IEEE P802.11
Wireless LANs

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| LB266: CR for Clause 9 and 10 |
| Date: September 12, 2022 |
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 Abstract

This submission proposes resolutions for following 9 CIDs received for TGbe LB266:

12958, 11123, 10842, 10708, 13126, 13127, 11987, 10844, 12940

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Changed the instructions to the editor for CID 11987

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

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

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

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| **CID** | **Commenter** | **Section** | **Pg.Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 12958 | Chunyu Hu | 9.3.3.2 | 172.20 | Given ML is part of EHT Capability, it makes more sense to put the ML element after EHT Capabilities. That is, move Multi-Link element to be after "EHT Operation" element in the table for Beacon and other similar ones (Table 9-60, 9-62, 9-63, 9-64, 9-65, 9-66, 9-67) | See comment. | **Rejected**Based on the ordering of the elements in Tables 9-60, 9-62, …, 9-67 in baseline, the ordering has no relationship with the features that the elements support. Therefore, there is no logical ordering of the elements in the cited tables. |
| 11123 | Brian Hart | 9.4.2.312.2.2 | 220.24 | As a matter of spec hygiene, what if a STA needs more than 20.4 GHz of frequency separation (e.g. 40 and 61 GHz) for STR? | Define n = 255 as 20.4 GHz or more | **Rejected**EHT is defined to operate between 1 to 7.250 GHz (see 4.3.16a). An EHT STA does not need to have the ability to signal 20.4GHz of separation. |
| 10842 | Jinsoo Choi | 9.6.7.36 | 256.11 | Why would the EHT BSS operating channel width have to include 22 MHz? Delete it. | As in comment | **Rejected** The channel width 22 MHz corresponds to DSSS operations, which is supported in an EHT BSS in the 2.4 GHz band.  |
| 10708 | Liangxiao Xin | 10.23.2.2 | 297.47 | When NSTR MLD starts to receive a PPDU on one NSTR link, it takes time for the NSTR MLD recognizes whether it is the intended receiver of the PPDU. Before the NSTR MLD recognizes the recipient of the PPDU, should it contend and/or access the channel on the other NSTR link? | It may not access the channel when backoff counts down to zero in this case | **Rejected**The highlighted problem occurs only when the reception on one link and transmission on another link occur nearly at the same time. In such cases, the rules in D2.1.1 allow the STA operating on a link that is a part of an NSTR link pair that has gained right to initiate transmission of a frame to not transmit that frame if the STA expects such a transmission to cause interference at the other STA of the NSTR link pair. Therefore, the STA may contend for medium access and in case the backoff counter reaches zero at the same time as PPDU reception starts on another link, the STA may decide to not transmit. Please refer to page 454 Line 31 of D2.0 – ‘A non-AP STA affiliated with an MLD that has gained the right to initiate transmission of a frame of an AC on a link through the rules for EDCA backoff in 10.23.2.4 (Obtaining an EDCA TXOP) may choose to not transmit any frame corresponding to that AC due to expected NSTR based interference at another STA within the MLD and lack of availability of an alternative frame in the queue that would not introduce the opportunity for such interference.’ |
| 13126 | Mark RISON | 10.23.2.2 | 297.53 | "An MA-UNITDATA.request primitive is received or the transmit queues associated with that AChave become nonempty due to the conditions in 35.3.16.4 (Nonsimultaneous transmit and receive(NSTR) operation), either of which causes" changes the sense of the sentence | Change to "An MA-UNITDATA.request primitive is received or the transmit queues associated with that AChave become nonempty due to the conditions in 35.3.16.4 (Nonsimultaneous transmit and receive(NSTR) operation), where that causes" | **Accepted****TGbe editor: Please note that the accepted change has been shown in this document tagged as 13126.** |
| 13127 | Mark RISON | 10.23.2.2 | 298.24 | "If explicitly indicated as in 35.3.16.4" is not clear | Merge into previous bullet: "If explicitly indicated, such as in 26.17.2.3.3 (Non-AP STA scanning behavior) and 35.3.16.4." and revert the insertion at line 47 | **Rejected**The proposed change is incorrect. The statement on line 47 requires the CW[AC] and QSRC[AC] to be left unchanged for case a) and h) but not for g). Therefore g) cannot be merged with h). |
| 11987 | Albert Petrick | 10.23.2.2 | 298.34 | Spelling error | Change "MPDUS" to "MPDUs" | **Accepted****TGbe editor: Please note that the accepted change has been shown in this document tagged as 11987.** |
| 10844 | Jinsoo Choi | 10.23.2.8 | 299.34 | Weren't all VHT/HE/EHT NDP Announcement frames amended to just NDP Announcement frame? It seems there are still mixed usage here and there throughout the spec, so need to unify them. | As in comment | **Revised**Agree with the commenter. Instances each of ‘EHT NDP Announcement frame’, ‘HE NDP Announcement frame’, and ‘VHT NDP Announcement frame’ occurring in 10.23.2.8 and 10.23.2.9 are revised to ‘NDP Announcement frame’.**TGbe editor: Please implement the changes shown in document [**<https://mentor.ieee.org/802.11/dcn/22/11-22-1477-01-00be-lb266-cr-for-clause-9-and-10.docx>] **tagged as 10844** |
| 12940 | Kirill Chemrov |   | 0.00 | There is a terms conflict between Link (identifier) ID in context of MLD and Link ID in context of Mesh, link identifier in context of TDLS. | Change the term (for example, Link Index) or add a note not to confuse these terms. | **Revised**Agree with the commenter in principle. In the context of TDLS, there is a ‘Link Identifier’ element (9.4.2.61). ‘The Link Identifier element contains information that identifies a TDLS direct link.’In the context of Mesh, the Mesh Peering Management frame element (9.4.2.101) has a subfield called ‘Local Link ID’ and ‘Peer Link ID’. Local Link ID – ‘The Local Link ID field is the unsigned integer value generated by the local mesh STA to identify the mesh peering instance.’In the context of DMG, the DMG STA Directional Transmit Activity Report element (9.4.2.290) has a subfield called ‘Link ID’ – ‘The Link ID subfield is a locally unique identifier for data transmit activities targeting a given receiver, or a group of receivers, that are always transmitted data to through a common transmit antenna pattern and transmit power.’Since many subfields in the baseline standard have similar names, choosing a different name for the MLO ‘Link ID’ is suitable. **TGbe editor: Please change all instances of ‘Link ID’ to ‘AP ID’ and all instances of ‘Link identifier’ to ‘AP identifier’ in the latest draft of 11be.**  |

***TGbe editor: Please note Baseline is 11be D2.1.1 and REVme D1.3***

**10.23 HCF**

**10.23.2 HCF contention based channel access (EDCA)**

**10.23.2.2 EDCA backoff procedure**

***TGbe editor: Please update bullet a) and j) as shown below: [CID 13126, 11987]***

The backoff procedure shall be invoked by an EDCAF if any of the following events occurs:

1. An MA-UNITDATA.request primitive is received or the transmit queues associated with that AC have become nonempty due to the conditions in 35.3.16.4 (Nonsimultaneous transmit and receive (NSTR) operation)where that (#13126) causes an MPDU corresponding to the EDCAF’s AC to be queued for transmission such that all of the following are true:

…

1. If explicitly indicated, such as in 26.17.2.3.3 (Non-AP STA scanning behavior).
2. If explicitly indicated as in 35.3.16.4 (Nonsimultaneous transmit and receive (NSTR) operation).

…

1. The transmission by the TXOP holder of all MPDUs (#11987) in a non-initial PPDU of a TXOP fails, as defined in this subclause, and the PPDU contains an MPDU that solicits an HE TB PPDU.

…

If the backoff procedure is invoked for a reason a) or h) above, CW[AC] or QSRC[AC] shall be left unchanged.

**10.23.2.8 Multiple frame transmission in an EDCA TXOP**

***TGbe editor: Please revise the following text as shown below. [CID 10844]***

A frame exchange, in the context of multiple frame transmission in an EDCA TXOP, may be one of the following:

* A frame not requiring immediate acknowledgment (such as a group addressed frame or a frame transmitted with an ack policy that does not require immediate acknowledgment) or an A-MPDU containing only such frames
* A frame requiring immediate acknowledgment (such as an individually addressed frame transmitted with an ack policy that requires immediate acknowledgment) or an A-MPDU containing at least one such frame, followed after SIFS by a corresponding acknowledgment frame
* A triggering frame or an A-MPDU containing at least one such frame, followed after SIFS by an HE TB PPDU or an EHT TB PPDU where the HE TB PPDU or the EHT TB PPDU is optionally followed after SIFS by an acknowledgment
* Either
	+ a NDP Announcement frame followed after SIFS by a VHT NDP followed after SIFS by an A-MPDU containing one or more VHT Compressed Beamforming frames, or (#10844)
	+ a Beamforming Report Poll frame followed after SIFS by an A-MPDU containing one or more VHT Compressed Beamforming frames, or
	+ an NDP Announcement frame followed after SIFS by an HE sounding NDP followed after SIFS by a PPDU containing one or more HE Compressed Beamforming/CQI frames, or (#10844)
	+ a broadcast NDP Announcement frame followed after SIFS by an HE sounding NDP followed after SIFS by a BFRP Trigger frame followed by HE TB PPDUs, or (#10844)
	+ a BFRP Trigger frame followed after SIFS by an HE TB PPDU containing one or more HE Compressed Beamforming/CQI frames, or
	+ an NDP Announcement frame followed after SIFS by an EHT sounding NDP followed after SIFS by a PPDU containing one or more EHT Compressed Beamforming/CQI frames, or (#10844)
	+ a broadcast NDP Announcement frame followed after SIFS by an EHT sounding NDP followed after SIFS by a BFRP Trigger frame followed after SIFS by EHT TB PPDUs, or (#10844)
	+ a BFRP Trigger frame followed after SIFS by an EHT TB PPDU containing one or more EHT Compressed Beamforming/CQI frames

**10.23.2.9 TXOP limits**

***TGbe editor: Please revise the following text as shown below. [CID 10844]***

* Transmission of one of the following sequences, provided that the sequence fits within the TXOP limit and it is only the response and the immediately preceding SIFS that causes the TXOP limit to be exceeded:
	+ An NDP Announcement frame and HE sounding NDP (#10844)
	+ An NDP Announcement frame and HE sounding NDP and BFRP Trigger frame (#10844)
	+ A BFRP Trigger frame
	+ An NDP Announcement frame and EHT sounding NDP (#10844)
	+ An NDP Announcement frame and EHT sounding NDP and BFRP Trigger frame (#10844)