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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CC36 CR for Trigger frame on RA-RU | | | | |
| Date: 2021-08-03 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | Email |
| Yanjun Sun | Qualcomm |  |  |  |
| Steve Shellhammer |  |  |  |  |
| Alfred Asterjadhi |  |  |  |  |
| George Cherian |  |  |  |  |
| Abhishek Patil |  |  |  |  |
| Youhan Kim |  |  |  |  |
| Bin Tian |  |  |  |  |
| Duncan Ho |  |  |  |  |
| Gaurang Naik |  |  |  |  |
| Geonjung Ko | Wilus |  |  |  |
| Xiandong Dong | Xiaomi |  |  |  |
| Jonghun Han | Samsung |  |  |  |
| Hanqing Lou | InterDigital |  |  |  |
| Rojan Chitrakar | Panasonic |  |  |  |
| Xiaofei Wang | InterDigital |  |  |  |

**Abstract**

This submission proposes resolutions for following xxx comments received for TGbe CC36:

• 5901, 4201, 5936, 6056, 5201, 5203, 5109, 5118, 6514

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Adopted comments from Xiaofei and Rojan to make RA-RU Information subfield reserved in the EHT variant User Info field in R1

***TGbe editor: Please note Baseline is REVmd D5.0, 11ax D8.0, and 11be D1.1***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Commenter | Clause | Page | Comment | Proposed Change | Resolution |
| 5901 | Li-Hsiang Sun | 9.3.1.22.1.2.2 | 95.15 | "RA-RU Information" does not seem applicable to EHT variant of user info because currently there are no new AID defined only for EHT STA to perform UORA. User info for UORA would still be using existing UORA AID 0 or 2045 and it needs to be interpreted by legacy/EHT STAs the same way | remove RA-RU information from the name of the field | Revised –  Agree in principle with the comment. Proposed resolution marks the RA-RU information field as reserved in the EHT variant User Info field since none of this behavior is defined for EHT TB PPDU. Note that an EHT STA can still use RA-RUs for the HE TB PPDU case.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5901 |
| 4201 | Alfred Asterjadhi | 35.4.2.2.1 | 287.49 | I think RA-RU was decided to not be covered by EHT baseline features but rather enhanced ones. If that is the case then suggest removing RA-RU related changes in these two paragraphs. | As in comment. | Revised  Agree with the commenter in principle. Proposed change removes RA-RU related changes. These changes are along the same lines as those proposed by CID 5901.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #4201 |
| 5936 | Li-Hsiang Sun | 35.4.2.3.1 | 287.48 | Currently there is no UORA using EHT TB-PPDU | removing the bullet | Revised  Agree with the commenter in principle to delete the text on RA-RU for EHT TB PPDU.  Proposed change removes RA-RU related changes. These changes are the same as those proposed by CID 5901.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5936 (same as the changes for **#4201** above) |
| 6056 | Liwen Chu | 35.4.2.3.1 | 287.53 | RA-RU for EHT TB is not defined. | Change the text according to the comment. | Revised  Agree with the commenter in principle. Proposed resolution removes the RA-RU information field from the EHT variant User Info field since none of this behavior is defined for EHT TB PPDU. Note that an EHT STA can still use RA-RUs for the HE TB PPDU case.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #6056 (same as the changes for **#4201** above) |
| 5201 | Hanqing Lou | 9.3.1.22.1.1 | 89.51 | When an AP sets HE/EHT P160 subfield to 0, could this AP use AID values 0 or 2045 to solicit EHT UORA transmission? If there are HE STAs present in the BSS, HE STAs may respond with HE TB PPDU. | Add restrictions for the use of AID=0 and 2045 when HE/EHT P160 field is set to 0. | Revised  Agree with the commenter in principle that clarification is needed on whether to add constraints to RA-RU if the HE/EHT P160 subfield is equal to 0.  Based on CIDs above, RA-RU for EHT TB PPDU is not defined in R1. Essentially RA-RU triggers only HE TB PPDU in R1. This means that B54 and B55 in the Common Info must be equal to 1. Clarifications have been added in subclause in 35.4.1.1.2 accordingly.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5201 |
| 5203 | Hanqing Lou | 9.3.1.22.1.2.2 | 95.25 | Need to prevent HE STAs to access RUs allocated in an EHT variant User Info field. For example, if AID12=0 or 2045, a HE STA may ignore all the B54 and B55 in Common Info field, and still try to use the RU. It may misunderstand RU Allocation subfield and PS160 subfield as well. | Not using AID12 = 0 or 2045 in EHT variant User Info field. | Revised  Agree with the commenter in principle. Proposed resolution removes the RA-RU information field from the EHT variant User Info field since none of this behavior is defined for EHT TB PPDU. Note that an EHT STA can still use RA-RUs for the HE TB PPDU case.  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5203 (same as the changes for **#5201** above) |
| 5109 | Geonjung Ko | 35.4.2.2.1 | 286.30 | Need the appropriate restriction to prevent a problem that an HE TB PPDU is transmitted on an RA-RU when the RA-RU is allocated by an EHT variant User Info field. | Define the rule. | Revised  Agree with the commenter in principle. The issue can be avoided by the resolution for CID 5201  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5109 (same as the changes for **#5201** above) |
| 5118 | Geonjung Ko | 9.3.1.22.1.2.2 | 95.26 | If the AID12 subfield is encoded to 0 or 2045 as defined in Table 9-29h for the EHT variant User Info field, it may result in collision, since HE STAs cannot understand that the User Info field is the EHT variant. | Add restrictions for the User Info field setting. | Revised  Agree with the commenter in principle. The issue can be avoided by the resolution for CID 5201  Tgbe editor please implement changes as shown in doc 11-21/1282rx tagged as #5118 (same as the changes for **#5201** above) |
| 6514 | Pascal VIGER | 9.3.1.22.1.2.1 | 91.24 | At that time, UORA usage is deprectaed as there is no possibility to trigger HE or EHT stations. The HE variant User Info can not use AID12 value '0' for UORA, because the legacy HE stations can interpret this value useful for it. | Please solve the identification issue between HE and EHT STAs. May be UORA is reserved for HE, and a more eficient RA mechanism has to be provided to EHT ? | Rejected  An EHT STA is an HE STA, and as such both can contend for a particular RA RU. The RA RU information in this case is provided in an HE variant User Info field which can be decoded by both HE and EHT STAs. Hence there is no identification issues. Regarding reserving UORA only for HE that would mean that EHT STAs would not be capable of using this mechanism which would cause compatibility issues (EHT STAs are HE STAs). |

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.***

**9.3.1.22.1.2.2 EHT variant User Info field**

***TGbe editor: Please update the last paragraph in 9.3.1.22.1.2.2 as follows:***

The (#5901) UL Target Receive Power, and Trigger Dependent User Info subfields are set as defined in 9.3.1.22.1.2.1 (HE variant User Info field).

The RA-RU Information subfield is reserved in the EHT variant User Info field. (#5901)

* + - * 1. **TXVECTOR parameters for EHT TB PPDU response to Trigger frame**

***TGbe editor: Please update the bullet on RU\_ALLOCATION in subclause 35.4.2.3.1 as follows:***

…

The RU\_ALLOCATION parameter is set to the value indicated by the RU Allocation subfield of the User Info subfield of the Trigger frame.

(#4201)(#5936)(#6056)

* + - * 1. **Allowed settings of the Trigger frame fields and TRS Control subfield**

***TGbe editor: Please update the 3rd paragraph in subclause 35.4.1.1.2 as follows***

If the dot11EHTBaseLineFeaturesImplementedOnly is equal to true, then an EHT AP shall not transmit a Trigger frame that solicits both an HE TB PPDU and an EHT TB PPDU. The EHT AP shall not transmit a Trigger frame that contains a User Info field whose AID12 subfield is equal to 0 or 2045 unless both B54 and B55 in the Common Info field of the Trigger frame are equal to 1. (#5201)(#5203)(#5109)(#5118)

35.4.2.3 Non-AP STA behavior for UL MU operation

35.4.2.3.1 General

***TGbe editor: Please update the 2nd paragraph in subclause as follows***

If a non-AP EHT STA receives an EHT variant User Info field in a Trigger frame that is not MU-RTS Trigger frame in which the AID12 subfield matches its AID, then it responds with an EHT TB PPDU. If a non-AP EHT STA receives an HE variant User Info field in a Trigger frame that is not MU-RTS Trigger frame in which the AID12 subfield matches its AID, then it responds with an HE TB PPDU. A non-AP EHT STA may contend for an RA-RU and transmit an HE TB PPDU, if the STA receives an HE variant User Info field that allocates RA-RU(s) in a Trigger frame (see 26.5.4 (UL OFDMA-based random access (UORA)).