IEEE P802.11
Wireless LANs

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| LB 203 Comment Resolution for Clauses 8.6.5.3, 9.23, 9.3.2.10a |
| Date: 2014-07-14 |
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Abstract

This submission proposes resolutions for comments in clause 8.6.5.3, 9.23, and 9.3.2.10a of TGah Draft 2.0 with the following CIDs (4 CIDs):

* 3294
* 3333, 3334
* 3339

Revisions:

* Rev 0: Initial version of the document

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

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

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

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3294 | 176.03 | 8.6.5.3 | Clarify that the Originator Parameter is not present otherwise. | Insert at the end of this sentence: " Otherwise, it is not present." | Revised –TGah editor to make changes shown in 11/14/0962r0 under all headings that include CID 3294. |

***TGah Editor: Change the paragraph below in 8.6.5.3 as follows:***

The Originator Parameter field is present if dot11S1GOptionImplemented is true, and the Block Ack Action field is 1, and it is defined in 8.4.1.15a (Originator Parameter field). Otherwise, it is not present.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3333 | 264.54 | 9.23.1 | According to Annex B, block ack operation is mandatory for non-sensor type STAs (see page 497L12). But this is missing here. | Insert "that is a non-Sensor type STA or" immediately after " An S1G STA". | Revised –Agree in principle with the commenter. The proposed resolution resolves the inconsistency by specifying that an S1G STA that is a non-Sensor type STA shall support the HT immediate block ack operation.TGah editor to make changes shown in 11/14/0962r0 under all headings that include CID 3333. |

* **Block acknowledgment (block ack)**
* **Introduction**

**Instructions to TGah Editor: *Change this fourth paragraph as follows:***

A DMG STA and an S1G STA that is a non-Sensor type STA shall support the HT-immediate block ack extension. A DMG STA shall not use the HT-delayed block ack extension. An S1G STA that sets the A-MPDU Supported field in the S1G Capabilities element to 1 shall support the HT-Immediate block ack extension. An S1G STA that sets the HT-Delayed Block Ack field in the S1G Capabilities element to 1 shall support the HT-delayed block ack extension.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3334 | 267.41 | 9.23.7.3 | Do you need to specify the value of the RXVECTOR parameter here? It seems redundant given that each frame in an A-MPDU's value of FN is 0 anyways. | Remove " with RXVECTOR parameter RESPONSE\_INDICATION equal to NDP Response". Idem in 9.23.7.4. | Revised –Agree with the commenter. Proposed resolution is inline with the suggested change.TGah editor to make changes shown in 11/14/0962r0 under all headings that include CID 3334. |

* **HT-immediate block ack extensions**
* **Scoreboard context control during full-state operation**

**Instructions to TGah Editor: *Change bullet b) of this subclause as follows:***

* For each received Data frame that is related with a specific full-state operation HT-immediate block ack agreement, the block acknowledgment record for that agreement is modified as follows, where *SN* is the value of the Sequence Number subfield of the received Data frame, and FN is equal to 0 except when the received data MPDU is part of an A-MPDU that is not a VHT Single MPDU carried in an S1G PPDU in which case FN is equal to the value of the Fragment Number subfield of the received data MPDU:
* If , set to 1 the bit in position *SN* within the bitmap.
* If , set *WinEndR* = *SN* + *FN* and *WinStartR* = *SN + FN* – *WinSizeR* + 1.
* If ,
* Set to 0 the bits corresponding to MPDUs with Sequence Number subfield values from *WinEndR*+1 to *SN+FN* – 1.
* Set *WinStartR* = *SN* + *FN* – *WinSizeR* + 1.
* Set *WinEndR* = *SN* + *FN*.
* Set to 1 the bit at position *SN* in the bitmap.
* **Scoreboard context control during partial-state operation**

**Instructions to TGah Editor: *Change bullet b) of this subclause as follows:***

* For each received Data frame that is related with a specific partial-state operation HT-immediate block ack agreement, when no temporary record for the agreement related with the received Data frame exists at the time of receipt of the Data frame, a temporary block acknowledgment record is created as follows, where *SN* is the value of the Sequence Number subfield of the received Data frame and *FN* is equal to 0 except when the received data MPDU is part of an A-MPDU that is not a VHT Single MPDU carried in an S1G PPDU in which case FN is equal to the value of the Fragment Number subfield of the received data MPDU:
* *WinEndR* = *SN+FN.*

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3339 | 233.25 | 9.3.2.10a | The encoding (decoding) the BlockAck bitmap is described in 9.52 but it is better to put a declarative statement in this subclause to help the reader identify the correct subclause. | Insert "The bitmap of the NDP BlockAck frame is protected using the encoding procedure described in 9.54 (Bitmap Protection for NDP BlockAck frames)." immediately after the note, and insert at the end of P233L36: "The values of the BlockAck ID and Starting Sequence Number are obtained after decoding the NDP BlockAck frame as described in Clause 9.52 (Bitmap Protection for NDP BlockAck frames)". | Revised –Agree with the commenter. Proposed resolution accounts for the suggested change.TGah editor to make changes shown in 11/14/0962r0 under all headings that include CID 3339. |

* **Fragment BA procedure**

**Instructions to TGah Editor: *Change this subclause as follows:***

An S1G STA can partition an MSDU or an MMPDU into multiple fragments as described in 9.5 (Fragmentation) and send the MPDUs containing the fragments of the MSDU or of the MMPDU as independent transmissions. In this subclause a Fragment MPDU (F-MPDU) is an MPDU that contains a fragment of an MSDU or of an MMPDU.

An S1G STA indicates support of Fragment BA using the Fragment BA Support subfield of the S1G Capabilities Info field in the S1G Capabilities element. An S1G STA shall set the Fragment BA Support subfield to 1 in S1G Capabilities element if the dot11FragmentBAOptionImplemented is true. Otherwise, the S1G STA shall set the Fragment BA Support subfield to 0. An S1G STA (known as the originator STA) with dot11FragmentBAOptionImplemented equal to true sending frames to another S1G STA shall use the Fragment BA procedure described in this subclause if it has received from the STA (known as the recipient STA) a frame that included an S1G Capabilities element with the Fragment BA Support subfield equal to 1. Otherwise an S1G STA shall not use the Fragment BA procedure described in this subclause. Non-S1G STAs shall not use the Fragment BA procedure described in this subclause.

An originator STA may send F-MPDUs and set the Ack Policy of the F-MPDU to Block Ack. A recipient STA shall not send any frame as an immediate response to an F-MPDU that has the Ack Policy equal to Block Ack. An originator STA may solicit an immediate response following an F-MPDU by setting the Ack Policy of the eliciting F-MPDU to Implicit Block Ack Request.

The receiving STA that is the intended receiver of an F-MPDU with the Ack Policy equal to Implicit Block Ack Request shall send an NDP BlockAck frame after a SIFS, without regard of the idle/busy state of the medium, that is:

* an NDP\_1M BlockAck frame if the eliciting F-MPDU is either carried in a 1 MHz format PPDU or the receiving STA has indicated use of 1 MHz control response frames as described in 9.7.6.6 (Channel Width selection for Control frames).
* an NDP\_2M BlockAck frame if the eliciting F-MPDU is carried in a ≥ 2 MHz short/long format PPDU and the receiving STA has not indicated use of 1 MHz control response frames as described in 9.7.6.6 (Channel Width selection for Control frames).

The receiving STA shall generate the BlockAck ID and the Starting Sequence Control field of the NDP BlockAck as described in 8.9.1.6 (NDP BlockAck).

The receiving STA shall include the receipt status of a set of the F-MPDUs in the BlockAck Bitmap field of the NDP BlockAck frame as follows:

* If the originator STA elicits an NDP\_1M BlockAck frame as a response, the BlockAck Bitmap field of the NDP BlockAck frame indicates the receipt status of a set of F-MPDUs which depends on the value of the Fragment Number (FN) subfield in the Sequence Control field of the F-MPDU that elicited the response:
* If the value of the FN is not greater than 7 then the BlockAck Bitmap field shall indicate the receipt status of F-MPDUs with FNs from 0 to 7 (all inclusive).
* If the value of the FN is greater than 7 then the BlockAck Bitmap field shall indicate the receipt status of F-MPDUs with FNs from 8 to 15 (all inclusive).
* If the originator STA elicits an NDP\_2M BlockAck frame as a response, the BlockAck Bitmap field of the NDP BlockAck frame shall indicate the receipt status of the F-MPDUs with FNs from 0 to 15 (all inclusive).

NOTE—An NDP\_1M BlockAck frame can acknowledge only a limited number of consecutive fragments because its BlockAck Bitmap field size is 8. Instead, an NDP\_2M BlockAck frame can acknowledge up to the maximum number of fragments because its BlockAck Bitmap field size is 16.

The bitmap of the NDP BlockAck frame is protected using the encoding procedure described in 9.54 (Bitmap Protection for NDP BlockAck frames).

An originator STA that elicits an NDP\_1M BlockAck frame as a response shall not transmit an F-MPDU that has a FN greater than 7 if it has not previously received an NDP\_1M BlockAck frame that indicates successful reception of all F-MPDUs with FNs from 0 to 7.

The originator STA shall consider an NDP\_1M BlockAck frame (or an NDP\_2M BlockAck frame) as successfully received if the BlockAck ID field value equals the 2 LSBs (or 6 LSBs) of the Scrambler Initialization value in the Service field and the Starting Sequence Control field value equals the Sequence Number of the F-MPDU that elicited the response. The Scrambler Initialization value shall be obtained from the PHY-TXEND.confirm parameter SCRAMBLER\_OR\_CRC.

The values of the BlockAck ID and Starting Sequence Number are obtained after decoding the NDP BlockAck frame as described in 9.52 (Bitmap Protection for NDP BlockAck frames)

If the originator STA does not receive an NDP BlockAck frame as an immediate response, it may retransmit the last transmitted F-MPDU to re-solicit an immediate NDP BlockAck response.