IEEE P802.11  
Wireless LANs

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| **Proposed resolution for comments related to**  **CIDs in 27.5.2** |
| **Date:** 2017/03/15 |

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Abstract

This submission proposes resolutions for comments in clause 27.5.2 of TGax Draft 1.0 with the following CIDs:

* CIDs:5397, 5712, 7394, 8058, 8275, 8303

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Incorporated changes suggested during the ad hoc presentation. (Changes are highlighted in this color).
* Rev 2: Removed CID 7394, 8058, 8275, 8303 and corresponding discussions (marked in gray color) in this document. CR for CID 7394, 8058, 8275, 8303 will be submitted in a new 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** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 5397 | 27.5.2.2.3 | 167 | 38 | It seems that the sentence of line 33 includes the sentence of line 38. | Remove the sentence | Revised  Agree in principle. Revised as described in doc.: 17/448r2 |
| 5712 | 27.5.2.2.3 | 167 | 39 | It's not clear which case this paragraph apply to. Does this paragraph applies to the case when trigger is the only frame in the PPDU? Does it cover the case where trigger is aggregated with data? The trigger-frame only PPDU case is already covered in the paragraph above it. | Clarify | Revised  Agree in principle. Revised as described in doc.: 17/448r2 |
| 7394 | 27.5.2.2.3 | 167 | 25 | Recommendations on the AP parameters (EDCA parameters and TxOP duration) to access the channel to send a trigger frame should be defined in order to ensure fairness between OBSSs | Same as comment | Revised  Agree in principle. Revised as described in doc.: 17/448r0 |
| 8058 | 27.5.2.2.3 | 167 | 34 | The sentence "An AP may use any AC for sending a PPDU that contains only Trigger frames." allows an AP to use the voice AC to "preempt" the medium, event if it knows, through reporting for instance, that the addressed STAs only have background traffic to transmit. In my opinion, we should at least recommend for data traffic that if the AP knows the AC categories of the  buffered traffic of the addressed STAs, it should use the lowest AC reported for sending a PPDU that contains such Trigger frame | As in comment. | Revised  Agree in principle. Revised as described in doc.: 17/448r0 |
| 8275 | 27.5.2.2.3 | 167 | 38 | It is stated that "An AP may send the Trigger frame using any access category and follows the rules defined in 10.22.2". This is not applicable at all because AP does not know which AC to use.For Data or Ack frames, the AC is determined by examining the TID field of MSDU packet ( TID is linked to UPs of MSDU from higher layer as refer to 5.1.1.3). For a Management frame, the AC is AC\_VO.  What is the procedure for a Trigger Frame, as it is a control frame (which by essence has no TID) ? | Procedure can envisage a mapping between the priority of the TF and the Access Categories AC0 - AC3 to insert the trigger frame. As example, by following sentence:  " the trigger frame may be conveyed in the AC that corresponds to the type of uplink traffic that the HE STAs are requested to send in response to the trigger frame. If different ACs are requested to STAs, the HE AP may select an Access Category for the trigger frame corresponding to the AC with the highest priority among the requested Access Categories."  Additionally, upon emergency for sending a Trigger Frame (BSR reports inform of an important amount of pending data), then " The AP may select one AC queue with the highest priority as the one that has the lowest backoff value, i.e. the next AC queue from which data will be sent on the medium. " | Revised  Agree in principle. Revised as described in doc.: 17/448r0 |
| 8303 | 27.5.2.2.3 | 167 | 38 | "An AP may send the Trigger frame using any access category and follows the rules defined in 10.22.2 (HCF  contention based channel access (EDCA)) for obtaining and sharing the TXOP."  How is the position of the Trigger frame in the selected queue ? If too many frame are waiting to be transmitted, the transmission information (for instance RU information) can be obsolete. | Proposal:" An AP may send the Trigger frame using any access category and follows the rules defined in 10.22.2 (HCF  contention based channel access (EDCA)) for obtaining and sharing the TXOP. The Trigger frame is located in the head of the FIFO related to the selected access category" | Revised  Agree in principle. Revised as described in doc.: 17/448r0 |

**Discussion**

Abstract

This document provides resolutions for the following CIDs on Clause 25.9.3. The baseline for this comment resolution document is 802.11ax Draft 0.1.

* CIDs: 705, 706

Agree in principle with these comments corresponding to the text below in TG ax D1.1 (line 59 ~ 65 in page 171)

An AP may use any AC for sending a PPDU that contains only Trigger frames. If the PPDU contains frames that are not Trigger frames in addition to a Trigger frame, then the AP shall follow the rules defined in

10.22.2.6 (Sharing an EDCA TXOP).

An AP may send the Trigger frame using any access category and follows the rules defined in 10.22.2 (HCF contention based channel access (EDCA)) for obtaining and sharing the TXOP.

Basically, the comments pointed out two issues,

1) Clarify cases and the corresponding rules for each case described in these two paragraphs.

► “A PPDU that contains only Trigger frames” case and “a PPDU that contains frames that are not trigger frames in addition to a Trigger frame” case are specified in D 1.1.

* As for “a PPDU that contains only trigger frames” case, an AP may use any AC for sending the PPDU.
* As for “a PPDU that contains frames that are not Trigger frames in addition to a Trigger frame” case, then the AP shall follow the rules defined in 10.22.2.6 (Sharing an EDCA TXOP).

However, it is not clear about how to choose AC to send a PPDU that does not contain only Trigger frames in subclause 10.22.2.6 (Sharing an EDCA TXOP).

We suggest to clarify how to choose AC for the “a PPDU that contains frames that are not Trigger frames in addition to a Trigger frame” case as following,

If the PPDU contains frames that are not Trigger frames in addition to a Trigger frame, then the AP shall use the primary AC for accessing the medium and follow the rules defined in 10.22.2.6 (Sharing an EDCA TXOP).

2) Recommended rules that AP chooses the AC to access the channel to send a trigger frame should be defined.

►Agree in principle with comments. Which AC should be chosen to access channel for sending a trigger frame should be decided by the AP flexibly, but it is better to specify recommended rules which would minimally affect the existing channel access priority built by EDCA. In this sense, we suggest to add a note for avoiding confusion as following,

The AP can indicate in the Preferred AC subfield of the Trigger frame the AC that it used to access the medium to transmit the PPDU containing the Trigger frame.

**Proposed resolution**

***Detailed implementation of the resolution***

Make the following changes to 802.11ax D 1.1

***TGax editor: Change the paragraph below of section 27.5.2.2.3 AP access procedures for UL MU operation on page 171 line 59 ~ 65 as the following (#CID 5397, 5712, 7394, 8058, 8275, 8303 ):***

An AP may use any AC for sending a PPDU that contains only Trigger frames. If the PPDU contains frames that are not Trigger frames in addition to a Trigger frame, then the AP shall use the primary AC for accessing the medium and follow the rules defined in 10.22.2.6 (Sharing an EDCA TXOP).

~~NOTE—An AP transmitting a PPDU contains frames that are not Trigger frames in addition to a Trigger frame uses the primary AC for accessing the medium (see 10.22.2.6 (Sharing an EDCA TXOP)). The AP can indicate in the Preferred AC subfield of the Trigger frame the AC that it used to access the medium to transmit the PPDU containing the Trigger frame.~~

~~An AP may send the Trigger frame using any access category and follows the rules defined in 10.22.2 (HCF contention based channel access (EDCA)) for obtaining and sharing the TXOP.~~