IEEE P802.11
Wireless LANs

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| Resolutions Clause 31.2.3 comments for LB-251 |
| Date: 2021-05-10 |
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Abstract

This document provides proposed comment resolutions for some comments submitted in response to the 802.11 TGbd D1.0 WG letter ballot #251. CIDs: 1040, 1133, 1231,1282, 1426, 1427, 1429, 1430, 1495, 1496, 1497, 1498, 1499, 1565, 1603, 1626, 1752, and 1759 are addressed.

r1: as updated in the 11 March 2021 TGbd teleconference.

r2: as updated in the 20 April 2021 TGbd teleconference.

r3: with additional updates for the open comments for CID: 1752, 1282, 1430, 1498, 1040, and 1760. Also, rejection reason for 1429 was updated and should be reviewed.

The comments are available in: <https://mentor.ieee.org/802.11/dcn/20/11-20-1887-05-00bd-tgbd-lb251-comments.xlsx>. The proposed resolutions are grouped by clause, page and line number.

Status: Highlighting in CID column indicates the status of the discussion on the CID:

Not Discussed (not highlighted)

Discussed additional discussion required (date of discussion(s) is(are) located below CID number)

Discussed / ready for SP (date of discussion(s) is(are) located below CID number)

SP run / ready for Motion (date of the SP is located below the date of discussion)

Motioned (date of Motion is located below the date of the SP)

Resolution Status: Highlighting in the Resolution column indicates:

Yellow highlighted text needs to be discussed

Red highlighted text has been discussed and additional discussion is required

**CIDs for Clause 31.2.3, Page , line :**

| **CID** | **Comment** | **Proposed Change** | **Resolution** |
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| 1565 | What capabilities are referred in the phrase "... to exchange capabilities?" | Please clarify. | RevisedThere is no need to clarify as the requirement has been rewritten and the phase “… to exchange capabilities” is removed. The sentence is replaced with:Replace the sentence with:“NGV STA frame aggregation parameters are fixed and are defined in this clause.” Editor: please see 1495 |
| 1495 | "without the requirement to exchange capabilities" is ambiguous. It implies that frame aggregation parameters are not negotiated. | Change "Frame aggregation by an NGV STA operates without the requirement to exchange capabilities." to "Frame aggregation parameters for an NGV STA are specified in a manner beyond the scope of the standard." | RevisedThe frame aggregation parameters used by an NGV STA are fixed by the Standard and their specification is not out of scope. Replace the sentence with:“NGV STA frame aggregation parameters are fixed and are defined in this clause.” Editor: also see CID 1565. |
| 1496 | Since A-MPDU and A-MSDU aggregation is not negotiated, there needs to be either a primitive to specify the parameters. | Add primitives to configure frame aggregation parameters. | RejectedThere are no external parameters that are supplied to an NGV STA. An NGV STA may transmit A-MPDUs or A-MSDUs as long as the procedures defined in Clause 10.11, 10.12, and 10.25 are followed, the maximum MPDU length is not exceeded (as per table 31-1, and the 2µs minimum time between adjacent MPDUs is met.  |
| 1497 | A-MPDU/A-MSDU transmission is always optional. "While...." is not required at the cited location. | Change "While it isnot mandatory to transmit an A-MPDU or A-MSDU, an NGV STA" to "An NGV STA" | RevisedAgree in principle.Change: “While it is not mandatory to transmit an A-MPDU or A-MSDU, an NGV STA shall support the reception of an AMSDU and an A-MPDU of the sizes outlined below.”To: “An NGV STA may transmit an A-MPDU or A-MSDU and shall support the reception of an A-MSDU or A-MPDU with aggregation parameters as defined in this clause.” |
| 1426 | "An NGV STA shall transmit a maximum MPDU length of 7991 octets, though the maximum may be less for certain MCSs. 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 31-1 (Maximum NGV MPDU length).." 1) Confusing because the max is not 7991 in all cases. 2) Confusing because it's not clear which of 5484 and the table are normative. 3) Confusing because it's not clear whether this is about the TXOP limit or the maximum PPDU duration. 4) Double full stop | Change to "An NGV STA shall not transmit an MPDU whose length is greater than that shown in Table 31-1.NOTE---This corresponds to a maximum PPDU duration of 5484 <micro>s." | Accept |
| 1752 | TXOP limit is something that is specified in the EDCA parameters. | Change "An NGV STA shall not exceed the maximum TXOP limit of 5484us." to "An NGV STA shall not transmit PPDUs that exceed the maximum PPDU duration of 5484us."Change "The number of octets that fit in a TXOP limit is shown in Table 31-1 (Maximum NGV MPDU length)." to "The number of octets that fit in the maximum PPDU duration is shown in Table 31-1 (Maximum NGV MPDU size)."Change "a TXOP limit" to "the maximum TXOP duration" in line 2.Change the title of Table 31-1 from "Maximum NGV MPDU length" to "Maximum NGV MPDU size". | RevisedAgree in principle.Make the changes provided, except for: Change “a TXOP limit” to “the maximum TXOP duration” as all the other TXOP references have been removed. Change “The number of octets that fit in a TXOP limit” to “The maximum number of octets that may be in a NGV MPDU” Duration may be doubled – check 8 µs symbols.  |
| 1133 | "2us" should be "2 ╬╝s"? | change "2us" to "2 ╬╝s" | Revised –Accept in principle, the correct character was not provided in the comment due to comment tool limitations. Replace 2us with 2<micro>s |
| 1429 | "An NGV STA shall support 2us minimum time between the start of adjacent MPDUs within an A-MPDUthat the STA can receive, measured at the PHY SAP (see Clause 10.12.13 (Minimum MPDU Start Spacingfield))" 1) obviously this can only apply to things the STA can receive 2) it's not clear what the relevance of the PHY SAP is here 3) wrong xref | Change to "An NGV STA shall support 2 <micro>s MPDU start spacing (see 10.12.3)." | RejectThe minimum MPDU Start Spacing value is provided by the intended receiver. NGV operation does not support an intended receiver setting the minimum MPDU Start Spacing. All NGV STAs support a fixed and specified minimum time between MPDUs. While it is possible to describe this requirement by stating the MPDU start spacing is 2 <micro>s see 10.12.3, it is not clear how this relates to NGV. As the intended STA does not provide the Minimum MPDU Start Spacing field to the transmitting STA, this requirement would have to be worded to say that this value is fixed for NGV STA operation. It is clearer and simpler to just specify the fixed minimum time between MPDUs for all NGV STAs. Check the cross reference – 10.12.13 or is it 10.12.3Checked the reference 10.12.3 is Minimum MPDU Start Spacing field.Also consider deleting the can statement.Removed the “can statement” in the revised resolution to CID 1231  |
| 1231 | The sentence following Table 31-1 is confusing. It states that adjacent MPDUs in an A-MDPU shall be separated by a minimum of 2 microseconds, but it includes the extraneous words "that the STA can receive". The transmitting STA is not receiving, so those words should be deleted. | Delete "that the STA can receive" so the sentence reads "An NGV STA shall support 2us minimum time between the start of adjacent MPDUs within an A-MPDU measured at the PHY SAP ..." | Revise – Accept in principle.Change the sentence to read:“An NGV STA shall transmit adjacent MPDUs in an A-MPDU with a minimum of 2<micro>s between the MPDUs.”  |
| 1282 | the concept of a fixed Block ACK policy seems to be unique to NGV, hence there is no need to give it a name. All that is required is that the NGV STA behavior be specified. | Replace: "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 buffer size of 32, i.e., the number of MPDUs that can be held in its buffer. Block Acks may be sent without a Block Ack Agreement in place."With:"An NGV STA shall support Block ACK, the BA buffer size is set to 32. An NGV STA shall transmit a Block ACK when the BA buffer is full, after transmission the NGV STA shall clear the BA buffer." | Revised - "An NGV STA shall support Block ACK. An NGV STA shall have a BA buffer large enough to hold 32 MPDUs. An NGV STA shall transmit a Block ACK when a BA solicitation is received. After Block ACK transmission, the NGV STA shall clear the BA buffer."Just fix the buffer size. New Proposed resolution:“An NGV STA shall support block ack and does so without exchanging capabilities or creating a block ack agreement. An NGV STA shall have the following block ack configuration:* A-MSDU is supported
* The block ACK policy is HT-immediate block ack
* No timeout
* The number of buffers available is 32
* Each buffer is capable of holding 7991 octets (the maximum size of an A-MSDU)”

Note to editor: CIDs 1430, 1040 have the same resolution. |
| 1430 | "An NGV STA shall support a fixed Block ACK policy. The Block ACK policy is not setup, modified or torndown. The Block ACK policy does not timeout. An NGV STA shall support the BA buffer size of 32, i.e.,the number of MPDUs that can be held in its buffer. Block Acks may be sent without a Block Ack Agree-ment in place. " 1) OK, but which BA policy is it. 2) Obviously policies cannot be setup, or torn down etc. 3) No need to ad lib on what buffer size is. 4) Not clear what last sentence means. 5) Not clear about other BA params, e.g. A-MSDU permissibility | Change to "All MSDUs shall be transmitted under an implicit block ack agreement, with HT-immediate block ack policy, a buffer size of 32, no timeout, and A-MSDUs permitted." | RevisedChange to:"An NGV STA shall support Block ACK. An NGV STA shall have a BA buffer large enough to hold 32 MPDUs. An NGV STA shall transmit a Block ACK when the BA buffer holds 32 MPDUs. After transmission, the NGV STA shall clear those 32 MPDUs from the BA buffer."New Proposed resolution:“An NGV STA shall support block ack and does so without exchanging capabilities or creating a block ack agreement. NGV STAs have a fixed and specified NGV block ack configuration:* A-MSDU is supported
* The block ACK policy is HT-immediate block ack
* No timeout
* The number of buffers available is 32
* Each buffer is capable of holding 7991 octets (the maximum size of an A-MSDU)”

Note to editor: CIDs 1282, 1040 have the same resolution. |
| 1498 | If an NGV STA supports a fixed BlockACK policy, there needs to be configuration variables where it can be stored. | Add MIB variables to store the BA Policy parameters. | RejectThere are no MIB variables for the NGV Block ACK policy, the configuration variables are set by the specification. The BA buffer size is 32, and there is no Block ACK agreement.  |
| 1040 | In other places of the standard phrases like "buffer size of <NUMBER>" seem to be accompanied by units (octets? Bits? Etc) | Add unit | RevisedThe units are MPDUs, the requirement is reworked so “unit” is clear.Replace: “An NGV STA shall support the BA buffer size of 32, i.e.,the number of MPDUs that can be held in its buffer.”With: “An NGV STA shall have a BA buffer large enough to hold 32 MPDUs.”New Proposed resolution:“An NGV STA shall support block ack and does so without exchanging capabilities or creating a block ack agreement. NGV STAs have a fixed and specified NGV block ack configuration:* A-MSDU is supported
* The block ACK policy is HT-immediate block ack
* No timeout
* The number of buffers available is 32
* Each buffer is capable of holding 7991 octets (the maximum size of an A-MSDU)”

Note to editor: CIDs 1282, 1430 have the same resolution.Editor: please note units are missing from Table 31-1, Under the 4 row headings (e.g., 1SS10 MHz) above the MPDU lengths “(Octets)” should be added.  |
| 1626 | Block Ack is written in several different ways, e.g. Line 39 "Block ACK", Line 41 "Block Ack" | To avoid different ways of writing block Ack use always acronym BA | RevisedAgree in principle. But since this is a stand alone NGV clause defining BA operation. For the first use of block acknowledgement, the term should be spelled out. Therefore, at 39.38 change: “An NGV STA shall support a fixed Block ACK policy.” to “An NGV STA shall support a fixed block acknowledgement (BA) policy.” Change all other instances of Block ACK, block Ack, Block Acks to BA or BAs as required. At the following locations: 39.38, 39.39, 39.41 (two locations). Note to Editor: all instances of block ACK throughout clause 31 should be replaced by BA.  |
| 1759 | "An NGV STA shall support the BA buffer size of 32, i.e., the number of MPDUs that can be held in its buffer. Block Acks may be sent without a Block Ack Agreement in place." Is the BlockAck Bitmap length fixed? If fixed, then what will be the actual length? 32 bits or 64 bits? Can a Multi-STA BlockAck frame can be used? Or, only a Compressed format is allowed? Such conditions should be clarified to use BlockAck frames without any negotiation. | As in comment. | Revised:Agree in principle. Add the following at the end of the last paragraph of clause 31.2.3:“The NGV BA frame is a Compressed BA frame (see Clauses 9.3.1.8.1 and 9.3.1.8.2).”Note that even though the BA buffer size is fixed at 32, the NGV BA frame maintains the 64 bit BA bitmap and uses only the first 32 bits.  |
| 1760 | BlockAck size seems to be fixed. If dot11DynamicEIFSActivated is true, is there any intent to make the EIFS value more shorter by updating Table 10-8--Determination of the EstimatedAckTxTime based on properties of the PPDU causing the EIFS? | Update Table 10-8. | Reject:There is no intent to shorten the EIFS value and therefore dot11DynamicEIFSActivated is set to false. Check with Menzo copy Tomoko. |
| 1499 | If a BlockACK policy is not explicitly agreed to, wouldn't it be negotiated in a manner out of the scope of the standard? | Change "Block Acks may be sent without a Block Ack Agreement in place." | RejectThe Block ACK policy for NGV STAs is fix by the specification, nothing is negotiated, there is no BA agreement, and all NGV STAs support the NGV Block ACK. |
| 1427 | I think the heading for the middle column should say 10 MHz not 20 MHz | As it says in the comment | AcceptEditor Duplicate comment see CID 1602 |
| 1603 | First row, third column of Table 31-1 has wrong entry | Replace "2SS 20 MHz" with "1SS 20 MHz" in row 1, column 3 of Table 31-1 | AcceptEditor Duplicate comment see CID 1427 |

**References:**