IEEE P802.11
Wireless LANs

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| Resolution for MISC CIDs |
| Date: March 15, 2020 |
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 Abstract

This submission proposes resolutions for following (11) CIDs received for TGax SA Ballot 1:

24552, 24350, 24486, 24311, 24400, 24401, 24351, 24352, 24348, 24349, 24017

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Resolution for CID 24352 was updated based on offline feedback
* Rev 2: Resolution for CID 24349 was updates based on offline feedback.

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.***

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| **CID** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 24552 | Asterjadhi, Alfred | 349.54 | 26.5.2.2.4 | "The other remaining subfields are set to any valid value" This is not clear. I guess you want to say a valid value so that the soliciting STA constructs a valid HE TB PPDU. | Ensure that the AP provides valid combinations of the values so that the STA constructs a valid HE TB PPDU. | **Revised**Agree with the comment. It is possible that the AP sets each of the remaining fields to a valid value. However AP needs to ensure that the values together doesn’t form an invalid set. Therefore, the spec should require that an AP sets the values for the rest of the subfield such that it results in the solicited STA constructing a valid HE TB PPDU. **TGax Editor, please replace the bullet on P349L54 of D6.0 with the following:*** ~~The~~ Each of the other remaining subfields are set to ~~any~~ a valid value such that the combination together would cause the soliciting STA to construct a proper HE TB PPDU
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| 24350 | RISON, Mark | 350.14 | 26.5.2.2.4 | "the broadcast RU" suggests there can only be one in an HE MU PPDU. But there could be one for associated STAs and one for unassociated STAs, or one per BSS in a multiple BSSID set, etc. | Change to "a broadcast RU". Also at 459.6 and 459.26 | **Accepted****TGax editor, please implement the change as suggested by the comment.** |
| 24486 | RISON, Mark | 351.06 | 26.5.2.2.4 | Figure 26-4--Example of User Info field ordering and RU location mapping has a confusing heading (what is shown is the TF, not just the order of the UFs) | Delete "Order of User Info fields in a " at the top of the figure | **Accepted****TGax editor, please implement the change as suggested by the comment.** |
| 24311 | RISON, Mark | 428.52 | 26.11.1 | "If an RU is intended for an AP (i.e., the TXVECTOR parameter UPLINK\_FLAG is 1), then theparameter STA\_ID contains only one element that is set to the 11 LSBs of the AID of the non-AP STAtransmitting the PPDU." -- should also be allowed to be 2045 so that an unassociated STA can send a narrow PPDU to an AP | As it says in the comment | **Rejected**A STA may send a PSDU in an MU PPDU so that AP can determine the sender (AID carried in the SIG B) in case there are any failures. This helps in recovery protocols (e.g., AP could schedule/assign an RU for the STA). However, unassociated STAs do not have a dedicated AID instead they have a generic AID (2045) which doesn’t identify an individual unassociated STA. Therefore, adding the case of unassociated STA sending an MU PPDU with STAID set to 2045 provides no benefit. |
| 24400 | RISON, Mark |  |  | [Resubmission of comment withdrawn on D5.0] AID 2045 should be allowed in an HE MU PPDU from a non-AP STA to an AP, to signal "not from a STA associated with you" | As it says in the comment | **Rejected**A STA may send a PSDU in an MU PPDU so that AP can determine the sender (AID carried in the SIG B) in case there are any failures. This helps in recovery protocols (e.g., AP could schedule/assign an RU for the STA). However, unassociated STAs do not have a dedicated AID instead they have a generic AID (2045) which doesn’t identify an individual unassociated STA. Therefore, adding the case of unassociated STA sending an MU PPDU with STAID set to 2045 provides no benefit. |
| 24401 | RISON, Mark | 428.52 | 26.11.1 | [Resubmission of comment withdrawn on D5.0] AID 2045 should be allowed in an HE MU PPDU from a non-AP STA to an AP, to signal "not from a STA associated with you" | At the referenced location change "If an RU is intended for an AP (i.e., the TXVECTOR parameter UPLINK\_FLAG is 1), then theparameter STA\_ID contains only one element that is set to the 11 LSBs of the AID of the non-AP STAtransmitting the PPDU." to "If an RU is intended for an AP (i.e., the TXVECTOR parameter UPLINK\_FLAG is 1), then theparameter STA\_ID contains only one element that is set to the 11 LSBs of the AID of the non-AP STAtransmitting the PPDU or that is set to 2045 if the non-AP STA is not associated to the AP. NOTE---Since the purpose of allowing UL HE MU PPDU transmission is to allow the AP to determine the origin of failing PPDUs, the value 2045 must be used so that an AP will not be misled by failed transmissions from a STA that is not in its BSS." | **Rejected**A STA may send a PSDU in an MU PPDU so that AP can determine the sender (AID carried in the SIG B) in case there are any failures. This helps in recovery protocols (e.g., AP could schedule/assign an RU for the STA). However, unassociated STAs do not have a dedicated AID instead they have a generic AID (2045) which doesn’t identify an individual unassociated STA. Therefore, adding the case of unassociated STA sending an MU PPDU with STAID set to 2045 provides no benefit. |
| 24351 | RISON, Mark | 429.05 | 26.11.1 | "For an AP with dot11MultiBSSIDImplemented equal to true, if the RU is intended for more than oneassociated STA on any of its BSSs, the parameter STA\_ID is set to 2047." should be qualified w.r.t. individually addressed RUs, like the other cases | Change to "For an AP with dot11MultiBSSIDImplemented equal to true, if the RU is intended for more than oneassociated STA on any of its BSSs that is not a recipient of an individually addressed RU, the parameter STA\_ID is set to 2047." | **Accepted****TGax editor, please implement the change as suggested by the comment** |
| 24352 | RISON, Mark | 429.11 | 26.11.1 | There is a zoo of broadcast RUs (0, 2045, 2047, BSSID index). An HE MU PPDUs shouldn't use more than one of the ones for associated STAs | After "A non-AP STA shall not transmit an HE MU PPDU where the TXVECTOR parameter STA\_ID includesmore than one entry in the range 1 to 2007." add "An AP shall not transmit an HE MU PPDU where the TXVECTOR parameter STA\_ID includesmore than one entry that is 0, 2047 or a BSSID index." | **Rejected**Each AID value (e.g., 0, 2045, 2047, BSSID-Index) is directed towards a specific group of STAs and hence should be allowed independently. For example, an AP in a multiple BSSID set can include multiple RUs in a DL MU PPDU such that an RU with STA\_ID=0 is directed towards STAs associated with TxBSSID, an RU with STA\_ID=BSSID-Index-1 is directed towards STAs associated with BSSID-Index-1, an RU with STA\_ID=2047 is directed towards STAs associated with all the remaining BSSIDs in the set and an RU with STA\_ID=2045 is directed towards STAs not associated with the AP. |
| 24348 | RISON, Mark |  |  | The definition of "broadcast RU" is not clear. 26.5.4.5 suggests a broadcast RU is or at least can be one with STA-ID == 2045 but 26.5.1.2 suggests the STA-ID == 2047. The definition in 3.2 suggests it can be 0 or 2047. 26.11.1 indicates the STA\_ID can be 0 or a BSSID index or 2045 or 2047. Need to specify what a broadcast RU is | As it says in the comment | **Rejected**The definition of ‘broadcast RU’ in clause 3.2 covers the case of 0, BSSID-Index, 2045 and 2047. The reference to broadcast RU in various subclause of clause 26 is consistent with this definition.  |

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| 24349 | RISON, Mark |  | 26.5 | The definition of "broadcast RU" is not clear. 26.5.4.5 suggests a broadcast RU is or at least can be one with STA-ID == 2045 but 26.5.1.2 suggests the STA-ID == 2047. The definition in 3.2 suggests it can be 0 or 2047. 26.11.1 indicates the STA\_ID can be 0 or a BSSID index or 2045 or 2047 | In 26.5.1.2 delete "(parameter STA\_ID equal to 2047)". In 26.5.4.5 change "in a DL HE MU PPDU on a broadcast RU with STA-ID 2045" to "in a DL HE MU PPDU in an RU with STA-ID 2045" | **Revised**Updated the text at the cited locations to identify the type of (broadcast) RU**TGax editor, please make changes as shown in doc 11-20/317r2** |

*TGax editor, please make changes to the following paragraph as showing below*

**26.5.1.2 RU addressing in an HE MU PPDU**

11ax D6.0 P343L17:

A non-AP STA that receives an HE MU PPDU where the RXVECTOR includes a parameter STA\_ID that matches the 11 LSBs of the non-AP STA’s AID may disregard any broadcast RU in the HE MU PPDU. A non-AP STA that receives an HE MU PPDU where the RXVECTOR includes a parameter STA\_ID that is equal to the BSSID Index of the BSSID of the AP with which the STA is associated (see 9.4.2.73 (Multiple BSSID-Index element)) may disregard a (broadcast) RU corresponding to parameter STA\_ID equal to 2047.

**26.5.4.5 Additional considerations for unassociated STAs**

11ax D6.0 P367L12:

An AP that receives Management frames from one or more unassociated non-AP STAs carried in HE TB PPDUs transmitted on RA-RUs shall respond with a Multi-STA BlockAck frame carried either in an SU PPDU or in a DL HE MU PPDU on a (broadcast) RU corresponding to parameter STA-ID equal to 2045.

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| **CID** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 24017 | Bims, Harry | 221.12 | 9.6.7.36 | The text says the FILS Discovery frame optionally includes 3 information elements: Reduced Neighbor Report element, FILS Indication element, and Roaming Consortium element. However, there is no text describing when any of them are optionally included or not included. | Please add text describing when each of the three Information Elements:a) Reduced Neighbor Report elementb) FILS Indication elementc) Roaming Consortium elementis present in the FILS Discovery frame, and when they are not present | **Revised**Agree with the comment. Added condition describing when each of the element is carried in the frame.Note, description of Roaming Consortium Element is missing in baseline (REVmd) spec. This should be addressed in REVmd spec as the impact is not limited to 11ax spec.**TGax editor, please make changes as shown in doc 11-20/317r2** |

* FILS Discovery frame format

*TGax editor, please make changes to the following table in this sub-clause as showing below*

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| * FILS Discovery frame format
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| Order | Information | Notes |
| 1 | Category  |  |
| 2 | Public Action  |  |
| 3 | FILS Discovery Information field  |  |
| 4 | Reduced Neighbor Report element | The Reduced Neighbor Report element is optionally present if dot11FILSActivated, or dot11HEOptionImplemented or dot11HE6GOptionImplemented is true, otherwise it is not present. |
| 5 | FILS Indication element | The FILS Indication element is optionally present if dot11FILSActivated is true, otherwise it is not present.  |
| 6 | Roaming Consortium element | The Roaming Consortium element is optionally present if dot11FILSActivated is true, otherwise it is not present. |
| 7 | TIM element | The TIM element is optionally present if dot11HEOptionImplemented is true, otherwise it is not present. |
| 8 | TWT element | The TWT element is optionally present if dot11HEOptionImplemented is true, otherwise it is not present. If present, the Broadcast field of the TWT element is 1 |
| 9 | OPS element | The OPS element is optionally present if dot11HEOptionImplemented is true, otherwise it is not present. |