IEEE P802.11
Wireless LANs

|  |
| --- |
| 11be D5.0 Initial CA Ballot Miscellaneous CIDs |
| Date: 2024-03-10 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Liwen Chu |  |  |  | Liwen.chu@nxp.com |

Abstract

This submission proposes resolutions for multiple comments related to TGbe D5.0 with the following CIDs:

 ,22222, 22094, 22195, 22355, 22193, 22194

Revisions:

* Rev 0: Initial version of the document.

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** | **PP** | **LL** | **Comment** | **Proposed Change** | Resolution |
| 22222 | 81 | 20 | The text "non-MLO links" expands up to be "non Multi-Link Operation links" which doesn't make sense. | Change "non-MLD links" to "links" | RevisedDiscussion: in this subclause, the affiliated (non-MLO) upper MAC sublayer functions (only on AP) is related to the operation with a STA not affiliated with a non-AP MLD.TGbe editor to make changes in THIS DOCUMENT with CID tag 22222. |
| 22094 | 205 | 45 | [AK] The MLD does not transmit the Basic Multi-Link element, but only its affiliated STAs. Please revise the sentence as suggested. | Please revise the sentence as follows:" An MLD indicates which mode(s) it supports in the EML Capabilities field of the Basic Multi-Link element that is transmitted by its affiliated STA(s)". | RevisedDiscussion: the following styles are used in 11be D5.0: 1) a AP/STA affiliated with an AP/non-AP MLD transmits, 2) a MLD transmits, 3) a MLD thtough its affiliated AP/STA transmits. Most places use the style of case 1. To address the issue, “that it transmits” is removed.TG be editor: please change NOTE 1 in P207L42 as follows:NOTE 1—The EMLSR Mode and EMLMR Mode subfields are used to enable or disable the EMLSR and EMLMR modes, respectively. An EML Operating Mode Notification frame sets either of these subfields to a nonzero value only when the corresponding mode is supported by the receiving MLD. An MLD indicates which mode(s) it supports in the EML Capabilities field of the transmitted Basic Multi-Link element (see 9.4.2.312.2 (Basic Multi-Link element)).(#22094) |
| 22195 | 577 | 18 | Text in this paragraph has NSS with the SS as subscripts and as normal text. Given that EMLMR definition also uses subscripts (Page 59, Line 35), second instance of NSS here should be changed | Change "SS" to subscript in "NSS" | RevisedDiscussion: in 802.11 me D4.1 both NSS (e.g. at P220L54) and NSS (e.g. P623L22) are used to indicate the number of spatial stream. However in one paragraph, the same style should be used.TGbe editor to make changes in THIS DOCUMENT with CID tag 22195. |
| 22355 | 579 | 14 | [Al Petrick] Provide high level block diagram illustrating the EMLMR transceiver with multiple radios and multiple links identifying PHY / MAC functionality for transmitter and receiver w/antennas. This can be similar to other block diagrams in legacy amendments within the 802.11 baseline. This will enable the reader to better understand and follow the text. The diagram could be part of the examples in the AF annex. | As commented | RejectedDiscussion: The comment fails to identify the technical issue. The figure AF-57 in AF annex explicitly describes the time when link switch will happen. |
| 22193 | 579 | 25 | Two issues with the text of this sentence: - Operating Mode Notification frame should be “EML Operating Mode Notification” – Parentheses are not required around EHT in “(EHT) OM control” (See clause 9.2.4.7.8) Same comment applies on page 579, row 40. | Revise as “…defined by the exchanged EML Operating Mode Notification frame and the EHT OM control on one of the EMLMR link(s)…” | RejectedDiscussion: what the comment referred to is related to the initial frame exchange where the Operation Mode Notification frame is used for operating parameter change. The EML Operating Notification is used for the operating parameter announcement after the initial frame exchange. |
| 22194 | 579 | 49 | The “NSS” in the name of the subfield “EMLMR Supported MCS and Nss Set” advertised by the non-AP MLD” should use the upper case letter ‘s’. Same comment applies on page 579, line 50. | Change “Nss” to “NSS” | RevisedDiscussion: Agreed with the commenter that in the field name, NSS should be used instead of Nss. Another Nss should be replaced by NSS.TGbe editor to make changes in THIS DOCUMENT with CID tag 22194. |

**5.1.5.1a MLD MAC sublayer functions**

***TGbe etidtor: Please change subclause 5.5.5.1a as follows:***

**……**

When MLO is being used, the “Block Ack Scoreboarding” block in the MLD upper MAC sublayer manages the scoreboard context control and may manage the reception status in the setup links where the Block Ack session is established between the two MLDs. The “Block Ack Scoreboarding” block in the MLD lower MAC sublayer manages at least the Block Ack status of the MPDUs (of this Block Ack session) that are received on this link. The MLD lower MAC sublayer may convey Block Ack status of the MPDUs received on another link if it obtained such info from the other link. The “Block Ack Scoreboarding” block in the affiliated AP upper MAC sublayer manages the Block Ack status of the successfully received MPDUs from a STA that is not affiliated with a non-AP MLD over the corresponding link. In an implementation, this function may be distributed into the MLD lower MAC sublayer.(#22222)

**35.3.18 Enhanced multi-link multi-radio (EMLMR) operation**

The enhanced multi-link multi-radio (EMLMR) operation defined in this subclause allows a non-AP MLD with multiple radios on multiple links to listen a set of links as defined below for an initial frame sent by an AP affiliated with an AP MLD, followed by frame exchanges that satisfy the MCS and number of spatial streams (NSS) capabilities in the EMLMR mode on the link on which the initial frame was received. Here initial frame is transmitted in a PPDU whose NSS satisfies the receiving STA’s capabilities. (#22195)

……

When a non-AP MLD operates in the EMLMR mode, after the initial frame exchange, subject to its per-link spatial stream capabilities and operating mode defined by the exchanged Operating Mode Notification frame, (EHT) OM control on one of the EMLMR link(s), the non-AP MLD shall be able to support the following until the end of the frame exchange sequence initiated by the initial frame exchange:

—Receive PPDUs with the number of spatial streams up to the value as indicated in the EMLMR Supported MCS And NSS Set subfield of the EML Control field of the EML Operating Mode Notification frame at a time on the link for which the initial frame exchange was made.

—Transmit PPDUs with the number of spatial streams up to the value as indicated in the EMLMR Supported MCS And NSS Set subfield of the EML Control field of the EML Operating Mode Notification frame at a time on the link for which the initial frame exchange was made.

……

If an EMLMR STA affiliated with a non-AP MLD obtains a TXOP and transmits frames, the PPDUs that carry the frames are transmitted at an EHT-MCS and NSS indicated as supported in the EMLMR Supported MCS and NSS Set advertised by the non-AP MLD. (#22194)