IEEE P802.11
Wireless LANs

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| 11ax D2.0 Comment Resolution 27.10.4.2, 27.10.4.3 |
| Date: 2018-04-30 |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D2.0 with the following CIDs:

* 11297, 12930. 11299, 11300, 12933, 12934, 12935, 12936, 13732, 13745,
* 13938.

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** |
| 11297 | 302 | 57 | Actually this rule is applicable in general. I.e. it has to state that does not contain any A-MPDU subframe with Length field that is greater than 0 and with EOF field equal to 1. but that is already listed in the next paragraph. So suggest to replace this item with the content of the paragraph in P302L64. | As in comment. | **Revised****Generally agree with the commenter****TGax editor to make changes in 11-18/0796r0 under CID 11297** |
| 12930 | 302 | 47 | "except as defined below" -- it is not clear what the "except" means here. It might mean that it restricts the A-MPDUs to a particular subset of what 9.7/10.13 allow, or it might mean that it contradicts some of the rules in 9.7/10.13 | Change "except as defined below" to "and that conforms to the rules below" | **Agree** |

 **27.10.4 multi-TID A-MPDU and ack-enabled A-MPDU**

* + - 1. **General**

27.10.4.2 Non-ack-enabled multi-TID A-MPDU operation

***TGax editor: please change subclause 27.10.4.2 as follows:***

For non-ack-enabled A-MPDU operation, a STA shall follow the rules in 9.7 (Aggregate MPDU (A-MPDU)) and 10.13 (A-MPDU operation) and that conforms to the rules below.(#12390)

(#11297)A non-ack-enabled multi-TID A-MPDU is an A-MPDU that meets the following conditions:

* Contains two or more non-EOF frame that are QoS Data frames that belong to two or more block ack agreements and that have the Ack Policy field set to Implicit Block Ack Request, HTP Ack, or Block Ack
* Does not contain a Management frame that is not an Action No Ack frame
* Does not contain any EoF frames that are QoS Data frames with the Ack Policy field set to Normal Ack or HTP Ack

NOTE—A non-ack-enabled multi-TID A-MPDU might include other frames such as a Trigger frame, BlockAck frame, or QoS Null frame (see Table 9-425 (A-MPDU contents in the data enabled immediate response context))

The EOF field of each A-MPDU subframe with an MPDU Length field with a nonzero value in a non-ack-enabled multi-TID A-MPDU carried in an HE PPDU shall be set to 0.

A STA that receives a non-ack-enabled multi-TID A-MPDU responds as defined in 27.4.4 (Per-PPDU acknowledgment selection rules).

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| **CID** | **PP** | **LL** | **Comment** | **Proposed Change** | **Resolution** |
| 11299 | 303 | 17 | replace "belonging to one or more block ack agreements each carried in" with "each of which belongs to a blockack agreement and is carried in". Apply throughout these items. Also mention the Action no Ack frame in the note. | As in comment. | **Revised****Generally agree with the commenter****Gax editor to make changes in 11-18/0796r0 under CID 11299.** |
| 11300 | 303 | 53 | Isn't this covered by the rules listed in the above items? Seems like it. In which case this paragraph is redundant and can be deleted. | As in comment. | **Rejected****Discussion: the rules list in the above items are about A-MPDU content. L53 sentence defines how to solicit Ack frame.** |
| 12933 | 303 | 9 | "except as defined below" -- it is not clear what the "except" means here. It might mean that it restricts the A-MPDUs to a particular subset of what 9.7/10.13 allow, or it might mean that it contradicts some of the rules in 9.7/10.13 | Change "except as defined below" to "and that conforms to the rules below" | **Agree** |
| 12934 |  |  | " belonging to one or more block ack agreements" is confusing in that it suggests that some of the QoS Data frames might not belong | Delete the cited text in this subclause (4 instances) | **Revised****Generally agree with the commenter****Gax editor to make changes in 11-18/0796r0 under CID 12934.** |
| 12935 | 303 | 24 | "one or more QoS Data frames with the Ack Policy field set toNormal Ack or HTP Ack each with a different TID" -- if there's only one how can it have a "different TID"? It's not necessary for there to be multiple TIDs anyway -- the single QoS Data with EOF=1 is enough to make it an ack-enabled MTAM | Delete "each with a different TID" | **Revised****Generally agree with the commenter****Gax editor to make changes in 11-18/0796r0 under CID 12935.** |
| 12936 | 303 | 35 | This last bullet is a special case of the second bullet | Delete this last bullet | **Rejected.****Discussion: the last bullet covers the case that has management frame in the A-MPDU. The second bullet covers the case that has no management frame in the A-MPDU** |
| 13732 | 303 | 62 | When a STA receives an Ack frame in response to the immediately preceeding Ack-enabled MT A-MPDU containing more than one EOF:1 MPDUs, it ignores the Ack frame. In this case, what is the expected behavior of the EDCAF? As the recipient might have sent the Ack frame in response to the MPDU from the primary AC, it may not be reasonable to define it as a failure. Note that if there is at least one immediate response frame, transmission of an HE MU PPDU or a Trigger frame is regarded as success. | As in comment | **Rejected****Discussion: Since the STA doesn’t know wheich frame that the Ack acknowledge, the EDCAF will be treated as the transmission failure. If the STA wants to avoid such failure, it can just transmit a A-MPDU with single frame to ack for Ack.** |
| 13745 | 303 | 62 | If the originator transmitted an ack-enabled multi-TID A-MPDU, the originator would have set the duration field long enough to contain an M-BA frame. In this case, the recipient could have transmitted an M-BA frame in the given TXOP duration, even if it had received only one MPDU with EOF=1 correctly. Then, in most cases, the originator doesn't have to ignore the response frame. Therefore, it is better for the recipient to respond with an M-BA frame when the received A-MPDU contains an error, if the given duration or the length in the triggering information allows it. | It is better for the recipient to respond with an M-BA frame when the received A-MPDU contains an error, if the given duration or the length in the triggering information allows it. Also corresponding normative behavior must be specified in 27.4.4 | **Rejected****Discussion: a responder normally doesn’t know the duration allocated to the solicited acknowledgement except the solicited acknowledgement is in HE TB PPDU. Another observation is that transmitting M-BA can’t give more information to the initiating STA in this case.** |
| 13938 | 303 | 64 | "A STA that transmits an ack-enabled multi-TID A-MPDU that contains at least two MPDUs with different TIDs carried in A-MPDU subframes that have the EOF field equal to 1 shall ignore the immediate response if it is an Ack frame."When a STA transmits one QoS Data frames with the Ack Policy field set to Normal Ack or HTP Ack each (EOF field set to 1), and one Action frame (EOF field set to 1), it also ignore the immediate response if it is an Ack frame.That scenario is missed. | Change as the following:"A STA that transmits an ack-enabled multi-TID A-MPDU that contains at least first QoS Data frame and either second Qos Data frame with different TID or one Action frame carried in A-MPDU subframes that have the EOF field equal to 1 shall ignore the immediate response if it is an Ack frame." | **Rejected****Discussion: the proposed change is not right: more than one QoS Data frame soliciting Ack in an ack-enabled multi-TID A-MPDU must be from different TIDs.** |

27.10.4.3Ack-enabled multi-TID A-MPDU operation

***TGax editor: please change subclause 27.10.4.3 as follows:***

For ack-enabled multi-TID A-MPDU operation, a STA shall follow the rules in 9.7 (Aggregate MPDU (A-MPDU)), 10.13 (A-MPDU operation) and that conforms to the rules below.(#12933)

(#11299, 12934, 12935)An ack-enabled multi-TID A-MPDU is an A-MPDU that contains one of the following combinations of frames:

* One or more non-EOF frames that are QoS Data frames with the Ack Policy field set to Implicit Block Ack Request, HTP Ack, or Block Ack each of which belongs to a ack agreement and one EOF frame that is a Management frame except Action No Ack frame.
* One or more non-EOF frames that are QoS Data frames with the Ack Policy field set to Implicit Block Ack Request, HTP Ack, or Block Ack each of which belongs to a block ack agreement, and one or more EOF frames that are QoS Data frames with the Ack Policy field set to Normal Ack or HTP Ack each with a different TID.
* Zero or more non-EOF frames that are QoS Data frames with the Ack Policy field set to Implicit Block Ack Request, HTP Ack, or Block Ack each of which belongs to a block ack agreement, one or more EOF frames that are QoS Data frames with the Ack Policy field set to Normal Ack or HTP Ack each with a different TID, and one EOF frame that is a Management frame except Action No Ack frame.
* Zero or more non-EOF frames that are QoS Data frames with the Ack Policy field set to Implicit Block Ack Request, HTP Ack, or Block Ack each of which belongs to a block ack agreement, and two or more EOF frames that are QoS Data frames with the Ack Policy field set to Normal Ack or HTP Ack each from different TID.

NOTE—An ack-enabled multi-TID A-MPDU might include other frames, such as a Trigger frame, BlockAck frame, or QoS Null frame (see Table 9-425 (A-MPDU contents in the data enabled immediate response context)).

QoS Data frames with the same TID shall have the same Ack Policy field setting.

QoS Data frames with the same TID shall be carried in A-MPDU subframes with the same value in the EOF field setting.

In an ack-enabled multi-TID A-MPDU, the EOF field of each A-MPDU subframe carrying a frame that solicits an Ack frame acknowledgment(#11208) shall be set to 1. The EOF field of all other A-MPDU subframes carrying frames shall be set to 0.

A STA that receives an ack-enabled multi-TID A-MPDU responds as defined in 27.4.4 (Per-PPDU acknowledgment selection rules)(#14304).

A STA that transmits an ack-enabled multi-TID A-MPDU that contains at least two MPDUs with different TIDs carried in A-MPDU subframes that have the EOF field equal to 1 shall ignore the immediate response if it is an Ack frame.