**Instructions to TGbe editor:**Please make the changes as shown in 11/23-1256r0 tagged with #17051. |

**Proposed Text Change (**#**17051):**

***TGbe editor:*** *There are* ***65 changes*** *to be updated. 2 changes are on subclause 9.4.1.67, and the other 63 are on subclause 35.7.2.* ***Please update these two clauses as shown below:***

**9.4.1.67 EHT Compressed Beamforming Report field**

For an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth 20 MHz or 40 MHz, (#17498)compressed beamforming information related to the subcarrier indices of 242-tone RU for each 20 MHz requested in the Partial BW Info subfield is included in the feedback report.

For an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth larger than or equal to 80 MHz, in each 80 MHz frequency subblock, if the Partial BW Info subfield requests (#17499)feedback for the entire 80 MHz (i.e., all the bits corresponding to the 80 MHz frequency subblock are set to 1), then compressed beamforming information related to subcarrier indices of the corresponding 996-tone RU is included in the feedback report. If the Partial BW Info subfield in each 80 MHz frequency subblock requests feedback for a subset of the 80 MHz (i.e., some but not all of the bits corresponding to the 80 MHz frequency subblock are set to 1), then:

**35.7.2 EHT sounding protocol**

An EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth larger than 40 MHz shall not solicit (#17052)any feedback from an EHT beamformee with 40 MHz operating channel width.

In an EHT non-TB sounding sequence, a 20 MHz operating EHT beamformee shall support SU feedback for (#17053)a 242-tone RU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.

In an EHT TB sounding sequence, a 20 MHz operating EHT beamformee may support SU feedback for (#17053)a 242-tone RU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz, 40 MHz, 80 MHz, and 160 MHz.

(#17984)In an EHT TB sounding sequence, a 20 MHz operating EHT beamformee shall support MU feedback for (#17053)a 242-tone RU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.

(#17984)In an EHT TB sounding sequence, a 20 MHz operating EHT beamformee may support MU feedback for (#17053)a 242-tone RU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz, 80 MHz, and 160 MHz.

In an EHT non-TB sounding sequence, a 40 MHz operating EHT beamformee shall support SU feedback for the following combinations of RU size and NDP announcement bandwidth:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.

In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee may support SU feedback for the following combinations of RU size and NDP announcement bandwidth:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz(#15577).

(#17984)In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee shall support MU feedback for the combinations of RU size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.

(#17984)In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee may support MU feedback for (#17053)a 242-tone RU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.

In an EHT non-TB sounding sequence, an 80 MHz operating EHT beamformee shall support SU feedback for the following combinations of RU or MRU size and NDP announcement bandwidth:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz with 20 MHz puncturing.
* 996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz without puncturing.

In an EHT TB sounding sequence, an 80 MHz operating EHT beamformee may support SU feedback for the feedback RU or MRU size as shown in Table 9-42f (Settings for BW, Partial Bandwidth Info subfield in the EHT NDP Announcement frame) that are within its operating channel width and solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz, 40 MHz, 80 MHz, 160 MHz, and 320 MHz.

(#17984)In an EHT TB sounding sequence, an 80 MHz operating EHT beamformee shall support MU feedback for the combinations of RU or MRU (if the MRU is full bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 996-tone RU and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz or 160 MHz.
* 996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

(#17984)In an EHT TB sounding sequence, an 80 MHz operating EHT beamformee may support MU feedback for the combinations of RU or MRU (if the MRU is partial bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 242-tone and 484-tone RU, and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz or 160 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

In an EHT non-TB sounding sequence, a 160 MHz operating EHT beamformee shall support SU feedback for the following combinations of RU or MRU size and NDP announcement bandwidth:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 484+242-tone MRU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz with 20 MHz puncturing.
* 996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz
* 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz with 40 MHz puncturing.
* 996+484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz with 20 MHz puncturing.
* 2996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz without puncturing.

In an EHT TB sounding sequence, a 160 MHz operating EHT beamformee may support SU feedback for the feedback RU or MRU size as shown in Table 9-42f (Settings for BW, Partial Bandwidth Info subfield in the EHT NDP Announcement frame) that are within its operating channel width and solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz, 40 MHz, 80 MHz, 160 MHz, and 320 MHz.

(#17984)In an EHT TB sounding sequence, a 160 MHz operating EHT beamformee shall support MU feedback for the combinations of RU or MRU (if the MRUs are full bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 996-tone RU and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz.
* 2996-tone RU, 996+484-tone and 996+484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz.
* 2996-tone RU and 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

(#17984)In an EHT TB sounding sequence, a 160 MHz operating EHT beamformee may support MU feedback for the combinations of RU or MRU (if the MRUs are partial bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 242-tone and 484-tone RU, and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz.
* 242-tone, 484-tone, and 996-tone RU, and 484+242-tone and 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz.
* 484-tone and 996-tone RU, and 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

In an EHT non-TB sounding sequence, a 320 MHz operating EHT beamformee shall support SU feedback for the following combinations of RU or MRU size and NDP announcement bandwidth:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz
* 484+242-tone MRU solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz with 20 MHz puncturing
* 996-tone RU feedback solicited with an EHT NDP announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz
* 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz with 40 MHz puncturing.
* 996+484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz with 20 MHz puncturing.
* 2996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz.
* 2996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz with 80+40 MHz puncturing.
* 3996-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz with 80 MHz puncturing.
* 3996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz with 40 MHz puncturing.
* 4996-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz without puncturing.

In an EHT TB sounding sequence, a 320 MHz operating EHT beamformee may support SU feedback for the feedback RU or MRU size as shown in Table 9-42f (Settings for BW, Partial Bandwidth Info subfield in the EHT NDP Announcement frame) that are within its operating channel width and solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz, 40 MHz, 80 MHz, 160 MHz, and 320 MHz.

(#17984)In an EHT TB sounding sequence, a 320 MHz operating EHT beamformee shall support MU feedback for the combinations of RU or MRU (if the MRUs are full bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 20 MHz.
* 484-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 996-tone RU and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz.
* 2996-tone RU, 996+484-tone and 996+484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz.
* 4996-tone RU and 2996+484-tone, 3996-tone, and 3996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

(#17984)In an EHT TB sounding sequence, a 320 MHz operating EHT beamformee may support MU feedback for the combinations of RU or MRU (if the MRUs are partial bandwidth feedback) size and NDP announcement bandwidth below:

* 242-tone RU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 40 MHz.
* 242-tone and 484-tone RU, and 484+242-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 80 MHz.
* 242-tone, 484-tone, and 996-tone RU, and 484+242-tone and 996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 160 MHz.

484-tone, 996-tone, and 2996-tone RU, and 996+484-tone, 2996+484-tone, 3996-tone, and 3996+484-tone MRU feedback solicited with an EHT NDP Announcement frame carried (#17051)in a PPDU of bandwidth of 320 MHz.

# CID: 17100

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed Resolution |
| 17100 | / | / | / | Use floor glyphs rather than floor() | As it says in the comment (9x) | **Revised.** Agree with the commenter, and reflect the detail changes.**Instructions to TGbe editor:**Please make the changes as shown in 11/23-1256r0 tagged with #17100. |

**Proposed Text Change (**#**17100):**

***TGbe editor:******Please update the following clauses as shown below:***

**9.4.1.51 Operating Mode field**

**P228L10**

The maximum number of spatial streams that the STA supports in reception for a given EHT-MCS as a function of the received EHT PPDU bandwidth at an EHT STA transmitting an Operating Mode field is defined as

(#17100)⌊*Rx*-*NSS*-*from*-*OMF*  *Max*-*EHT*-*NSS*-*at*-*BW*  *Max*-*EHT*-*NSS*-*at*-80⌋ (0-5a)

**9.4.2.312.2.4 Link Info field of the Basic Multi-Link element**

**P284L30**

The TSF Offset subfield of the STA Info field indicates the offset (*Toffset*) between the TSF timer of the reported AP (*TA*) and the TSF timer of the reporting AP (*TB*) and is encoded as a 2s complement signed inte- ger with units of 2 µs. *Toffset* is calculated as *Toffset*= (#17100)⌊(*TA* – *TB*)/2⌋.

**36.2.2 TXVECTOR and RXVECTOR parameters**

**P694L21/L22**

Table 36-1—TXVECTOR and RXVECTOR parameters (continued)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Condition** | **Value** | **TXVECTOR** | **RXVECTOR** |
| TXOP\_DURATION | FORMAT is EHT\_MU or EHT\_TB | Indicates the TXOP duration. Enumerated type or integer:UNSPECIFIED indicates no NAV value specified. 0–8448 indicates a value in units of 1 µs that is used to update the NAV for this TXOP (see 26.2.4 (Updating two NAVs)).The TXOP subfield in U-SIG is computed from the TXVECTOR parameter TXOP\_DURATION as follows:TXOP\_DURATION = UNSPECIFIED: TXOP = 127. TXOP\_DURATION < 512:TXOP = 2  (#17100)⌊TXOP\_DURATION/8⌋.Otherwise: TXOP = 2  (#17100)⌊(TXOP\_DURATION – 512)/ 128⌋ + 1.The RXVECTOR parameter TXOP\_DURATION is computed from the value of the TXOP subfield in U-SIG as follows:TXOP = 127: TXOP\_DURATION = UNSPECIFIED.TXOP is an even number: TXOP\_DURATION = 8  TXOP/2.Otherwise: TXOP\_DURATION = 512 + 128  (TXOP – 1)/2. | Y | Y |
| FORMAT is PHY\_VER\_UNKNOWN | Indicates the TXOP duration. Enumerated type or integer:UNSPECIFIED indicates no NAV value specified. 0–8448 indicates a value in units of 1 µs that is used to update the NAV for this TXOP (see 26.2.4 (Updating two NAVs)).The RXVECTOR parameter TXOP\_DURATION is computed from the value of the TXOP subfield in U-SIG as follows:TXOP = 127: TXOP\_DURATION = UNSPECIFIED.TXOP is an even number: TXOP\_DURATION = 8  TXOP/2.Otherwise: TXOP\_DURATION = 512 + 128  (TXOP – 1)/2. | N | Y |
| Otherwise | See corresponding entry in Table 27-1 (TXVECTOR and RXVECTOR parameters). |

**P786L19/L21**

**Table 36-28—U-SIG field of an EHT MU PPDU *(continued)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two parts of U-SIG** | **Bit** | **Field** | **Number of bits** | **Description** |
| B13–B19 | TXOP | 7 | If the TXVECTOR parameter TXOP\_DURATION is UNSPECIFIED, set to127 to indicate the absence of duration information.If the TXVECTOR parameter TXOP\_DURATION is an integer value, set to a value less than 127 to indicate duration information for NAV setting and protection of the TXOP as follows:If the TXVECTOR parameter TXO- P\_DURATION is less than 512, set to 2  (#17100)⌊TXOP\_DURATION/8⌋.Otherwise, set to2  (#17100)⌊(TXOP\_DURATION – 512)/128⌋ + 1. |
| B20–B24 | Disregard | 5 | Set to all 1s and treat as Disregard. |
|  | B25 | Validate | 1 | Set to 1 and treat as Validate. |
| U-SIG-2 | B0–B1 | PPDU Type And Compression Mode | 2 | If the UL/DL field is set to 0:A value of 0 indicates a DL OFDMA transmission.A value of 1 indicates an EHT SU transmission or an EHT sounding NDP. A value of 2 indicates a non-OFDMA DL MU-MIMO transmission.A value of 3 is Validate.If the UL/DL field is set to 1:A value of 1 indicates an EHT SU transmission or an EHT sounding NDP. Values 2 and 3 are Validate.NOTE—A value of 0 indicates a TB PPDU. Refer to [Table 36-31 (U-SIG field](#_bookmark105) [of an EHT TB PPDU)](#_bookmark105).For further clarifications on all values of this field, refer to [Table 36-29 (Combination of](#_bookmark103) [UL/DL and PPDU Type And Compression](#_bookmark103) [Mode field)](#_bookmark103). |
| B2 | Validate | 1 | Set to 1 and treat as Validate. |

**36.3.12.7.2 Content**

**P793L44/L46**

Table 36-31—U-SIG field of an EHT TB PPDU

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two parts of U-SIG** | **Bit** | **Field** | **Number of bits** | **Description** |
| U-SIG-1 | B0–B2 | PHY Version Identifier | 3 | Differentiate between different PHY clauses.Set to 0 for EHT. Values 1–7 are Validate. |
|  | B3–B5 | Bandwidth | 3 | Set to 0 for 20 MHz.Set to 1 for 40 MHz.Set to 2 for 80 MHz.Set to 3 for 160 MHz.Set to 4 for 320 MHz-1.Set to 5 for 320 MHz-2.See definition of 320 MHz-1 and 320 MHz-2 in [36.3.24.2 (Channelization for 320 MHz](#_bookmark328) [channel)](#_bookmark328).Values 6 and 7 are Validate. |
|  | B6 | UL/DL | 1 | Set to 1 to indicate that the PPDU is addressed to the AP. |
|  | B7–B12 | BSS Color | 6 | An identifier of the BSS.Set to the TXVECTOR parameter BSS\_COLOR. |
|  | B13–B19 | TXOP | 7 | If the TXVECTOR parameter TXOP\_DURATION is UNSPECIFIED, set to127 to indicate the absence of duration information.If the TXVECTOR parameter TXOP\_DURATION is an integer value, set to a value less than 127 to indicate duration information for NAV setting and protection ofthe TXOP as follows: |
|  |  |  |  | If the TXVECTOR parameter TXO- |
|  |  |  |  | P\_DURATION is less than 512, set to 2  (#17100)⌊TXOP\_DURATION/8⌋. |
|  |  |  |  | Otherwise, set to2  (#17100)⌊(TXOP\_DURATION – 512)/128⌋ + 1. |
|  | B20–B25 | Disregard | 6 | Set to the value of the TXVECTOR parameter TB\_DISREGARD\_IN\_USIG1 and treat as Disregard. See Table 9-45h (Mapping from Special User Info field to U-SIG-1 and U-SIG- 2 fields in the EHT TB PPDU(#17443)(#17444)). |

**35.9 Operating mode indication**

**P641L32**

If the operating channel width of the STA is greater than 80 MHz, then the maximum number of spatial streams that the STA supports in reception for a given EHT-MCS as a function of the received EHT PPDU bandwidth *BW* at an EHT STA transmitting only an OM Control subfield or an EHT OM Control subfield combined with an OM Control subfield is defined in Equation (35-3).

(#17100)⌊*Rx*-*NSS*-*from*-*OMI*  *Max*-*EHT*-*NSS*-*at*-*BW*  *Max*-*EHT*-*NSS*-*at*-80⌋ (35-3)