IEEE P802.11  
Wireless LANs

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| LB 275 Resolution for CIDs assigned to Abhi – Part 10 | | | | |
| Date: November 2, 2023 | | | | |
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Abstract

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

19616 19661 19662 19804 19978

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1:
  + Updates to resolutions for CID 19662 and 19978 based on offline discussions.
  + Added discussion section to explain the issue being resolved by CID 19661.

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

Interpretation of a Motion to Adopt

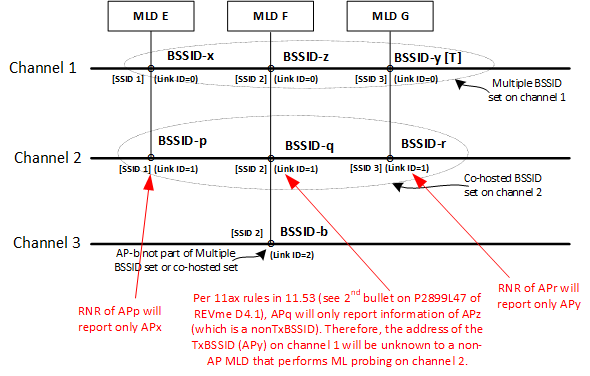
A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbe Draft. This introduction is not part of the adopted material.

***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** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 19616 | Mark Hamilton | C.3 | 945.42 | dot11MultiLinkActivated is read-write (written by an external management entity). | Replace "read-only" with "read-write" | **Accepted** |
| 19661 | Laurent Cariou | AF3.3 | 1005.12 | Add some clarifications, especially regarding on which links the different APs are. | as in comment | **Revised**  Based on offline discussions with the commenter, additional details are provided as requested by the comment. The comment also addresses an issue in which a non-AP MLD is unable to gather sufficient details of a reported AP if it corresponds to a nonTxBSSID.  **TGbe editor, please make changes as shown in doc 11-23/1776r1 tagged 19661** |
| 19662 | Laurent Cariou | AF3.3 | 1005.49 | Add the following sentence to the paragraph for clarity: In addition, it also includes the Basic Multi-Link element containing the Common-Info of the AP MLD to which the AP corresponding to the transmitted BSSID is affiliated with | as in comment | **Revised**  Agree with the comment. TGbe draft already includes a similar sentence (as a resolution to CID 15980) – see P1018L38 of D4.1. Therefore, no further changes are needed to address this comment. |
| 19804 | Abhishek Patil | AF.8.1 | 1013.22 | In figure AF-28, the frame exchange doesn't have to be limited to Data frames. | Delete 'Data' and just say 'Frame exchange'. | **Accepted**  **TGbe editor, the figure in D4.1 is AF-30. A copy of the updated figure is shown in this document.** |
| 19978 | Rubayet Shafin | 35.3 | 489.10 | While the procedure for individual TWT operation/negotiation with MLO is described in 35.3.24.2, the corresponding procedure for Broadcast TWT operation is currently missing. This is stark gap in the spec that needs to be closed. | Please provide the missing text corresponding to broadcast TWT. | **Rejected**  The comment fails to identify changes in sufficient details that would satisfy the comment. Also please note that broadcast TWT operation for APs affiliated with an AP MLD is defined in subclause 35.3.24.3. |

x-x-x-x-x-x-x Start of changes for CID 19661 -x-x-x-x-x-x-x-x

Discussion:



**AF.3.3 Management frames originating from an affiliated AP that is a member of a multiple BSSID set**

***TGbe editor, please update the following paragraph in this subclause as shown below:***

In these illustrations:

* The reporting AP corresponds to the transmitted BSSID in a multiple BSSID set.
* There are three BSSIDs active in the multiple BSSID set: transmitted BSSID (index 0) and two nontransmitted BSSIDs corresponding to (BSSID) index 3 and (BSSID) index 5, respectively.
* Each AP corresponding to a BSSID within the multiple BSSID set is affiliated with a different AP MLD.
* Each AP MLD has two affiliated APs: One of the AP is a member of the multiple BSSID set and the other AP is operating on a different link. In this example, the link ID assigned to the AP on the other link for each of the three AP MLDs is 0.
* The Beacon and Probe Response frames transmitted by the AP corresponding to the transmitted BSSID includes a Reduced Neighbor Report element carrying three TBTT Information fields; each of which corresponds to the AP that is operating on a different link and is affiliated with one of the AP MLDs corresponding to either the transmitted BSSID or one of the two nontransmitted BSSIDs in the multiple BSSID set. The Reduced Neighbor Report element can include additional TBTT Information fields to report other APs.
* The Beacon frames and Probe Response frames, which are not a multi-link probe response, transmitted by the AP corresponding to the transmitted BSSID include a Basic Multi-Link element corresponding to the AP MLD with which the AP corresponding to the transmitted BSSID is affiliated with.
* The Beacon frames and Probe Response frames transmitted by the AP corresponding to the transmitted BSSID also includes Multiple BSSID element.
* The Nontransmitted BSSID Profile subelement, carried in the Multiple BSSID element, for each AP corresponding to the nontransmitted BSSID includes a Basic Multi-Link element. This is shown in Figure AF-17 (Contents of a Beacon frame or Probe Response frame that is not a multi-link probe response transmitted by an AP corresponding to transmitted BSSID during MLO discovery).
  + The Per-STA Profile subelement of the Basic Multi-Link element corresponding to a reported AP is not included in the element unless conditions specified in 35.3.11 (Multi-link procedures for (extended) channel switching and channel quieting) are satisfied for that reported affiliated AP.

9.4.2.72 Multiple BSSID-Index element

***TGbe editor, please update the following paragraph in this subclause as shown below:***

The Multiple BSSID-Index element is included in the nontransmitted BSSID profile carried in a Multiple BSSID element, as described in 11.1.3.8 (Multiple BSSID procedure). The Multiple BSSID-Index element is included in the Per-STA Profile subelement, of a Basic Multi-Link element, that carries a complete profile of a reported AP if the reported AP corresponds to a non­transmitted BSSID. ~~The use of the Multiple BSSID element and frames is described in~~Also see 11.10.14 (Multiple BSSID set).

9.4.2.312.2.4 Link Info field of the Basic Multi-Link element

***TGbe editor, please update the figure 9-1001n in this subclause as shown below:***

B0 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B15

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Link ID | Complete Profile | STA MAC  Address Present | Beacon Interval Present | TSF  Offset Present | DTIM  Info Present | NSTR  Link Pair Present | NSTR  Bitmap Size | BSS  Parameters Change Count Present | MaxBSSID Indicator Present | Reserved |

Bits: 4 1 1 1 1 1 1 1 1 1 3

**Figure 9-1001n—STA Control field format of the Basic Multi-Link element**

***TGbe editor, please add the following paragraph after the paragraph starting “The BSS Parameters Change Present subfield”:***

The MaxBSSID Indicator Present subfield indicates the presence of the MaxBSSID Indicator field in the STA Info field and is set to 1 if the MaxBSSID Indicator field is present in the STA Info field; otherwise, it is set to 0. A non-AP STA sets the MaxBSSID Indicator Present subfield to 0 in the transmitted Basic Multi-Link element. An AP sets the MaxBSSID Indicator Present subfield to 1 if the Per-STA Profile carries complete profile of a reported AP and the reported AP corresponds to a nontransmitted BSSID. Otherwise, an AP sets this subfield to 0.

***TGbe editor, please update the figure 9-1001o in this subclause as shown below:***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| STA Info Length | STA MAC  Address | Beacon Interval | TSF Offset | DTIM Info | NSTR  Indication Bitmap | BSS  Parameters Change Count | MaxBSSID Indicator |

Octets: 1 0 or 6 0 or 2 0 or 8 0 or 2 0 or 1 or 2 0 or 1 0 or 1

**Figure 9-1001o—STA Info field format of the Basic Multi-Link element**

***TGbe editor, please add the following paragraph after the paragraph starting “The BSS Parameters Change subfield”:***

The MaxBSSID Indicator subfield of the STA Info field is defined in 9.4.2.44 (Multiple BSSID element) and carries the value n, where 2n is the maximum number of BSSIDs in the multiple BSSID set to which the reported AP belongs to.

x-x-x-x-x-x-x End of changes for CID 19661 -x-x-x-x-x-x-x-x

**AF.8.1 Example of per-link power-save operation**[19804]

***TGbe editor, please update the figure AF-30 in this subclause as shown below:***

A diagram of a building

Description automatically generated

**Figure AF-30—Each non-AP STA affiliated with a non-AP MLD maintains its own power state**