IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resolution for CID 3014 | | | | |
| Date: December 16, 2022 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Alfred Asterjadhi |  |  |  |
| Duncan Ho |  |  |  |
| George Cherian |  |  |  |
| Gaurang Naik |  |  |  |
| Yanjun Sun |  |  |  |
| Abdel Karim |  |  |  |
| Mark Rison | Samsung |  |  |  |
| Michail Koundourakis |  |  |  |

Abstract

This submission proposes resolution for CID 3014 received against REVme D2.0 during LB270.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Minor updates to the proposed changes in 9.6.4.1
* Rev 2:
  + Fixed instructions to the editor (previous version was incorrectly referring to TGbe editor).
  + Deleted the last sentence in the 2nd bullet under 10.25.7 (since the frame is no longer ADDBA Request frame)
  + Minor updates to other parts of the text
* Rev 3: Additional changes based on offline feedback from Mark Rison and others.

***TGm editor: Please note baseline for this document is REVme D2.0***

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 TGm Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGm Draft (i.e., they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGm Editor: Editing instructions preceded by “TGm Editor” are instructions to the TGm editor to modify existing material in the TGm draft. As a result of adopting the changes, the TGm editor will execute the instructions rather than copy them to the TGm Draft.***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 3014 | Abhishek Patil | 1967.15 | 10.25.7 | An originator can send an ADDBA Request frame to modify/renegotiate the parameters for a BA session. In a protected BA setup, it is not clear how to distinguish an ADDBA sent to update WinStartR vs an ADDBA sent to update the parameters of the BA session. | Provide a mechanism (possibly define a new frame) to differentiate between the two cases. | **Revised**  Agree with the comment. The resolution defines a new action frame which is exclusively meant for updating the value of *WinStartB* and *WinStartR* at the recipient when the negotiated block ack agreement is a protected BA. The new frame replaces the usage of ADDBA Request frame for this purpose. Other portions of the spec are updated accordingly (including deleting the qualifier ‘robust’ since all BA frames are robust (per table 9-79), deleting ‘value of’ to be consistent with clause 1.4, and editorial updates for consistency, remove duplication, and improved readability).  **TGm editor, please implement changes as shown in 11-22/2206r3** |

* Block Ack Action frame details
* General

***TGm editor: Please add a row to Table 9-442 in this subclause as shown below:***

***Request to ANA editor: Please assign value < 128 so that it is not in the S1G range. Prefer value 3 if available.***

|  |  |
| --- | --- |
| * Block Ack Action field values | |
| **Block Ack Action**  **field values** | **Meaning** |
| <ANA> | PBAC WinStart Update |

***TGm editor: Please add the following new subclause after 9.6.4.4 as shown below:***

* + - 1. **PBAC WinStart Update frame format**

The PBAC WinStart Update frame is sent by an originator to update *WinStartB* and *WinStartR* at the recipient for a protected block ack agreement (see 10.25.7 (Protected block ack agreement)). The Action field of a PBAC WinStart Update frame contains the information shown in Table 9-<xxx> (PBAC WinStart Update frame Action field format).

|  |  |
| --- | --- |
| **Table 9-<xxx> - PBAC WinStart Update frame Action field format** | |
| **Order** | **Information** |
| 1 | Category |
| 2 | Block Ack Action |
| 3 | Block Ack Parameter Set |
| 4 | Block Ack Starting Sequence Control |

The Category field is defined in 9.4.1.11 (Action field).

The Block Ack Action field is set as defined in Table 9-442 (Block Ack Action field values) to represent PBAC WinStart Update.

The Block Ack Parameter Set field is defined in 9.4.1.13 (Block Ack Parameter Set field).

The Starting Sequence Number subfield of the Block Ack Starting Sequence Control field (see Figure 9-48 (Block Ack Starting Sequence Control subfield format)) contains the sequence number of the next MSDU to be sent under this block ack agreement. The Fragment Number subfield is set to 0.

**10.25.6.7 Originator’s behavior**

**10.25.6.7.1 General**

***TGm editor: Please update the contents of the following paragraph this subclause as shown below:***

When a QoS Data frame that was previously transmitted within an A-MPDU that had Normal Ack ack policy is discarded due to exhausted MSDU lifetime, the originator may send a BlockAckReq frame for a block ack agreement that is not a protected block ack agreement or a PBAC WinStart Update frame for a protected block ack agreement to shift the recipient’s *WinStartB* and *WinStartR* past the hole in the sequence number space that is created by the discarded Data frame and thereby to allow the earliest possible passing of buffered frames up to the next MAC process. Under a block ack agreement with segmentation and reassembly, the BlockAckReq frame shall contain only MPDU\_SSN and the PBAC WinStart Update frame shall contain only MPDU\_SSN and MSDU\_SSN fields of an MPDU that has the Start of MSDU subfield equal to 1.

* Protected block ack agreement

***TGm editor: Please update the contents of the following paragraph this subclause as shown below:***

A STA that has successfully negotiated a protected block ack agreement shall obey the following rule as a block ack originator in addition to rules specified in 10.25.6.7 (Originator’s behavior) and 10.25.6.8 (Maintaining block ack state at the originator):

* To update *WinStartB* and *WinStartR* at the receiver, the STA shall use a PBAC WinStart Update frame.

A STA that has successfully negotiated a protected block ack agreement shall obey the following rules for that agreement as a block ack recipient in addition to rules specified from 10.25.6.3 (Scoreboard context control during full-state operation) to 10.25.6.6 (Receive reordering buffer control operation):

* The STA shall not use the Starting Sequence Number subfield of the Block Ack Starting Sequence Control field in a BlockAckReq frame to update *WinStartB* and *WinStartR*. If the Starting Sequence Number subfield is greater than *WinEndB* or less than *WinStartB*, dot11PBACErrors shall be incremented by 1. If, for a block ack agreement with segmentation and reassembly, the MPDU Starting Sequence Number subfield is greater than *WinEndB* or less than WinStartB, dot11PBACErrors shall be incremented by 1.
* Upon receipt of a PBAC WinStart Update frame whose TID and transmitter address are the same as those of the protected block ack agreement, the STA shall update its *WinStartR* and *WinStartB* values based on the starting sequence number in the PBAC WinStart Update frame according to the procedures outlined for reception of BlockAckReq frames in 10.25.6.3 (Scoreboard context control during full-state operation), 10.25.6.4 (Scoreboard context control during partial-state operation), 10.25.6.6.1 (General), and 10.25.6.6.3 (Operation for each received BlockAckReq), while treating the starting sequence number as though it were the *SSN* of a received BlockAckReq frame or, in case of a block ack agreement with segmentation and reassembly, treating the MPDU starting sequence number as though it were the MPDU SSN of a received BlockAckReq frame.
* Block Ack Parameter Set field

***TGm editor: Please update the contents of the following paragraph this subclause as shown below:***

The Block Ack Parameter Set field is used in an ADDBA Request frame or an ADDBA Response frame to signal the parameters for setting up a block ack agreement and is used in a PBAC WinStart Update frame, under a protected block ack agreement, to identify the TID for which *WinStartB* and *WinStartR* at the recipient are being updated. The length of the Block Ack Parameter Set field is 2 octets. The Block Ack Parameter Set field is shown in Figure 9-143 (Block Ack Parameter Set field format). When carried in a PBAC WinStart Update frame all subfields except the TID subfield are reserved.

***TGm editor: Please update the contents of the following paragraph this subclause as shown below:***

When carried in an ADDBA Request frame or an ADDBA Response frame, the TID subfield contains the TC or TS for which the BlockAck frame is being requested. When carried in a PBAC WinStart Update frame, the TID subfield is used to identify the TID for which *WinStartB* and *WinStartR* are being updated.