IEEE P802.11  
Wireless LANs

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| Resolutions for “Obsolete?” BlockAcks  Basic BlockAckReq, Basic BlockAck, non-HT BlockAck and HT Delayed BlockAck | | | | |
| Date: 2018-16-1 | | | | |
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Abstract

This submission proposes resolutions for CIDs 57, 58, 61 and 70

R2 CIDs 70 and 137 added

R5 has edits by Menzo plus results of discussions Dec 7th 2017

R6 and 7 have additions based upon the discussions on Dec 7th 2017, Jan 5, 2018

* 1789.17 para deleted
* 784.21, new sentence
* Clause 10.24 changes

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| --- | --- | --- | --- | --- | --- | --- |
| CID | Commenter | Clause | Page | Line | Comment | Proposed |
| 57 | Graham Smith | 9.3.1.8.2 | 712 | 8 | Time to remove BlockAckReq? | Remove |
| 58 | Graham Smith | 9.3.1.9.2 | 716 | 14 | Time to remove basic BlockAck variant? | Remove |
| 61 | Graham Smith | 11.5.2.4 | 1802 | 31 | Time to remove Non-HT blockack ? | Remove, also at 2949L25, 2950L6 |
| 70 | Graham Smith | B4.17.1 | 2970 | 8 | HT-delayed block ack obsolete? But I see 50 other instances of HT-delayed Block ack where obsolete is not mentioned. Which is in error? | Is it obsolete or not? Correct |
| 137 | Mark R |  |  |  | We should not include obsolete material | Delete all material described as obsolete |

P711.56

*“DMG STAs use only the Compressed BlockAckReq variant and the Extended Compressed BlockAckReq variant.”*

So no worries there then.

No other reference to this outside of 9.3.1.8.2

CID 57 BlockAckReq variant and CID 58 Basic Block Ack variant

9.3.1.8.2 “The use of the **basic BlockAckReq variant is obsolete**. Consequently, this subclause might be removed in a later revision of the standard.”

9.3.1.9.2 “The use of the **basic BlockAck variant is obsolete**. This subclause might be removed in a later revision of the standard.

9.3.1.8 “BlockAckReq frame format”

This describes the BlockAckReq of which there are 5 variants. One of those variants is the “**Basic** BlockAckReq variant”. This, and only this is to be deleted.

“9.3.1.8.2 Basic BlockAckReq variant”

The term “BlockAckReq is used generally so we need to be careful.

**712.5 “NOTE—Reference to “a BlockAckReq” frame without any other qualification from other subclauses applies to any of the variants, unless specific exclusions are called out.”**

The term “Basic BlockAck” is used to refer to the “Basic BlockAckReq variant”

***So we need to remove all “Basic BlockAck”references*** as well as Basic BlockAckReq.

We do note that PSMP appears to use the basic variant.

At 1564.54 we read:

“Within a PSMP-DTT or PSMP-UTT between STAs where one is not an HT STA, BlockAckReq and BlockAck frames shall be exchanged through the use of an immediate block ack agreement and shall be the basic variants, i.e., Basic BlockAckReq and Basic BlockAck, respectively.”

In this case it is referring to the case where one STA is NOT an HT STA. As non-HT block ack is obsolete, I am assuming that this sentence can be deleted.

CID 61 Non-HT block ack agreement and CID 70 HT-delayed block ack

11.5.2.4. Table 11-4

“NOTE 1—**Non-HT block ack agreement is obsolete**. Support for this mechanism might be removed in a later revision of the standard.”

“NOTE 2—**HT-delayed block ack agreement is obsolete**. Support for this mechanism might be removed in a later revision of the standard.”

In response to CID 70, HT-delayed block ack may be useful in a subsequent revision of the standard and should be retained. What may have happened is that non-HT-delayed in some occasions got turned into HT-delayed, which may explain that a few mentions of it being deprecated slipped into the standard.

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Discussed in Berlin as part of document 17/0989

General consensus to remove but need to check Basic BlockAckReq and Basic BlockAck

Also required detailed editor instructions.

This submission 17/1137 was therefore prepared to consider removing these block acks.

Add – hoc meeting Dec 2017

* + 1. ACTION ITEM #1: Graham and Menzo to continue review of document.
    2. P1789.17 – reference to Block Ack Policy – may need to be adjusted as well.
       1. We need to find all the “immediate block ack policy” that do not have HT in front to address the removal of non-HT immediate.
       2. We may want to delete the full paragraph here at line 17. ACTIONED
    3. p1802 table 11-5 – this indicates that the Block Ack Policy is sometimes 0 (for DMG STAs) so the note we suggested before is not correct. The sentence at 784.21 should also address the case of the DMG STAs.
    4. Note Graham is asked to harmonize the changes across the various locations considering the DMG STA requirements and removal of the two features.
       1. DMG STA description did not update the info on page 784 to indicate their usage. This will have to be added

R6 and 7 have additions based upon the discussions on Dec 7th 2017, Jan 5, 2018

* 1789.17 para deleted
* 784.21, new sentence
* Clause 10.24 changes

CIDs 57, 58, 61

Deletion of Basic block ack.

RESOLUTION

REVISED

711.40 in Table 9-22 replace “Basic BlockAckReq” in column 4 with “Reserved”

711.28 edit as shown

The values of the Multi-TID, Compressed Bitmap, and GCR subfields determine which BlockAckReq frame variant is represented, as indicated in Table 9-22 (BlockAckReq frame variant encoding).

712.8 delete clause 9.3.1.8.2 “Basic BlockAckReq variant”

715.26 delete “The value 1 is not used in a Basic BlockAck frame outside a PSMP sequence.”

715.42 in Table 9-24 replace “Basic BlockAck” in column 4 with “Reserved”

716.14 delete clause 9.3.1.9.2 (Basic BlockAck variant)

769.11 at B14 change "Delayed Block Ack" to "Reserved"

769.11 at B15 change "Immediate Block Ack" to "Reserved"

771.50 delete "A STA sets the Delayed Block Ack subfield to 1 within the Capability Information field when

dot11DelayedBlockAckOptionImplemented is true and sets it to 0 otherwise."

771.54 delete "A STA sets the Immediate Block Ack subfield to 1 within the Capability Information field when

dot11ImmediateBlockAckOptionImplemented is true and sets it to 0 otherwise."

1394.32 modify as shown

QoS Data frames with a TID that corresponds to an HT-delayed block ack agreement.

1395.9 modify as shown

"QoS Data frames with a TID that corresponds to an HT-delayed block ack agreement."

1395.44 modify as shown

"QoS Data frames with a TID that corresponds to an HT-delayed block ack agreement."

1453.22 delete “other than a Basic BlockAckReq or Basic BlockAck frame”

1453.26 delete lines 26 to 32. ("If a Basic BlockAckReq or Basic BlockAck frame is carried in a non-HT PPDU, the transmitting STA shall transmit the frame using a rate supported by the receiver STA, if known (as reported in the Supported Rates and BSS Membership Selectors element and/or Extended Supported Rates and BSS Membership Selectors element in frames transmitted by that STA). If the operational rate set of the receiving STA or STAs is not known, the transmitting STA shall transmit using a rate from the BSSBasicRateSet parameter or using a rate from the mandatory rate set of the attached PHY if the BSSBasicRateSet is empty.")

1453.36 delete “But the Basic BlockAckReq and Basic BlockAck frames are subject to fewer restrictions because their use at times mimics a typical data-Ack exchange, where no BSSBasicRateSet rate restriction exists on the Data frame. In addition, the Basic BlockAck frame is significantly larger than the other Control frames.”

1522.35 - 1523.6 delete (including Figure 10-32—Message sequence chart for block ack mechanism: (a) setup, (b) data and acknowledgment transfer, and (c) teardown)

1523.9 edit as shown

“To set up a block ack agreement, an originator sends an ADDBA Request frame indicating the TID for which the block ack agreement is being set up. The Buffer Size and Block Ack Timeout fields in the ADDBA Request frame are advisory. A block ack agreement shall not be set up between a non-HT non-DMG STA and another STA .”

1524.19 delete clause 10.24.3 (Data and acknowledgment transfer using immediate block ack policy and delayed block ack policy)

1527.13 delete clause 10.24.4 (Receive buffer operation)

1528.5 edit as shown

“The block ack agreement may be torn down if there are no BlockAck, BlockAckReq, or MPDUs (sent under block ack policy) for the block ack's TID received from the peer within a duration of block ack timeout value (see 11.5.4 (Error recovery upon a peer failure)).”

1570.1 (PSMP ack rules) edit as shown

Acknowledgment for data transmitted under an HT-immediate block ack agreement may be requested implicitly using PSMP Ack setting of the Ack Policy field in Data frames or explicitly with a BlockAckReq or Multi-TID BlockAckReq frame. An AP that transmits Data frames with the Ack Policy field equal to PSMP Ack or that transmits a BlockAckReq or Multi-TID BlockAckReq frame addressed to a STA in a PSMP-DTT shall allocate sufficient time for the transmission of a BlockAck frame or Multi- TID BlockAck frame, respectively, in a PSMP-UTT allocated to that STA within the same PSMP sequence. A STA that has received a PSMP frame and that receives a QoS Data frame with the Ack Policy field equal to PSMP Ack or that receives a BlockAckReq or Multi-TID BlockAckReq frame shall transmit a BlockAck frame or Multi-TID BlockAck frame, respectively, in the PSMP-UTT of the same PSMP sequence.

1570.19 edit as shown

An AP that receives a QoS Data frame with the Ack Policy field equal to PSMP Ack during a PSMP-UTT shall transmit a response that is a BlockAck frame or Multi-TID BlockAck frame in the next PSMPDTT that it schedules for that STA, except if it has transmitted a BlockAck frame for such TIDs to the STA outside the PSMP mechanism.

1802.13 delete entry for "One or both of the STA are non-HT.", e.g. both "Block Ack Policy subfield equal to 1 | Immediate" and "Block Ack Policy subfield equal to 0 | Delayed"

1802.22 delete entry for "Both STAs are HT STAs, and at least one of the STAs sets the HT-delayed Block Ack subfield of the HT Capabilities element to 0.", e.g. "Block Ack Policy subfield equal to 0 | Delayed"

(or: 1802.22 change entry for "Both STAs are HT STAs, and at least one of the STAs sets the HT-delayed Block Ack subfield of the HT Capabilities element to 0." from "Delayed" to "HT-immediate")

1802.31 delete "NOTE 1—Non-HT block ack agreement is obsolete. Support for this mechanism might be removed in a later revision of the standard."

2949.28 (2952), and 2950.9 (2953) (PICS) Delete “9.3.1.8.2 (Basic BlockAckReq variant)”

2949.31 (2952), 2950.12 (2953) (PICS) Delete “9.3.1.9.2 (Basic BlockAck variant)”

3585.28 and 3586.25 delete "block-ack" (and remove parens)

3588.59 delete NOTE - keep line "[RTS CTS] (BlockAckReq BlockAck) | "

3586 delete lines 4 and 5

3588.05 - for discussion. I think the "|Ack[+HTC]) " term can be deleted.

3588.06 delete line.

3589 lines 7 and 8. For discussion. Are these necessary to support HT-delayed BA?

3590 lines 18 and 19 support HT-delayed BA. Ditto other locations that contain "delayed-no-ack "

3592 lines 6 and 7 delete "or immediate". These lines support HT-delayed

3592.50 delete "| Ack+HTC+mfb" and remove surrounding inner parens

3593 delete lines 25-29

3594 delete lines 22-26, replace vertical bar on previous line with semi-colon

3594 delete lines 56-61, replace vertical bar on previous line with semi-colon