IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB275 CR for Misc. CIDs | | | | |
| Date: 2023-10-08 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Guogang Huang | Huawei |  |  | [huangguogang1@huawei.com](mailto:huangguogang1@huawei.com) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes CR for 8 CIDs:

19002 19216 19299 19436 19465 19665 19882 20067

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revise the resolution for CID 19882.
* Rev 2: Revise the resolution for CID 19002.

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.***

| **CID** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- |
| 19002 | Chaoming Luo | 579.34 | 35.3.21.2 | The sentence is wrong. TDLS setup should not be sent over the TDLS direct link, according to 11.20.4 TDLS direct link establishment. | Remove 'or TDLS setup' | Revised  Agree in principle. The text is revised.  TGbe editor, please make the changes tagged by CID #19002 in 11-23/1806r2. |
| 19216 | Yoshio Urabe | 576.06 | 35.3.21.2 | "non-STA" should be "non-AP STA" in NOTE 1 | replace "non-STA" with "non-AP STA" | Accepted |
| 19299 | John Wullert | 576.06 | 35.3.21.2 | "non-STA" should be "non-AP STA" | As in comment | Accepted |
| 19665 | Laurent Cariou | 242.43 | 9.4.2.311 | "BSS bandwidth". It seems we are missing a definition of BSS bandwidth, and probably of EHT BSS bandwidth as well. Would help to have one to avoid misinterpretations. | as in comment | Rejected  The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined. |
| 20067 | Mengshi Hu | 241.12 | 9.4.2.311 | The "PE field duration" is not clear, although I can infer that this is the EHT PE field duration. Suggest adding "for an EHT TB PPDU solicited by a TRS Control subfield" same as the previous one. | Add "for an EHT TB PPDU solicited by a TRS Control subfield" after the "PE field duration" in Line 12. | Accepted |
| 19436 | Guogang Huang | 0.00 | 12.5.2.3.3 | Since the AAD construction for the MMPDU still follows the original method, i.e. the AAD will change if the link used for the transmission of the MMPDU is different, any encrypted MMPDU cannot change the link for the transmission. It's not flexible for the cross-link delivery of the MMPDU to make decision on which link is used for transmission before encryption, especially under the non-collocated AP MLD architecture discussed in UHR. Because the encryption is done in the UMAC and the communication between UMAC and LMAC is via the DS. | Mandate an MLO Link Information element to be included within the frame body of a link-specific individually addressed MMPDU and construct the AAD in the same way as the individually addressed Data frame | Rejected  This issue has been previously discussed and the task group could not reach a consensus. |
| 19465 | Bo Gong | 314.01 | 9.4.2.311 | Either the AP MLD or the non-AP MLD can provide the info on the Recommended Max Simultaneous Links, which is useful for the T2L mapping negotiation | Add a Negotiation Control field to carry the Recommended Max Simultaneous Links within the T2L Mapping Request/Response frame. | Revised  Agree in principle. The AP MLD can provide this info during an individual TTLM to prioritize a non-AP MLD.  TGbe editor, please make the changes tagged by CID #19465 in 11-23/1806r2. |
| 19882 | Yunbo Li | 573.06 | 9.4.2.311 | There is no need to signal whether a reported AP is operating on non-primary link or not by using the setting of the TBTT Info Field Type and TBTT Info Field Length subfields. Furthermore, it will change the original function of the TBTT Info Field Type and TBTT Info Field Length. Hence, it is not appropriate to use the word 'identify'. | If the reported AP is operating on the nonprimary link, the corresponding TBTT Information Field Type and TBTT Information Field Length subfields shall be set to 1 and 3, respectively. The non-AP MLD shall not probe a reported AP with the corresponding TBTT Information Field Type and TBTT Information Field Length subfields equal to 1 and 3, respectively. | Revised  Agree in principle. The combination of the TBTT Information Field Type 1 and TBTT Information Field Length 3 also should be applied to other cases.  TGbe editor, please make the changes tagged by CID #19882 in 11-23/1806r2. |

*TGbe editor: Please modify the second paragraph of subclause 35.3.21.2 as follows:（CID19002）*

When a non-AP MLD that has performed ML setup with an AP MLD establishes a single link TDLS direct link on one of its links, it shall set the context (i.e., security, SN/PN, BA) for the TDLS direct link with respect to the MLD MAC address of the non-AP MLD. For ease of description in the rest of this subclause, the single link TDLS context is described with respect to a TDLS non-AP STA affiliated with the non-AP MLD. The TDLS non-AP STA affiliated with the non-AP MLD shall be able to receive frames sent over the direct link with RA field set to the MLD MAC address of the non-AP MLD. When a TDLS non-AP STA affiliated with the non-AP MLD initiates TDLS discovery(CID 19002), it shall set the TA field of frames sent via the direct path to the MLD MAC address of the non-AP MLD.

*TGbe editor: Please modify NOTE 1 of subclause 35.3.21.2 as follows:（CID 19216）*

NOTE 1—Due to the nature of multi-link operation, when a Data frame that is transmitted by a non-AP(CID 19216) STA affiliated with a non-AP MLD and that is directed towards a peer TDLS STA (i.e., the DA field is set to the target’s MAC address) traverses an AP MLD, it can be relayed (i.e., transmitted by an AP affiliated with the AP MLD) on any link where the target is reachable. Furthermore, when a frame that was transmitted by a non-AP STA affiliated with a non-AP MLD traverses an AP MLD, the AP MLD sets the SA field to the transmitting non-AP MLD’s MLD MAC address. Therefore, when a non-AP STA affiliated with a non-AP MLD receives a frame from its corresponding associated AP that is affiliated with an AP MLD, it cannot determine the BSSID where the frame originated from or determine if the initiating non-AP STA is affiliated with a non-AP MLD or is a non-MLD non-AP STA.

*TGbe editor: Please modify the following of subclause 9.4.2.311 as follows:(CID 20067)*

The EHT Default PE Duration subfield is set to 1 to indicate that the PE field duration for an EHT TB PPDU solicited by a TRS Control subfield is 20 μs and set to 0 to indicate that the PE field duration for an EHT TB PPDU solicited by a TRS Control subfield(CID 20067) is the same as that indicated in the HE Operation Parameters field in the HE Operation element.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Resolution for CID 19465\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

*TGbe editor: Please modify the following figure of subclause 9.4.2.314 as follows:*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 B15 |
|  | Direction | Default Link Mapping | Mapping Switch Time Present | Expected Duration Present | Link Mapping Size | Extended TID-To-Link Control Present | Reserved | Link Mapping Presence Bitmap (Optional) |
| Bits: | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 8 |

**Figure 9-1001ap—TID-To-Link Control field format**

*TGbe editor: Please insert the following paragraph after the paragraph (“The Link Mapping Size subfield is set …”) of subclause 9.4.2.314 as follows:*The Extended TID-To-Link Control Present subfield is set to 1 if the Extended TID-To-Link Control field is present and 0 oth­erwise.

*TGbe editor: Please modify the following figure of subclause 9.4.2.314 as follows:*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element ID | | Length | Element ID  Extension | | TID-To-Link Mapping Control | | Mapping Switch Time | Expected Duration | Link Mapping Of TID 0  (Optional) |
| Octets: | 1 | | 1 | 1 | | 1 or 2 | | 0 or 2 | 0 or 3 | 0, 1 or 2 |
|  | … | Link Mapping Of TID 0  (Optional) | | | Extended TID-To-Link Control | |
| Octets: |  | 0, 1 or 2 | | | 0 or 1 | |

**Figure 9-1001ao—TID-To-Link Mapping element format**

***TGbe editor: Please insert the following text in the end of subclause 9.4.2.314 as follows:***

The Extended TID-To-Link Control field is defined in Figure 9-xxxx (Extended TID-To-Link field format).

|  |  |  |
| --- | --- | --- |
|  | B0 B3 | B4 B7 |
|  | Recommended Max Simultaneous Links | Reserved |
| Bits: | 4 | 4 |

**Figure 9-xxxx—Extended TID-To-Link Control field format**

The Recommended Max Simultaneous Links subfield has the same definition as the Recommended Max Simultaneous Links subfield of the Extended MLD Capabilities And Operations subfield of the Basic Multi-link element (See Figure 9-1001l (Extended MLD Capabilities And Operations subfield format)).

***TGbe editor: Please modify the second paragraph of subclause 35.3.7.1 as follows:***

When an AP MLD advertises a value L (where L is greater than 1) in the Recommended Max Simultaneous Links subfield of the Basic Multi-Link element, an associated non-AP MLD should not exchange frames simultaneously on more than L links unless the value of the Recommended Max Simultaneous Links subfield is updated through an individual TTLM negotiation after this info is advertised in a Beacon frame and a broadcast Probe Response frame.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*End of Resolution for CID 19465\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Resolution for CID 19882\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**35.3.19.2 Discovery of an NSTR mobile AP MLD**

***TGbe editor: Please modify the second bullet of the paragraph of subclause 35.3.19.2 as follows:***

The discovery procedure for an NSTR mobile AP MLD is the same as the procedure described in 35.3.4 (Discovery of an AP MLD) with the following exceptions:

* An AP affiliated with an NSTR mobile AP MLD and that is operating on the primary link shall indicate that it is an NSTR mobile AP MLD by setting AP MLD Type Indication subfield to 1 in MLD Capabilities And Operations subfield of Common Info field in the Basic Multi-Link element.
* An AP affiliated with an NSTR mobile AP MLD and that is operating on the primary link shall include a Reduced Neighbor Report element with the MLD Parameters subfield present in a TBTT Information field corresponding to a reported AP affiliated with the same NSTR mobile AP MLD and that is operating on the nonprimary link of the NSTR link pair in a Beacon and Probe Response frames that it transmits. The Neighbor AP TBTT Offset subfield, the BSSID subfield, the Short-SSID subfield, the BSS Parameters subfield and the 20 MHz PSD subfield shall not be present in the TBTT Information field for that reported AP. If a reported AP is operating on the nonprimary link，the corresponding TBTT Information Field Type and TBTT Information Length subfields shall be set to 1 and 3, respectively.
* A non-AP STA affiliated with a non-AP MLD shall not transmit a Probe Request frame to the AP affiliated with the NSTR mobile AP MLD and that is operating on the nonprimary link of the NSTR link pair. To request a complete profile of the AP operating on the nonprimary link, a non-AP STA affiliated with a non-AP MLD shall send a multi-link probe request to an AP affiliated with the NSTR mobile AP MLD and that is operating on the primary link (see 35.3.4.2 (Use of multi-link probe request and response)).
* The NSTR mobile AP MLD shall not respond to any received Probe Request frames on the nonprimary link.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*End of Resolution for CID 19882\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*