IEEE P802.11  
Wireless LANs

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| 11ax D3.0 Comment Resolution 9.7.1 | | | | |
| Date: 2018-11-01 | | | | |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D3.0 with the following CIDs:

* 16264, 16266, 16267, 16294, 16647, 16908, 17040.

Revisions:

* .

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** |
| ~~15157~~ | ~~195~~ | ~~21~~ | ~~The HT-immediate BlockAck in Table 9-425 calls out a BlockAck for DMG STA. Type of BlockAck is missing.~~ | ~~Change "same BlockAck" to "same BlockAck frame"~~ |  |
| ~~15162~~ | ~~196~~ | ~~1~~ | ~~I am pretty confident that we can simplify these tables. The normative behavior in clause 27 already covers all these combinations so it could be as simple as adding a reference to subclauses in 27 instead of replications.~~ | ~~As in comment. For all these tables.~~ |  |
| 16264 | 191 | 17 | The EOF field no longer always indicates EOF | Delete "End of frame indication." at the referenced location | **Revised**  **Generally agree with the commenter.**  **TGax editor please make changes in subclause 9.7.1 as shown in 11-18/1856r1 under CID 16264**  **TGax editor please replace End of frame with EOF through 11ax draft and 11md draft** |
| 16266 | 191 | 28 | "a Ack response" -- undefined term | Change to "an response in the acknowledgment context (see Table 9-24b)" | **Revised**  **Generally agree with the commenter.**  **TGax editor please make changes in subclause 9.7.1 as shown in 11-18/1856r1 under CID 16266** |
| 16267 | 191 | 22 | "a QoS Data frame or Action frame soliciting an Ack frame in response that are contained in an ack-enabled multi-TID A-MPDU" is confusing because (a) an Action frame always solicits an ack and (b) for an aemTAM you don't get an Ack frame but an M-BA. The rejection of CID 12816 misses the point | Change " set to 1 in a MPDU delimiter preceding a QoS Data frame or Action frame soliciting an Ack frame in response that are contained in an ack-enabled multi-TID A-MPDU" to "set to 1 in an MPDU delimiter preceding a QoS Data frame that solicits a non-block acknowledgment or preceding an Action frame, where contained in an ack-enabled multi-TID A-MPDU" | **Revised.**  **Discussion: non-block acknowledgement is confusing since there is no such thing of it. Howerver Action frame should be extended to cover a management frame other than Action frame. The accurate text should be PerAID TID Info with Ack Type being 1.**  **TGax editor please make changes in subclause 9.7.1 as shown in 11-18/1856r1 under CID 16267** |
| 16294 | 191 | 22 | " a QoS Data frame or Action frame soliciting an Ack frame in response that are contained in an ack-enabled multi-TID A-MPDU" -- the EOF-MPDUs solicit the acknowledgment context, not necessarily an Ack frame (might get an M-BA frame instead) | Change "soliciting an Ack frame" to "soliciting the acknowledgment context" | **Revised**  **See CID 16267** |
| 16647 | 191 | 4 | The max A-MPDU pre-EOF padding in an HE PPDU is wrong (not consistent with Table 9-19 & Table 28-51) | Change 8,388,607 to 6,500,631. | **Revised.**  **Generally agree with the commenter. 8, 388, 607 is acquired from the maximal length defined by HE Capabilities element. However per the maximal PHY PPDU length, the maximal -MPDU length can’t be more than 6, 500, 631.**  **TGax editor to make changes in 11-18/1856r1 under CID 16647** |
| 16908 |  |  | The EOF field is no more a field indicating the end of the frame. It now additionally shows the presence of a QoS Data frame or action frame soliciting an Ack frame. The field name should reflect the intention of the field. In the past, for example, we’ve change the Order bit to +HTC/Order bit when we added another role, which is to indicate the presence of the HT Control field, for that bit. | Change the EOF field to EOF/Ack solicitation field throught the draft. | **Revised**  **See 16264** |
| 17040 | 191 | 22 | “…and set to 1 in a MPDU delimiter preceding a QoS Data frame or Action frame soliciting an Ack frame in response that are contained in an ack-enabled multi-TID A-MPDU…” Based on 27.10.4.2 and 27.10.4.3, “Action frame” shall be hanged to “Management frame”. | As in comment. | **Revised**  **See CID 16267** |

**9.7 Aggregate MPDU (A-MPDU)**

**9.7.1 A-MPDU format**

TGax editor: Change the 6th and subsequent paragraphs as follows:

In a VHT or HE PPDU, the following padding is present, as determined by the rules in 10.13.6 (A-MPDU padding for VHT, HE or S1G PPDU):

* 0–3 octets in the Padding subfield of the final A-MPDU subframe (see Figure 9-740 (A-MPDU subframe format)) before any EOF padding subframes. The content of these octets is unspecified.
* Zero or more EOF padding subframes in the EOF Padding Subframes subfield.
* 0–3 octets in the EOF Padding Octets subfield. The content of these octets is unspecified.

An A-MPDU pre-EOF padding refers to the contents of the A-MPDU up to, but not including, the EOF Padding field.

NOTE—A-MPDU pre-EOF padding includes any A-MPDU subframes with 0 in the MPDU Length field and 0 in the EOF field inserted in order to meet the minimum MPDU start spacing requirement.

The maximum length of an A-MPDU in an HT PPDU is 65 535 octets. The maximum length of an A-MPDU in a DMG PPDU is 262 143 octets. The maximum length of an A-MPDU pre-EOF padding in a VHT PPDU is 1 048 575 octets. The maximum length of an A-MPDU pre-EOF padding in an HE PPDU is 6,500,631octets (#16647). The length of an A‑MPDU addressed to a particular STA can be further constrained as described in 10.13.2 (A-MPDU length limit rules).

***TGax editor: Change Table 9-422 as follows:***

**Table 9-422— MPDU delimiter fields (non-DMG)**

|  |  |  |
| --- | --- | --- |
| Field | Size (bits) | Description |
| EOF | 1 | End of frame indication/Ack soliciting indication (#16264, 16908). Set to 1 in an A-MPDU subframe that has 0 in the MPDU Length field and that is used to pad the A-MPDU in a VHT or HE PPDU as described in 10.13.6 (A-MPDU padding for VHT PPDU). Set to 1 in the MPDU delimiter of an S-MPDU as described in 10.13.7 (Setting the EOF field of the MPDU delimiter)) and set to 1 in an MPDU delimiter preceding a QoS Data frame or Management frame soliciting an Ack or PerAID TID Info field with 1 in Ack Type field in Multi-STA BA frame in response that are contained in an ack-enabled multi-TID A-MPDU as described in 27.10.4.3 (Ack-enabled multi-TID A-MPDU operation) and ack-enabled A-MPDU as described in 27.10.4.1 (General). Set to 0 otherwise.(#16267, 16294, 17040)  NOTE—In a VHT PPDU the EOF field indicates end of frame. In an HE PPDU the EOF field indicates either end of frame or that the immediate following MPDU solicits an Ack .(#16397) (#16266) |
| Reserved | 1 |  |
| MPDU Length | 14 | Length of the MPDU in octets. Set to 0 if no MPDU is present. An A-MPDU subframe with 0 in the MPDU Length field is used as defined in 10.13.3 (Minimum MPDU Start Spacing field) to meet the minimum MPDU start spacing requirement and also to pad the A-MPDU to fill the available octets in a VHT or HE PPDU as defined in 10.13.6 (A-MPDU padding for VHT PPDU). |
| CRC | 8 | 8-bit CRC of the preceding 16 bits |
| Delimiter Signature | 8 | Pattern that may be used to detect an MPDU delimiter when scanning for an MPDU delimiter.  The unique pattern is 0x4E, which is the ASCII value of the character 'N' ~~(see NOTE below)~~. |
| ~~NOTE—The ASCII value of the character 'N' was chosen as the unique pattern for the value in the Delimiter Signature field.~~ | | |

**27.10 A-MPDU operation**

**27.10.1 General**

***TGax editor: change the 3rd paragraph in 27.10.1 as follows:***

An HE STA that sends a VHT Capabilities element and an HE Capabilities element with Maximum A-MPDU Length Exponent Extension field greater than 0 shall support in reception an A-MPDU pre-EOF padding as defined in 10.13.2 (A-MPDU length limit rules) except that the maximum length for the A-MPDU(#16764) pre-EOF padding shall be (#16454)equal to min(2(20 + Maximum A-MPDU Length Exponent Extension) – 1, 6,500,631).(#16647) An HE STA that sets the Maximum A-MPDU Length Exponent Extension field of the HE Capabilities element to a value greater than 0 shall set the Maximum A-MPDU Length Exponent subfield of the VHT Capabilities element to 7.

Note: 6,500,631 is defined in Table 9-25 (Maximum data unit sizes (in octets)) as upbound of A-MPDU size.( #16647)

**10.14 PPDU duration constraint**

***TGax editor: add the following paragraph at the end of subclause 10.14:***

An HE STA shall not transmit an HE PPDU that has a duration (as determined by the PHY-TXTIME.confirm

primitive defined in 6.5.6 (PLME-TXTIME.confirm) that is greater than aPPDUMaxTime defined in

Table 28-51 (HE PHY characteristics) (#16647).