IEEE P802.11
Wireless LANs

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| 11ax D4.0 Comment Resolution 10.24 |
| Date: 2019-05-08 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Liwen Chu | Marvell |  |  |  |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D4.0 with the following CIDs:

* 20654, 20671, 20876

Revisions:

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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** |
| 20654 | 253 | 35 | It is not clear how multi-TID A-MPDUs work inthe context of EDCA, where the multiple TIDs are for more than one AC, e.g. which set of EDCA parameters (i.e. which EDCAF) is used, and how admission control works | At the end of "10.24.2.4 Obtaining an EDCA TXOP" add a para "For a multi-TID, ack-enabled multi-TID or non-ack-enabled multi-TID A-MPDU, the EDCAF that is used is the one that corresponds to the highest-priority TID in the A-MPDU.NOTE---This applies to both backoff and admission control procedures." | Revised.Discussion: the relation of the backoff AC and the content of ack-enabled and non-ack-enabled multi-TID A-MPDU is defined in subclause 26.6: * An HE AP may aggregate MPDUs from any TIDs in multi-TID A-MPDU for DL HE MU PPDU transmission
* If the TXOP limit is greater than 0, then the STA may aggregate QoS Data frames from one or more TIDs in the A-MPDU under the following conditions
	+ The A-MPDU shall be carried in either an HE SU PPDU or an HE ER SU PPDU transmitted by the non-AP STA or the AP within the obtained TXOP or an HE MU PPDU transmitted by a non-AP STA within the obtained TXOP.
	+ The A-MPDU shall contain one or more MPDUs with any of the TIDs that correspond to the primary AC.
	+ If no more MPDUs can be aggregated in the A-MPDU from any of the TIDs that correspond to the primary AC then the A-MPDU may additionally contain one or more MPDUs with TIDs that do not correspond to the primary AC if the TIDs correspond to any AC that has a higher priority with respect to the primary AC and the addition of these MPDUs does not cause the STA to exceed the current TXOP duration

For the admission control, 802.11md D2.2 includes the following text already in 10.24.2.7: With respect to admission control (see 10.24.4.2 (Contention based admission control procedures)),all frames transmitted under TXOP sharing shall be treated as if they were from the primary AC. We can add the missing part in 10.24.2.7 about HE MU PPDU.TGax editor to make changes in 11-19/0735r2 under CID 20654 |
| 20671 | 261 | 3 | "Frame exchange sequences for Management frames and the HE TB PPDU are excluded from the used\_time update." is unclear (what is a frame exchange sequence for "the HE TB PPDU"?) and also gives an unfair advantage to HE STAs over non-HE STAs (note that non-HE STAs using RD don't get any exemption from updating used\_time) | Revert the insertion of "and the HE TB PPDU" in the cited text at the referenced location | RevisedDiscussion: it is not good to exclude the medium time of the HE HB PPDU from the admission control. One similar case is the scheduled UL PPDU in HCCA where the medium time is counted for admission control. ***TGax editor to make changes in 11-19/0735r2 under CID 20671*** |
| 20876 | 260 | 42 | The change from "data rate > 6 Mb/s" to "except 6 Mb/s OFDM" does not make sense: (a) only OFDM can generate 6 Mb/s and (b) the previous change did not apply to e.g. 3 Mbps OFDM, but the new one does | Revert the changes at the referenced location | RejectedDiscussion: in 11ax, several extended range mode allows <6MB/s OFDM. |

**10.24.2.7 Sharing an EDCA TXOP**

***TGax editor: Change the first 4 paragrsphes in 10.24.2.7 as follows:***

(#1195)The AC associated with the EDCAF that gains an EDCA TXOP is referred to as the primary AC.

Frames from ACs other than the primary AC shall not be included in the TXOP, with the following exceptions

(TXOP sharing):

— Frames from a higher priority AC may be included when at least one frame from the primary AC has

been transmitted and all frames from the primary AC have been transmitted.

— When an AP supports MU PPDUs, frames from a higher or lower priority AC may be included

in a VHT or S1G MU PPDU with the TXVECTOR parameter(#2639) NUM\_USERS > 1 or in an HE MU PPDU, when

these frames do not increase the duration of the VHT or S1G MU PPDU beyond that required for the

transmissions of the frames of the primary AC. Frames from the primary

AC shall be transmitted first. (#20654)

When sharing, the TXOP limit that applies is the TXOP limit of the primary AC.

(#1195)With respect to admission control (see 10.24.4.2 (Contention based admission control procedures)),

all frames transmitted under TXOP sharing shall be treated as if they were from the primary AC.

NOTE—An AP can protect an immediate response by preceding the VHT (11ah), S1G or HE MU PPDU (which might have TXVECTOR parameter NUM\_USERS > 1) with an RTS/CTS exchange, MU-RTS/CTS or a CTS-to-self transmission. (#20654)

**10.24.4 Admission Control at the HC**

**10.24.4.2 Contention based admission control procedures**

**10.24.4.2.3 Procedure at non-AP STAs**

***TGax editor: Change the 8th paragrsph in 10.24.4.2.3 as follows:***

The MPDUExchangeTime equals the time required to transmit the MPDU sequence. For the case of an MPDU

transmitted with Normal Ack ack policy(#1415) and without RTS/CTS protection, this equals the time

required to transmit the MPDU plus the time required to transmit the expected response frame plus one SIFS.

Frame exchange sequences for Management frames (#20671) are excluded from the used\_time update. If the used\_time value reaches or exceeds the admitted\_time value, the corresponding EDCAF shall no longer transmit QoS Data frames or QoS Null frames(#1444) using the EDCA parameters for that AC as specified in the QoS Parameter Set element. However, a STA may choose to temporarily replace the EDCA parameters for that EDCAF with those specified for an AC of lower priority, if no admission control is required for those ACs.