IEEE P802.11
Wireless LANs

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| LB271 CR for Reconfiguration ML element - part 1  |
| Date: March 12, 2023 |
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 Abstract

This submission proposes resolutions for following 12 CIDs received for TGbe LB271:

15369 15481 15595 15950 15951 15952 15953 15954 15955 15956

16443 18295

Remaining CIDs:

15950 15951 15952 15953 15956 17667

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Green tagging of CIDs by Alfred. Added editor instruction for CID 15951.
* Rev 2: Updates to some editor instruction.
* Rev 3: Updates during the conf call. Deferred 6 CIDs highlighted above.
* Rev 4: Updates to resolution for 5 deferred CIDs. Added CID 17667. CID 16443 is already resolved by 23/765r4.
* Rev 5: Revision to the resolution of deferred CID 17667 per offline feedback.

***TGbe editor: The baseline for r4 of this document is 11be D3.2.***

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 | Clause | Page | Comment | Proposed Change | Resolution |
| 15369 | 9.4.2.312.4 | 267.22 | There is a grammatical problem with the sentence that makes it hard to parse: "The STA MAC Address subfield of the STA Info field carries the MAC address of the AP can operate on the link identified by the Link ID subfield and is affiliated with the same MLD as the STA that transmitted the Reconfiguration Multi-Link element." | Rephrase as "The STA MAC Address subfield of the STA Info field carries the MAC address of the STA that operates on the link identified by the Link ID subfield and is affiliated with the same MLD as the STA that transmitted the Basic Multi-Link element." | RevisedText has been revised as per the suggestion.TGbe editor, please make the changes tagged by CID #15369 in 11-23/0361r3. |
| 15481 | 9.4.2.312.4 | 267.13 | The size of Operation Parameters subfield should be 0 or 3 Octets. | As in comment | RevisedThe size of Operation Parameters subfield is modified to be 0 or 3 Octets.TGbe editor, please make the changes tagged by CID #15481 in 11-23/0361r3. |
| 15595 | 9.4.2.312.4 | 267.13 | the length of Operation Parameters subfield in Figure 9-1002y should be 0 or 3 octets, not 0 or 2 octets | as in comment | RevisedSame resolution as CID 15481.TGbe editor, please make the changes tagged by CID #15481 in 11-23/0361r3. |
| 15950 | 9.4.2.312.4 | 266.30 | The Link ID field identifies the AP/link for which information is being provided in the Per-STA Profile of the Reconfiguration ML element. The Link ID field description should be revised to reflect this. | Modify Link ID description to"The Link ID subfield is as defined in 9.4.1.75 (Link ID Info field) and specifies a value that uniquely identifies the link for which information is being provided in the Per-STA Profile subelement." | RejectedThe suggested resolution for this CID was discussed but the group didn’t reach consensus.  |
| 15951 | 9.4.2.312.4 | 266.47 | The Reconfiguration ML element is used across different ML reconfiguration operations including AP Removal and to indicate updates to ML operation parameters. Other potential usage of this element were proposed in D2.0 round. The 'Operation Update Type' subfield should be defined such that it can be used to indicate these different ML reconfiguration use cases and new ones in future. Hence it is better to rename this field to a more generic name such as "Reconfiguration Operation Type" to be able to use and extend to various types of ML reconfiguration operations. | Rename the 'Operation Update Type' subfield to 'Reconfiguration Operation Type' as per reasons in the comment. | RevisedAgree in principle. Revised text to rename the 'Operation Update Type' subfield to 'Reconfiguration Operation Type'. Also, added instruction for the editor to rename the occurrence of this subfield in other clauses.TGbe editor, please make the changes tagged by CID #15951 in 11-23/0361r4. |
| 15952 | 9.4.2.312.4 | 266.64 | The Operation Parameters Present subfield is not needed, since presence of the Operation Parameters subfield can be indicated based on the Operation Update Type value. If the value is set to 0, the Operation Parameters subfield is included. This saves reserved bits in the STA Control field for future extensibility. | Remove the Operation Parameters Present subfield and make the bit Reserved. Indicate when the Operation Update Type is set to 0 then the Operation Parameters subfield is present. | Rejected Members prefer to keep the present bit to simplify the parsing and keep similar behavior as the Basic ML element where present bits are used to indicate presence of subfields. |
| 15953 | 9.4.2.312.4 | 267.01 | The presence of fields in the STA Info field can also be indicated by the Operation Update Type field value. Capture this in the text. | Modify to "The STA Info field consists of fields whose presence is indicated by the subfields of the STA Control field or by the Operation Update Type field value. | RejectedAgree that the presence of fields in the STA Info field can also be indicated by the Operation Update Type subfield value. Since the Operation Update Type subfield is also part of STA Control field, current text in D3.2 already captures this aspect. No further changes needed. |
| 15954 | 9.4.2.312.4 | 267.02 | The text describing in which order STA Info field appear is not needed, since Figure 9-1002y shows the order. Such text is also not used for the STA Info field for the Basic ML element. | Remove following text "The subfields in the STA Info field appear in the same order as their corresponding presence subfield in the STA Control field." | RevisedAgree in principle. Text is revised to remove the indicated text.TGbe editor, please make the changes tagged by CID #15954 in 11-23/0361r3. |
| 15955 | 9.4.2.312.4 | 267.16 | The Operation Parameters field is 3 octets long as indicated in Figure 9-1002z. | Modify size of the Operation Parameters field to be 0 or 3 in Figure 9-1002y. | RevisedSame resolution as CID 15481.TGbe editor, please make the changes tagged by CID #15481 in 11-23/0361r3. |
| 15956 | 9.4.2.312.4 | 268.21 | Subfield name A-MSUD Length does not match with the name of corresponding present subfield - 'Maximum A-MSDU Length Present' subfield. | Rename "A-MSUD Length" -> "Maximum A-MSDU Length" in Figure 9-1002ab | RevisedText is revised to rename the field.TGbe editor, please make the changes tagged by CID #15956 in 11-23/0361r4. |
| 16443 | 9.4.2.312.4 | 366.53 | The operation Update Type field is always present and can only be set to 0 for performing the update. In the regular usage of ML Reconfiguration element, this update is not used. | either make that Operation Update Type be present or not depending on a presence bit. Or add a new entry in the field to define a mode where there is no Updates. For Backward compatibility reasons, this entry should be entry 0. Then move Operation Parameter Update entry to value 1. | RevisedAgree in principle. Text is revised to use the value 0 for current use of Reconfiguration ML element and use value 1 for Operation Parameter Update.TGbe editor, please make the changes tagged by CID #16443 in 11-23/0361r3. |
| 18295 | 9.4.2.312.4 | 267.22 | Change "can operate" to "that operates". | As in comment. | RevisedSame resolution as CID 15369.TGbe editor, please make the changes tagged by CID #15369 in 11-23/0361r3. |
| 17667 | 9.4.2.312.2.4 | 267.28 | Need more clarity here. If AP Removal Timer = 1, and this is transmitted at a TBTT or slightly later, does this mean removal happens at next TBTT so no beacon is transmitted at that next TBTT (or thereafter)? Then is AP Removal Timer == 0 reserved? | Provide more descrptive precision and consider explicitly reserving 0 as described in comment | RevisedAgreed in principle. The procedures for AP removal are described in clause 35.3.6.3. Added clarification text and reference to that clause. Also added text that AP Removal Timer value 0 is reserved and value 1 indicates that AP Removal occurs at the next TBTT.TGbe editor, please make the changes tagged by CID #17667 in 11-23/0361r5.  |

**9.4.2.312.4 Reconfiguration Multi-Link element**

…

***TGbe editor: Please update the following paragraphs in this subclause as shown below:***

The format of the STA Control field is defined in [Figure 9-1001x (STA Control field format for the Recon-](#_bookmark215) [figuration Multi-Link element(#15985))](#_bookmark215).

B0 B3 B4 B5 B6 B7 B10 B11 B12 B13 B15

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Link ID | Complete Profile | STA MACAddress Present | APRemoval Timer Present | (#15951)Reconfiguration O peration Type | Operation Parameters Present | NSTRBitmap Size | Reserved |

Bits: 4 1 1 1 4 1 1 3

**Figure 9-1001x—STA Control field format for the Reconfiguration Multi-Link ele- ment(#15985)**

 …

The (#15951)Reconfiguration Operation Type subfield is set to indicate the type of MLO update (#15985)for the link indicated by the Link ID subfield as per [Table 9-404k (Operation Update Type subfield encoding(#16433))](#_bookmark216).

**Table 9-404k—** **(#15951)Reconfiguration Operation Type subfield encoding(#16433)**

|  |  |
| --- | --- |
| **Value** | **Name** |
| 0 | AP Removal |
| 1 | Operation Parameter Update |
| 2 | Add Link |
| 3 | Delete Link |
| 4–15 | Reserved |

(#15951) ***TGbe editor: In D3.2 in clause 10.11 and clause 35.3.7.6, please change every instance of “Operation Update Type equal to 0”, “operation update type equal to 0” and “Operation Update Type subfield equal to 0” to “Reconfiguration Operation Type subfield equal to 1”. In D3.2 in clause 35.3.7.6, please change every instance of “Operation Update Type subfield set to 0” and “operation update type set to 0” to “Reconfiguration Operation Type subfield set to 1”. In all other clauses in D3.2, please change “Operation Update Type” and “operation update type” to “Reconfiguration Operation Type”.***

…

…

The AP Removal Timer subfield indicates the number of TBTTs of the AP corresponding to the Per-STA Profile subelement until the AP is removed. (#17667). Value 1 for this subfield indicates that the AP removal occurs at the next TBTT, Value 0 is reserved for this subfield. At the TBTT indicated by the AP Removal Timer subfield, the AP MLD follows the procedures defined in clause 35.3.6.3 (Removing affiliated APs) to remove the affiliated AP.

…

The Operation Parameter Info subfield contains operation parameters to be updated and is shown in [Figure 9-1002ab (Operation Parameter Info subfield format)](#bookmark204).

|  |  |  |
| --- | --- | --- |
| Maximum MPDU Length | (#15956)Maximum A-MSDU Length | Pad |

Bits: 0 or 2 0 or 1 Variable

**Figure 9-1002ab—Operation Parameter Info subfield format**

The Maximum MPDU Length subfield is in defined in Table 9-310 (Subfields of the VHT Capabilities Information field).

The (#15956)Maximum A-MSDU Length subfield is defined in Table 9-221 (Subfields of the HT Capabilities Information field).