IEEE P802.11
Wireless LANs

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| CC36 Resolution for CIDs related to ML element – Part 2 |
| Date: January 4, 2022 |
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 Abstract

This submission proposes resolutions for following 5 CIDs received for TGbe CC36:

7704, 5177, 5911, 7584, 5178

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Corrected the document number in the resolution table.

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** | **Commenter** | **Section** | **Pg.Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 5178 | Guogang Huang | 9.4.2.295b.2 | 133.61 | Change "MAC Address Present" to "STA MAC Address Present" | As in comment. | **Accepted**Agree with the comment. The name of the corresponding subfield in the STA Info field is “STA MAC Address”. Hence, the name of the bit was changed to “STA MAC Address Present”. |
| 7704 | Xiaofei Wang | 9.4.2.295b.2 | 133.42 | The MAC Address of a reported STA should always be present in the Per-STA Profile subelement format. When information is provided for a STA operating on the indicated Link, the receiving MLD needs the STA MAC address to conduct further operation without needing to send extra management frames to inquire the MAC address. | will submit a contribution | **Revised** Agree with the commenter in principle. However, in Beacon and Probe Response frames, the MAC address of the other APs affiliated with the same AP MLD as the transmitting AP is included in the RNR element. Inclusion of the STA MAC address subfield, therefore, will lead to duplication of information and Beacon bloating (6 octets/per-STA profile). The STA MAC address is included in all frames transmitted by a non-AP STA. The STA MAC address is included in all frames other than Beacon and Probe Response frames transmitted by an AP.**Tgbe editor: please make the changes shown in doc 11-22/0024r1 tagged as 7704.** |
| 5177 | Guogang Huang | 9.4.2.295b.2 | 133.64 | In the (Re)Association Response frame, the MAC Address Present subfield should be set to 0 because the non-AP MLD already has got the <Link ID, affiliated AP MAC address> info during the discovery phase. | Remove this sentence "An STA sets this subfield to 1 when the element carries complete profile". And add the the following text in 35.3.5.4 to clarify the setting of the MAC Address Present subfield:The MAC Address Present subfield of the STA Control field of the Per-STA Profile subelement of the Basic variant Multi-link element carried in the (Re)Association Response frame is set to 0. The affiliated AP MAC addresses are obtained during discovery. | **Revised**The RNR element is not included in (Re)Association Response frames. To keep the frame self-contained, STA MAC address subfield must be included in the (Re)Association Response frames.**Tgbe editor: please make the changes shown in doc 11-22/0024r1 tagged as 7704.** |
| 5911 | Li-Hsiang Sun | 9.4.2.295b.2 | 133.64 | For the complete profile in a ML probe response, MAC address of the AP on a reported link is already in RNR and can be ommitted in the ML element per-STAprofile | change to "An STA sets this subfield to 1 when the element carries complete profile unless RNR carries the BSSID of the reported AP" | **Revised**Agree with the commenter in principle. However, in Beacon and Probe Response frames, the MAC address of the other APs affiliated with the same AP MLD as the transmitting AP is included in the RNR element. Inclusion of the STA MAC address subfield, therefore, will lead to duplication of information. The STA MAC address is included in all frames transmitted by a non-AP STA. The STA MAC address is included in all frames other than Beacon and Probe Response frames transmitted by an AP.**Tgbe editor: please make the changes shown in doc 11-22/0024r1 tagged as 7704.** |
| 7584 | Tomoko Adachi | 9.4.2.295b.2 | 134.42 | "The STA MAC Address subfield of the STA Info field carries the MAC address of the (AP or non-AP) STA that can operate ..." It is clear that when "STA" is used, it includes both AP and non-AP STA, and such expression is used throughout the baselines. | Delete "(AP or non-AP)" from the cited text. | **Accepted**Agree with the commenter. |

**DISCUSSION**

If the AP that transmits a Beacon or Probe Response frame is affiliated with an AP MLD, then Clause 35.3.4.1 specifies that the AP shall include a Reduced Neighbor Report element that carries a TBTT Information field corresponding to each AP affiliated with the same AP MLD (see Fig. (1)). Thus, inclusion of the STA MAC address field in the Link Info field (if present) will lead to duplication of information as the MAC Address of the affiliated APs (BSSID) is already included in the RNR element in Probe Response and Beacon frames.



**Fig. (1) Contents of Beacon frame or Probe Response frame that is not an ML probe response**

On the other hand, (Re)Association Response frames transmitted by an AP affiliated with an AP MLD do not carry the Reduced Neighbor Report element (see Fig. (2)). Therefore, the AP must include the MAC address of the other APs affiliated with the same AP MLD in the STA MAC address subfield of the Link Info field.



**Fig. (2) Contents of (Re)Association Response frame**

Since no frames transmitted by a non-AP STA affiliated with a non-AP MLD includes the Reduced Neighbor Report element, the non-AP STA must include the MAC address of the other non-AP STAs affiliated with the same non-AP MLD in the STA MAC address subfield of the Link Info field.

***TGbe editor: Please note Baseline is 11be D1.3***

**9.4.2.312.2 Basic Multi-Link element**

***TGbe editor: Please revise the following statement as shown below***

The STA (#5178) MAC Address Present subfield indicates the presence of the STA MAC Address subfield in the STA Info field and is set to 1 if the STA MAC Address subfield is present in the STA Info field; otherwise set to 0. The STA MAC Address Present subfield is set to 1 in a Basic Multi-Link element that is included in a frame that is sent by a non-AP STA or that is included in a frame that is sent by an AP and that is not a Beacon or Probe Response frame (#7704).

NOTE – When the Basic Multi-Link element is included in an Authentication frame transmitted by a STA affiliated with an MLD, the element does not include the Link Info field (see 35.3.5.4 (Usage and rules of Basic Multi-Link element in the context of multi-link (re)setup)) and, therefore, does not include the STA MAC Address subfield.