IEEE P802.11
Wireless LANs

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| Comment Resolution D0.3 Section 31.2.3 |
| Date: 2020-09-04 |
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|  |  |  |  |  |

Abstract

Comment Resolution for 802.11bd D0.3 CID 4, 5, 20, 26

Revision 0: 2020-09-04

Revistion 1: 2020-09-04 (after teleconference)

**Comments:**

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 20 | 23.37 | 37 | 31.2.3 | Agree in principal with the design for frame aggregation, however more changes to the baseline text are required to enable this feature in 11bd. | Commentor will prepare a submission | Revise. See changes in 802.11-20/0729r0 |
| 4 | 23.45 | 45 | 31.2.3 | Maximum MPDU size for NGV STA needs to be added to Table 9-25 Max DU sizes | The text sets the max MPDU size for NGV STA to 7991, it is in contradiction w/ Table 9-25, where NGV STA falls under note 4. Need a contribution to update Table 9-25 w/ NGV specific value | Revise. See changes in 802.11-20/0729r0 |
| 5 | 32.49 | 49 | 31.2.3 | The Buffer Size filed is not applicable in the case of NGV where there is no negotiation. The text is not clear. | Remove the reference to Buffer Size field | Reject. The buffer size is not a field that is negotiated, but a buffer size value is required to be supported for an NGV STA. This is a fixed value to allow interoperability without negotiation.  |
| 26 | 23.45 | 45 | 31.2.3 | For frame aggregation we have a maximum size in bits. This is enough for the receiver requirement, but for the transmitter the maximum exists in both bits and duration (microseconds). Add a reference to REVmd table 9-25, or recreate that requirement specific to 11bd. The risk is that at the lowest 11bd rates in 10MHz, 7991 bytes will be too long in terms of airtime. | Add text that harmonizes with the frame duration limits in REVmd 3.0 table 9-25. In particular 10MHz MCS 0,1,2 and 10 will not be able to transmit 7991 bytes. | Revise. See changes in 802.11-20/0729r0 |

*Changes:*

**31. Next Generation V2X (NGV) MAC specification**

**..**

**31.2 Operation in 5.9 GHz band**

**..**

**31.2.3 A-MSDU operation, A-MPDU operation, and BA operation**

Frame aggregation by an NGV STA operates without the requirement to exchange capabilities. This provides the ability to transmit an A-MPDU and an A-MSDU outside the context of a BSS (OCB). While it is not mandatory to transmit an A-MPDU or A-MSDU, an NGV STA shall support the reception of an A-MSDU and an A-MPDU of the sizes outlined below.

An NGV STA follows the procedures defined in Clause 10.11 (A-MSDU operation), Clause 10.12 (AMPDU operation) and Clause 10.25 (Block acknowledgement (block ack)) and, additionally, the procedures defined in this subclause.

An NGV STA shall support receiving a maximum MPDU length of 7991 octets (see Clause 10.11 (A-MSDU operation). An NGV STA shall transmit a maximum MPDU length of 7991 octets, though the maximum may be less for certain MCSes. An NGV STA shall not exceed the maximum TXOP limit of 5484us. The number of octets that fit in a TXOP limit is shown in table 31-X

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| MCS | 1SS 10 MHz | 2SS 10 MHz | 1SS 20 MHz | 2SS 20 MHz |
| 0 | 2262 | 4524 | 4524 | 7991 |
| 1 | 4455 | 7991 | 7991 | 7991 |
| 2 | 6717 | 7991 | 7991 | 7991 |
| 3 | 7991 | 7991 | 7991 | 7991 |
| 4 | 7991 | 7991 | 7991 | 7991 |
| 5 | 7991 | 7991 | 7991 | 7991 |
| 6 | 7991 | 7991 | 7991 | 7991 |
| 7 | 7991 | 7991 | 7991 | 7991 |
| 8 | 7991 | 7991 | 7991 | 7991 |
| 9 | N/A | N/A | 7991 | 7991 |
| 10 | 1096 | N/A | 2193 | N/A |

Table 31-1 Maximum NGV MPDU length

An NGV STA shall support 2us minimum time between the start of adjacent MPDUs within an AMPDU that the STA can receive, measured at the PHY SAP (see Clause 10.12.13 (Minimum MPDU Start Spacing field)).

An NGV STA shall support a fixed Block ACK policy. The Block ACK policy is not setup, modified or torn down. The Block ACK policy does not timeout. An NGV STA shall support the BA ~~B~~buffer ~~S~~size of 32, i.e., the number of MPDUs that can be held in its buffer. ~~No BA negotiation is required between two NGV STAs before doing BA operation between them.~~ Block Acks may be sent without a Block Ack Agreement in place.

**9.2.4.7 Frame Body**

**9.2.4.7.1 General**

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| --- |
| * Maximum data unit sizes (in octets) and durations (in microseconds)
 |
|  | Non-HT non-VHT (11ah)non-S1G non-DMG PPDU and non-HT duplicate PPDU | HT PPDU | VHT PPDU | .. | NGV PPDU |
| MMPDU size | 2304 | 2304 | See NOTE 1 |  | 2304 |
| MSDU size | 2304 | 2304 | 2304 |  | 2304 |
| A‑MSDU size | 3839 or4065 (see NOTE 2) (HT STA, see also Table 9-184 (Subfields of the HT Capability Information field(#221)(#67))), or N/A (non-HT STA, see also 10.11 (A‑MSDU operation)) | 3839 or 7935 (see also Table 9-184 (Subfields of the HT Capability Information field(#221)(#67))) |  |  |  |
| MPDU size | See NOTE 4 | See NOTE 5 | 3895 or 7991 or 11 454 (see also Table 9-271 (Subfields of the VHT Capabilities Information field)) |  | 7991 (see Table 31-1) |
| PSDU size | 212–1 (see Table 15-5 (DSSS PHY characteristics), Table 16-4 (HR/DSSS PHY characteristics), Table 17-21 (OFDM PHY characteristics), Table 18-5 (ERP characteristics)) | 216–1 (see Table 19-25 (HT PHY characteristics)) | 4 692 480 (~222.16) (see Table 21-29 (VHT PHY characteristics(#361))) |  | 7991 (see Table 31-1) |
| PPDU duration(M138) | See NOTE 6 | 5484 (HT\_MF; see 10.27.4 (L\_LENGTH and L\_DATARATE parameter values for HT-mixed format PPDUs)) or 10 000 (HT\_GF; see Table 19-25 (HT PHY characteristics)) | 5484 (see Table 21-29 (VHT PHY characteristics(#361))) |  | 5484 |
| NOTE 1—No direct constraint on the maximum MMPDU size; indirectly constrained by the maximum MPDU size (see 9.3.3.1 (Format of Management frames)).NOTE 2—Indirect constraint from the maximum PSDU size: 212–1 octets minus the minimum QoS Data frame overhead (26 octets for the MAC header and 4 octets for the FCS).NOTE 3—No direct constraint on the maximum A‑MSDU size; indirectly constrained by the maximum MPDU size.NOTE 4—No direct constraint on the maximum MPDU size; indirectly constrained by the maximum MSDU/MMPDU or (for HT STAs only) A‑MSDU size.NOTE 5—No direct constraint on the maximum MPDU size; indirectly constrained by the maximum A‑MSDU size.NOTE 6—No direct constraint on the maximum duration, but an L\_LENGTH value above 2332 might not be supported by some receivers (see last NOTE in 10.27.4 (L\_LENGTH and L\_DATARATE parameter values for HT-mixed format PPDUs)).(M138) |

***Add the new text to the end of the clause***

**10.12.2 A-MPDU length limit rules**

..

An NGV STA may transmit A-MPDU without exchange of HT Capabilities or VHT Capabilities with maximum length specified in 31.2.3. An NGV STA shall support reception of A-MPDU as specified in 31.2.3.

***Change the text in the clause***

**10.12.4 A-MPDU aggregation of group addressed Data frames**

A STA that is neither an AP, ~~nor a~~ mesh STA, nor an NGV STA shall not transmit an A-MPDU containing an MPDU with an RA that is a group address.

***Add the new text to the end of the clause***

**10.13 PPDU duration constraint**

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A STA shall not transmit an NGV PPDU that has a duration (as determined by the PHY-TXTIME.confirm primitive defined in 6.5.6 (PLME-TXTIME.confirm)) that is greater than

aPPDUMaxTime defined in Table 32-xx (NGV PHY characteristics).

***Change the text in the clause***

**10.25 Block acknowledgment (block ack)**

**10.25.1 Introduction**

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The block ack mechanism is initialized by an exchange of ADDBA Request/Response frames except for GLK-GCR block ack and NGV block ack. After initialization, blocks of QoS Data frames may be transmitted from the originator to the recipient. A block may be started within a polled TXOP, within an SP, or by winning EDCA contention. The number of frames in the block is limited, and the amount of state that is to be kept by the recipient is bounded. The MPDUs within the block of frames are acknowledged by a BlockAck frame, which is requested by a BlockAckReq frame.

***Add the new text to the end of the clause***

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

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An NGV STA does not setup or modify block ack parameters. NGV STAs use block ack policy as specified in 31.2.3.