IEEE P802.11
Wireless LANs

|  |
| --- |
| **CR for CID 15105** |
| **Date:** 2018-09-06 |

|  |
| --- |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jeongki Kim | LG | Yangae 11gil, Seocho-gu, Seoul, Republic of Korea |  | jeongki.kim@lge.com |
| Kiseon Ryu | LG |  |  | kiseon.ryu@lge.com |
| Alfred Asterjadhi  | Qualcomm Inc. |  |  | aasterja@qti.qualcomm.com |
| Abhishek Patil  | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Yongho Seok | MediaTek |  |  | yongho.seok@mediatek.com |

Abstract

This submission proposes resolution for one comment related to TGax D3.0 with the following CID (1 **CID**):

* Provided the resolutions for CID 15105

Revisions:

- Rev 0: Initial version of the document.

- Rev 1: Modify the proposal to the fast link adapation for the HE TB PPDU. (Feedback from Yongho)

- Rev 2: Editorial changes (Commented by Alfred)

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** | **Page.Line** | **Comment** | **Proposed Change** | **Resolution** |
| 15105 | 332.12 | Can an AP know if an associated STA is able to close the link only using narrow band RUs? | Please clarify | Revised.Agree in principle.TGax editor to adopt the proposed text changes in 11-18/1548r2. |

**Discussion:**

When a STA suffers from a bad UL link (e.g., fails to send a frame by using the RU assigned by Trigger frame or an SU PPDU continuously), the STA should be able to request to AP to allocate a narrowband RU.

One method is that STA can inform AP of recommended narrowband UL RU which is similar to MCS field in HT(/HE A-) Control field. Based on a recommended narrowband UL RU received from a STA, the AP can allocate to the STA an appropriate RU (e.g., an UL RU with the same size or the size less than the recommended narrowband UL RU which the STA requested).

**Propose:**

To TGax Editor: Modify the Figure 9-15e as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 B4 | B5 B8 | B9 | B10 B17 | B18 B19 | B20 B22 | B23 | B24 | ~~B24~~ B25 |
|  | Unsolicited MFB | MRQ | NSS | HE-MCS | DCM | RU Allocation | BW | MSI/Partial PPDU Parameters | Tx BF | UL HE TB PPDU MFB | Reserved |
| Bits: | 1 | 1 | 3 | 4 | 1 | 8 | 2 | 3 | 1 | 1 | 1~~2~~ |

**Figure 9-15e—Control Information subfield for HLA Control**

To TGax Editor: Modify the Table 9-18c (HLA Control Subfield) as follows:

**Table 9-18c—HLA Control subfields *(continued)***

|  |  |  |
| --- | --- | --- |
| Subfield | Meaning | Definition |
| … | … | … |
| NSS | Recommended number of spatial stream | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0 or if the Unsolicited MFB subfield is 0 and the MRQ subfield is 0, the NSS subfield indicates the recommended number of spatial streams to the PPDU sent to the STA, NSS, and is set to NSS - 1. If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 1, the NSS subfield indicates the recommended number of spatial streams to the HE TB PPDU sent from the STA, NSS, and is set to NSS - 1.  Otherwise, this subfield is reserved. |
| HE-MCS | Recommended HE-MCS | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0 or if the Unsolicited MFB subfield is 0 and the MRQ subfield is 0, the HE-MCS subfield indicates the recommended HE-MCS to the PPDU sent to the STA, and is set to the HE-MCS Index value (defined in 28.5 (Parameters for HE-MCSs)). If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 1, the HE-MCS subfield indicates the recommended HE-MCS to the HE TB PPDU sent from the STA, and is set to the HE-MCS Index value (defined in 28.5 (Parameters for HE-MCSs)). Otherwise, this subfield is reserved. |
| DCM | Recommended usage of DCM | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0 or if the Unsolicited MFB subfield is 0 and the MRQ subfield is 0, the DCM subfield indicates the recommended usage of DCM. This subfield is set to 1 if DCM is recommended to the PPDU sent to the STA and is set to 0 otherwise. If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 1, the DCM subfield indicates the recommended usage of DCM. This subfield is set to 1 if DCM is recommended to the HE TB PPDU sent from the STA and is set to 0 otherwise. Otherwise, this subfield is reserved. |
| BW | Bandwidth of the recommended HE-MCS/Bandwidth specified by MFB requester to get feedback | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0, the BW subfield indicates the bandwidth for which the recommended HE-MCS applies to the PPDU sent to the STA, as defined in 27.13 (Link adaptation using the HLA Control subfield). If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 1, the BW subfield indicates the bandwidth for which the recommended HE-MCS applies to the HE TB PPDU sent from the STA, as defined in 27.13 (Link adaptation using the HLA Control subfield).If the Unsolicited MFB subfield is 0 and the MRQ subfield is 1, the BW subfield indicates the bandwidth requested by the MFB requester to get feedback. Set to 0 for 20 MHz Set to 1 for 40 MHz Set to 2 for 80 MHz Set to 3 for 160 MHz or 80+80 MHz. Otherwise, this subfield is reserved. |
| RU Allocation | RU of the recommended HE-MCS/RU specified by MFB requester to get feedback | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0, the RU Allocation subfield indicates the RU for which the recommended HE-MCS applies to the PPDU sent to the STA, as defined in 27.13 (Link adaptation using the HLA Control subfield).If the Unsolicited MFB subfield is 0, and the MRQ subfield is 1, the RU Allocation subfield indicates the RU requested by the MFB requester to get feedback.The RU Allocation subfield is interpreted with the BW subfield to specify the RU.The RU index encoding is as defined 9.3.1.23 (Trigger frame format).If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 1, the RU Allocation subfield indicates the RU for which the recommended HE-MCS applies to the HE TB PPDU sent from the STA, as defined in 27.13 (Link adaptation using the HLA Control subfield) and that the actual allocation of the RU can be ignored by the recipient.Otherwise, this subfield is reserved. |
| … | … | … |
| TxBF | Transmission type of the measured PPDU | If the Unsolicited MFB subfield is 1 and the UL HE TB PPDU MFB subfield is 0, then the Tx BF subfield indicates whether or not the PPDU from which the unsolicited MFB was estimated is beamformed. Set to 0 for non-beamformed PPDU Set to 1 for beamformed PPDU Otherwise, this subfield is reserved. |
| UL HE TB PPDU MFB | UL HE TB PPDU MFB Indication | When Unsolicited MFB subfield is set to 1, a value of 1 in this subfield indicates that the NSS, HE-MCS, DCM, BW and RU Allocation fields represent the recommended MFB for the HE TB PPDU sent from the STA. Otherwise, this subfield is reserved.  |

To TGax Editor: Add the following text at the end of the subclause 27.13 (Link adaptation using the HLA Control subfield)

(#15105)

An HE non-AP STA may set the UL HE TB PPDU MFB to 1 in the HLA Control field it transmits to the AP to indicate that the NSS, HE-MCS, DCM, BW and RU Allocation in the HLA Control field represent the recommended MFB for the HE TB PPDU sent from the HE non-AP STA in response to a Trigger frames and MPDUs containing TRS Control fields addressed to it. The AP should not exceed the recommended RU size indicated in the most recently received RU Allocation field of the HLA Control field when it sends a Trigger frame or a TRS Control field addressed to the STA.