IEEE P802.11
Wireless LANs

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| Resolution of CIDS 4448 4470 |
| Date: 2019-04-23 |
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Abstract

Resolutions to CIDs 4448 and 4470 from Letter Ballot 239 are provided.

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| **CID** | **Commenter** | **Clause** | **Comment** | **Proposed Change** |
| 4448 | Solomon Trainin | 9.7.3 | "HT-immediate block ack agreement or under an unsolicited block ack extension agreement" As it is defined in the subclause 10.26.1 Introduction "The block ack mechanism is initialized by an exchange of ADDBA Request/Response frames or by using the unsolicited block ack extension mechanism. After initialization, blocks of QoS Data frames may be transmitted from the originator to the recipient." In both cases it is HT-immediate block ack agreement so no need to mention the "under an unsolicited block ack extension agreement" | Remove "or under an unsolicited block ack extension agreement" in all appearances in the Table 9-528 |

**Proposed Resolution**: Reject

**Discussion**:

The text in table 9-528 in Draft 3.0 is correct. Table 9-528 is titled "A-MPDU contents in the data enabled

immediate response context" and therefore refers to data frame that are sent under the HT immediate block ack extentions. The changes to the table clarify that the rules also apply when the unsolcited block ack extention is employed. Furthermore, this text did not change between D1.0 and D2.0 and therefore changing it now, after a recirculation letter ballot, is not indicated.

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| **CID** | **Commenter** | **Clause** | **Comment** | **Proposed Change** |
| 4470 | Yongho Seok | 10.26.11 | Regardin CID 2134, the implemented spec changes are little different with the approved submission (11-18/1001r2).The below paragraph was deleted in the next revision (TGay D2.0 and D3.0)."Under an unsolicited block ack extension agreement, the NextExpectedSequenceNumber is initialized to zero upon successful establishment of the agreement. Under block ack agreement using segmentation and reassembly, the NextExpectedSequenceNumber is initialized to the value of the MSDU Starting Sequence Number subfield of the BAR Information field of the ADDBA Request frame that established the block ack agreement."I think that we still need similar text. | Change 10.26.2 as the following:10.26.2 Setup and modification of the block ack parameters...For each accepted block ack agreement, the originator shall set the sequence number of the first frame transmitted under the agreement to the value of the Block Ack Starting Sequence Control field of the ADDBA Request frame of the accepted block ack agreement. Under an unsolicited block ack extension agreement, the NextExpectedSequenceNumber is initialized to zero upon successful establishment of the agreement. Under block ack agreement using segmentation and reassembly, the NextExpectedSequenceNumber is initialized to the value of the MSDU Starting Sequence Number subfield of the BAR Information field of the ADDBA Request frame that established the block ack agreement. |

**Proposed Resolution**: Revise

**Discussion**:

The commentor is correct in that the previous resolution was never implemented by the editor as documented in 11-18-0067-11-00ay-11ay-d1-0-comment-database. Reviewing that comment:

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| **CID** | **Clause Number(C)** | **Page(C)** | **Line(C)** | **Type of Comment** | **Part of No Vote** | **Resolution** |
| **2134** | **10.24.4** | **118** | **31** | **T** | **Y** | **Resolve as in https://mentor.ieee.org/802.11/dcn/18/11-18-1001-02-00ay-cr-unsolicited-block-ack-part-2.docx** |

The resolution was (from 802.11-18/1001r2):

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| 2134 | Su Khiong Yong | 10.24.4 | What is "...at successful association establishment." means? | clarify |

**Resolution**: Revise

**Discussion**: Commentor does not supply a solution, but we agree that the current text is confusing.

*Instruct the Editor to replace the paragraph in 10.25.4 Receive buffer as shown*:

For each block ack agreement, the recipient maintains a MAC variable NextExpectedSequenceNumber. The NextExpectedSequenceNumber is initialized to the value of the Block Ack Starting Sequence Control field of the ADDBA Request frame of the accepted block ack agreement. Under an unsolicited block ack extension agreement, the NextExpectedSequenceNumber is initialized to zero upon ~~at~~ successful ~~association~~ establishment of the agreement. Under block ack agreement using segmentation and reassembly, the NextExpectedSequenceNumber is initialized to the value of the MSDU Starting Sequence Number subfield of the BAR Information field of the ADDBA Request frame that established the block ack agreement.

It is noted that Section 10.25.4 was deleted from 802.11md. However, the impact to this comment resolution was never discussed in 802.11ay. Therefore, the previous motion should be followed.

**Proposed Text Updates for CID 4470**

*Instruct the Editor to restore the removed text to Section 10.26.11.5 and insert the resolution to CID 2134 as shown below:*

For each unsolicited block ack extension agreement, the recipient maintains a MAC variable NextExpectedSequenceNumber.

The NextExpectedSequenceNumber is initialized to zero upon successful establishment of the unsolicited block ack extension agreement. Under unsolicited block ack extension agreement using segmentation and reassembly, the NextExpectedSequenceNumber is initialized to the value of the MSDU Starting Sequence Number subfield of the BAR Information field of the ADDBA Request frame that established the unsolicited block ack extension agreement.

Upon the receipt of a QoS Data frame from the originator for which an unsolicited block ack extension agreement exists, the recipient buffers the MSDU regardless of the value of the Ack Policy subfield within the QoS Control field of the QoS Data frame, unless the sequence number of the frame is older than the NextExpectedSequenceNumber for that unsolicited block ack extension agreement, in which case the frame is discarded because it is either old or a duplicate.

The recipient flushes received MSDUs from its receive buffer as described in this subclause.

If a BlockAckReq frame is received, all complete MSDUs and A-MSDUs with lower sequence numbers than the starting sequence number contained in the BlockAckReq frame shall be passed up to the next MAC process as shown in Figure 5-1 (MAC data plane architecture). Upon arrival of a BlockAckReq frame, the recipient shall pass up the MSDUs and A-MSDUs starting with the starting sequence number sequentially until there is an incomplete or missing MSDU or A-MSDU in the buffer. If no MSDUs or A-MSDUs are passed up to the next MAC process after the receipt of the BlockAckReq frame and the starting sequence number of the BlockAckReq frame is newer than the NextExpectedSequenceNumber for that unsolicited block ack extension agreement, then the NextExpectedSequenceNumber for that block ack agreement is set to the sequence number of the BlockAckReq frame.

If, after an MPDU is received, the receive buffer is full, the complete MSDU or A-MSDU with the earliest sequence number shall be passed up to the next MAC process.

If, after an MPDU is received, the receive buffer is not full, but the sequence number of the complete MSDU or A-MSDU in the buffer with the lowest sequence number is equal to the NextExpectedSequenceNumber for that unsolicited block ack extension agreement, then the MPDU shall be passed up to the next MAC process.

Each time that the recipient passes an MSDU or A-MSDU for a unsolicited block ack extension agreement up to the next MAC process, the NextExpectedSequenceNumber for that unsolicited block ack extension agreement is set to the sequence number of the MSDU or A-MSDU that was passed up to the next MAC process plus one.

The recipient shall pass MSDUs and A-MSDUs up to the next MAC process in order of increasing sequence number.