IEEE P802.11
Wireless LANs

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| LB225 11ax D1.0 Comment Resolution 27.11.1, 27.11.2 |
| Date: 2017-08-23 |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D1.0 with the following CIDs :

* 3083, ~~7778,~~ 8724, 8725, 5735, 9316.

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.***

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| **CID** | **PP** | **LL** | **Comment** | **Proposed Change** | **Resolution** |
| 3083 | 195 |  | There are cases (like GCR, FMS) where the traffic is for a limited set of STAs (i.e., not broadcast to all) - in such cases, a STA needs to check the MAC header to see if it is one of the intended recipient. | Add text to clarify that when the STA\_ID\_LIST indicates 'more than one STA', a STA should check the MAC header to see if it is one of the intended recipient. | **Rejected.****Discussion: the checking of MAC header to decide the desnating STAs of the frames carried in a DL RU is mandatory requirement for all RUs, not just for broadcast RUs. The reason is that the BSS color + AID in HE SIG-B to identify a DL RU is not unique.** |
| ~~7778~~ | ~~196~~ | ~~2~~ | ~~2047 is used as start of MAC padding on page 165 line 35 and here it's used to indicate STAs in all BSS when multiBSS is acviated. How does a STA identify if it's for start of the MAC padding or for STAs in all BSS?~~ | ~~Clarify~~ | **~~Rejected~~** **~~Discussion: 2047 for MAC padding is used in Trigger frame. 2047 for broadcast RU indentification is in HE SIG-B. These two usage should be ok.~~** |
| 8724 | 195 | 48 | Is it correct that the STA\_ID\_LIST contains one element per RU? If so, add this to the description. | See comment | **Revised****Generally agree with the commenter.****TGax editor to make changes in 11-17/1282r4 under CID 8724** |
| 8725 | 195 | 57 | "The AP may include only one element with this value in a DL MU PPDU.". Does this mean there can only be one RU that is intended for more than oneSTA? This would mean that only one RU can do MU-MIMO, regardless of the number of RU's in the HE MU frame. | If this is indeed the case, this is an unacceptable limitation. Let the AP control the number of RU's with MU-MIMO. | **Rejected.****Discussion: The cited text is about AID 0 for broadcast transmission. RU identified by 0 is used for broadcast transmission. MU-MIMO can’t be used in that RU, and this doesn’t mean that only one RU is used for MU MIMO.** |

**27.11 Setting TXVECTOR parameters for an HE PPDU**

**27.11.1 STA\_ID\_LIST**

***TGax editor: Change subclause 27.11.1 as follows:***

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. If an RU is intended for a single non-AP STA, then 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 27.5.1 (**HE DL MU operation**)). If an RU is intended for multiple STAs and carries a single A-MPDU then the STA\_ID\_LIST element for that RU is set as follows:(#3095) (#8724)

— For an AP with dot11MultiBSSIDActivated equal to false, if the RU is intended for more than one associated STA(#4800) in the BSS, 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 more than one associated STA(#4800) in any of its BSSs, the STA\_ID\_LIST element is set to partial virtual bitmap value assigned for the group addressed frame (see 9.4.2.6 (TIM element)). 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(#4800) 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.

— For an AP with dot11MultiBSSIDActivated equal to false, 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.

— For an AP with dot11MultiBSSIDActivated equal to true, if the RU is intended for more than one unassociated STA for any of its BSSs, the STA\_ID\_LIST element is set to 2045. The AP may include only one element with this value in a DL MU PPDU.(#4800)

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| **CID** | **PP** | **LL** | **Comment** | **Proposed Change** | **Resolution** |
| 5735 | 196 | 12 | Why only extended range SU PPDU is excluded in this case. If the intention is to ask 3rd party device to set NAV when transmitting RTS or CTS, then HE SU PPDU should also be included. | Chagne "an HE extended range SU PPDU" to "an HE SU PPDU or HE extended range SU PPDU" | **Revised****Discussion: in 11ac the rules about the PPDU format of initiating control frame is defined. However it seems the rules about the PPDU format of initiating control frame. allowing RTS to be carried in HE PPDU seems add almost no burden to the implementation because of RTS in HE ER SU PPDU. Howeer there is no apparent benefit for RTS in HE PPDU.****TGax editor: Make changes in 11-1282/r4 under CID 5735**  |
| 9316 | 196 | 11 | It is unclear why the UPLINK\_FLAG needs to be set to 0 for RTS/CTS frames sent with TXOP Duration set to all 1s.When the AP transmits an RTS frame with the UPLINK\_FLAG set to 0 in an Extended Range SU PPDU, and the receiver STA transmits a CTS frame with the UPLINK\_FLAG to 1 in an Extended Range SU PPDU, as all the HE STAs within the BSS receives that RTS frame from the AP, the 3rd party HE STA can set the NAV by the RTS frame. Therefore, even if the UPLINK\_FLAG in the CTS frame is set to 1 and the 3rd party HE STAs go to PPDU Power Save, the 3rd party HE STAs will hold the NAV value.Next when the STA transmits an RTS frame with the UPLINK\_FLAG set to 1 in an Extended Range SU PPDU, and the AP which is the receiver of the RTS frame transmits a CTS frame with the UPLINK\_FLAG set to 0 in an Extended Range SU PPDU, even if the 3rd party HE STAs go to PPDU Power Save by the RTS frame, they still can receive the CTS frame sent from the AP. Therefore, the 3rd party HE STAs will set NAV by the CTS frame sent from the AP.From the above consideration, there seems no reason to set the UPLINK\_FLAG to 0 in RTS/CTS by changing the usage of the UPLINK\_FLAG from the original meaning. | Delete "except when the HE PPDU is an HE extended range SU PPDU with the TXOP Duration field set to all 1s and contains an RTS or CTS frame in which case the STA may set the TXVECTOR parameter UPLINK\_FLAG to 0" from the first item starting from line 11 in page 196. | **Rejected****Discussion: For RTS/CTS, the specific rules are defined for NAV setting, e.g. reseting NAV set by RTS if CTS is not received correctly. The setting of UPLINK\_FLAG to 0 and TXOP Duration to 1s makes 3rd party STA in the BSS to decode RTS/CTS in the HE extended range PPDU (since the UPLINK\_FLAG being 0 indicates the PPDU from the AP).** |

**27.15 PPDU format, BW, MCS, NSS, and DCM selection rules**

**27.15.2 PPDU format selection**

***TGax editor: Add the following paragraph in subclause 27.15.2 as the second paragraph:***

A STA may transmit Control frame in non-HT PPDU. A first STA shall not transmit a Control frame in HE ER SU PPDU to a second STA unless the second STA indicates the reception of HE ER SU PPDU (see **27.15.2 (PPDU format selection)**). (5735)