IEEE P802.11
Wireless LANs

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| CC36 Resolution for CIDs related to MLO BA Procedure (Part 2) |
| Date: September 23, 2021 |
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 Abstract

This submission proposes resolutions for following 2 CID received for TGbe CC36: 7435, 4062

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Revised based on offline feedback from several members
* Rev 2:
	+ The contents are split across another document and this contribution focuses on protected BA aspects (2 CIDs)
	+ Baseline updated to TGbe D1.4 and [11-22/0082r3](https://mentor.ieee.org/802.11/dcn/22/11-22-0082-03-000m-lb258-resolution-for-cids-related-to-protected-ba.docx)
* Rev 3:
	+ Baseline updated to TGbe D1.4 and REVme D1.1
	+ Fixed the revision reference in the resolution column and the headers

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

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

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

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| **CID** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 7435 | Thomas Derham | 35.1 | 0.00 | Unprotected BAR allows DoS attack by advancing the sliding window of expected SNs. DoS attacks are becoming higher profile, and 11be should protect against them. PBAC mechanism is already defined in baseline | Mandate support and negotiation of PBAC between 11be devices | **Revised**Agree with the comment. However, the choice to support protected BA procedure is left to an implementation. Clause 10.25.7 is updated to provide clarification on PBAC signaling for an MLD and protected BA setup between two MLDs. In addition, the resolution adds a paragraph in clause 35.3.8 to clarify that when both MLDs negotiate a protected BA session between them, the originator MLD can send an ADDBA Request frame on any link to which the TID corresponding to the agreement is mapped to in order to update the WinStartB and WinStartR at the recipient MLD.**TGbe editor, please make changes as shown in doc 11-21/1582r3 tagged as 7435** |
| 4062 | Abhishek Patil | 35.3.7.1.1 | 261.41 | How does protect BA mechanism work in MLO? How does BAR (protected and unprotected) work in MLO - esp. since a successful scoreboard update needs to account for status from all links, which may not be immediate? Please clarify | As in comment | **Revised**Agree with the comment. However, the choice to support protected BA procedure is left to an implementation. Clause 10.25.7 is updated to provide clarification on PBAC signaling for an MLD and protected BA setup between two MLDs. In addition, the resolution adds a paragraph in clause 35.3.8 to clarify that when both MLDs negotiate a protected BA session between them, the originator MLD can send an ADDBA Request frame on any link to which the TID corresponding to the agreement is mapped to in order to update the WinStartB and WinStartR at the recipient MLD.**TGbe editor, please make changes as shown in doc 11-21/1582r3 tagged as 7435** |

***TGbe editor: The baseline for this document is 11be D1.4 and REVme D1.1.***

**10.25.7 Protected block ack agreement**

A STA indicates support for protected block ack by setting the MFPC subfield in the RSN Capabilities field to 1 (see 9.4.2.24.4 (RSN capabilities)) and the PBAC subfield in the Extended RSN Capabilities field to 1 (see 9.4.2.241 (RSN Extension element (RSNXE))). Such a STA is a PBAC STA; otherwise, the STA is a non-PBAC STA. All STAs affiliated with the same MLD shall advertise the same PBAC capability. A block ack agreement that is successfully negotiated between two PBAC STAs is a protected block ack agreement. A block ack agreement that is successfully negotiated between two PBAC capable MLDs is a protected block ack agreement. A block ack agreement that is successfully negotiated between two STAs when either or both of the STAs is not a PBAC STA is a block ack agreement that is not a protected block ack agreement. A block ack agreement that is successfully negotiated between two MLDs when either or both of the MLDs is not a PBAC capable MLD is a block ack agreement that is not a protected block ack agreement.

**35.3.8 Block ack procedures in Multi-Link operation**

***TGbe editor: Please add the following paragraph at the end of this subclause as shown below:***

[7435]If two MLDs have negotiated a protected block ack agreement, they shall follow the procedure described in 10.25.7 (Protected block ack agreement). In a protected block ack agreement between two MLDs, the originator MLD shall transmit a robust ADDBA Request frame, via its affiliated STA that is operating on an enabled link to which the TID belonging to the block ack agreement is mapped, to advance the *WinStartR* and *WinStartB* at the recipient MLD.