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

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| CC36 CR for Trigger frame and puncturing  |
| Date: 2022-01-28 |
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**Abstract**

This submission proposes resolutions for the following 23 CIDs for TGbe CC36:

* 4583,5441,4097,6486,6485,5370,7028,4875,4876,7682,
* 4967,5589,7690,5465,6091,4886,6126,6125,5946,5852,
* ~~5205~~,6686,5733

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Revised the resolution for CID4097 based on Xiaofei’s inputs and that for CID5370 based on Dibakar’s inputs.

***TGbe editor: Please note Baseline is REVmd D5.0, 11ax D8.0, and 11be D1.4***

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| --- | --- | --- | --- | --- | --- | --- |
| CID | Commenter | Clause | Page | Comment | Proposed Change | Resolution |
| 4583 | Bo Yang | 9.3.1.22.1.3 | 0.00 | The following two paragraphs are not related to the subclause 9.3.1.22.1.3 Special User Info field."If solicited by an EHT variant User Info field in a Trigger frame, then the addressed EHT STA responds to the Trigger frame with an EHT TB PPDU as defined in 35.4.2 (UL MU operation), except for an MU-RTS in which case the EHT STA responds to the Trigger frame with a non-HT duplicate PPDU.If solicited by an HE variant User Info field in a Trigger frame, then the addressed EHT STA responds to the Trigger frame with an HE TB PPDU as defined in 26.5.2 (UL MU operation), except for an MU-RTS in which case the EHT STA responds to the Trigger frame with a non-HT duplicate PPDU."They are general rules for the PPDU type of Trigger responses. move them to subclause 9.3.1.22.1.2 User Info List field | Move those two paragraphs to subclause 9.3.1.22.1.2 User Info List field | RevisedAgree with the commenter in principleThis has been addressed in D1.4 in that the redundant text has been deleted.Tgbe editor, no further action is needed |
| 5441 | Jian Yu | Contents | 9.05 | Add 9.3.1.22.1.3 Special User Info field | as in comment | RevisedAgree with the commenter in principleThis has been addressed in D1.4 in that subclause 9.3.1.22.1.2.3 for Special User Info field has been addedTgbe editor, no further action is needed |
| 4097 | Abhishek Patil | 9.3.1.22.1.1 | 85.05 | Clarify that Trigger Type subfield is the same for EHT variant as the HE variant. Similar inheritance (from HE to EHT) applies for other subfields of the EHT variant Common Info field if the subfield has the same name as the HE variant (e.g., CS Required, More TF etc) unless the description clearly specifies a different meaning/intention. | As in comment | RevisedAgree with the commenter in principle. Add a paragraph to say that “The HE variant Common Info field and the EHT variant Common Info field share the encoding for the Trigger Type, UL Length, More TF, CS Required, LDPC Extra Symbol Segment, AP TX Power, Pre-FEC Padding Factor, PE Disambiguity and Trigger Dependent Common Info subfields.” Tgbe editor please implement changes as shown in doc 11-22/0237r1 tagged as #4097 |
| 6486 | Osama Aboulmagd | 9.3.1.23 | 82.32 | It is not clear how to distinguish the two trigger frame variants, HE and EHT. | Make clear how the two variants are identified. | Revised. Agree with the commenter in principleThis has been addressed in D1.4. D1.4 has provided rules on how to identify EHT variant Common Info field and User Info field. At the high-level, the presence of a Special User Info field is used to distinguish the two.Tgbe editor, no further action is needed |
| 6485 | Osama Aboulmagd | 9.3.1.22 | 82.32 | Trigger frame format clause is confusing. It helps if the discussion on HE Trigger frame and EHT trigger frame are separated and not overflow each other. I suggest have different clauses for each Trigger frames. | As in comment | RevisedAgree with the commenter in principleThis has been addressed in D1.4. D1.4 has provided rules on how to identify EHT variant Common Info field and User Info field. At the high-level, the presence of a Special User Info field is used to distinguish the two.D1.4 has separate subclauses for HE and EHT User Info fields, which is aligned with the suggestion to have a separate clause for the EHT. As the Trigger frame for EHT STAs has been designed to inherit from HE Trigger frame as much as possible, the current structure helps a reader to see what parts common and what parts are different.Tgbe editor, no further action is needed |
| 5370 | Jay Yang | 9.4.2.295c.2 | 137.25 | a modified MU-RTS frame is not a normative language, suggest using MU-RTS TXS frame, which is aligned with the context. | As in comment | RevisedAgree with the commenter in principle. This has been addressed in 21/1731r4 [https://mentor.ieee.org/802.11/dcn/21/11-21-1731-04-00be-cr-for-35-2-1-3-remaining-part1.docx, Motion 289, CID#7588, 7706, 8292, 8293] in that “a modified MU-RTS frame” has been replaced with “an MU-RTS TXS Trigger frame” Tgbe editor please implement changes as shown in doc 11-21/1731r4 (link above) tagged as ##7588, 7706, 8292, 8293 for Table 9-322at—Subfields of the EHT MAC Capabilities Information field |
| 7028 | Sigurd Schelstraete | 9.3.1.22.1.2.2 | 86.20 | The value 18 for B7-B1 is reserved, yet it also shows that it only applies to 80,160 or 320. Shouldn't the whole row corresponding to value 18 be reserved (compare with e.g. line 60 on page 96) | Clarify and fix | RevisedAgree with the commenter in principleD1.4 has addressed this. The two rows have been revised to have consistent format in that 'Reserved' is only shown in the RU/MRU index column.Tgbe editor, no further action is needed |
| 4875 | Dong Guk Lim | 9.3.1.22.1 | 87.02 | The field name is wrong. In Figure 9-64b1, the field name is indicated as "MU-MIMO HE-LTF Mode". Correct it. | Change "The MU-MIMO EHT-LTF Mode " with "The MU-MIMO HE-LTF Mode" | RevisedAgree with the commenter in principle. This has been addressed in D1.4, in which the field is renamed to ‘Reserved’.Tgbe editor, no further action is needed |
| 4876 | Dong Guk Lim | 9.3.1.22.1 | 87.21 | The EHT variant of the common field can be used to solicit either HE PPDU or EHT PPDU. so, it is good to use the same field name in the common field regardless of solicited TB PPDU type but, the interpretation of this field is different regarding TB PPDU type. | Delete the " or the Number Of EHT-LTF Symbols And Midamble Periodicity subfield " in P87L21. | RevisedAgree with the commenter in principle. This has been addressed in D1.4, in which the subfield is renamed to ‘Number Of HE/EHT-LTF Symbols’. In this way, it indicates that this field can be used regardless of the TB PPDU type.Tgbe editor, no further action is needed |
| 7682 | Xiaofei Wang | 9.3.1.22.1.1 | 87.38 | it is not clear which part was changed in the paragraph from L35-L56 | please indicate clearly what the changes are in these paragraphs or revise the instructions above. | RevisedAgree with the commenter in principle.This has been addressed in D1.4, where the revised text clarifies that these lines are only applicable to HE variant Common Info field.Tgbe editor, no further action is needed |
| 4967 | Eunsung Park | 9.3.1.22.1.1 | 89.55 | When soliciting EHT TB PPDU, UL HE-SIG-A2 Reserved subfield is devided into HE/EHTP160, Special User Info Field Present and Reserved subfields. Add this description and specify which values are used to set the Special User Info Field Present and Reserved subfields. | See the comment. | RevisedAgree with the commenter in principleThis has been addressed in D1.4. First, Figure 9-88a (EHT variant Common Info field format) in D1.4 shows B54-B62 are split as the commenter suggested. Second, D1.4 has a new paragraph on page 124 specifying that the value of the Special User Info Field Flag subfield in the EHT variant Common Info field is 0 in the EHT variant Common Info field.Lastly, values for the reserved subfields have also been specified in D1.4.Tgbe editor, no further action is needed |
| 5589 | John Wullert | 9.3.1.22.1.2.2 | 95.32 | Typo: "indentifies" should be "identify" | as in comment | RejectedAfter a careful review, the existing text looks correct, as the subject of the sentence is “the RU Allocation field along with …”.Tgbe editor, no further action is needed |
| 7690 | Xiaofei Wang | 9.3.1.22.1.2.2 | 95.38 | It is unclear what "N" means in this sentence | please add clarifcation or reference to explain to which value "N" refers, for example Equation 9-0a1 | RevisedAgree with the commenter in principle. This has been addressed in D1.4, which clarifies that N "is obtained from Table 9-53b (Lookup table for X1 and N(#7032)) that is derived from Equation (9-0a1)"”Tgbe editor, no further action is needed |
| 5465 | Jian Yu | 9.3.1.22.1.3 | 103.28 | Define default values of U-SIG Disregard And Validate subfield to optimize PAPR | Will bring a detailed proposal | RevisedAgree with the commenter in principle. This has been addressed in D1.4 with the following text: with the following text "The Validate In U-SIG-2 subfield is set to 1. (#6998)The values of the Disregard In U-SIG-1 and Disregard In U-SIG-2 subfields are defined in 35.4.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield), "Tgbe editor, no further action is needed |
| 6091 | Mahmoud Kamel | 9.3.1.22.1.3 | 103.28 | the Disregard bits in the USIG of the TB-PPDU is not set to a specific bit sequence and there is no specs to specify how this will be set. | I have proposed contribution 21/1008 to fix this issue | RevisedAgree with the commenter in principle. Similar to the resolution for 5465 above, this has been addressed in D1.4 with the following text: with the following text "The Validate In U-SIG-2 subfield is set to 1. (#6998)The values of the Disregard In U-SIG-1 and Disregard In U-SIG-2 subfields are defined in 35.4.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield), "Tgbe editor, no further action is needed |
| 4886 | Dong Guk Lim | 9.3.1.22.1.3 | 103.35 | It is not clear that the bits in table 9-29j4 are set to which value when it is transmitted in the trigger frame. clarify this. | As in comment | RevisedAgree with the commenter in principle. Similar to the resolution for 5465 above, this has been addressed in D1.4 with the following text: with the following text "The Validate In U-SIG-2 subfield is set to 1. (#6998)The values of the Disregard In U-SIG-1 and Disregard In U-SIG-2 subfields are defined in 35.4.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield), "Tgbe editor, no further action is needed |
| 6126 | Mark RISON | 9.3.1.22.5 | 104.55 | "a scheduledSTA can transmit PPDU(s) addressed to its associated AP or addressed toanother STA." -- PPDUs are not addressed to anyone | Refer to MPDU(s) instead | RevisedAgree with the commenter in principle. Replaced PPDU with MDPU in both rows of Table 9-53e—TXOP Sharing Mode subfield encoding.Tgbe editor please implement changes as shown in doc 11-22/0237r1 tagged as #6126 |
| 6125 | Mark RISON | 9.3.1.22.5 | 104.55 | "a scheduledSTA can transmit PPDU(s) addressed to its associated AP or addressed toanother STA." -- is this trying to say that you cannot transmit to multiple non-AP STAs? | Clarify | RejectedThe current text looks correct in that it follows the motion below to transmit only to its AP or another STA:The 802.11be amendment shall define mechanism(s) for an AP to assist a STA that communicates with another STA.[Motion 22, [9] and [153]]Tgbe editor, no further action is needed |
| 5946 | Li-Hsiang Sun | 35.4.2.1 | 286.22 | Under default TID link mapping, when there is TB-PPDU access on link1, MU-EDCA should start on all other links to minimize contention | as in comment | RejectedThe comment is not identifying a technical issue (noting that contention on a link is not an issue but rather the building block of a WiFi system). EDCA control should be on a per link basis since the medium conditions are link dependent. If the intention is for fairness control, it could be addressed through AP implementations.  |
| 5852 | Lei Wang | 35.4.2.2.1 | 286.42 | Is there any condition for the sentence "The AID12 subfield of the Special User Info field shall be set to 2007."?If yes, please specify the condition.If no, then this AID12 subfield is not needed at all, as its value is a constant. | As discussed in the comment. | RejectedThere is the only normative text on the value of the AID12 subfield for the Special User Info field. We need to keep this sentence for the completeness of the standards |
| 5205 | Hanqing Lou | 35.4.2.2.1 | 286.44 | The sentence "An EHT AP shall set the value of B54 in the Common Info field of a Trigger frame to 1 if there exists any HE variant User Info field in the Trigger frame." is valid in R1. In R2, we may have changes if A-PPDU resolution is 80MHz. | Change to "If the dot11EHTBaseLineFeaturesImplementedOnly is equal to true, an EHT AP shall set the value of B54 in the Common Info field of a Trigger frame to 1 if there exists any HE variant User Info field in the Trigger frame." | RejectedThere is no straightforward way for B54=0 to bring additional benefits based on the existing combinations of B54 and B55. Specifically, the combination of B54=0 & B55=0 has already been defined in R1, so the only combination for future expansion is B54=0 & B55=1 based on the commet. This combination, however, is invalid as B55=1 indicates the Trigger frame doesn’t contain a Special User Info field that is essentially for any EHT PPDU. |
| 6686 | Robert Stacey | 35.2.1.2.2 | 243.46 | The purpose of the INACTIVE\_SUBCHANNELS parameter should be defined in Table 36-1 an not repeated here. Whether or not the INACTIVE\_SUBCHANNELS parameter is present in the TXVECTOR is defined in Table 36-1 and should not be repeated here. | Nothing in the paragraph belongs in this subclause. Remove from here and ensure that the appropriate description is present in Table 36-1 | RevisedAgree with the commenter in principle. To inherit the same structure from 11ax, move 35.2.1.2.2 (INACTIVE\_SUBCHANNELS) into subclause 35.11 (Rules for the PHY interface of an EHT STA) as a new subclause 35.11.4 (INACTIVE\_SUBCHANNELS)Tgbe editor please implement changes as shown in doc 11-22/0237r1 tagged as #6686 |
| 5733 | Laurent Cariou | 35.11.2 | 0.00 | "If a 20 MHz subchannel is indicated as a punctured subchannel in the Disabled Subchannel Bitmap field in the EHT Operation element, the corresponding bit in the TXVECTOR parameter INACTIVE\_SUBCHANNELS shall be set to 1 and the punctured 20 MHz subchannel shall not be used by any PPDU that is transmitted within the operating channel of the EHT AP to a member of the EHT BSS. " For static puncturing but not only, we need to make it clear that all other bits within the BW of the PPDU shall be set to 0, unless specified otherwise. | as in comment | RevisedAgree with the commenter in principle. The comment has been addressed in D1.4. Specifically, Table 36-1 (TXVECTOR and RXVECTOR parameters) in D1.4 has the following text “A bit is set to 1 to indicate that the corresponding 20 MHz subchannel is punctured and set to 0 to indicate the corresponding 20 MHz subchannel is not punctured.”.Tgbe editor, no further action is needed |

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.***

**9.3.1.22.1.1 Common Info field**

***TGbe editor: Please insert the following as the 5th paragraph in the subclause (page 118 of D1.4)***

(#4097)

The HE variant Common Info field and the EHT variant Common Info field share the encoding for the Trigger Type, UL Length, More TF, CS Required, LDPC Extra Symbol Segment, AP TX Power, Pre-FEC Padding Factor, PE Disambiguity and Trigger Dependent Common Info subfields.

The Trigger Type subfield identifies the Trigger frame variant and its encoding is defined in Table 9-46 (Trigger Type subfield encoding).

**9.3.1.22.5 MU-RTS Trigger frame format**

***TGbe editor: Please update the 2nd and 3rd rows in Table 9-53e—TXOP Sharing Mode subfield encoding (in page 142 of D1.4)***

**Table 9-53e—TXOP Sharing Mode subfield encoding**

|  |  |
| --- | --- |
| **TXOP Sharing Mode subfield value** | **Description** |
| 0 | MU-RTS that does not initiate MU-RTS TXOP sharing procedure. |
| 1 | MU-RTS that initiates MU-RTS TXOP sharing procedure wherein a scheduled STA can only transmit (#6126)MPDU(s) addressed to its associated AP. |
| 2 | MU-RTS that initiates MU-RTS TXOP sharing procedure wherein a scheduled STA can transmit (#6126)MPDU(s) addressed to its associated AP or addressed to another STA. |
| 3 | Reserved. |

***TGbe editor: Please delete subclause 35.2.1.2.2 (page 447 in D1.4) and move all the paragraphs in it to a newly created subclause 35.11.4 (INACTIVE\_SUBCHANNELS) as follows:***

**(#6686)**

**35.11 Rules for the PHY interface of an EHT STA(#4633)**

**(#6686)35.11.4 INACTIVE\_SUBCHANNELS**

(#3151)(#3120)(#2180)(#1086)(#2541)An EHT STA shall not transmit on any 20 MHz subchannel that is punctured as indicated in the TXVECTOR parameter INACTIVE\_SUBCHANNELS (see Table 36-1 (TXVECTOR and RXVECTOR parameters)).

… …