IEEE P802.11
Wireless LANs

|  |
| --- |
| Resolution for CIDs assigned to Abhi – Part 6 |
| Date: May 7th 2023 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Gaurang Naik |  |  |  |
| George Cherian |  |  |  |
| Alfred Asterjadhi |  |  |  |
| Duncan Ho |  |  |  |
| Yanjun Sun |  |  |  |
| Abdel Karim |  |  |  |

 Abstract

This submission proposes resolutions for following 10 CIDs received for TGbe LB271:

17593 17616 17617 17618 17649 17657 17626 17663 17666 15541

Revisions:

* Rev 0: Initial version of the document.

***TGbe editor: Baseline for this document is 11be D3.1***

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** | **Pg.Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 17593 | Brian Hart | 9.4.2.240 | 247.22 | This implies the NI element be can carried in another element - but how can that be? (When a TLV is carried in another element, it is a subelement) | We need a widespread clean-up of these "elements" that are apearing as subelements. Normally there is a defined mapping from one to the other: i.e. "subelement X has the same format as the element X [except ...]". BTW, this demarcation between elements and subelements is more rigid that say the labels "subfield" and "field", where pretty much anything goes. This is because "subelement" is a defined term with its own section (9.4.3) so more rigor is needed. | **Rejected**The Non-Inheritance element can be carried either within the Multiple BSSID element or Basic Multi-Link element. In both instances, it is carried within a subelement (e.g., Nontransmitted BSSID Profile subelement) which consists of several other elements. Therefore, the existing reference as ‘element’ within an element is fine since the embedded element is within a subelement. |
| 17616 | Brian Hart | 9.4.2.312.2.3 | 254.32 | The Basic Multi-Link element can be sent in (Re)Assoc Req frames. Here, AFAIK the Basic ML element is mostly describing the non-AP MLD (i.e., its MLD MAC address etc); so here the Basic ML element is \*not\* describing an AP MLD. | If the Link ID Info subfield is only transmitted by an AP(?), then, to make the clause 9 language complete, add this limitation at P253L29 (along the lines of P254L54). Else apply a more correct fix. | **Revised**D3.0 had erroneously deleted a sentence that said that the Basic ML IE transmitted by a non-AP STA does not include the Link ID field. This was fixed in D3.1. The text related to non-AP not carrying Link ID and BPCC subfields is moved up and the text related to inclusion in Mgmt frames from the AP is also rewritten to better convey the intention.**TGbe editor, please make changes shown in 11-23/0743r0 tagged 17616** |
| 17617 | Brian Hart | 9.4.2.312.2.3 | 254.54 | This is really a rule on the related "Present" variable, so is in the wrong section | Move/merge to P253L33. Similarly P254L57-60 and P255L1-5. | **Revised**The paragraphs related to presence indicators does not talk about when the bit is set to 1 or 0. Therefore, for consistency, the rules are not moved to that portion of the spec. Resolution to CID 17616 merges the rules for presence of Link ID and BPCC subfields.**TGbe editor, please make changes shown in 11-23/0743r0 tagged 17616** |
| 17618 | Brian Hart | 9.4.2.312.2.3 | 254.58 | What is the behavior for an Authentication frame (not present / optionally present / defined in section xxx)? Also, elements are only carried in mgmt frames, so recommend delete "Mgmt". Also, spurious comma. | 1) Define behavior for Auth frame (or use xref). 2) Delete "Management", 3) Delete comma in ", when". | RevisedAgree in principle. Resolution for CID 17616 address this comment. **TGbe editor, please make changes shown in 11-23/0743r0 tagged 17616** |
| 17649 | Brian Hart | 9.4.2.312.2.3 | 260.06 | Confusing indenting; makes "otherwise" more powerful than it should be | Indent "Set to 1 ..." and "Set to 0 otherwise" so it is clear these are dependent on +HTC-HE Sup = 1 | **Accepted** |
| 17657 | Brian Hart | 9.4.2.312.2.4 | 263.19 | Probably unintendedly ambiguous antecedent (it => j) | try "otherwise the bit Bj is set to 0" | **Revised**Agree in principle. The suggested change is made. In addition, an error in the paragraph is fixed as a resolution to this comment.**TGbe editor, please make changes shown in 11-23/0743r0 tagged 17657** |
| 17626 | Brian Hart | 9.4.2.312.2.4 | 263.33 | Upper bound of the elements expected in the Complete profile is undefined. | Define an upper bound on (or equality for) the complete profile - e.g. list of allowable elements or something more generic like "union of all elements allowable in Beacon, Probe Response and ?(Re)Assocation Reponse frames excepting xxxx" or "union of all elements sent in Beacon, Probe Response and ?(Re)Assocation Reponse frames by each affiliated AP of the AP MLD excepting xxxx". | **Rejected**The contents of the complete profile are based on elements that are applicable to the reported STA (i.e., satisfies the condition in the corresponding table in clause 9.3.3) and inheritance applies. Therefore, the upper bound is based on the elements listed in the corresponding table in 9.3.3 for the Management frame that carries the Basic ML IE. |
| 17663 | Brian Hart | 9.4.2.312.2.4 | 265.64 | There is no "list" of subelements in the field | Try "One or more Per-STA Profile subelements are included in the Link Info field (see Table 9-401c (Optional subelement IDs for Link Info field of the Multi-Link element)). Similarly look at P269L30 | **Revised**Agree in principle. The suggested change is made for Probe Request ML IE, Reconfiguration ML IE and Priority Access ML IE.**TGbe editor, please make changes shown in 11-23/0743r0 tagged 17663** |
| 17666 | Brian Hart | 9.4.2.312.2.4 | 267.23 | Grammar glitch; needs changing/checking around "arries the MAC address of the AP can operate on" | Maybe "The STA MAC Address subfield of the STA Info field carries the MAC address of the AP [that operates | that can operate] on the link identified by the Link ID subfield and is affiliated with the same MLD as the STA that transmitted the Reconfiguration Multi-Link element." | **Revised**Agree in principle. The suggested change is made as a resolution.**TGbe editor, please make changes shown in 11-23/0743r0 tagged 17666** |
| 15541 | Chaoming Luo | 35.3.12.4 | 538.31 | This case is missing: An AP affiliated with an AP MLD where the AP corresponds to a transmitted BSSID in a multiple BSSID set shall indicate pending buffered traffic for a non-AP MLD associated with that AP MLD.Neither does the first nor the second paragraph include this case. | Change: the AP is not a member of a multiple BSSID setTo: the AP is not a member of a multiple BSSID set or corresponds to a transmitted BSSID in a multiple BSSID set | **Rejected**The second paragraph in 35.3.12.4 covers the case of traffic indication for a non-AP MLD associated with the AP corresponding to the transmitted BSSID. The phrase “any AP MLD that has an affiliated AP in the same multiple BSSID set as the transmitting AP” includes the transmitted BSSID. |

**9.4.2.312.2.3 Common Info field of the Basic Multi-Link element**[17616]

***TGbe editor: Please update the following paragraphs in this subclause as shown below:***

and the BSS Parameters Change Count subfield are

when the element is carried in an

The format of the Link ID Info subfield is defined in 9.4.1.75 (Link ID Info field). The Link ID subfield of the Link ID Info field indicates the link identifier of the AP that is affiliated with the AP MLD which is described in the Basic Multi-Link element and satisfies one of the following:

—It is the AP that transmitted the Basic Multi-Link element.

—It is the AP that corresponds to a nontransmitted BSSID that is a member of the same multiple BSSID set as the AP that transmitted the Multiple BSSID element containing the profile for the non-transmitted BSSID which includes the Basic Multi-Link element.

The BSS Parameters Change Count subfield in the Common Info field carries an unsigned integer, initialized to 0. The value carried in the subfield is incremented by 1 when a critical update (as defined in 11.2.3.15 (TIM Broadcast) and 35.3.10 (BSS parameter critical update procedure)) occurs to the BSS parameters of the AP that is affiliated with an AP MLD which is described in the Basic Multi-Link element and satisfies one of the following:

—It is the AP that transmitted the Basic Multi-Link element.

—It is the AP that corresponds to a nontransmitted BSSID that is a member of the same multiple BSSID set as the AP that transmitted the Multiple BSSID element containing the profile for the non-transmitted BSSID which includes the Basic Multi-Link element.

***TGbe editor: Please update the contents of the following row in Table 9-401i in this subclause as shown below:***

***TGbe editor: Please note, there is no change to the text. Instead, the content under “If the +HTC-HE Support subfield is 1:” is indented to the right.***

**Table 9-401i—Subfields of the MLD Capabilities And Operations subfield**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| AAR Support | An AP MLD indicates support for receiving a frame with an AAR Control subfield | If the +HTC-HE Support subfield is 1: [17649]Set to 1 if the AP MLD supports the AAR Control subfield functionality.Set to 0 otherwise.Reserved for non-AP MLD or if the +HTC-HE Support subfield is 0.See 35.3.16.8.3 (AP assisted medium synchronization recovery procedure). |

**9.4.2.312.2.4 Link Info field of the Basic Multi-Link element**

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

[17657]Each bit B*j* (*j* ¹ *i*) in the NSTR Indication Bitmap subfield included in the Per-STA Profile subelement with Link ID subfield equal to *i* (where 0 £ *i* < 15 ) is set to 1 if the link pair corresponding to Link IDs equal to <*i*, *j>* forms an NSTR link pair where j is the link ID of the link on which a STA affiliated with the same MLD as the reported STA is operating on; otherwise the bit B*j* is set to 0. Bit B*i* in the NSTR Indication Bitmap subfield included in the Per-STA Profile subelement with Link ID subfield value equal to *i* is reserved.

**9.4.2.312.3 Probe Request Multi-Link element**

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

[17663]If the Link Info field is present (see 35.3.4.2 (Use of multi-link probe request and response)), then one or more Per-STA Profile subelements are included (see Table 9-401c (Optional subelement IDs for Link Info field of the Multi-Link element)).

**9.4.2.312.4 Reconfiguration Multi-Link element**

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

One or more Per-STA Profile subelements are included [17663]in the Link Info field (see Table 9-401c (Optional subelement IDs for Link Info field of the Multi-Link element)).

**9.4.2.312.6 Priority Access Multi-Link element**

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

One or more Per-STA Profile subelements are included [17663]in the Link Info field (see Table 9-401c (Optional subelement IDs for Link Info field of the Multi-Link element)).

**9.4.2.312.4 Reconfiguration Multi-Link element**

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

The STA MAC Address subfield of the STA Info field carries the MAC address of the AP that[17666] can operate on the link identified by the Link ID subfield and is affiliated with the same MLD as the STA that transmitted the Reconfiguration Multi-Link element.