IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resolution for CID 13078 | | | | |
| Date: May 1, 2018 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Alfred Asterjadhi | Qualcomm Inc. |  |  | aasterja@qti.qualcomm.com |
| George Cherian | Qualcomm Inc. |  |  | gcherian@qti.qualcomm.com |

Abstract

This submission proposes resolutions for CID 13078 received for TGax LB230

Revisions:

* Rev 0: Initial version of the document.

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** |
| 13078 | Pascal VIGER | 33.06 | 3.2 | The naming "broadcast RU" in DL is not really appropriate, as this DL RU is intended for multiple STAs (according 27.11.1) and not for all STAs. As example, some STA\_ID values represent a subset of stations and not all stations (e.g. 2045 is intended for more than one unassociated STA). | Change the naming "broadcast RU" by either "group RU", or "multiple STAs RU" or equivalent | Revised  The term broadcast RU is kept unchanged as the RU is meant for all STAs in a BSS unless they are a recipient of a directed RU. The definition is updated to correct the multi-BSS nonTxBSSID indexing portion. Further, section 27.11.1 is updated to clarify broadcast RU and make it consistent with 27.5.1.2. A few other fixes thru the spec.  **TGax editor, please make changes as shown in doc 11-18/0744r0.** |

* Definitions specific to IEEE 802.11

***TGax Editor: Please make changes to the following definition as shown below:***

**broadcast resource unit (RU):** a resource unit within an HE MU PPDU, intended for unassociated STAs or any STA associated with the BSS, identified by the STA-ID values 0 and 2045 when the AP does not transmit Multiple BSSID element, and by the STA-ID values 2045, 2047 and 0 to 2n – 1 when the AP transmits a Multiple BSSID element and *n* is equal to the MaxBSSID Indicator field advertised by the AP in the Multiple BSSID element.

* **STA\_ID\_LIST**

***TGax Editor: Please make the following changes to this section as shown below:***

Each element of the TXVECTOR parameter STA\_ID\_LIST identifies the STA or group of STAs that is the recipient of an RU in the HE MU PPDU. A directed RU is an RU addressed to a single non-AP STA and the STA\_ID\_LIST element for that RU is set to the 11 LSBs of the AID of the STA receiving the PSDU contained in that RU. If an RU is intended for no user, then the STA\_ID\_LIST element for that RU is set to 2046. If an RU is intended for an AP, then the STA\_ID\_LIST contains only one element that is set to the 11 LSBs of the AID of the non-AP STA transmitting the PPDU. If an RU is intended for multiple STAs for MU-MIMO then multiple STAIDs in the STA\_ID\_LIST will refer to the same resource unit (see 27.5.3 (UL MU operation)). If an RU is intended for multiple STAs and carries a single A-MPDU then the STA\_ID\_LIST element is set as follows:

* For an AP with dot11MultiBSSIDActivated equal to false, if the RU is intended for any associated STA in the BSS that is not a recipient of a directed RU, the STA\_ID\_LIST element is set to 0. The AP may include only one element with this value in a DL MU PPDU.
* For an AP with dot11MultiBSSIDActivated equal to true, if the RU is intended for any associated STA in any of its BSSs that is not a recipient of a directed RU, the STA\_ID\_LIST element is set to 0 for transmitted BSSID or to the value of the BSSID Index field corresponding to that BSS (see 9.4.2.74 (Multiple BSSID-Index element)) for a nontransmitted BSSID. The AP may include only one element for each BSSID of the multiple BSSID set in the HE MU PPDU, and the number of such elements shall not exceed the maximum number of BSSs of the multiple BSSID set.
* For an AP with dot11MultiBSSIDActivated equal to true, if the RU is intended for more than one associated STA on all its BSSs, the STA\_ID\_LIST element is set to 2047. The AP may include only one element with this value in a DL MU PPDU.
* If the RU is intended for more than one unassociated STA, the STA\_ID\_LIST element is set to 2045. The AP may include only one element with this value in a DL MU PPDU.
* **Responding to an HE TB PPDU with an HE MU PPDU**

***TGax Editor: Please update the 3rd paragraph in this section as shown below:***

For an AP with dot11MultiBSSIDActivated equal to true, the AP may do one of the following:

* For each BSS belonging to the set, an AP may respond with a Multi-STA BlockAck frame with RA field set to broadcast address in an HE DL MU PPDU. The Ack Type field shall be set according to the acknowledgement context. The AP shall set the STA\_ID\_LIST field as defined in 27.11.1 (STA\_ID\_LIST). There shall be no more than one group addressed Multi-STA BlockAck frame carried in a broadcast RU of the HE DL MU PPDU.
* If all the recipient non-AP STAs have indicated support for receiving Control frames addressed to STAs from two or more BSSs of a multiple BSSID set by setting the Rx Control Frame to MultiBSS subfield in the HE Capabilities element to 1, an AP may respond with a Multi-STA BlockAck frame with RA field set to broadcast address and STA\_ID\_LIST field set to 2047. The Ack Type field shall be set according to the acknowledgement context. There shall be no more than one group addressed Multi-STA BlockAck frame carried in a broadcast RU of the HE DL MU PPDU.
* **RU addressing in an HE MU PPDU**

***TGax Editor: Please make the following changes to the 2nd paragraph in this section as shown below:***

An AP shall set one or more elements in the TXVECTOR parameter array STA\_ID\_LIST, which represents the list of STAs that are the recipients of the transmitted HE MU PPDU as described in 27.11.1 (STA\_ID\_LIST). A STA\_ID\_LIST element with a particular value shall not appear more than once in the array except is the value is 2046, which identifies an unallocated RU. If an AP sets the TXVECTOR parameter STA\_ID\_LIST to match the 11 LSBs of the AID of a non-AP STA, then the non-AP STA may disregard any broadcast RU in the same HE MU PPDU.

***TGax Editor: Please add a new paragraph at the end of this section as shown below:***

For an AP with dot11MultipleBSSIDActivated set to true, if the AP includes an RU with STA\_ID\_LIST set to 2047 in an HE MU PPDU, it shall not include a BSS specific broadcast RU in the same HE MU PPDU.