IEEE P802.11
Wireless LANs

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| LB275 CR for CID 20089 |
| Date: 2023-11-10 |
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Abstract

This submission proposes resolutions for the following CIDs for TGbe LB275:

20089

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.***

***TGbe editor: The baseline for this document is 11be D4.1.***

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| **CID** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 20089 | Liuming Lu | 35.3.7.2.1 General | 520.37 | The inconsistency between unreachability and enablement for a setup link of non-AP MLD needs to be clarified. If an AP affiliated with the AP MLD is unreachable to an non-AP STA affiliated with an associated non-AP MLD corresponding to a setup link, it may be beneficial to set that link to be disabled for the non-AP MLD. | Please clarify how to handle the inconsistency between unreachability and enablement for a setup link of non-AP MLD. | RevisedIt is proposed to add a note to clarify that a setup link might be disabled if the non-AP MLD is not able to reach the AP MLD on that link.**Instruction to the editor**, ***please update the text in the subclause35.3.7.2.1 General, as shown in this document (doc.: IEEE 802.11-23/1872r0).*** |

**Discussion:**

1. **The inconsistency between unreachability and enablement for a setup link of non-AP MLD exists**

There is one case that a non-AP MLD does multi-link setup with an AP MLD for links on 2.4GHz and 6Ghz, and sends the association request frame on the 2.4GHz link then receives the association response also on this link. In this case, the non-AP STA affiliated with the non-AP MLD on the 6GHz link may be unable to reach the corresponding AP affiliated with the AP MLD. If the two links are been successfully set up, AP on the 6GHz link would fail to send the frames to the non-AP STA of the non-AP MLD, and doesn’t determine whether the interferences cause the failure, or other factors. This would lead to low communication efficiency.

There exists the other case that a non-AP MLD might move away from the AP MLD and as a result, some of its links (i.e., affiliated non-AP STA) is unable to reach the corresponding AP affiliated with the AP MLD. For example, non-AP MLD is not able to reach the AP MLD on 6 GHz link but is able to reach the AP MLD on 2.4 GHz.

1. **The check of reachability in the link level is missing for current draft**

For non-MLD STA, there may exist two mechanisms used to check whether the non-AP STA is reachable to the AP. One is the exchanges of preauthentication messages during the authentication/association stage. The other is the detection of any frames during the time specified by the BSS Max Idle Period element.

But in current 11be draft for MLD, the detection of any frames during the time specified by the BSS Max Idle Period element is done in the MLD-level, so the check of reachability in the link level is missing.

**Proposed Text Change:**

35.3.7.2 TID-To-Link Mapping (TTLM)

35.3.7.2.1 General

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A setup link is defined as enabled for a non-AP MLD if at least one TID is mapped to that link either in DL or in UL and is defined as disabled for a non-AP MLD if no TIDs are mapped to that link in DL and no TIDs are mapped to that link in UL. At any point in time, a TID shall always be mapped to at least one setup link both in DL and UL, which means that a TTLM change is only valid and successful if it will not result in having any TID for which the link set for DL or UL is made of zero setup links. By default, all setup links are enabled (see 35.3.7.2.2 (Default mapping mode)).

***TGbe editor: please add the following text:***

Note: A setup link might be disabled if the non-AP MLD is not able to reach the AP MLD on that link

**References:**

1. <https://mentor.ieee.org/802.11/dcn/20/11-20-0508-03-00be-mlo-reachability-problem.pptx>