IEEE P802.11
Wireless LANs

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| Solomon text to cover SFD 3.7 Block Acknowledgement  |
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Abstract

Text to cover following sections of SFD

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| --- | --- | --- | --- |
| **Section** | **Page** | **Line** | **Topic** |
| 3.7 | 16 | 1 | Block acknowledgement |

Discussion:

Terminology that should be introduced in some place:

1. EDMG STA – STA that asserted EDMG Supported field to 1 in DMG Parameters field or/and a non-AP or non-PCP STA declares that it is an EDMG STA by transmitting the EDMG Capabilities element.
2. EDMG STA is a DMG STA by default, it means that EDMG STA supports all relevant DMG features when communicating with DMG STA
3. EDMG STA that communicates with DMG STA is referred as DMG STA
4. If some definition is applicable for EDMG STA it should be specifically mentioned
5. Non-EDMG STA actually means DMG STA that is not capable of (1)
6. Non-DMG excludes any 60GHz capable STA

**6.3.29 Block Ack**

- No changes needed in the entire sub clause

**10.24 Block acknowledgment (block ack)**

**10.24.1 Introduction**

- No changes needed

**10.24.2 Setup and modification of the block ack parameters**

P1384L14

When a block ack agreement is set up between HT or DMG STAs, or EDMG STAs, the Buffer Size and Block Ack Timeout fields in the ADDBA Request frame are advisory.

P1384L42

When a block ack agreement is established between two HT STAs or two DMG STAs or two EDMG STAs, the originator may change the size of its transmission window if the value in the Buffer Size field of the ADDBA Response frame is larger than the value in the ADDBA Request frame. If the value in the Buffer Size field of the ADDBA Response frame is smaller than the value in the ADDBA Request frame, the originator shall change the size of its transmission window (WinSizeO) so that it is not greater than the value in the Buffer Size field of the ADDBA Response frame and is not greater than:

- the value 64 if the STAs that establish the block agreement are HT STAs or DMG STAs

- the value 1024 if the STAs that establish the block agreement are EDMG STAs.

When a block ack agreement is established between two EDMG STAs, a size of BlockAck bitmap the recipient shall use depends on the established size of the transmission window (WinSizeO). The size of the Block Ack bitmap for EDMG STAs shall be one of 64, 128, 256, 512 or 1024 bits. The size of the BlockAck bitmap shall be the smallest size that is greater than the WinSizeO for the established block ack agreement.

**10.24.3 Data and acknowledgment transfer using immediate block ack policy and delayed block ack policy**

P1387L56

A DMG and EDMG originator shall set the Retry subfield to 1 for any possible retransmissions of the MPDUs.

**10.24.4 Receive buffer operation**

- No changes needed

**10.24.5 Teardown of the block ack mechanism**

- No changes needed

**10.24.6 Selection of BlockAck and BlockAckReq variants**

Discussion:

DMG STA supports two variants of BlockAckReq compressed and extended compressed. There is no differences between these variants. Suggest to use Compressed BlockAckReq variant in EDMG STA. DMG STA supports two variants of BlockAck compressed and extended compressed.

BlockAck variant of EDMG BlockAck combines both so no need to use other BlockAck variants

EDMG STA interconnecting with another EDMG STA in EDMG BSS and in DMG BSS shall use EDMG BlockAck variant and Compressed BlockAckReq variant.

EDMG STA interconnecting with DMG STA in EDMG BSS and in DMG BSS is referred as DMG STA in relation to expected behavior.

Editor at P1389L41 add new paragraph:

In a DMG BSS and in an EDMG BSS BlockAck and BlockAckReq frames transmitted between EDMG STAs as part of the HT-immediate agreement shall be of EDMG Compressed BlockAck variant and Compressed BlockAckReq variant.

**10.24.7 HT-immediate block ack extensions**

**10.24.7.1 Introduction to HT-immediate block ack extensions**

P1390L7

A DMG STA and EDMG STA shall support HT-immediate block ack.

**10.24.7.5 Generation and transmission of BlockAck frames by an HT STA or DMG STA or EDMG STA**

**10.24.7.6.2 Operation for each received Data frame**

P1394L51

… has *SN*=*WinStartB* or if *SN>WinStartB*, the STA is a DMG STA or EDMG STA,

P1395L31

5) … For a DMG STA and EDMG STA, follow rules defined in item a) 2) above.

**10.24.7.7 Originator’s behavior**

P1396L50

An originator that is a DMG STA or EDMG STA shall…

P1396L62

An originator that is a DMG STA or an EDMG STA shall not …

**10.24.8 HT-delayed block ack extensions**

**10.24.8.1 Introduction**

P1397L50

A DMG STA and an EDMG STA shall not use HT-delayed block ack.

**10.24.11 DMG block ack with flow control**

Discussion: - not addressed yet

**11.5 Block ack operation**

**11.5.2.2 Procedure at the originator**

P1653L54

b) … All DMG STAs and EDMG STAs are capable of participating in the block ack mechanism.

**11.5.2.4 Procedure common to both originator and recipient**

P1654L31

Once a block ack agreement has been … Table 11-5 (Types of block ack agreement based on capabilities and ADDBA conditions for DMG STAs) for DMG STAs, Table 11-6 (Types of block ack agreement based on capabilities and ADDBA conditions for EDMG STAs)

**Table 11-6—Types of block ack agreement based on capabilities and ADDBA conditions for**

**EDMG STAs (placeholder)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Capabilties conditions**  | **ADDBA conditions** | **Type of BlockAckReq and BlocAck variant** | **Type of block ack agreement**  |
| One of the STAs is DMG STA  | Per Table 11-5 | Per Table 11-5 | Per Table 11-5 |
| Both STAs are EDMG STA | Indication of EDMG Flow control support is not set  | Compressed BlockAckReq and EDMG Compressed BlockAck | HT-Immediate |
| Both STAs are EDMG STA | Indication of EDMG Flow control support is set to EDMG Flow Control support | Compressed BlockAckReq and EDMG Compressed BlockAck | HT-Immediate +EDMG Flow control  |

**References:**

1. 11-15-1358-14-00ay-11ay Spec Framework.pdf
2. IEEE P802.11-REVmc/D8.0, Aug 2016