IEEE P802.11  
Wireless LANs

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| **Resolution for CID 7250, 7251 and 7252** |
| **Date:** 2017-05-03 |

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Abstract

This submission proposes resolutions for multiple comments related to TGax D1.0 with the following CIDs (3 **CIDs**):

* Provided the resolutions for CID7250, 7251, 7252

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** |
| 7250 | 172.10 | When a STA sends a QoS Null frame for BSR in random RU, it needs to confirm that the frame is successfully received at the AP. If it fails, the STA may perfom the retransmission procedure for random access. | Modify the text as below:  An AP can also solicit one or more non-AP STAs for their BSR(s) by sending a BSRP variant Trigger frame (see 9.3.1.23 (Trigger frame format)). The non-AP STA responds (solicited BSR) as defined below:  ...  - The STA shall include in the HE trigger-based PPDU one or more QoS Null frames containing one or more of the following:  ...  - The HE STA shall not solicit an immediate response for the frames carried in the HE trigger-based PPDU (e.g., by setting the Ack Policy subfield of the frame to Normal Ack or Implicit BAR) except that it sends one or more QoS Null frames in the HE trigger-based PPDU in a random RU. | Rejected.  In response to the BSRP Trigger frame, a QoS Null frames with the Ack Policy only set to No Ack is allowed to be sent in the HE TB PPDU. |
| 7251 | 195.04 | Based on the multi-TID A-MPDU aggregation rule, a STA may not report the buffer status information for lower priority AC in an A-MPDU.  QoS Null frame with BSR information should be able to be aggregated in a multi-TID A-MPDU regardless of AC priority. | As in the comment | Revised.  Agree in principal.  QoS Null frame with Ack Policy set to No Ack can be aggregated in an A-MPDU carried in the HE TB PPDU regardless of the value of the Preferred AC subfield in the Basic Trigger frame.  TGax editor make the changes as shown in 11-17/0729r0. |
| 7252 | 166.56 | QoS Data frame or QoS Null frame with Ack Policy 'No Ack' can be aggregated regardless of the TID Aggregation Limit | As in the comment | Revised.  Agree in principal.  QoS Null frame with Ack Policy 'No Ack' can be aggregated in an A-MPDU in the HE TB PPDU regardless of the TID Aggregation Limit.  TGax editor make the changes as shown in 11-17/0729r0. |

**Discussion:** *The current spec is unclear regarding the QoS Null frame aggregation in an A-MPDU as belows.*

* It’s not clear how to aggregate QoS Null frames with Ack Policy set to No Ack in an A-MPDU in the HE TB PPDU.
* The 11ax spec D1.2 does not specify clearly whether it is possible to aggregate a QoS Null frame with Ack Policy set to Normal Ack or Implicit Block Ack Request in an A-MPDU in the HE TB PPDU.

**Proposal**

* Add a clarification text “any QoS Null frame with Ack Policy set to No Ack can be aggregated in an A-MPDU carried in the HE TB PPDU regardless of the value of the TID Aggregation Limit subfield and the value of the Preferred AC subfield in the Basic Trigger frame.”
* Add a note “QoS Null frame with Ack Policy set to Normal Ack or Implicit Block Ack Request can not be aggregated in an A-MPDU as described in the section of A-MPDU contents”.

**Propose:**

Revised for CID 7250, 7251, 7252 per discussion and editing instructions in 11-17/0xxxr0.

***TGax editor: Modify the sentence on page 215 line 1 as the following:***

**27.10.4 A-MPDU with multiple TIDs**

…

If the multi-TID A-MPDU is transmitted in an HE TB PPDU, then the number of different TID values in the multi-TID A-MPDU shall not exceed the value specified in the Multi-TID Aggregation Limit subfield in the Trigger Dependent User Info subfield of the User Info field in the Basic Trigger variant Trigger frame that allocated resources for the HE TB PPDU.

Any number of QoS Null frame with any TID with which the Ack Policy field is set to No Ack may be aggregated in an A-MPDU carried in the HE TB PPDU regardless of the value of the TID Aggregation Limit subfield and the value of the Preferred AC subfield in the Basic Trigger variant Trigger frame (#7251)(7252).

Note. A QoS Null frame with the Ack Policy field set to Normal Ack or Implicit Block Ack Request is not allowed to be sent in an A-MPDU (as defined in Table 9-425 (A-MPDU contents in the data enabled immediate response context) and Table 9-426 (A-MPDU contents in the data enabled no immediate response context) and Table 9-428 (A-MPDU contents MPDUs in the control response context)) (#7251)(7252).

A multi-TID A-MPDU shall not be transmitted in an HE SU PPDU or HE ER SU PPDU except when TXOP limit is not zero for the AC that is used to gain access to the medium. This AC is defined as the primary AC. When TXOP limit is not zero 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 an HE SU PPDU or an HE ER SU PPDU transmitted within the obtained TXOP

— The A-MPDU shall contain one or more MPDUs with any of the TIDs that correspond to the primary AC

— When any of the buffers is empty or when 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.

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