IEEE P802.11
Wireless LANs

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| Comment Resolution on A-PPDU and Sector ACK frame format |
| Date: 2018-3-4 |
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Abstract

This submission proposes resolution of comments received from LB# 231 (TGay Draft 1.0) on clause 10.15 DMG A-PPDU operation

- 7 CID: 1096, 1099, 1215, 1282, 1288, 1764 and 2166

And clause 9.3.1.22 Sector Ack frame format

- 1 CID: 1280

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| **CID** | **Page Number** | **Line Number** | **Comment** | **Proposed Change** |
| 1096 | 112 | 31 | I couldn't find the abbreviation A-PPDU introduced anywhere. If not present in the baseline, please add in clause 3.4 | as in comment |

**Proposed resolution**: Revised, besides the acronym of A-PPDU, the definitions of A-PPDU, DMG A-PPDU and EDMG A-PPDU are also added.

**Proposed changes to D1.0:**

*TGay Editor: Adding the following definition of A-PPDU in clause 3.2 in alphabetic order (CID #1096):*

**3.2 Definitions specific to IEEE Std 802.11**

aggregate physical layer (PHY) protocol data unit (A-PPDU): A sequence of two or more PPDUs transmitted without IFS, preamble, and with a PHY-header between PPDU transmissions.

directional multi-gigabit (DMG) aggregate physical layer (PHY) protocol data unit (A-PPDU): An A-PPDU where all constituent PPDUs are DMG PPDUs.

enhanced directional multi-gigabit (EDMG) aggregate physical layer (PHY) protocol data unit (A-PPDU): An A-PPDU where all constituent PPDUs are EDMG PPDUs.

*TGay Editor: Adding acronym of A-PPDU in clause 3.4 in alphabetic order (CID #1096):*

3.4 Abbreviations and acronyms

A-PPDU: Aggregate PHY protocol data unit

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| **CID** | **Page Number** | **Line Number** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 1099 | 112 | 34 | In practice there are two A-PPDU formats: DMG A-PPDU and EDMG A-PPDU. The text presented in 10.15 need to distinguish between the two and be clearer of what can be done and what is not.Below rule should be clearer, the text should state a rule regarding transmitting EDMG PPDUs in DMG A-PPDU format. Having both non-EDMG and EDMG PPDUs in EDMG-APPDU is not possible per the EDMG A-PPDU format as described in 30.3.2.2."A non-EDMG PPDU and an EDMG PPDU shall not be included in the same A-PPDU." | All EDMG PPDUs within an EDMG A-PPDU shall have the ADD-PPDU parameter of the TXVECTOR set to NO-ADD-PPDU. All EDMG PPDUs within an EDMG A-PPDU shall have the EDMG\_ADD\_PPDU parameter of the TXVECTOR set to ADD-PPDU, except forthe last PPDU in the EDMG A-PPDU that shall have this parameter set to NO-ADD-PPDU. A non-EDMG PPDU and an EDMG PPDU shall not be included in the same DMG A-PPDU.DMG A-PPDU shall not include EDMG PPDU. | **Revised**EDMG A-PPDU capability indication is also added for clear EDMG A-PPDU operation.  |
| 1215 | 113 | 7 | "The EDMG SU A-PPDU format is defined in 30.3.2.2." - the MAC should not need to know anything about this format if the coupling between the MAC and PHY is adequately represented by the PHY SAP. | Remove cited text. | **Accpeted** |
| 1282 | 113 | 7 | "The EDMG SU A-PPDU format is defined in 30.3.2.2.""30.3.2.2 EDMG A-PPDU format"Use the unified name | Delete “SU” and specific EDMG A-PPDU used for SU only. | **Revised**The refered sentence has been deleted base on CR of CID 1215.. |
| 1764 | 112 | 34 | The sentence "All EDMG PPDUs within an A-PPDU shall have the ADD-PPDU parameter of the TXVECTOR set to NO-ADD-PPDU." contradicts with the next sentence. | Remove the sentence "All EDMG PPDUs within an A-PPDU shall have the ADD-PPDU parameter of the TXVECTOR set to NO-ADD-PPDU." | **Rejected**Two parameters, ADD-PPDU and EDMG\_ADD\_PPDU, need separate indication, no conflict. |

**Proposed changes to D1.0:**

*TGay Editor: Changing Figure 24 and adding one paragraph after L19P56 of clause 9.4.2.250.1 as follows (CID #1099):*

9.4.2.250.1 General

B0 B6 B7 B18 B19 B42 B43 B44 B47

A-MPDU Parameters

TRN Parameters

Supported MCS

Reserved

EDMG A-PPDU

Bits: 7 12 24 1 4

**Figure 24 —Core Capabilities field format**

**……**

The EDMG A-PPDU subfield is set to 1 to indicate that the STA supports EDMG A-PPDU as described in 10.15. Otherwise, it is set to 0.

*TGay Editor: Changing clause 10.15 as follows (CID #1099, 1215, 1282, 1764):*

10.15 DMG A-PPDU and EDMG A-PPDU operation

A DMG STA is DMG aggregate PPDU (A-PPDU) capable if the A-PPDU supported field within the STA’s DMG Capabilities element is 1. Otherwise, the STA is not DMG A-PPDU capable.

An EDMG STA is EDMG A-PPDU capable if the EDMG A-PPDU field within the STA’s EDMG Capabilities element is 1. Otherwise, the STA is not EDMG A-PPDU capable.

A DMG STA shall not transmit a DMG A-PPDU to a not DMG A-PPDU capable STA . An EDMG STA shall not transmit an EDMG A-PPDU to a not EDMG A-PPDU capable STA.

All PPDUs within a DMG A-PPDU shall have the ADD-PPDU parameter of the TXVECTOR set to ADD-PPDU, except for the last PPDU in the DMG A-PPDU that shall have this parameter set to NO-ADD-PPDU. EDMG PPDU shall have the ADD-PPDU parameter of the TXVECTOR set to NO-ADD-PPDU. All PPDUs within an EDMG A-PPDU shall have the EDMG\_ADD\_PPDU parameter of the TXVECTOR set to ADD-PPDU, except for the last PPDU in the EDMG A-PPDU that shall have this parameter set to NO-ADD-PPDU. A DMG PPDU and an EDMG PPDU shall not be included in the same A-PPDU.The value of a TXVECTOR parameter of a PPDU belonging to a DMG A-PPDU or an EDMG A-PPDU might differ from the value of the same TXVECTOR parameter of another PPDU in the same A-PPDU, including the MCS parameter.

A PPDU within an A-PPDU shall contain an A-MPDU. All MPDUs within A-MPDUs within an A-PPDU shall have the same values for the TA and RA fields. All QoS Data frames within A-MPDUs within an A-PPDU shall have the same value of the Ack Policy subfield of the QoS Control field. If a frame that requires an immediate response is present within an A-PPDU, it shall be transmitted in the last A-MPDU of the A-PPDU.

The transmission duration of an A-PPDU shall be no greater than aPPDUMaxTime (see Table 20-32).

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| **CID** | **Page Number** | **Line Number** | **Comment** | **Proposed Change** |
| 1288 | 112 | 31 | The DMG A-PPDU foramt is misssing. | Add DMG A-PPDU format |

**Proposed resolution**: Rejected

**Discussion**: Agree that it would be better to add this format, clause 20 would be the suitable place, but any changes to clause 20 should be done in TGmd. Suggest a comment or contribution in TGmd for this issue.

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| **CID** | **Page Number** | **Line Number** | **Comment** | **Proposed Change** |
| 2166 | 112 | 31 | Is the existing A-PPDU ACK procedure sufficient to transmit the EDMG A-PPDU? Clarification is required. | A definition of the ack procedure in the A-PPDU should be added. |

**Proposed resolution**: Rejected

**Discussion**: There is no such issue for A-PPDU, because ACK procedure related to MPDU, not PPDU. Note that there is no ACK procedure related description in original text of clause 10.15.

**Straw Poll/Motion:**

* **Do you agree to accept the comment resolution for CID1096, 1099, 1215, 1282, 1288, 1764 and 2166 as proposed in doc 11-18/0231r3?**

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| **CID** | **Page Number** | **Line Number** | **Comment** | **Proposed Change** |
| 1280 | 36 | 7 | ‘If the value of the Number of Sector Feedback field is 1, the RA field contains the MAC address of the STA that is the intended destination of the Sector Ack frame’The following Sector Feedback field also include a ‘RA’ field,which is redundant | Delete the RA field before TA, or delete the RA field of the single Sector Feedback when the Number of Sector Feedback field is 1. |

**Proposed resolution**: Rejected

**Discussion**: The motivation of a variant Sector Feedback field without RA subfield is for time saving, when the Number of Sector Feedback field equal to 1. But actually, it may not be effective, given how the LDPC and rounding of the Duration field works. On the other hand, it introduces a frame format that is not uniform.

**Straw Poll/Motion:**

**• Do you agree to accept the comment resolution for CID1280 as proposed in doc 11-18/0231r3?**