IEEE P802.11
Wireless LANs

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| CR for 35.3.5.4 Multi-link Setup - IE usage |
| Date: Mar. 22, 2021 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jason Yuchen Guo | Huawei |  |  | guoyuchen@huawei.com |
| Ming Gan | Huawei |  |  |  |
| Yunbo Li | Huawei |  |  |  |
| Guogang Huang | Huawei |  |  |  |
| Yiqing Li | Huawei |  |  |  |
| Mengyao Ma | Huawei |  |  |  |
| Hongjia Su | Huawei |  |  |  |
| Jianhui Li | Huawei |  |  |  |

 Abstract

This submission proposes resolutions for following 4 CIDs received for TGbe CC34:

1194 1714 2318 3253

Revisions:

* Rev 0: Initial version of the document.
* Rev 1-2: Modify the text based on Draft 1.0

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** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1194 | Arik Klein | 132.50 | 35.3.5.4 | According to 802.11be D0.3 "The Basic variant Multi-Link element carried in the (Re-)Association Response frame shall include one or more STA profile subelement(s), each of which contains the complete information (such as capabilities and operational parameters) of an AP affiliated with the AP MLD and corresponding to a link \*that is accepted by the AP MLD\* and requested by the non-AP MLD"1. The association response of any AP affiliated with the AP MLD shall refer to all requested links by the corresponding non-AP STAs within the non-AP MLD (as indicated in the soliciting Association Request).2. Consequently, the Per STA subelement used in MLD Association Response shall include the Status Code (accept / Reject, etc.) for the preceding MLD association request (as in regular Association Request frame). | In case of MLD Association Response (i.e using the Association Response with MLE): the Per-STA subelement shall include:1. Remove the words "accepted by the AP MLD and" from the cited text (so the modified text shall be "AP affiliated with the AP MLD and corresponding to a link that is accepted by the AP MLD and requested by the non-AP MLD")2. The Per STA subelement used in MLD Association Response shall include the Status Code (accept / Reject, etc.) for the preceding MLD association request (as in regular Association Request frame). | Revised-Agree in general with the comment. A separate CR doc 21/0390r2 has addressed this comment. Please refer to the contents tagged as 3251 in doc. 21/0390r2 (https://mentor.ieee.org/802.11/dcn/21/11-21-0390-02-00be-cr-for-35-3-5.docx).TGbe editor:No further changes are needed in this document to address this comment. |
| 1714 | Guogang Huang | 132.53 | 35.3.5.4 | If some link is rejected by AP MLD, the non-AP MLD has no way to know what's the reason. We need a status code field in the Per-STA profile of Multi-link element to indicate whether each link is successfully setup or not, and the reason of failure | The solution is proposed in my presentation DCN1534 | Revised-Agree in general with the comment. A separate CR doc 21/0390r2 has ad-dressed this comment. Please refer to the contents tagged as 3251 in doc. 21/0390r2 (https://mentor.ieee.org/802.11/dcn/21/11-21-0390-02-00be-cr-for-35-3-5.docx).TGbe editor:No further changes are needed in this document to address this comment. |
| 2318 | Ming Gan | 132.56 | 35.3.5.4 | It is not complete, need to add Multiple BSSID element. Moreover, it is redundant since this is mentioned in P126 L28 of subclause 35.3.2.1 General | As in comment | Revised-Agree with the comment. Since the content of this paragraph has already been mentioned in 35.3.2.1, and the Multiple BSSID element is also mentioned in 35.3.2.1, we don’t need this paragraph now.TGbe editor:Please implement changes as shown in this document tagged as 2318. |
| 3253 | Yuchen Guo | 132.56 | 35.3.5.4 | This paragraph is redundant. Same contents as the last paragraph of 35.3.2.1 | delete this paragraph | Accepted- |

***TGbe editor: Please note baselines are REVmd D5.0, 11ax D8.0 and 11be D0.4***

**35.3.5.4 Usage and rules of Basic variant Multi-link element in the context of multi-link setup**

***TGbe editor: Please update the subclause as shown below***

A non-AP MLD may initiate a multi-link setup with an AP MLD to setup more than one link with a subset of APs that are affiliated with the AP MLD. When a non-AP MLD initiates a multi-link setup with an AP MLD, a non-AP STA that is affiliated with the non-AP MLD shall transmit an (Re)Association Request frame on the link it is operating on. An AP that is affiliated with the AP MLD and that received the (Re)Association Request frame shall transmit an (Re)Association Response frame.

The non-AP STA shall include a Basic variant Multi-Link element in the (Re)Association Request frame it transmits.

The Basic variant Multi-Link element carried in the (Re)Association Request frame shall include the Common Info field and the Link Info field.

The Common Info field of the Basic variant Multi-Link element carried in the (Re)Association Request frame shall
— include the MLD MAC address subfield for the non-AP MLD with which the non-AP STA is affiliated by setting the MLD MAC Address Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 1
— not include the Link ID Info subfield by setting the Link ID Info Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 0
— (#1068)not include the BSS Parameters Change Count subfield by setting the BSS Parameters Change Count Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 0.

The Link Info field of the Basic variant Multi-Link element carried in the (Re)Association Request frame shall include one or more Per-STA Profile subelement(s), each of which contains the complete information (such as capabilities) of a non-AP STA affiliated with the non-AP MLD and corresponding to a link that is requested for multi-link setup and shall set the Complete Profile subfield of the (#3251)Per-STA Control field of the Basic variant Multi-Link element to 1 and indicate SUCCESS in the Status Code subfield included in the Per-STA Profile subelement of the Basic variant Multi-Link element.

(#3251)The Link Info field of the Basic variant Multi-Link element carried in the (Re)Association Response frame shall include a Per-STA Profile subelement corresponding to a link that is not accepted by the AP MLD, is requested by the non-AP MLD and is not the link used to send (Re)Association Request frame, and shall set the Complete Profile subfield of the Per-STA Control field of the Basic variant Multi-Link element to 1 and indicate the failure cause of not accepting the link in the Status Code subfield included in the PerSTA Profile subelement of the Basic variant Multi-Link element.

The Link ID subfield of the Per-STA Control field of the Per-STA Profile subelement for the corresponding non-AP STA that requests a link for multi-link setup with the AP MLD is set to the link ID of an AP MLD that is operating on that link. The link ID is obtained during discovery.

The AP shall include a Basic variant Multi-Link element in (Re)Association Response frame that it transmits.

The Basic variant Multi-Link element carried in the (Re)Association Response frame shall include Common Info field and Link Info field.

The Common Info field of the Basic variant Multi-Link element carried in the (Re)Association Response frame shall
— include the MLD MAC address subfield for the AP MLD with which the AP is affiliated by setting MLD MAC Address Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 1
— include the Link ID Info subfield for the AP by setting the Link ID Info Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 1
— (#1068)include the BSS Parameters Change Count subfield for the AP by setting the BSS Parameters Change Count Present subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 1.

The Link Info field of the Basic variant Multi-Link element carried in the (Re)Association Response frame shall include one or more Per-STA Profile subelement(s), each of which contains the complete information (such as capabilities and operational parameters) of an AP affiliated with the AP MLD and corresponding to a link that is accepted by the AP MLD and requested by the non-AP MLD and shall set the Complete Profile subfield of the Multi-Link Control field of the Basic variant Multi-Link element to 1.

The Link ID subfield of the Per-STA Control field of the Per-STA Profile subelement for the corresponding AP that accepts a link requested by an STA of non-AP MLD with a non-AP MLD is set to the link ID of the AP of the AP MLD that is operating on that link.

Each Per-STA Profile subelement included in the Basic variant Multi-Link element carried in the (Re)Association Request frame shall not include another Basic variant Multi-Link element. (#2318, #3253)

A STA affiliated with an MLD shall include a Basic variant Multi-Link element containing the MLD MAC address of the MLD with which the STA is affiliated in the Authentication frame that it transmits.

A STA, which is affiliated with an MLD, may select and manage its operating parameters independently from the other STA(s) affiliated with the same MLD, unless specified otherwise.

**Straw Poll: Do you support the changes proposed in 11-21/0523r3 for the following CIDs?**

**1194 1714 2318 3253**

**Result: Yes/No/Abstain**