IEEE P802.11
Wireless LANs

|  |
| --- |
| Resolution for CIDs assigned to Abhi |
| Date: October 08, 2020 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Alfred Asterjadhi |  |  | aasterja@qti.qualcomm.com |
| George Cherian |  |  | gcherian@qti.qualcomm.com |

 Abstract

This submission proposes resolutions for following (6) CIDs received for TGax SA Ballot 2:

25012, 25017, 25034, 25079, 25084, 25099

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Minor fix based on feedback from Mark R.
	+ Marked in blue
* Rev 2: Updates made when the doc was presented on TGax telco on 10/13
	+ Include updating the resolution for CID 25034
* Rev 3: Updated resolution to CID 25012 to include fixing an editorial error in the following sentence.
	+ AID 4096 is invalid, it should be 4095.

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

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 25012 | Patil, Abhishek | 124.09 | 9.3.1.22.1 | When AID12 value is 2046, all field except the RU Allocation subfield in the User Info field are reserved. | Modify the sentence to say:If the AID12 subfield is 2046, then the remaining subfields in the User Info field are reserved except for the RU Allocation subfield which indicate the RU location of the unallocated RU. | RevisedAgree with the comment.In addition, the resolution also fixes an editorial error in the following sentence. The AID value 4096 is invalid. It should be 4095. There was an editorial error when CIDs 24398 & 24399 were resolved.TGax editor please make changes as shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1591-03-00ax-sa2-misc-mac-crs-assigned-to-abhi.docx> tagged as 25012 |
| 25017 | Myles, Andrew | 455.45 | 26.11.4 | On behalf of Pooya MonajemiThe note seems to be incorrect: 26.10 describes SR based on inter-BSS PPDUs, the classification of which may or may not be based on BSS color (see 26.2.2) Note that the resolution to comment 24310 added "on that basis" to the sentence below due to the same reason described here. | Remove the note, or change "does not follow" to "might not follow" | RevisedAgree with the commentor.TGax editor, please update the NOTE as follows:“NOTE – An HE STA that receives an HE PPDU with the RXVECTOR parameter BSS\_COLOR equal to 0 might not follow the spatial reuse rules described in 26.10 (Spatial reuse operation).” |
| 25034 | Seok, Yongho | 376.54 | 26.5.2.3.3 | "A non-AP STA transmitting an HE TB PPDU in response to a Trigger frame that is not an MU-RTS Trigger frame shall set the TXVECTOR parameters as follows:"Please add a NFRP Trigger frame as another exception. | As in comment. | RevisedRevised the text in 26.5.2.3.3 to provide exception for NFRP Trigger frame.TGax editor please make changes as shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1591-03-00ax-sa2-misc-mac-crs-assigned-to-abhi.docx> tagged as 25034 |
| 25079 | RISON, Mark | 385.1 | 26.5.4.1 | "An AP that transmits a Basic Trigger frame may set the AID12 subfieldof any User Info field of the frame to indicate allocation of one or more RA-RUs for unassociated STAs." -- what this needs to say is that you can only do this for Basic Trigger frames | Change to "An AP that transmits a Basic Trigger frame that is not a Basic Trigger frame shall not set the AID12 subfieldof any User Info field of the frame to indicate allocation of one or more RA-RUs for unassociated STAs." | RevisedAgree with the comment. The spec needs to clarify that only Basic variant of the Trigger frame is allowed for RA-RU for unassociated STAsTGax editor please make changes as shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1591-03-00ax-sa2-misc-mac-crs-assigned-to-abhi.docx> tagged as 25079 |
| 25084 | RISON, Mark | 390.01 | 26.5.4.5 | " one Management frame in S-MPDU format " -- S-MPDU is not a format of a frame, it's a context for a frame | Change to " one Management frame that is an S-MPDU". Also, at 350.48 change " one dynamic fragment of an MMPDU in an A-MPDU format" to " one dynamic fragment of an MMPDU in an A-MPDU" and at 369.12 change "• Are carried in an S-MPDU format that solicits an immediate Ack frame (see 10.12.8 (Transportof S-MPDUs))• Are carried in an A-MPDU format that solicits an immediate BlockAck frame (see 10.25.6.7(Originator’s behavior))• Are carried in a multi-TID A-MPDU format that solicits an immediate Multi-STA BlockAckframe (see 26.6.3 (Multi-TID A-MPDU and ack-enabled single-TID A-MPDU))" to "• Are an S-MPDU that solicits an immediate Ack frame (see 10.12.8 (Transportof S-MPDUs))• Are carried in an A-MPDU that solicits an immediate BlockAck frame (see 10.25.6.7(Originator’s behavior))• Are carried in a multi-TID A-MPDU that solicits an immediate Multi-STA BlockAckframe (see 26.6.3 (Multi-TID A-MPDU and ack-enabled single-TID A-MPDU))" | Accepted |
| 25099 | RISON, Mark | 0 | 26.5.1.2 | The interplay between the various types of broadcast RU and the various types of BSSID is not clear | At the end of 26.5.1.2 RU addressing in an HE MU PPDU add a para "The frames in a broadcast RU corresponding to parameter STA\_ID equal to 0 or 2047 shall use the transmitted BSSID. The frames in a broadcast RU corresponding to parameter STA\_ID equal to the BSSID Index of a BSSID in a multiple BSSID set shall use the corresponding nontransmitted BSSID." | RevisedAgree with the comment. Provided text to specify the TA field for frames carried in different types of broadcast RUsTGax editor please make changes as shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1591-03-00ax-sa2-misc-mac-crs-assigned-to-abhi.docx> tagged as 25099 |

* Trigger frame format
* General[25012]

*TGax editor, please make changes to the following paragraph in this subclause as shown below:*

If the AID12 subfield is 2046, then the remaining subfields in the User Info field are reserved except for the RU Allocation subfield, which indicates the RU location of the unallocated RU.

If the AID12 subfield is 4095, then the remaining subfields in the User Info field are not present.(#24399)

* **TXVECTOR parameters for HE TB PPDU response to Trigger frame**

*TGax editor, please make changes to the following paragraph in this subclause as shown below:*

[25034]A non-AP STA transmitting an HE TB PPDU in response to a Trigger frame that is not an MU-RTS Trigger frame(#24292) shall set the TXVECTOR parameters as follows (subject to, in the case of an NFRP Trigger frame, the exceptions given in 26.5.7.2 (STA behavior)):

26.5.4.1 General

*TGax editor, please make changes to the following paragraph in this subclause as shown below:*

[25079]An HE AP may transmit a Basic Trigger frame, BQRP Trigger frame or BSRP Trigger frame that contains one or more RUs for random access. An AP that transmits a Trigger frame that is not a Basic Trigger frame shall not set the AID12 subfield of any User Info field of the frame to indicate allocation of one or more RA-RUs for unassociated STAs. An AP that transmits a Trigger frame that is not a Basic Trigger frame, BQRP Trigger frame or BSRP Trigger frame shall not set the AID12 subfield of any User Info field of the frame to indicated allocation of one or more RA-RUs for associated STAs.

**26.5.1.2 RU addressing in an HE MU PPDU**[25099]

*TGax editor, please add the following paragraphs at the end of this subclause as shown below:*

For an AP with dot11MultiBSSIDImplemented equal to false, the AP shall set the TA and BSSID fields (when present) to the BSSID of the AP’s BSS for all the frames carried in a broadcast RU that corresponds to parameter STA\_ID equal to 0 or 2045.

For an AP with dot11MultiBSSIDImplemented equal to true, the AP shall set the TA and BSSID fields (when present) to the transmitted BSSID for all the frames carried in a broadcast RU corresponding to parameter STA\_ID equal to 0 or 2045 or 2047.

For an AP with dot11MultiBSSIDImplemented equal to true, the AP shall set the TA and BSSID fields (when present) to the BSSID of the corresponding nontransmitted BSSID for the all frames carried in a broadcast RU corresponding to parameter STA\_ID equal to the BSSID Index of a nontransmitted BSSID in a multiple BSSID set.

**Bug fix**

Discussion: TGax has introduced the *Control Frame To MultiBSS* feature as a technique to improve the efficiency by reducing the number of OTA frames. This features enables an AP in a multiple BSSID set to consolidate Control frames directed towards multiple STAs associated with different BSSIDs in the set. Since the goal of the feature is to improve efficiency and reduce frames, it must not be used to send an individually addressed Control frame to a STA associated with a nonTxBSSID. The 802.11ax spec should clarify this behavior.

* **Allowed settings of the Trigger frame fields and TRS Control subfield**

*TGax editor, please make changes to the following paragraph in this subclause as shown below:*

An AP with dot11MultiBSSIDImplemented equal to true shall not send a Trigger frame (other than an NFRP Trigger frame) with the TA field set to the transmitted BSSID to a non-AP STA that is associated with an AP corresponding to a nontransmitted BSSID(#24108) in the multiple BSSID set unless the AP has received an HE Capabilities element from non-AP STA with the Rx Control Frame To MultiBSS subfield in the HE MAC Capabilities Information field equal to 1. An AP with dot11MultiBSSIDImplemented equal to true may send an NFRP Trigger frame with the TA field set to the transmitted BSSID to a non-AP STA that is associated with an AP corresponding to a nontransmitted BSSID(#24108) in a multiple BSSID set. An AP with dot11MultiBSSIDImplemented equal to true shall not send an individually addressed Trigger frame with the TA field set to the transmitted BSSID to a non-AP STA associated with an AP corresponding to a nontransmitted BSSID(#24108).

**26.7.3 Rules for HE sounding protocol sequences**

*TGax editor, please make changes to the following paragraph in this subclause as shown below:*

An HE AP with dot11MultiBSSIDImplemented equal to true shall not send an HE NDP Announcement frame with the TA field set to the transmitted BSSID to a non-AP STA that is associated with an AP corresponding to a nontransmitted BSSID in the multiple BSSID set unless the AP has received from the non-AP STA an HE Capabilities element with the Rx Control Frame To MultiBSS subfield in the HE MAC Capabilities Information field equal to 1. An AP with dot11MultiBSSIDImplemented equal to true shall not send an individually addressed HE NDP Announcement frame with the TA field set to the transmitted BSSID to a non-AP STA associated with an AP corresponding to a nontransmitted BSSID(#24108).