IEEE P802.11
Wireless LANs

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| Resolution for LB258 CID 2195 |
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Abstract

This contribution proposes resolutions to CID 2195 related to A-MSDU fragmentation/defragmentation.

Baseline document: REVme D1.0.

### Introduction

As shown in the following cited text,11ax added support for A-MSDU fragmentation/defragmentation, but only for HE STAs in the form of dynamic fragmentation. However this is not clearly stated in Clause 10 and some text relevant to A-MSDU fragmentation/defragmentation was not updated to include A-MSDU.

### Resolution of CID

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| **CID** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** |
| 2195 | Nancy Lee | 10.2.7 | 2081/61 | Overview section doesn't mention that A-MSDUs can be fragmented and defragmented | change to "The process of partitioning an MSDU, A-MSDU, or an MMPDU into smaller MAC-level frames, MPDUs, is called fragmentation. Fragmentation creates MPDUs smaller than the original MSDU, A-MSDU, or MMPDU length to increase reliability, by increasing the probability of successful transmission as defined in 10.2.2 (DCF) of the MSDU, A-MSDU, orMMPDU when channel characteristics limit reception reliability for longer frames. A STA may use fragmentation to use the medium efficiently in consideration of the duration available in granted TXOPs, as long as the rules in 10.4 (MSDU, (11ax)A-MSDU, and MMPDU fragmentation) are followed. Fragmentation is accomplished at each immediate transmitter. The process of recombining MPDUs into a single MSDU, A-MSDU, or MMPDU is defined as defragmentation. Defragmentation is accomplished at each immediate recipient. |

**Discussion:**

11ax added support for A-MSDU fragmentation to 10.11 under specified conditions. 10.2.7 needs to be updated to allow A-MSDU fragmentation and reference the conditions specified in 10.11, and 10.11 needs clarification that there is no A-MSDU fragmentation if no HE Capabilities element is present.

Also address the following comments on an earlier proposed resolution in 11-22/0530r0:

Instead of deleting NOTE 2, change it to say only dynamic fragmentation is supported for A-MSDUs.  Also clarify the change in 10.11 so the second case states that the HE Capabilities element is transmitted (and align the first and second sentences).

**Proposed resolution of CID2195:** REVISED

***TGm editor: Change subclauses 10.2.7 and and 10.11 as follows (CID 2195):***

**10.2.7 Fragmentation/defragmentation overview**

The process of partitioning an MSDU, A-MSDU, or an MMPDU into smaller MAC-level frames, MPDUs, is called fragmentation. Fragmentation creates MPDUs smaller than the original MSDU, A-MSDU, or MMPDU length to increase reliability, by increasing the probability of successful transmission as defined in 10.2.2 (DCF) of the MSDU, A-MSDU, or MMPDU when channel characteristics limit reception reliability for longer frames. A STA may use fragmentation to use the medium efficiently in consideration of the duration available in granted TXOPs, as long as the rules in 10.4 (MSDU, (11ax)A-MSDU, and MMPDU fragmentation) and 10.11 (A-MSDU operation) are followed. Fragmentation is accomplished at each immediate transmitter. The process of recombining MPDUs into a single MSDU, A-MSDU, or MMPDU is defined as defragmentation. Defragmentation is accomplished at each immediate recipient.

An MSDU transmitted under an HT-immediate block ack agreement shall not be fragmented even if its length exceeds dot11FragmentationThreshold. An MSDU or MMPDU transmitted within an A-MPDU that does not contain an S-MPDU (see 10.12.8 (Transport of S-MPDUs)) shall not be fragmented even if its length exceeds dot11FragmentationThreshold. MSDUs or MMPDUs carried in a group addressed MPDU shall not be fragmented even if their length exceeds dot11FragmentationThreshold.

NOTE 1—A fragmented MSDU or MMPDU transmitted by an HT STA to another HT STA can be acknowledged only

using immediate acknowledgment (i.e., transmission of an Ack frame after a SIFS).

NOTE 2—As specified in 10.4 (MSDU, A-MSDU, and MMPDU fragmentation) and 10.11 (A-MSDU operation), only dynamic fragmentation is supported for A-MSDUs.

NOTE 3—A fragmented MSDU or MMPDU transmitted by an S1G STA(#371) can be acknowledged either using immediate

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**10.11 A-MSDU operation**

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If the recipient STA has omitted the HE Capabilities element or the recipient STA has transmitted an HE Capabilities element with the A-MSDU Fragmentation Support subfield in the MAC Capabilities Information field set to 0, then an A-MSDU shall be carried, without fragmentation, within a single QoS Data frame. If the recipient STA has transmitted an HE Capabilities element with the A-MSDU Fragmentation Support subfield set to 1, then an A-MSDU may be fragmented, and each fragment is sent to the recipient in a QoS Data frame.(11ax)

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