### **IEEE P802.11 Wireless LANs**

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| LB271 CR for 9.3.1.22.3 | | | | |
| Date: 2023-05-01 | | | | |
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**Abstract**

This submission proposes resolutions for the following 18 CIDs for TGbe LB271:

* 17463,15042,17464,17462,15043,
* 17465,15211,17466,15670,17467,
* 16391,17468,17469,17470,17471,
* 15253,17472,17473

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Updated resolution for 17466 based on Dibakar’s inputs

***TGbe editor: Please note Baseline is 11be D3.0, 11me D3.0***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Commenter | Clause | Page | Comment | Proposed Change | Resolution |
| 17463 | Brian Hart | 9.3.1.22.9 | 194.21 | What does "addressed" mean here? By its name, AID12 is an identifier not an address, so is this limited to an RA equal to the non-AP STA? But the "any non-AP EHT STA" implies more than just the RA. | 11ax mostly used "identifed" to avoid this confusion. Try "If any non-AP EHT STA is an identified recipient in an MU-RTS Trigger frame from an EHT AP and any of the following conditions is met, the User Info whose AID12 subfield identifies an EHT STA in the MU-RTS Trigger frame is an EHT variant User Info field". | Revised  Agree with the commenter in principle. The text was revised using “identified” instead of “addressed”.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17463 |
| 15042 | Ryota Yamada | 9.3.1.22.9 | 194.22 | This text has the same meaning as P478L1, but the two texts are slightly different. Please unify the expressions. | as in comment. | Revised  Agree with the commenter in principle. Replaced “PPDU” with “EHT MU PPDU or non-HT duplicate PPDU” to align with the referred text in clause 35.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #15042 |
| 17464 | Brian Hart | 9.3.1.22.9 | 194.22 | Is "an EHT STA" at L23 the same as one of the "any non-AP EHT STA"s at L21.5? Or are all EHT STAs signified? This is confusing. | Is the intent "If \*any\* non-AP EHT STA is addressed in an MU-RTS Trigger frame from an EHT AP and any of the following conditions is met, the User Info field addressed to \*each\* EHT STA in the MU-RTS Trigger frame is an EHT variant User Info field" OR "If \*a\* non-AP EHT STA is addressed in an MU-RTS Trigger frame from an EHT AP and any of the following conditions is met, the User Info field addressed to \*the\* EHT STA in the MU-RTS Trigger frame is an EHT variant User Info field". At the moment the language is ambiguously is half'n'half? Pick one and apply | Revised  Agree with the commenter in principle. “any non-AP EHT STA” has been replaced with “a non-AP EHT STA” and “an EHT STA” has been deleted for clarity.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17464 |
| 17462 | Brian Hart | 9.3.1.22.9 | 194.32 | This is procedural language that doesn't belong in clause 9 | Either P194L32-33 needs to be moved to clause 35, leaving a note and xref in this section, or rewritten: e.g., try "For an MU-RTS frame sent by an EHT AP with B55 in the Common Info field equal to 0, B54 in the Common Info field is set to 0." | Revised  Agree with the commenter in principle. The referred text and the following NOTE has been deleted as there is corresponding normative text in P478L14 in D3.0 as pointed out by CID #15043.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17462 |
| 15043 | Ryota Yamada | 9.3.1.22.9 | 194.32 | The description of the text is different from P478L14. In P194L32, "does not set" is used, and in P478L14, "shall not set" is used. Please unify. | as in comment. | Revised  Agree with the commenter in principle and deleted because there is already normative text as pointed out by the commenter.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17462, same as the resolution above |
| 17465 | Brian Hart | 9.3.1.22.9 | 194.41 | Baseline "GI And HE-LTF Type" is struck out and not replaced. This seems to change behavior for HE STAs | At L44, try "In the HE variant of the Common Info field, the GI And HE-LTF Type and HE-SIG-A2 Reserved subfields are reserved." | Rejected  The current text is correct as the TXS feature has renamed the referred subfield as “GI And HE-LTF Type/Triggered TXOP Sharing Mode” subfield and its value is defined by Table 9-53c. For an non-EHT HE STA, the value is set to 0, consistent with the default value for a reserved field in HE. So there is no backward compatibility issue for HE STAs. |
| 15211 | Eunsung Park | 9.3.1.22.9 | 194.44 | Change "the HE-SIG-A2 Reserved subfield" to "the UL HE-SIG-A2 Reserved subfield". | As in comment | Accepted |
| 17466 | Brian Hart | 9.3.1.22.9 | 194.50 | This is procedural language that doesn't belong in clause 9 | Either P194L50-53 needs to be moved to clause 35, leaving a note and xref in this section, or rewritten: e.g., try "For an MU-RTS frame sent by an EHT AP, the Triggered TXOP Sharing Mode subfield in the Common Info field equal to a nonzero value indicates a time allocation within an obtained TXOP that is assigned to an associated non-AP EHT STA for it to transmit one or more non-TB PPDUs sequentially" | Revised  Agree with the commenter in principle. Tweaked the suggested text a little based on offline inputs from Hanqing.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17462 |
| 15670 | Geonjung Ko | 9.3.1.22.9 | 195.11 | The procedure name in this table is inconsistent with the name in 35.2.1.2. | Please change "MU-RTS TXOP sharing procedure" to "triggered TXOP sharing procedure". | Accepted |
| 17467 | Brian Hart | 9.3.1.22.9 | 195.27 | Missing article | Try "The HE variant User Info field \*in\*an\* MU-RTS TXS Trigger frame is defined in Figure 9-95a (HE variant User Info field format in the MU-RTS TXS Trigger frame). " | Accepted |
| 16391 | Massinissa Lalam | 9.3.1.22.9 | 195.28 | Why is “HE variant User Info” field defined for MU-RTS TXS Trigger? Is the intent to extend this feature to 11ax STA? Since 11ax STA cannot signal their support for TXOP Sharing, I don’t see the need to define this HE variant for this specific type of frame. | Remove the notion of “HE variant User Info” for MU-RTS TXS Trigger | Rejected  The comment failed to identify an issue, but instead asked clarification questions.   As a clarification, the HE variant User Info field might be carried in a non-punctured PPDU that is less than or equal to 160 MHz to share TXOP to an EHT STA. The benefit is reduced overhead, as the Special User Info field is not needed any more. |
| 17468 | Brian Hart | 9.3.1.22.9 | 195.29 | Missing "EHT variant", article x2 and "subfield" | Try "The \*EHT variant\* User Info field \*in\*an\* MU-RTS TXS Trigger frame with \*an\* EHT variant Common Info \*field\* is defined in Figure 9-95b (EHT variant User Info field format in the MU-RTS TXS Trigger frame)." | Accepted |
| 17469 | Brian Hart | 9.3.1.22.9 | 196.16 | Many missing articles | Try "B0 of the RU Allocation subfield is set to 0 to indicate a primary 20 MHz channel, primary 40 MHz channel and primary 80 MHz channel. For a primary 160 MHz, [delete and] 80+80 MHz, and 320 MHz indication, B0 of the RU Allocation subfield is set to 1. A non-AP HE STA ignores B0 for a primary 160 MHz and 80+80 MHz (HE only) indication. A non-AP EHT STA checks B0 for a primary 160 MHz and 320 MHz indication if the non-AP EHT STA is addressed by an EHT variant User Info field. In an EHT variant User Info field, the PS160 subfield is set to 1 to indicate a 320 MHz channel and set to 0 to indicate a primary 20 MHz channel, primary 40 MHz channel, primary 80 MHz channel, and primary 160 MHz channel" | Accepted |
| 17470 | Brian Hart | 9.3.1.22.9 | 196.21 | This is procedural language that doesn't belong in clause 9 | Need to rewrite this to avoid "A non-AP HE STA ignores" and "A non-AP EHT STA checks". E.g., move this to clause 35, and insert an introductory NOTE with xref from here to there | Revised  Agree with the commenter in principle  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17470 |
| 17471 | Brian Hart | 9.3.1.22.9 | 196.35 | Wrong article. | Try "B7-B1 of the RU Allocation subfield is set to 69 to indicate \*a\* 320 MHz channel." | Accepted |
| 15253 | JINYOUNG CHUN | 9.3.1.22.9 | 197.05 | Delete 'UL BW subfield and' in the name of Figure 9-96. | as comment | Accepted |
| 17472 | Brian Hart | 9.3.1.22.9 | 197.09 | The P80 is shown as lowest in freq, so it is less-than-clear what happens if the P80 is anywhere else. | Redraw this figure so that the P80 is the uppermost portion of the figure (and then so too is P160). This helps decouple the notions of a) lowest in freq from b) primary-ness. | Revised  Agree with the commenter in principle that P80 and P160 can reside in different locations within a 160 MHz or 320 MHz operating channel width and figure 9-96 only illustrates one possible configuration. To avoid confusion while keep the spec text succinct, we removed the “lower Freq”, “higher freq” and the arrow with “increasing” from the left side of the figure, as the text in the figure has already clearly indicated the location of different 20/40 MHz RUs.  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17472 |
| 17473 | Brian Hart | 9.3.1.22.9 | 197.37 | Since duration is a time, "time duration" is redundant. | Try "duration" | Revised  Agree with the commenter in principle  Tgbe editor please implement changes as shown in doc 11-23/0520r1 tagged as #17473 |

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 TGbe Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the Tgbe Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

***Tgbe editor: Please update 9.3.1.22.9 as follows (track change enabled):***

* + - * 1. **MU-RTS Trigger frame format**

***Change the second paragraph as follows:***

The UL BW subfield in the Common Info field along with the UL BW Extension subfield in the Special User Info field (if present) indicates the bandwidth of the PPDU carrying the MU-RTS Trigger frame and is defined in Table 9-29d (UL BW subfield encoding) and [Table 9-50a (UL Bandwidth Extension subfield](#bookmark50) [encoding)](#bookmark50).

If (**#17464)** a non-AP EHT STA is (**#17463)** identified by the AID12 subfield of a User Info field in an MU-RTS Trigger frame from an EHT AP and any of the follow- ing conditions is met, the User Info field in the MU-RTS Trigger frame is an EHT variant User Info field:

* The bandwidth of the (**#15042)** EHT MU PPDU or non-HT duplicate PPDU carrying the MU-RTS Trigger frame is 320 MHz.
* The (**#15042)** EHT MU PPDU or non-HT duplicate PPDU carrying the MU-RTS Trigger frame is punctured.

Otherwise, the User Info field might be an HE variant User Info field or an EHT variant User Info field.

(**#17462)**

***Change the now-shifted seventh paragraph as follows:***

The UL Length, ~~GI And HE-LTF Type,~~ MU-MIMO HE-LTF Mode, Number Of HE-LTF Symbols And Midamble Periodicity, UL STBC, LDPC Extra Symbol Segment, AP Tx Power, Pre-FEC Padding Factor, PE Disambiguity, UL Spatial Reuse, and Doppler ~~and UL HE-SIG-A2 Reserved~~ subfields in the Common Info field are reserved. In the HE variant of the Common Info field, the (**#15211)** UL HE-SIG-A2 Reserved subfield is reserved.

***Insert the following paragraphs after the now-shifted seventh paragraph:***

**(#17466)**If the Triggered TXOP Sharing Mode subfield in the Common Info field of an MU-RTS frame transmitted by an EHT AP is set to a nonzero value, the frame indicates a time allocation within an obtained TXOP to an asso- ciated non-AP EHT STA for transmitting one or more non-TB PPDUs sequentially (see 35.2.1.2 (Triggered

TXOP sharing procedure)); otherwise the subfield is set to 0. The encoding of the Triggered TXOP Sharing Mode sub- field is defined in [Table 9-53c (Triggered TXOP Sharing Mode subfield encoding)](#bookmark68).

**Table 9-53c—Triggered TXOP Sharing Mode subfield encoding**

|  |  |
| --- | --- |
| **Triggered TXOP Sharing Mode subfield value** | **Description** |
| 0 | MU-RTS that does not initiate **(#15670)**triggered TXOP sharing procedure. |
| 1 | MU-RTS that initiates **(#15670)**triggered TXOP sharing procedure wherein a scheduled STA can only transmit MPDU(s) addressed to its associated AP. |
| 2 | MU-RTS that initiates **(#15670)**triggeredTXOP sharing procedure wherein a scheduled STA can transmit MPDU(s) addressed to its associated AP or addressed to another STA. |
| 3 | Reserved. |

An MU-RTS Trigger frame that has the Triggered TXOP Sharing Mode subfield set to a nonzero value is called an MU-RTS TXS Trigger frame.

The HE variant User Info field **(#17467)**in an MU-RTS TXS Trigger frame is defined in [Figure 9-95a (HE variant User](#bookmark69) [Info field format in the MU-RTS TXS Trigger frame)](#bookmark69). The **(#17468)**EHT variant User Info field in an MU-RTS TXS Trigger frame with an EHT variant Common Info is defined in [Figure 9-95b (EHT variant User Info field format in the MU-](#bookmark70) [RTS TXS Trigger frame)](#bookmark70).

B0 B11 B12 B19 B20 B28 B29 B39

|  |  |  |  |
| --- | --- | --- | --- |
| AID12 | RU Allocation | Allocation Duration | Reserved |

Bits: 12 8 9 11

**Figure 9-95a—HE variant User Info field format in the MU-RTS TXS Trigger frame**

B0 B11 B12 B19 B20 B28 B29 B38 B39

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AID12 | RU Allocation | Allocation Duration | Reserved | PS160 |

Bits: 12 8 9 10 1

**Figure 9-95b—EHT variant User Info field format in the MU-RTS TXS Trigger frame**

***Change the now-shifted 11th paragraph as follows:***

The UL HE-MCS, UL FEC Coding Type, UL DCM, SS Allocation/RA-RU Information and UL Target Receive Power fields in the HE variant User Info field are reserved in an MU-RTS frame that is not an MU- RTS TXS frame.

The UL EHT-MCS, UL FEC Coding Type, SS Allocation/RA-RU Information, and UL Target Receive Power fields in the EHT variant User Info field are reserved in an MU-RTS frame that is not an MU-RTS TXS frame.

***Change the now-shifted 13h paragraph as follows:***

The RU Allocation subfield in the User Info field addressed to the STA indicates whether the CTS frame is transmitted on the primary 20 MHz channel, primary 40 MHz channel, primary 80 MHz channel, primary 160 MHz channel, ~~or~~ 80+80 MHz channel (HE only) or 320 MHz channel.

***Change the now-shifted 14th paragraph as follows:***

**(#17469)**B0 of the RU Allocation subfield is set to 0 to indicate a primary 20 MHz channel, primary 40 MHz channel and primary 80 MHz channel. For a primary 160 MHz, ~~and~~ 80+80 MHz, and 320 MHz indication, B0 of the RU Allocation subfield is set to 1. **(#17470)** In an EHT variant User Info field, the PS160 subfield is set to 1 to indicate a 320 MHz channel and set to 0 to indicate a primary 20 MHz channel, pri- mary 40 MHz channel, primary 80 MHz channel, and primary 160 MHz channel.

**(#17470)NOTE--**A non-AP HE STA ignores B0 for a primary 160 MHz and 80+80 MHz (HE only) indication (see 26.5.2.3.1 (General)). A non-AP EHT STA checks B0 for a primary 160 MHz and 320 MHz indication if the non-AP EHT STA is addressed by an EHT variant User Info field (see 35.5.2.1 (General)).

***Change the now-shifted 18th paragraph as follows:***

B7–B1 of the RU Allocation subfield is set to 68 to indicate the primary and secondary 80 MHz channel if the bandwidth of the PPDU that carries the MU-RTS Trigger frame is less than 320 MHz, or to indicate the primary 160 MHz channel if the bandwidth of the PPDU that carries the MU-RTS Trigger frame is 320 MHz.

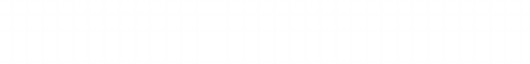
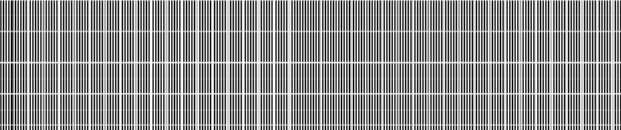
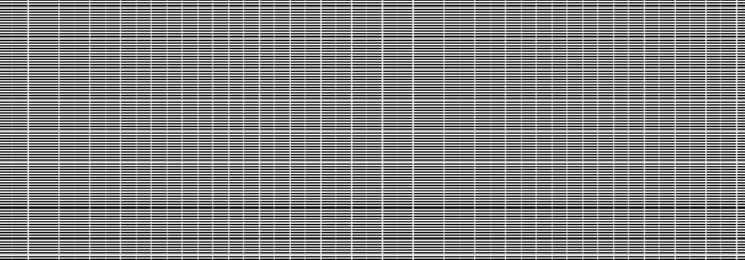
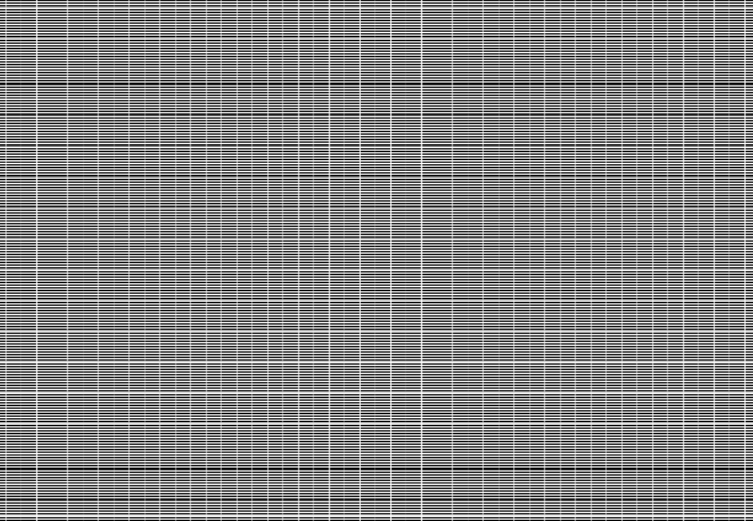
**(#17471)**B7–B1 of the RU Allocation subfield is set to 69 to indicate a 320 MHz channel.

***Change the now-shifted 20th paragraph and*** [***Figure 9-96 (UL BW subfield and B7–B1 of RU***](#bookmark71)[***Allocation subfield in MU-RTS Trigger frame for various bandwidths)***](#bookmark71) ***as follows:***

The settings for B7–B1 of the RU Allocation subfield are illustrated in [Figure 9-96 (](#bookmark71)**[(#15253)](#bookmark71)** [B7–B1 of RU Allocation subfield in MU-RTS Trigger frame for various bandwidths)](#bookmark71).

**PS160 = 1**

~~Higher Freq~~



**68**

(80+80 MHz

or primary 160 MHz)

**67** (primary

80 MHz)

**65** (primary 40 MHz is the lowest 40 MHz)

20 MHz

**61** (primary 20 MHz is the lowest 20 MHz)

**62** (primary 20 MHz is second lowest 20 MHz)

**63** (primary 20 MHz is third lowest 20 MHz)

**64** (primary 20 MHz is fourth lowest 20 MHz)

**66** (primary 40 MHz is the second lowest 40 MHz)

**69**

(320 MHz)

**Bandwidth**

320 MHz (EHT only)

160 MHz or 80+80 MHz

80 MHz

40 MHz

**B0 = 1**

**B0 = 0**

**PS160 = 0**

~~Lower Freq~~

~~Increasing~~

**(#17472)*Tgbe editor: Please delete all the contents in the yellow rectangle above, which includes “lower Freq”, “higher freq” and the arrow with “increasing” from the left side of the figure***

**Figure 9-96—~~UL BW subfield and~~ B7–B1 of RU Allocation subfield in MU-RTS Trigger frame for various bandwidths**

***Insert the following paragraph at the end of this subclause:***

The Allocation Duration subfield in the User Info field of the MU-RTS TXS Trigger frame indicates the time **(#17473)**allocated to the non-AP STA within the TXOP obtained by the AP, in units of 16 µs.

***Tgbe editor: Please update add a new paragraph to the end of 26.5.2.3.1 as follows (track change enabled):***

26.5.2.3 Non-AP STA behavior for UL MU operation

26.5.2.3.1 General

**(#17470)**A non-AP HE STA may ignore B0 in an HE variant User Info field in a Trigger frame.

***Tgbe editor: Please update add a new paragraph to the end of 35.5.2.1 as follows (track change enabled):***

35.5.2 EHT UL MU operation

35.5.2.1 General

**(#17470)**A non-AP EHT STA shall check B0 for a primary 160 MHz and 320 MHz indication if the non-AP EHT STA is addressed by an EHT variant User Info field in a Trigger frame.