IEEE P802.11
Wireless LANs

|  |
| --- |
| Comment Resolutions on Unsolicited Block ACK |
| Date: 2018-04-02 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Joe Andonieh | Peraso |  |  | joe@perasotech.com |
| Chris Hansen | Peraso |  |  | chris@covariantcorp.com |

Abstract

Proposed resolutions to LB231 CIDs 1102, 1103, 1104, 1105, 1106, 1107, 1116, 1220, 1646, 1649, 2200, 2205, 2238

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number(C)** | **Comment** | **Proposed Change** |
| 1102 | Oren Kedem | 10.24.12.6 | For the first A-MPDU transmission for a specific tuple <TA, RA, TID>, the originator should transmit only a few MPDUs with the same tuple in the A-MPDU so as to synchronize WinStartR and WinStartB at the recipientPlease define better how much is few ? | 1 MPDU sent in A-MPDU aggregation |

Resolution: Revise

Discussion: We clarify the text that a BAR will lead to synchronization of the parameters.

*Instruct the Editor to modify the text from 802.11ay D1.2 as shown:*

10.25.12.6 Originator behavior and block ack state maintenance

In addition to the rules defined for the HT-immediate block ack extension specified in section 10.25.7.7 and 10.24.7.8, an originator that utilizes the unsolicted block ack extension mechanism:

* In order to synchronize the SSN, WinStartR, and WinStartB at the recipient, the originator shall employ a BAR to synchronize WinStartR and WinStartB at the recipient..

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1103 | Oren Kedem | 10.24.2 | Does in order to establish unsolicited agreement, the IE must be included in all indicated messages? There are two ways to establish: via association Req/Rsp or after the association with Information Req/Rsp. All the other should be indicated as optional | Support for the unsolicited block ack extension is a capability of a recipient. receiver that supports the Unsolicited Block Ack Extension shall indicate it in by insertion of the Unsolicited Block Ack Extension element in its transmitted Association Request, Association Response, Reassociation Request, Reassociation Response, Information Request and Information Response frames. |

Resolution: Reject

Discussion: Current text from D1.2 10.25.2 is:

"Support for the unsolicited block ack extension is a capability of a recipient. Support for the unsolicited block ack extension by the recipient is advertised by insertion of the Unsolicited Block Ack Extension element in all transmitted Probe Request, Probe Response, Association Request, Association Response, Reassociation Request, Reassociation Response, Information Request and Information Response frames. An originator shall not use the unsolicited block ack extension mechanism with a recipient that does not support the mechanism."

 It is clear what is expected from both the initiator and the reciepent. No change is needed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1104 | Oren Kedem | 10.24.2 | "An unsolicited block ack extension agreement may be torn down following rules defined in 10.24.5."10.24.5 discuss on sending DELBA for torn up the Block Ack agreement, does it apply to unsolicited Block Ack as well ? Please provide better description how it is done. | In order to torn up the unsolicited Block Ack agreement, the recipient shall send Information request without the Unsolicited extension and receives Information Rsp without the unsolicited block Ack IE. |

Resolution: Revise

Discussion: It is not necessary to send an Information request element. A DELBA frame is sufficient.

*Instruct the Editor to modify the text from 802.11ay D1.2 (bottom of p.150) as shown:*

An unsolicited block ack extension agreement may be torn down using a DELBA frame as described in 10.25.3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1105 | Oren Kedem | 10.24.2 | An unsolicited block ack extension agreement is established per <TA, RA, TID> tuple. The unsolicited block ack extension agreement is considered set up if the following conditions apply: The recipient transmits and the originator receives a BlockAck frame in response to an MPDU with Ack Policy field set to Implicit Block Ack Request sent by the originator; and | Consider to add also the following rule to the set:the recipient includes the Unsolicited Block Ack Extension element in one of its re/Association of Information messages. |

Resolution: Reject

Discussion: This additional rule is unnecessary. Originators will only transmit an MPDU using the unsolicited Block ACK protocol if it knows the recipient supports that protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1106 | Oren Kedem | 10.24.4 | "Under an unsolicited block ack extension agreement, the NextExpectedSequenceNumber is initialized to zero at successful association establishment"the NextExpectedSequenceNumber should be set to zero also upon unsolicited BACK agreement torn down or timeout | "Under an unsolicited block ack extension agreement, the NextExpectedSequenceNumber is initialized to zero at successful association establishment and after unsolicited BACK agreement was torn down. |

Resolution: Reject

The sequence number is a global variable and does not depend on the particular Block ACK mechanism.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1107 | Oren Kedem | 10.24.4 | it is unclear if a station that support the unsolicited block ack timeout can remove its agreement support from a specific user ? If yes, How? |  |

Resolution: Reject

Discussion: Stations always support BA timeout. The unsolicited BA agreement incorporates the same usage and timeout is not different than the Implicit timeout. Timeout will clear the full state of the BA agreement.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1116 | Oren Kedem | 9.4.1.159.4.2.265 | the BlockAckTimeout indicated in the ADDBA Response indicates the time in which no activity resets the agreement. Please indicate what the timeout indicates with related to Unsolicited Block Ack, what is resulted if expired? |  |

Resolution: Reject

Discussion: The IE and all of the fields contained in it clearly apply to all TA/TID combinations. Therefore, timeout will apply to all TA/TID combinations.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1220 | Adrian Stephens | 10.24.12.5 | "control can be flushed" -- this is not the proper use of "can". Also the condition "when the STA stops receiving from the <TA, TID> pair" is not well defined. | Turn into a "may" statement, and define the condition for "stops receiving". |

Resolution: Accept

*Instruct the Editor to modify the text from 802.11ay D1.2 Section 10.25.12.5 (top of p.165) as shown:*

* When the unsolicited block ack extension agreement is established, WinEndB is initialized to the sequence number of the first MPDU inside the first A-MPDU sent with a specific tuple <TA, RA, TID>, and WinStartB is set to WinEndB – WinSizeB + 1.
* The buffered MSDUs in the receive reordering buffer control may be flushed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1646 | Jinjing Jiang | 10.24.2 | what is "the tuple of the ADDBA Response", I guess, it means <TA, RA, TID> tuple, please clarify | Please clarify |

Resolution: Accept

*Instruct the Editor to modify the text from 802.11ay D1.2 (bottom of p.150) as shown:*

* The originator does not receive an ADBBA Response frame with Status Code equal to SUCCESS prior to the reception of the BlockAck frame, or the <TA, RA, TID> tuple of the ADBBA Response frame with Status Code equal to SUCCESS received prior to the reception of the BlockAck frame is different than the BlockAck frame tuple.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1649 | Jinjing Jiang | 9.4.2.265 | The buffer size subfield is the same for all possible BA sessions; however, if the STA has limited buffer but more than 2 concurrent BA sessions with different TIDs (small voice packets and long/bulk data), it might be better to differentiate the buffer allocation for different TIDs. The current design seems not very flexible. If the fixed number of buffer for each unsolicited BA session is preferred, it might be also advise in the extension element the maximum number of such unsolicited BA sessions that can supported. | Modify as suggested in the comment |

Resolution: Reject

Discussion: The unsolicited agreement is a simple and straightforward method to support buffer management. Stations with special cases can employ explicit block ack agreements for any TID,RA. It is also not clear why we need to define a maximum number of unsolicited Block ACK sessions. The mechanism is designed to allow the use of block ack that are similar to normal ack frames.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2200 | Joseph Levy | 9.6.5.2 | This text could be clearer and less confusing for the general case. I don't believe it is necessary for the value of the Dialog Token field to be discussed in the frame format section. How the STA set the field should be described elsewhere where the use of the frame is specified. Hence, simply deleting the sentence would allow the various uses of the field to be explained in the appropriate section. | Delete: "For an unsolicited block ack extension agreement, the Dialog Token field is set to zero. Otherwise, the Dialog Token field is set to a nonzero value chosen by the STA." |

Resolution: Reject

Discussion: The setting of Dialog Token is already included in this section in IEEE 802.11-2016.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2205 | Joseph Levy | 10.24.1 | It is not necessary to state that unsolicited block ack does not require the exchange of ADDBA Request/Response frames | Change: "The block ack mechanism is initialized by an exchange of ADDBA Request/Response frames or by using the unsolicited block ack extension mechanism which does not require exchange of ADDBA Request/Response frames."To: "The block ack mechanism is initialized by an exchange of ADDBA Request/Response frames or by the unsolicited block ack extension mechanism." |

Resolution: Accept

*Instruct the Editor to modify the text from 802.11ay D1.2 (top of p.148) as shown:*

10.25.1 Introduction

*Change the second paragraph as follows*

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. A block may be started within a polled TXOP, within an SP, or by winning EDCA contention. The number of frames in the block is limited, and the amount of state that is to be kept by the recipient is bounded. The MPDUs within the block of frames are acknowledged by a BlockAck frame, which is requested by a BlockAckReq frame.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2283 | Li-Hsiang Sun | 10.24.12.2 | Not clear why under Unsolicited block ack extension agreement recipient shall use full-state operation of scoreboard context control | specify the procedure to allow the use of partial-state scoreboard, or add a note indicating why it is not possible |

Resolution: Reject

The addition of partial-state scoreboard capability to the unsolicited Block ACK mechanism would add considerable complexity to the mechanism with little minimal benefit. Therefore, it was not included in the feature. It is not necessary to explain design decisions in the normative text.