IEEE P802.11
Wireless LANs

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| LB271 Comment Resolution Clause 9 EMLSR |
| Date: 2023-3-8 |
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Abstract

This submission proposes comment resolution(s) for the following 14 CID(s) received in LB271 on TGbe D3.0 related to 9.4.1.74 EML Control field:

CIDs:

15473, 16239, 17990, 17515, 17516, 15903, 15904, 16471, 16224, 16225

16223, 15360, 16392, 15701

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: added green tags
* Rev 2: updated during the presentation
* Rev 3: Revised resolutions for the deferred 3 CIDs 15903, 15904, 17515
* Rev 4: updated during the presentation

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| **CID** | **Commenter** | **Clause Number** | **Page.****Line** | **Comment** | **Proposed Change** | **Resolution** |
| 15473 | Xiandong Dong | 9.4.1.74 | 216.56 | The size of the EMLSR/EMLMR Link Bitmap should be consistent with the number of the links between two MLDs. The EMLSR/EMLMR Link Bitmap can be 1 Octet while the number of links is less than 8. | Adding a subfield, for example EMLSR/EMLMR Link Bitmap size, to the EML control field to indicate wthere the size is 8 bits or 16 bits. | RejectedIn TGbe D3.0, the field related to such link bitmap information is 2 octets and not variable in size. It would be overoptimization to make the 2-octet field variable in size.  |
| 16239 | Stephen McCann | 9.4.1.74 | 217.13 | The description of EMLSR and EMLMR mode setting is very long in this clause and should be replaced by a simpler options table. | Commenter will create a submission | Revised.Replaced the two paragraphs with a table.TGbe editor to make the changes with the CID tag (#16239) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 17990 | Vishnu Ratnam | 9.4.1.74 | 217.13 | Having separate bits to indicate EMLSR mode, EMLMR mode, EMLSR parameter update, etc in the EML OMN frame is inefficient. | Define a EML Mode field containing 3 or 4 bits to indicate the different modes for the EML OMN frame. Change names of fields to be more generic by removing "EMLSR/EMLMR" in the name of the Link Bitmap. | RejectedIn terms of the number of bits being used, combining the EMLSR Mode, EMLMR Mode, and EMLSR Parameter Update Control fields into 3-4 bits doesn’t seem to be more efficient than the current design using 3 bits.  |
| 17515 | Brian Hart | 9.4.1.74 | 217.20 | "An AP MLD with dot11EHTEMLSROptionActivated equal to true sets the EMLSR Mode subfield to the value obtained from the EMLSR Mode subfield of the received EML Operating Mode Notification frame." is procedure and does not bleong as normative text in clause 9 | Move to clause 35. Rewrite as a note with a xref in this subclause. Ditto P217L31, P217L62 | Revised.Since TGbe D3.0 P564L24 and L50 have the same normative behavior defined as follows “An AP affiliated with the AP MLD that received the EML Operating Mode Notification frame from the non-AP STA affiliated with the non-AP MLD should transmit an EML Operating Mode Notification frame with the EML Control field set to the same value as the EML Control field in the received EML Operation Mode Notification frame”,we can make the sentence as a note in subclause 9.4.1.74 and add a reference to 35.3.17 where the normative behavior is defined. Same for the EMLMR.TGbe editor to make the changes with the CID tag (#17515) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 17516 | Brian Hart | 9.4.1.74 | 217.20 | Missing "subfield" | "the EMLSR/EMLMR Link Bitmap subfield is not present" | Revised.The missing ‘subfield’ is in line44.TGbe editor to make the changes with the CID tag (#17516) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 15903 | Xiaofei Wang | 9.4.1.74 | 217.21 | Which frame is "The received EML Operating Mode Notification frame"? It is not clear from the context | clarify the text | Revised.The sentence is converted to a NOTE and revised for clarification and added reference to 35.3.17 where the normative behavior is defined.TGbe editor to make the changes with the CID tag (#15903) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 15904 | Xiaofei Wang | 9.4.1.74 | 217.21 | Does this sentence mean that no matter to which STA an AP is sending a EMLSR Mode subfield, it will always change to the latest value contained in the EML Operating Mode Notification frame? Is this rule bound to a certain STA? The transmitting STA of the EML Operating Mode notification frame maybe? Language like this may cause errors in behavior | rewrite the text to clarify the behavior | Revised.The sentence is converted to a NOTE and revised for clarification and added reference to 35.3.17 where the normative behavior is defined.TGbe editor to make the changes with the CID tag (#15903) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 16471 | Arik Klein | 9.4.1.74 | 217.48 | Need to add a requirement that the EMLSR Parameter Update Control subfield is set to 1 when the EMLSR Mode subfield is set to 1 . | Please revise the sentence as follows:" The EMLSR Parameter Update Control subfield is set to 1 when the EMLSR Mode subfield is set to 1 and the EMLSR Parameter Update field is present in the EML Operating Mode Notification frame..." | Revised.TGbe editor to make the changes with the CID tag (#16471) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 16224 | Stephen McCann | 9.4.1.74 | 217.50 | The sentence starting "When the..." is defining normative behaviour of how to set the subfield values. This behaviour should be moved out of clause 9 into clause 35. | Move the cited sentence to clause 35.3.17 on P566L11. | Revised.Converted the sentence as a NOTE below the paragraph and added a reference to 35.3.17.TGbe editor to make the changes with the CID tag (#16224) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 16225 | Stephen McCann | 9.4.1.74 | 217.50 | The sentences starting "When the..." at the cited reference and on P566L6 are almost identical, but one refers to the EMLSR Parameter Update Control subfield and the other the EMLSR Parameter Update field. One of these sentences needs to be corrected. | At the cited location change "When the EMLSR Parameter Update Control subfield is set to 1"to"When the EMLSR Parameter Update field is set to 1" | Rejected.The EMLSR Parameter Update Control subfield in 9.4.1.74 and the EMLSR Parameter Update field in 35.3.17 are two different fields.  |
| 16223 | Stephen McCann | 9.4.1.74 | 217.51 | What is a "different value". The text doesn't define what values the EMLSR Link Bitmap subfield should have. Additionally what happens when there is no previous EML Operating Mode Notification frame? | Define a specific value for the EMLSR Link Bitmap. | Rejected.The different value means that the value in the EMLSR Link Bitmap subfield of the current EML OMN frame is different from the value that was included in the EMLSR Link Bitmap subfield in the previous EML OMN frame.  |
| 15360 | John Wullert | 9.4.1.74 | 218.01 | Note 2 focuses on EMLSR but the final sentence suddenly shifts to EMLMR, which is confusing. | Rephrase final sentence to: "With the corresponding changes, this example also applies to EMLMR operation using the EMLMR Link Bitmap subfield as described below." | Revised.Agree with the commenter.TGbe editor to make the changes with the CID tag (#15360) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 16392 | Massinissa Lalam | 9.4.1.74 | 218.03 | In NOTE2, "the two bit positions," should be deleted. It makes the sentence unclear. | As in comment | Revised.Agree with the commenter.TGbe editor to make the changes with the CID tag (#16392) in doc.: IEEE 802.11-23/0337r4[https://mentor.ieee.org/802.11/dcn/22/11-23-0337-04-00be-lb271-cr-cl9-emlsr.docx] |
| 15701 | Yousi Lin | 9.4.1.74 | 218.15 | A non-AP MLD that is in EMLSR mode also has different per-link capabilities. And AP MLD needs to be informed about the capabilities. So EMLMR Supported MCS And NSS Set should be extended for both EMLMR and EMLSR. | as in comment | Rejected.Each STA’s capabilities are indicated in each STA’s Per-STA Profile during the association process and when a non-AP MLD is operating in the EMLSR mode each STA’s capabilities are used.The same comment was discussed in LB266 CID10869 and in LB266 the group couldn’t reach consensus. The following was the resolution for CID10869 in LB266:“A proposed resolution for this CID was discussed as part of the comment resolutions in https://mentor.ieee.org/802.11/dcn/22/11-22-1434-04, however the group could not reach consensus on a proposed change that would resolve the comment. For the listed “CIDs” in green font, wherein the detailed proposed resolution is shown in the last column of the table in 11-22/1773r9 (https://mentor.ieee.org/802.11/dcn/22/11-22-1773-09-00be-11-22-xxxx-00-lb266-crs-for-cids-in-quarantine-part-1.docx)” |

**TGbe Editor to make the following changes in Subclause 9.4.1.74 (EML Control field) in TGbe D3.0**

**9.4.1.74 EML Control field**

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**TGbe Editor to replace the following two paragraphs (P217L13 and P217L24 in TGbe D3.0) with the Table 9-xx in Subclause 9.4.1.74 (EML Control field) in TGbe D3.0 (#16239):**

**Table 9-xx—EMLSR Mode subfield and EMLMR Mode subfield**

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| **Subfield** | **Description** |
| EMLSR Mode | If a non-AP MLD supports enhanced multi-link single radio operation (see 35.3.17 (Enhanced multi-link single radio operation)): Set to 0 to indicate that the EMLSR mode is disabled for the non-AP MLD. Set to 1 to indicate that the EMLSR mode is enabled for the non-AP MLD.If a non-AP MLD does not support enhanced multi-link single radio operation (see 35.3.17 (Enhanced multi-link single radio operation)) or if the EMLMR Mode subfield is equal to 1: Set to 0.(#17515, 15903)NOTE - An AP MLD with dot11EHTEMLSROptionActivated equal to true sets the EMLSR Mode subfield to the value obtained from the EMLSR Mode subfield of a received EML Operating Mode Notification frame when responding to that frame (see 35.3.17 (Enhanced multi-link single radio operation)). |
| EMLMR Mode | If a non-AP MLD supports enhanced multi-link multi-radio operation (see 35.3.18 (Enhanced multi-link multi-radio operation)): Set to 0 to indicate that the EMLMR mode is disabled for the non-AP MLD. Set to 1 to indicate that the EMLMR mode is enabled for the non-AP MLD.If a non-AP MLD does not support enhanced multi-link multi-radio operation (see 35.3.18 (Enhanced multi-link multi-radio operation)) or if the EMLSR Mode subfield is equal to 1: Set to 0.(#17515)NOTE - An AP MLD with dot11EHTEMLMROptionActivated equal to true sets the EMLMR Mode subfield to the value obtained from the EMLMR Mode subfield of a received EML Operating Mode Notification frame when responding to that frame (see 35.3.18 (Enhanced multi-link multi-radio operation)). |

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 Basic Multi-Link element that it transmits (see 9.4.2.312.2 (Basic Multi-Link element)).

When the EMLSR Mode subfield is set to 1, the EMLSR/EMLMR Link Bitmap subfield is the EMLSR Link Bitmap subfield. When the EMLMR Mode subfield is set to 1, the EMLSR/EMLMR Link Bitmap subfield is the EMLMR Link Bitmap subfield. When the EMLSR Mode subfield is set to 0 and the EMLMR Mode subfield is set to 0, the EMLSR/EMLMR Link Bitmap (#17516)subfield is not present.

When the EMLSR Mode subfield is set to 1, the EMLSR/EMLMR Link Bitmap subfield is the EMLSR Link Bitmap subfield. When the EMLMR Mode subfield is set to 1, the EMLSR/EMLMR Link Bitmap subfield is the EMLMR Link Bitmap subfield. When the EMLSR Mode subfield is set to 0 and the EMLMR Mode subfield is set to 0, the EMLSR/EMLMR Link Bitmap is not present.

The EMLSR Parameter Update Control subfield indicates whether the EMLSR Parameter Update field is present in the EML Operating Mode Notification frame. The EMLSR Parameter Update Control subfield is set to 1 when (#16471)the EMLSR Mode subfield is equal to 1 and the EMLSR Parameter Update field is present in the EML Operating Mode Notification frame, and set to 0 otherwise. (#16224)When included in a frame sent by an AP affiliated with an AP MLD, the EMLSR Parameter Update Control subfield is set to 0.

(#16224)NOTE - (see 35.3.17 (Enhanced multi-link single radio operation)).

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NOTE 2—As an example, when a non-AP MLD enables three links and the first link has Link ID equal to 0, the second link has Link ID equal to 1, and the third link has Link ID equal to 2, and the two links with Link ID equal to 1 and Link ID equal to 2 are used for the EMLSR operation, (#16392)the second bit and the third bit positions of the EMLSR Link Bitmap subfield are set to 1 and other bit positions are set to 0. (#15360)This example also applies to the EMLMR operation using the EMLMR Link Bitmap subfield as described below.