IEEE P802.11  
Wireless LANs

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| **CR for CID 12295** |
| **Date:** 2018-04-25 |

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Abstract

This submission proposes resolution for one comment related to TGax D2.0 with the following CID (1 **CID**):

* Provided the resolutions for CID 12295

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** | **Page.Line** | **Comment** | **Proposed Change** | **Resolution** | **Owning Adhoc** |
| 12295 | 257.09 | To increase the UL transmission coverage, a non-AP STA uses the narrow bandwidth transmission such as using an OFDMA 26 RU, 52 RU scheduled by a Trigger frame. In this case, SU PPDU sent by a non-AP STA may not be reached to the AP and the EDCA access by a non-AP STA may be restricted. | Define a mechanism of UL MU only access when the UL transmission coverage is needed to be increased. | Revised.  Agree in principle.  TGax editor to adopt the proposed text changes in 11-18/0813r3. | MU |

**Discussion:**

One of the main motivations for OFDMA Random Access was to allow STAs that are far away from the AP and cannot send SU packets to the AP to be able to close the link with the AP.

When SU transmission by a non-AP STA (which is far away from the AP) is not usually reached to the AP, UL OFDMA transmission on 26/52 RU can be used to increased UL transmission coverage. In this case, EDCA based SU transmission by these non-AP STAs can interfere other ongoing transmissions and reduce the BSS throughput. To solve the problem, per STA based EDCA access restriction needs to be applied and only HE TB PPDU transmission is allowed to these STAs. AP can know the STA’s channel status based on the STA’s information (e.g., the RSSI of the UL frame and UL power headroom). For network efficiency or MU efficiency, AP can disable the EDCA Access of a STA.

**Propose:**

**9.4.2.237.2 HE MAC Capabilities Information field**

**TGax Editor:*take one reserverd bit in the HE MAC capabilities field and make it as CAS Control EDCA Access Disable RX Support***

**TGax Editor: *modify table Table 9-262z—Subfields of the HE MAC Capabilities Information field as follows:***

**Table 9-262z—Subfields of the HE MAC Capabilities Information field**

|  |  |  |
| --- | --- | --- |
| HE Subchannel Selective Transmission Support(# 11837) | Indicates whether an HE STA supports an HE subchannel selective transmission operation described in 27.7.7 (HE subchannel selective transmission operation). | Set to 1 if supported. Set to 0 otherwise. |
| CAS Control EDCA Access Disable RX Support (#12295) | Indicates whether an HE STA supports receiving EDCA Access Disable bit in the CAS Control filed as described in 9.2.4.6a.7. | Set to 1 if supported. Set to 0 otherwise. |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | ~~B3~~ B4 B11 |
|  | AC Constraint | RDG/More PPDU | SR PPDU Indication | EDCA Access Disable(#12295) | Reserved |
| Bits: | 1 | 1 | 1 | 1 | ~~5~~4 |

**Figure 9-15j—Control Information subfield for CAS Control**

To TGax Editor: Add the following text at the end of the subclause 9.2.4.6a.7 (CAS Control)

(#12295) The EDCA Access Disable subfield is set to 1 to indicate that EDCA access of the intended non-AP STA that has set the CAS Control EDCA Access Disable RX Support field in the HE Capabilities element to 1 is suspended and set to 0 to indicate that EDCA access of the non-AP STA is resumed. A non-AP STA shall set the EDCA Access Disable subfield to 0.

To TGax Editor: Modify the Table 10-8a (Conditions for including Control subfield variants)

|  |
| --- |
| * Conditions for including Control subfield variants |

|  |  |
| --- | --- |
| Control subfield variant | Condition |
| … | …. |
| CAS | The transmitting STA follows either:  — T~~t~~he reverse direction protocol procedure as described in 10.28 (Reverse Direction Protocol) and the recipient STA has set the RD Responder of the HT Extended Capabilities field of the HT Capabilities elements it transmits to 1 or  —The SRP procedure as described in 27.9.3 (SRP-based spatial reuse operation) and the recipient STA has set the SR Responder subfield of the HE MAC Capabilities Information field of the HE Capabilities elements it transmits to 1.(#12439) or   * (#12295) The EDCA Access Disable procedure as described in 27.5.3.1 General (UL MU operation) and the receipient STA has set the CAS Control EDCA Access Disable RX Support in HE Capabilities elements it transmits to 1. |
| … | …. |

To TGax Editor: Add the following text at the end of the subclause 27.5.3.1 General (UL MU operation)

(#12295) If the non-AP STAhas set 1 in CAS Control EDCA Access Disable RX Support in HE Capabilities element, the EDCA access of a non-AP STA can be disabled when the non-AP STA suffers from a bad UL link and is not able to transmit SU PPDUs to the AP. The AP may disable an associated non-AP STA EDCA access only, if the AP transmits Trigger frames to allocate narrow OFDMA RUs (e.g., 26-tone RU and 52-tone RU) for the non-AP STA.

(#12295) If the HE non-AP STA has set the CAS Control EDCA Access Disable RX Support field in the HE Capabilities element it transmits to 1, the HE AP that the HE non-AP STA associates with may indicate whether the EDCA Access of the HE non-AP STA is suspended or resumed using the EDCA Access Disable field in the CAS Control information as described in subclause 9.2.4.6a.7 (CAS Control).

If the HE non-AP STA has set the CAS Control EDCA Access Disable RX Support field in the HE Capabilities element it transmits to 0, the HE non-AP STA shall ignore the received EDCA Access Disable subfield in the CAS Control field.

(#12295) An HE AP may control the EDCA access of an HE non-AP STA that has set the CAS Control EDCA Access Disable RX Support field in the HE Capabilities element to 1 by sending a frame that contains the CAS Control subfield to the HE non-AP STA. The HE AP shall set:

— The EDCA Access Disable subfield to 1 to indicate suspension of the EDCA access operation of the intended STA; otherwise the HE AP shall set the EDCA Access Disable subfield to 0 to indicate resumption or continuation of participation in the EDCA access operation of the intended STA.

• A non-AP STA shall set the EDCA Access Disable subfield to 0.

(#12295) An HE non-AP STA that has set the CAS Control EDCA Access Disable RX Support field in the HE Capabilities element to 1 shall suspend the EDCA access operation until the HE non-AP STA receives a frame that contains the EDCA Access Disable subfield set to 0 if the EDCA Access Disable subfield is 1 in the most recently received CAS Control subfield sent by the HE AP.

An HE AP that received the UL MU Disabled subfield in the OM Control field set to 1 from an HE non-AP STA shall not set the EDCA Access Disable subfield to 1 for the non-AP HE STA.

Note – EDCA Access Disable subfield set to 1 is ignored to a TDLS STA.