IEEE P802.11
Wireless LANs

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| LB271 CR for ML Reconfiguration Add Delete Link  |
| Date: May 5, 2023 |
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Abstract

This submission proposes resolutions for following 21 CIDs received for TGbe LB271:

15985 15028 15147 15613 15638 15844 15987 16094 16116 16155

16156 16172 16173 16416 16478 17885 18116 18117 18187 18274

18322 16443

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Editorial updates
* Rev 2: Clarified that AP MLD does not send unsolicited Link Reconfiguration frame to a non-AP MLD.
* Rev 3: Added procedure for multi-link reconfiguration recommendation by the AP MLD. Clarified that the non-AP MLD can include both add and delete link in the same request frame. Changes are highlighted in blue. Deferred CID 15613.
* Rev 4: Clarification to text related to EML Capabilities subfield per feedback from Minyoung.
* Rev 5: Resolving CID 15613.

***TGbe editor: The baseline for 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.***

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| ***CID*** | ***Clause*** | ***Page*** | ***Comment*** | ***Proposed Change*** | ***Resolution*** |
| 15613 | 35.3.6 | 510.03 | Seamless link-set change procedures should be defined for the non-AP MLD. | The ML reconfiguration procedure should be extended for the non-AP MLD. | RevisedAgree in principle. D3.2 already defines procedures for seamlessly adding/deleting link to the ML setup for a non-AP MLD. Addressing the related issue to indicate the presence of NSTR Indication Bitmap subfield in the STA Info field for the add link case, using the ‘NSTR Link Pair Present’ bit (similar to Basic ML element), since the NSTR Indication Bitmap won’t be included when the non-AP MLD does not have any NSTR link pairs to report for the link requested to be added. Hence, need a present bit for NSTR Indication Bitmap since that subfield may not be present in some cases. **TGbe editor, please make the changes tagged by CID #15613 in 11-23/0765r5** |

**9.4.2.312.4 Reconfiguration Multi-Link element**

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***TGbe editor: Please update the following paragraphs in this subclause as shown below (#15613):***

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 B14 B15

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Link ID | Complete Profile | STA MACAddress Present | APRemoval Timer Present | Operation Update Type | Operation Parameters Present | NSTR Link Pair Present | NSTRBitmap Size | Reserved |

Bits: 4 1 1 1 4 1 1 1 2

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

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The NSTR Link Pair Present subfield in the STA Control field is set to 1 if at least one NSTR link pair is present for the non-AP MLD that contains the link corresponding to the Link ID, otherwise this subfield is set to 0.

If the NSTR Link Pair Present subfield is equal to 1 in the STA Control field, then the STA Info field contains an NSTR Indication Bitmap subfield whose size is indicated in the NSTR Bitmap Size subfield; otherwise, the NSTR Indication Bitmap subfield is not present in the STA Info field. (#15985)The NSTR Bitmap Size subfield indicates the size of the NSTR Indication Bitmap subfield (if present) in the STA Info field and is set to 1 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 2 octets and is set to 0 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 1 octet. The NSTR Bitmap Size subfield in the STA Control field is reserved if the NSTR Link Pair Present subfield is equal to 0.

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**35.3.6.4 ML reconfiguration to the ML setup(#15985)**

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***TGbe editor: Please update the following paragraphs in this subclause as shown below(#15613):***

The following rules apply for each Per-STA Profile subelement corresponding to a non-AP STA which is contained in the Reconfiguration Multi-Link element included in the Link Reconfiguration Request frame:

* If the non-AP MLD is indicating to add a link, it shall set the fields in the Per-STA Profile subelement as follows:
	+ The Link ID subfield shall be set to the link identifier of the AP affiliated with the associated AP MLD that is operating on the link that the non-AP MLD is requesting to add. The Complete Pro- file subfield and the STA MAC Address Present subfield shall be set to 1. The AP Removal Timer Present subfield shall be set to 0. The Operation Update Type subfield shall be set to 2. The Operation Parameters Present subfield shall be set to 0.
	+ The NSTR Link Pair Present bit shall be set to 1 if at least one NSTR link pair is present for the non-AP MLD that contains the link corresponding to the Link ID, otherwise this bit shall be set to 0. If the NSTR Link Pair Present bit is set to 1, the NSTR Bitmap Size subfield shall be set to indicate the size of the NSTR Indication Bitmap subfield.
	+ The STA MAC Address subfield in the STA Info field shall be set to the STA MAC address of the non-AP STA that is indicated for operation on the link requested to be added with the AP indicated by the link ID.
	+ If the NSTR Link Pair Present bit is set to 1, the NSTR Indication Bitmap subfield in the STA Info field shall be included and shall be set to indicate STR or NSTR for each pair of links formed between the link corresponding to the Link ID and other setup links for the non-AP MLD by setting the corresponding bit in the NSTR Indi- cation Bitmap subfield to 0 or 1.
	+ The STA Profile field shall include the complete profile for the corresponding non-AP STA iden- tified by the STA MAC Address and shall consist of all the elements and fields that would be included in the STA Profile field for that non-AP STA in a Reassociation Request frame sent on the current link that includes the corresponding non-AP STA as a reported STA as per procedures in [35.3.3.3 (Advertisement of complete or partial per-link information)](file:///C%3A%5CUsers%5Cbinit%5CAppData%5CLocal%5CTemp%5CTemp2_Draft%20P802.11be_D3.2%20-%20Word.zip%5CDraft%20P802.11be_D3.2%20-%20Word%5CTGbe_Cl_35.docx#_bookmark14), except no inheritance is applied and all the applicable elements and fields are included in the STA Profile field itself.
* If the non-AP MLD is indicating to delete an existing link, it shall set the fields in the Per-STA Profile subelement as follows:
	+ The Link ID subfield shall be set to the link identifier of the AP affiliated with the AP MLD that is operating on the link that is requested to be deleted from the ML setup. The Complete Profile subfield shall be set to 0. The STA MAC Address Present subfield shall be set to 1. The AP Removal Timer Present subfield shall be set to 0. The Operation Update Type subfield shall be set to 3. The Operation Parameters Present subfield shall be set to 0. The NSTR Link Pair Present bit shall be set to 0.
	+ The STA MAC Address subfield in the STA Info field shall be set to the STA MAC address of the non-AP STA operating on the link indicated by the link ID, which is requested to be deleted.
	+ The NSTR Indication Bitmap subfield shall not be included.
	+ The STA Profile field shall not be included.