IEEE P802.11
Wireless LANs

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| Resolution for CIDs assigned to Abhi – Part 1 |
| Date: March 11, 2023 |
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 Abstract

This submission proposes resolutions for following 94 CIDs received for TGbe LB271 against D3.0:

15356 18258 17483 18259 18080 17904 17551 15161 15162 17761

17594 17610 15366 17612 17613 18087 18088 18090 16453 15949

17634 18093 18091 18092 17882 17660 15007 15008 15966 16080

17863 17864 16753 16754 16178 16179 15394 16757 15603 16760

17819 18271 16762 16763 18248 15968 16764 16765 16180 18241

16181 16766 16767 16768 17915 16770 16771 16769 16773 16772

16776 16182 18114 16188 17823 16788 15605 15857 15977 15606

16789 15979 16089 16090 15978 15858 15859 15981 15683 16012

16445 18174 15567 16968 18175 16969 16970 16971 16973 18176

16974 16076 15525 16501

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Resolves several more CIDs.
* Rev 2: Resolves some more CIDs.
* Rev 3: Deferred several CIDs (highlighted) + a few minor updates when the contribution was discussed in TGbe MAC session on 3/15/23 PM2.
* Rev 4: 4 CIDs are ready for SP (changes highlighted).
* Rev 5: Updated resolution for CIDs 18114, 16012, 16445, 17551, 15161 (CIDs are highlighted) based on offline feedback from members who wanted more time.
* Rev 6: Includes 2 additional (CIDs 15525 16501) – same resolution as 16012.
* Rev 7: includes updated resolution for CID 18092 and some updates to the resolutions for other ‘blue’ CIDs.
	+ Updates based on offline feedback from several members (Rubayet, Vishnu, Peshal, Sunshine, Elliot, Arik, Mike, Yongho, Laurent, Brian, Po-Kai, Binita)
	+ CIDs 18090 & 18091 are still deferred.
* Rev 8: Fixed a typo.
* Rev 9: Updated resolution for 18092 based on further (offline) feedback.
* Rev10: Editorial updates based on feedback received during TGbe MAC call 6/26/23.
	+ Blue CIDs 18092, 16012, 16445, 15525 & 16501 are deferred for further offline discussions.

***TGbe editor: Baseline for this document is 11be D3.0 unless specified otherwise.***

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** | **Clause** | **Pg.Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 15356 | John Wullert | 9.4.1.4 | 204.54 | The order of the phrases in the sentence make it hard to parse | Rephrase as "The Critical Update Flag subfield is reserved except when the Capability Information field is carried outside the Basic Multi-Link element in a Beacon or a Probe Response frame transmitted by an AP affiliated with an AP MLD." | RevisedAgree with the comment. There are several cases for which the Critical Updates Flag subfield is reserved. The paragraph is updated to state each condition separately so that is clear when the subfield is reserved. A similar set of changes are made to callout each condition when the Nontransmitted BSSIDs Critical Update Flag subfield is reserved. Other editorial updates were made without changing the technical content.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 15356 |
| 18258 | Li-Hsiang Sun | 9.4.1.4 | 205.18 | "carried outside Basic Multi-Link element" should also add "carried outside Multiple BSSID elelment" b/c the field is also used in nontransmitted BSSID capability element | as in comment | RevisedAgree with the comment. Resolution for CID 15356 addressed this comment.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 15356 |
| 17483 | Brian Hart | 9.4.1.4 | 205.14 | Spurious "by" (notes are just descriptions and xrefs; "by" implies that it is the note that is requiring the procedure to be executed) | Try "NOTE--An AP sets the Critical Update Flag subfield to 1 in one or more Beacon frames following the procedure defined in 35.3.10 (BSS parameter critical update procedure)." | RevisedThe ‘by’ is deleted as suggested by the comment.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 17483 |
| 18259 | Li-Hsiang Sun | 9.4.1.4 | 205.21 | "An AP affiliated with an AP MLD" sets the Non-transmitted BSSIDs Critical Update Flag subfield to 1"Should be AP corresponding to the transmitted BSSID sets this subfiled and the transmitted BSSID is not necessarily affiliated with a MLD | as in comment | RevisedClause 4.3.16a and 35.3.1 states that a EHT AP is affiliated with an AP MLD. Furthermore, all APs in a multiple BSSID set share the same Capability and Operational parameters. Therefore, each (EHT) AP in a multiple BSSID set would be affiliated with an AP MLD. In addition, the proposed changes to resolve CID 15356 added a bullet which clarifies that the Critical Updates Flag subfield is valid only a Beacon and Probe Response frame and only when transmitted by an AP affiliated with an AP MLD. Since only the AP corresponding to the TxBSSID beacons in a multiple BSSID set, the cited sentence doesn’t need further clarification.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 15356 |
| 18080 | Abhishek Patil | 9.4.1.4 | 204.29 | In addition to providing capability information, this field also provides status of critical updates. Therefore, name 'Capability Information' no longer conveys the intention of this field. | Rename the field name to Capability and Status Information field. Same comment for 9.4.2.71. | RevisedAgree with the comment. The proposed change updates the name of the field to include Status indication. Similar changes proposed for element name and field name in 9.4.2.71.TGbe editor, please replace the title of the subclause 9.4.1.4 to ‘Capability Information and Status Indication field’. Also, please replace the title of clause 9.4.2.71 to ‘Nontransmitted BSSID Capability and Status element’. Furthermore, please replace the field name ‘Nontransmitted BSSID Capability’ to ‘Nontransmitted BSSID Capability and Status’ |
| 17904 | Kazuto Yano | 9.4.1.4 | 205.09 | A period is missing at the end of this sentence. | As in comment. | Accepted |
| 15162 | Po-Kai Huang | 9.6.7.16 | 303.53 | Use non-AP STAs for STAs affiliated with a non-AP MLD. | Use non-AP STAs for STAs affiliated with a non-AP MLD. | RevisedTGbe editor, please replace ‘STA’ with ‘non-AP STA’ at P303L53 |
| 17761 | Brian Hart | 9.6.7.36 | 304.15 | Typo, "dot11MultiLinkActiviated" | "dot11MultiLinkActivated" | Accepted |
| 17594 | Brian Hart | 9.4.2.240 | 247.22 | Spurious reference to "Management" (since element s are only defined for mgmt frames, and noun has wrong number & missing article | Try "in a frame that includes" | RevisedThe paragraph is revised as suggested by the comment. A few additional updates were made for additional clarification.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 17594 |
| 17610 | Brian Hart | 9.4.2.312.1 | 251.37 | "it has a common encoding" is meaningless. All fields have a common encoding, Also, probably unintendedly ambiguous antecedent of "It". | Try "The Type field is used to differentiate the variants of the ML element and is defined in Table 9-401b." | RevisedThe cited paragraph is updated, and the text is simplified as suggested by the comment.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 17610 |
| 15366 | John Wullert | 9.4.2.312.1 | 251.62 | The sentence describing the Presence bitmap is missing pronouns and articles that would enhance clarity. | Rephrase as "The Presence Bitmap subfield is used to indicate the presence of various subfields in the Common Info field and the subfield has different formats for the different variants..." | Accepted |
| 17612 | Brian Hart | 9.4.2.312.1 | 251.64 | "as described" is too weak, since these are normative subclauses | Try "as further defined in the sub-clauses ..." | Accepted |
| 17613 | Brian Hart | 9.4.2.312.1 | 252.01 | The para has "except for the Link ID Info and BPCC subfields" but these are not introduced yet. Also missing article. And Common field is not completely defined here; merits a xref. | Try "The Common Info field carries information that is common to all the links except for the Link ID Info and BSS Parameters Change Count subfields (see 9.4.2.312.2.3), which apply to the link on which the Multi-Link element is sent. The Common Info field is further defined in the subclauses below." | RevisedThe Link ID Info and the BSS Parameter Change Count subfield are present only for Basic Multi-Link element. The paragraph is revised to provide reference to clause 9.4.2.312.2.3TGbe editor, please make changes as shown in 11-23/0296r4 tagged 17613 |
| 18087 | Abhishek Patil | 9.4.2.312.1 | 252.05 | An MLO association can be for one or more links (see 35.3.5). This can be because the two MLDs happened to have only 1 link in comment (e.g., MLD 1 can operate only on 2.4 & 5 while MLD 2 can opreate only on 5 & 6). Alternatively, an ML association may reduce to a single link if an AP is removed via the ML reconfiguration procedure. | Replace 'the links' with 'one or more links' | Accepted |
| 18088 | Abhishek Patil | 9.4.2.312.1 | 252.06 | Clause 9.4.3 does not define the order of subelements. Therefore replace 'and ordering of subelements are' with 'is'. | As in comment | Accepted |
| 18090 | Abhishek Patil | 9.4.2.312.2 | 253.53 | An NSTR mobile AP MLD will not operate multiple BSSID set and therefore, the corresponding field is not applicable. | Add a new sentence at the end: "An AP affiliated with an NSTR mobile AP MLD sets this subfield to 0." | Accepted |
| 16453 | Laurent Cariou | 9.4.2.312.2.3 | 254.01 | A sentence has been removed last round: Link ID Info subfield is not present if the Basic Multi-Link element is sent by a non-AP STA. That sounded like a correct statement. Please add it back unless this is captured elsewhere. | as in comment | RevisedAgree with the comment. The sentence about Link ID Info subfield not being present in a Basic ML IE transmitted by a non-AP STA was accidently removed during the creation of D3.0. The sentence is added back as a resolution to this CID.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16453 |
| 15949 | Binita Gupta | 9.4.2.312.2.3 | 254.34 | Capture how Link ID info subfield should be set by the non-AP STA. | Capture missing description as per comment. | RevisedAgree with the comment. The sentence about Link ID Info subfield not being present in a Basic ML IE transmitted by a non-AP STA was accidently removed during the creation of D3.0. The sentence is added back as a resolution to CID 16453. TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16453 |
| 17634 | Brian Hart | 9.4.2.312.2.3 | 256.27 | "includes" in "includes 3 bits" is odd, and all of this just duplicates Fig 9-1002j | Delete" includes 3 bits and". Ditto P257L6 | Accepted |
| 18093 | Abhishek Patil | 9.4.2.312.2.3 | 260.16 | The NOTE under Table 9-401i needs to be updated to clarify that support for advertised T2LM (as described in 35.3.7.1.7) is mandatory and does not depend on the support for T2LM negotiation. | Update the NOTE as suggested by the comment. | RevisedPer clause 35.3.7.1.1, if the AP MLD supports T2LM, then a non-AP that intends to perform ML association with that AP need to have the TID-To-Link Mapping Negotiation Support subfield set to at least 1. The NOTE was updated to clarify this. Additional, changes are made to the NOTE to clarify which field it is referring to.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 18093 |
| 18091 | Abhishek Patil | 9.4.2.312.2.3 | 254.01 | For better management of its resources, an AP MLD that is operating on several links might want to limit the number of links a non-AP MLD can request for association. Per the current spec (D3.0), an AP MLD is allowed to reject one or more links that are requested during association (ML setup). However, it would be beneficial if a non-AP MLD knows up-front the upper bound so that it can request links that are most suitable to it while honoring limits set by the AP. | Standard must provide a mechanism for an AP MLD to advertise such information and provide guidance for a non-AP MLD to conform to AP MLD's requirements. The commenter will provide a contribution to address this comment. | RevisedAgree with the comment. As stated by the comment. A non-AP MLD can benefit if it has prior knowledge of a limit on the number of links an AP MLD can support for association. Based on such information, the non-AP MLD can request its most preferred links for ML association (as opposed to asking for all links and risking its preferred set of links being rejected). The proposed change provides a framework for signaling capability, advertising the limit and actions to meet the requirements.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 18091 |
| 17882 | Gaurang Naik | 9.4.2.312.2.4 | 261.61 | An NSTR mobile AP MLD should set this subfield to 0. | As in comment | RevisedAgree with the comment. The TSF of the nonprimary link in an NSTR Mobile AP MLD has the same value as the TSF on the primary link. Therefore, the TSF Offset Present subfield is not required in the STA Info field corresponding to the nonprimary link. A sentence is added to the cited paragraph to clarify that this subfield is set to 0 for an NSTR Mobile AP MLD.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 17882 |
| 17660 | Brian Hart | 9.4.2.312.2.4 | 264.24 | Not clear why this is a NOTE. | Delete "NOTE -" | RevisedThe NOTE carries important piece of information. The resolution for CID 17967 (in doc 11-23/0344r0 (Rojan)) updated the NOTE and provides a reference to normative text.TGbe editor, no further changes are needed. |
| 15007 | Jay Yang | 35.3.3.1 | 481.14 | can we change the order to say "in an Authentication frame a (Re)Association Request frame, or in a (Re)Association Response frame are described in 35.3.5 (Multi-link (re)setup)." | as the comments | RevisedTGbe editor: Please implement the change as proposed by the comment with the addition of a comma (‘,’) between ‘Authentication frame’ and ‘a (Re)Association Request frame’. |
| 15008 | Jay Yang | 35.3.3.1 | 481.19 | "35.3.6.2.2 (Removing affiliated APs)" should be "35.3.6.2 (adding and removing affiliated APs)" | as the comments. | RejectedThe comment fails to identify an issue. Reconfiguration ML IE is included in the Beacon and Probe Response frames for AP removal case. Therefore, the reference to 35.3.6.2.2 is correct. |
| 15966 | Binita Gupta | 35.3.3.1 | 481.27 | In para "The requirements for including of a Probe Request Multi-Link element" - remove "of" | As in comment | Accepted |
| 16080 | Insun Jang | 35.3.3.1 | 481.34 | It's not clear to what "that AP MLD" means since there is no any AP MLD indicated. It should be changed to "an AP MLD". | As in the comment | Accepted |
| 17863 | Gaurang Naik | 35.3.3.1 | 481.35 | Need to clarify which is 'that' AP MLD here. | As in comment | RevisedAgree with the comment. The issue is fixed as a resolution to CID 16080. |
| 17864 | Gaurang Naik | 35.3.3.1 | 481.36 | How about when the Basic ML element is carried in MBSSID element? In that case, the link ID is not that of transmittng AP. | As in comment | RevisedAgree with the comment. The paragraph describing setting of the Link ID field in Common Info and STA Control field of Per-STA profile is deleted since the rules are clearly stated in clause 9.4.2.312.TGbe editor, please make changes as shown in 11-23/0296r4 tagged 17864 |
| 16753 | Mark RISON | 35.3.3.1 | 481.41 | "to carry complete or partial profile" missing article | Change to "to carry a complete or partial profile". Ditto 3 lines down | Accepted |
| 16754 | Mark RISON | 35.3.3.1 | 481.43 | "may include LinkInfo field" missing article | Change to "may include a Link Info field". Also add two missing articles at line 65 | Accepted |
| 16178 | Ming Gan | 35.3.3.1 | 481.47 | The sentence is not complete | Add "set" after "multiple BSSID" | Accepted |
| 16179 | Ming Gan | 35.3.3.1 | 481.56 | Change "contained" to "carried" | As in the comment | Accepted |
| 15394 | John Wullert | 35.3.3.2 | 482.27 | The requirement does not clearly specify which Link ID it describes | Revise to "The link ID associated with any specific tuple of Operating Class, Operating Channel, and BSSID shall not change for the lifetime of the BSS that is set up on the link associated with the link ID nor for the lifetime of any BSS of the other AP(s) affiliated with the same AP MLD. | RevisedTGbe editor: Please implement the change as proposed by the comment except for replacing ‘any specific’ to ‘a specific’. |
| 16757 | Mark RISON | 35.3.3.2 | 482.36 | "by performing channel switch procedure" missing article | Change to "by performing the channel switch procedure " | Accepted |
| 15603 | Bo Sun | 35.3.3.3 | 482.54 | There is a redundant left parenthesis in this sentence. Please delete it | as in comment | Accepted |
| 16760 | Mark RISON | 35.3.3.3 | 483.01 | Missing article in "Only Basic Multi-Link element" | Change to "Only a Basic Multi-Link element". Also "complete profile" -> "the complete profile" | Accepted |
| 17819 | Yunbo Li | 35.3.3.3 | 484.24 | It is easy to misunderstand that "subject to inheritance" is the title of Table 9-62 | changes to:as defined in Table 9-62, and subject to inheritance | AcceptedTGbe editor, Change shown in 11-23/0296r3 tagged 17819. A visio file for the updated figure will be provided. |
| 18271 | Xiaofei Wang | 35.3.3.3 | 484.36 | extra space between "non-" and "AP" | as in comment | RevisedTGbe editor, please delete the extra space between "non-" and "AP" at the cited location. |
| 16762 | Mark RISON | 35.3.3.3 | 484.44 | "carries variable number of fields" missing article | Change to "carries a variable number of fields" | Accepted |
| 16763 | Mark RISON | 35.3.3.3 | 484.53 | "NOTE 4--Listen interval is not included within a STA Profile field (see 35.3.3.4 (Fields and elements not carried in aper-STA profile)). Therefore, Capability Information field is" missing articles | Change to "NOTE 4--The listen interval is not included within a STA Profile field (see 35.3.3.4 (Fields and elements not carried in aper-STA profile)). Therefore, the Capability Information field is" | RevisedAgree with the comment. As part of the resolution a few details were added to the NOTE to clarify why Listen Interval field is not included in the STA Profile field of the Basic ML IE and that the NOTE only applies to Association Request frame. TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16763 |
| 18248 | Li-Hsiang Sun | 35.3.3.4 | 485.01 | TID to link mapping/multilink traffic indication element should not be in per-STA profile from either side | add TID-to-link mapping indication element after SSID element on L1,add Multilink traffic indication element in the list on p484L63 | RevisedAgree with the comment. Multi-Link Traffic Indication element is added to the 1st paragraph. In addition, the text at multiple location is fixed to clarify that the fields are not carried in the STA Profile field of the Per-STA Profile Subelement of the Basic ML IE.Since the 2nd paragraph talks about two elements (SSID and Basic ML IE), the bullets are updated to clarify that the ‘element’ is Basic ML IE.Since T2LM is at the MLD level, it is carried in Beacon and Probe Response frames of each affiliated AP. Therefore, the T2LM IE will be either inherited (if identical) by the nonTxBSSID profile or explicitly carried in the nonTxBSSID profile if different. T2LM IE will not be included in the STA Profile field of Basic ML IE. The text in the 1st paragraph is updated to include T2LM IE.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 18248 |
| 15968 | Binita Gupta | 35.3.3.4 | 485.14 | NOTE 1 mentions TIM element (which is not applicable) in text related to Timestamp field "For an AP MLD that is not an NSTR mobile AP MLD, the Timestamp field is specific to each link and the value for each can be obtained on the respective link (i.e., Beacon frame includes Timestamp field and TIM element andProbe Response frame includes Timestamp field)." | Remove mention of "TIM element" from the indicated sentence. Change to "For an AP MLD that is not an NSTR mobile AP MLD, the Timestamp field is specific to each link and the value for each can be obtained on the respective link (i.e., Beacon frame and Probe Response frame includes Timestamp field)." | RevisedThere was an error in the text. The intention was to refer to TIM frame. The sentence is revised to clarify that a non-AP MLD can obtain the TSF of a link by receiving a Beacon, Probe Response or TIM frame on that link.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 15968 |
| 16764 | Mark RISON | 35.3.3.4 | 485.01 | "SSID element" missing article | "an SSID element" | AcceptedTGbe editor, the ‘accepted’ change is shown in 11-23/0296r3 for clarity since there are many other changes being made to the cited paragraph |
| 16765 | Mark RISON | 35.3.3.4 | 485.15 | "Beacon Interval field is an explicit subfield in STA Info field for the reported AP. AID field and BSSMax Idle Period element apply at the MLD level and have the same value for all links." more missing articles | As it says in the comment | RevisedThe NOTE is moved to be after the 1st paragraph since the 1st paragraph provides rules related to the fields/elements discussed in the NOTE. In addition, the NOTE is split into 3 NOTEs for clarity. In addition, missing articles are added.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16765 |
| 16180 | Ming Gan | 35.3.3.4 | 485.17 | It is ambiguous to say "Max Idle Period element has the same value for all links". Does that mean each link maintains a Max Idle Period? | Remove "and have the same value for all links" | RevisedAgree with the comment. The text is updated to clarify that cited field/element are carried in the core frame (i.e., outside the Basic ML IE).TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16180 |
| 18241 | Li-Hsiang Sun | 35.3.3.4 | 485.19 | BSS max idle period should not be in per-STA profile from non-AP side in (re)association request | as in comment | RevisedAgree with the comment. Added BSS Max Idle Period element to the list. Also clarified that the fields are not carried in the STA Profile field of the Per-STA Profile Subelement of the Basic ML IE.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 18241 |
| 16181 | Ming Gan | 35.3.3.4 | 485.23 | It is ambiguous to say "Listen Interval field has the same value for all links". Does that mean each link maintains a Listen Interval? | Remove "and have the same value for all links" | RevisedAgree with the comment. The text is updated to clarify that cited fields are carried in the core frame (i.e., outside the Basic ML IE).TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16181 |
| 16766 | Mark RISON | 35.3.3.4 | 485.23 | "NOTE 2--Listen Interval field and Current AP Address field apply at the MLD level and have the same value for alllinks." missing articles | As it says in the comment | RevisedText is updated to include the missing articles.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16766 |
| 16767 | Mark RISON | 35.3.3.4 | 485.34 | "There is no RSNE/RSNXE included" is a bit weird | Change to "No RSNE/RSNXE is included" | RevisedAgree with the comment. In addition, other editorial fixes were made to the NOTE (such as adding missing articles) and clarifying that the fields are not carried in the STA Profile field of the Per-STA Profile Subelement of the Basic ML IE. Similar changes are applied to the paragraph before the NOTE.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16767 |
| 16768 | Mark RISON | 35.3.3.4 | 485.37 | "provided by non-AP MLD during multi-link (re)setup. See 12.6.3.1(General). An AP MLD can have different MFPR carried in RSNE for each of its affiliated APs and in such case, the(Re)Association Response frame includes RSNE in the corresponding Per-STA Profile subelement of Basic Multi-Linkelement. See 12.6.2 (RSNA selection)." -- missing articles | As it says in the comment | RevisedAgree with the comment. Resolution to CID 16767 added the missing articles.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16767 |
| 17915 | Kazuto Yano | 35.3.3.5 | 485.60 | A period is missing at the end of this sentence. | As in comment. | Accepted |
| 16770 | Mark RISON | 35.3.3.6.1 | 486.44 | "carries complete profile" missing article. Also line 49 | As it says in the comment | RevisedThe missing article is added at line 44 and 49 as suggested by the comment. In addition, editorial updates were made to the 1st paragraph to improve readability.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16770 |
| 16771 | Mark RISON | 35.3.3.6.1 | 486.57 | "An element, identified by an Element ID and Element ID Extension (if applicable)," -- all elements are so identified | Delete ", identified by an Element ID and Element ID Extension (if applicable),". Also 2x on page 487 | RejectedThe cited text was added after a lot of discussion within the group (and similar discussion in REVme for inheritance in MBSSID). A mgmt. frame carries several elements and some of those elements will be inherited (and hence not included within the STA Profile field of Basic ML IE). Therefore, it is essential to have such language.  |
| 16769 | Mark RISON | 35.3.3.6.1 | 486.61 | "the contents of the Information field is notthe same" should be "the contents of the Information field are notthe same" | As it says in the comment | Accepted |
| 16773 | Mark RISON | 35.3.3.6.1 | 487.61 | "In this example, the profile for STA 1,which is a complete profile is expanded to show the details of inheritance." missing comma | Change to "In this example, the profile for STA 1,which is a complete profile, is expanded to show the details of inheritance." | Accepted |
| 16772 | Mark RISON | 35.3.3.6.1 | 487.44 | "arries complete per-STA profile " missing article | As it says in the comment | RevisedThe missing article is added at the cited location as suggested by the comment. In addition, editorial updates were made to the paragraph to improve readability.TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16772 |
| 16776 | Mark RISON | 35.3.3.7 | 489.41 | "less than or equal 255 octets" missing "to" after "equal" | As it says in the comment | Accepted |
| 16182 | Ming Gan | 35.3.3.7 | 489.42 | Should be "equal to"? | add "to" after "equal" | Accepted |
| 16188 | Ming Gan | 35.3.4.6 | 496.01 | a typo | Change "an" to "a" | Accepted |
| 17823 | Yunbo Li | 35.3.4.6 | 497.08 | the footnote # says APs on 2.4GHz and 5GHz do not corresponding to a nonTXBSSID, but # are taged to AP2 and AP3 which are operating on 5GHz and 6GHz. | modify the figure to match sentence of footnote # with operating bands of AP2 and AP3. | AcceptedTGbe editor, Change shown in 11-23/0296r3 tagged 17823. A visio file for the updated figure will be provided. |
| 16788 | Mark RISON | 35.3.4.6 | 497.54 | "contents of Management frames" missing article | Prepend "the" | RevisedAgree with the comment. The missing article ‘the’ is added at the cited location. TGbe editor, please make changes as shown in 11-23/0296r3 tagged 16788 |
| 15605 | Bo Sun | 35.3.4.6 | 497.57 | "A Beacon frame" is not expected to be transmitted by a non-AP STA with a non-AP MLD during MLO discovery and multi-link setup process | Change "A Beacon frame or a Probe Request frame..." to "A Probe Request frame..." and remove "Beacon frame or" at pg497/ln58. | RevisedAgree with the comment. The error (i.e., inclusion of Beacon) is fixed in the description text and the caption for the figure. The resolution also updates the caption for figure 35-9xx, 35-10xx and 35-12xx to be more precise (i.e., applies either MLO discovery or ML setup).TGbe editor, please make changes as shown in 11-23/0296r3 tagged 15605 |
| 15857 | Chunyu Hu | 35.3.4.6 | 497.57 | A non-AP STA doesn't transmit Beacon frames | Remove "A Beacon frame" from the sentence. | AcceptedSame resolution as 15605  |
| 15977 | Binita Gupta | 35.3.4.6 | 497.57 | The Figure 35-9a should only be Probe Request frame, and not include Beacon frame, since this is capturing management frames by non-AP STA | Remove "Beacon frame". Also remove from label for Figure 35-9a. | AcceptedSame resolution as 15605 |
| 15606 | Bo Sun | 35.3.4.6 | 498.16 | The title of Figure 35-9a is misleading. The figure shows actually only the content of a Probe Request frame. | Remove "Beacon frame or" from the title of Figure 35-9a and all places referring it. | AcceptedSame resolution as 15605 |
| 16789 | Mark RISON | 35.3.4.6 | 498.03 | "A (Re)Association frame " -- no such frame | Change to "A (Re)Association Request frame ". At 499.32 similarly add "Response". At 207.20 change "(RE)ASSOCIATION FRAME" to "(RE)ASSOCIATION\_REQUEST\_FRAME". At 509.47 change "(Re)ASSOCIATION\_FRAME" to "(RE)ASSOCIATION\_REQUEST\_FRAME" | AcceptedTGbe editor, please make changes as shown in 11-23/0296r3 tagged 16789 |
| 15979 | Binita Gupta | 35.3.4.6 | 498.04 | Add "Request" in "(Re)Association frame". Similar comment for adding "Response' on pg 499 line 32 | Modify to "(Re)Association Request frame" and "(Re)Association Response frame" ( pg 499 line 32) | AcceptedThe comment is addressed as a resolution for CID 16789 |
| 16089 | Insun Jang | 35.3.4.6 | 498.04 | "Request" is missing for frame | Need to correct frame name as in the comment | AcceptedThe comment is addressed as a resolution for CID 16789 |
| 16090 | Insun Jang | 35.3.4.6 | 499.32 | "Response" is missing for frame | Need to correct frame name as in the comment | AcceptedThe comment is addressed as a resolution for CID 16789 |
| 15978 | Binita Gupta | 35.3.4.6 | 498.16 | Figure 35-9a and Figure 35-9b refer to an incorrect title for clause 35.3.4.5. | Fix the title for clause 35.3.4.5. in the two figures to "Probe Request frame content for a non-AP EHT STA" | RevisedAgree with the comment. The reference to the section title is removed from figure 35-9a and 35-9bTGbe editor, Change shown in 11-23/0296r3 tagged 15978. Visio files for the updated figure will be provided. |
| 15858 | Chunyu Hu | 35.3.4.6 | 498.07 | The caption and annotation for Figure 35-9a need fix. | Change "for" to "by" in "Active scanning for non-AP EHT STA". Remove "a Beacon frame or" as a non-AP STA doesn't transmit Beacons. | RevisedThe comment is addressed as a resolution for CID 15978TGbe editor, Change shown in 11-23/0296r3 tagged 15978 |
| 15859 | Chunyu Hu | 35.3.4.6 | 498.24 | The annotation in Figure 35-9b needs fix. | Change "for" to "by" in "Active scanning for non-AP EHT STA". | RevisedThe comment is addressed as a resolution for CID 15978TGbe editor, Change shown in 11-23/0296r3 tagged 15978 |
| 15981 | Binita Gupta | 35.3.4.6 | 504.30 | Figure35-12c needs to show that the Basic ML element (nonTx) has the AP MLD ID in the Common Info field set to 5 (same as Index value 5) | Update Figure as per comment | RevisedFigure 35-12c is updated to show AP MLD ID in the Common Info field of the Basic ML IE corresponding to the AP MLD of the nonTxBSSID.TGbe editor, Change shown in 11-23/0296r3 tagged 15981. Visio files for the updated figure will be provided. |
| 15683 | Oren Kedem | 35.3.3.2 | 523.30 | Oren Kedem | The definition for "Link" should be in section 3.2 | RejectedThe definition for ‘link’s exists in baseline spec (please see REVme D2.1 P216L57) |
| 18174 | Abhishek Patil | 35.3.20 | 575.50 | BSSID' missing after 'transmitted'. Also on P576L25, BSS should be changed to BSSID. | Add 'BSSID' between 'transmitted' and 'or' | Accepted |
| 15567 | Chaoming Luo | 35.3.20 | 575.53 | "that is affiliated with APs" is a little bit confusing. | Change to: whose affiliated APs | Accepted |
| 16968 | Mark RISON | 35.3.20 | 575.53 | "Each AP MLD, that is affiliated with APs belonging to a multiple BSSIDset or a co-hosted BSSID set, shall independently assign a Link ID to each of its affiliated APs." spurious commas | Delete the commas | Accepted |
| 18175 | Abhishek Patil | 35.3.20 | 575.54 | Provide reference to 35.3.3.2 after the term Link ID | As in comment | RevisedTGbe editor, please add “(see 35.3.3.2 (Link ID))” between ‘Link ID’ and ‘to’ at P575L54. |
| 16969 | Mark RISON | 35.3.20 | 576.02 | "the AP correspondingnontransmitted BSSID" should be "the AP correspondingto the nontransmitted BSSID" | As it says in the comment | Accepted |
| 16970 | Mark RISON | 35.3.20 | 576.15 | "include Basic Multi-Link element" missing article | As it says in the comment | RevisedTGbe editor, please add ‘a’ before ‘Basic Multi-Link element’ at the cited location |
| 16971 | Mark RISON | 35.3.20 | 576.15 | "corresponding to the AP MLD, withwhich the transmitted BSSID is affiliated with" spurious comma and excess with | Delete the comma and the second "with" | Accepted |
| 16973 | Mark RISON | 35.3.20 | 576.17 | "carry complete profile" missing article | As it says in the comment | RevisedTGbe editor, please add ‘a’ before ‘complete profile’ at the cited location. |
| 18176 | Abhishek Patil | 35.3.20 | 576.33 | Since the multi-link probe request was directed to a specific nonTxBSSID, it is optional to include the nonTxBSSID profile(s) for other AP(s) in the set. | Add "(if present)" after "nontransmitted BSSID profile(s)" | Accepted |
| 16974 | Mark RISON | 35.3.20 | 0.00 | Missing articles at lines 25, 29, 34 | As it says in the comment | RevisedAdded missing articles as stated in the comment.TGbe editor, please apply shown in 11-23/0296r3 tagged 16974. |
| 16076 | Binita Gupta | AA.3 | 996.55 | Labeling of SSID 4 is missing in top part of Figure AA-6. SSID 4 is used for MLD H | Label SSID 4 for ESS 4 in the Figure. Remove the additional label for SSID 3. | AcceptedTGbe editor, Change shown in 11-23/0296r3 tagged 16076. Visio file showing the change will be provided. |
| 17551 | Brian Hart | 9.4.2.61 | 234.09 | "the AP is operating on the link ..." is not unique: in Manhattan there could be 100 such APs. | Likely need to add some notion of association. Try rewriting the previous sentence but flip the "not affiliated" modifier | RevisedAgree with the comment. The entire subclause was re-written to clearly call out each condition and the corresponding field values.TGbe editor, please make changes as shown in 11-23/0296r10 tagged 17551 |
| 15161 | Po-Kai Huang | 9.4.2.61 | 234.01 | Use non-AP STAs for STAs affiliated with a non-AP MLD. | Use non-AP STAs for STAs affiliated with a non-AP MLD. | RevisedAgree with the comment. The comment is addressed as a result of the resolution for CID 17551.TGbe editor, please make changes as shown in 11-23/0296r10 tagged 17551 |
| 16012 | Binita Gupta | 35.3.7.1.7 | 519.41 | The NOTE 2 should be converted into a requirement and advertised TID-To-Link Mapping element for an MLD of a nontransmitted BSSID needs to be always carried in the nontransmitted BSSID profile, since AP MLDs of transmitted BSSID and nontransmitted BSSID can disable links independently. So, this element should never be inherited. | Convert NOTE to a requirement. | RevisedAgree with the comment. The intention of the NOTE is not clear and should be stated as normative text. The NOTE is replaced with normative text stating the set of conditions (all of) which need to be satisfied for a nonTxBSSID profile to inherit the T2LM IE(s). Otherwise, the nonTxBSSID profile needs to include the T2LM IE(s).TGbe editor, please make changes as shown in 11-23/0296r9 tagged 16012 |
| 15525 | Chaoming Luo | 35.3.7.1.7 | 519.41 | "each" here means every AP? The note does not cover all the cases. Change the text to reflect this case too: 3 APs in a M-BSSID set, 2 of them have the same link ID and the other 1 is different. | As in comment. | RevisedAgree with the comment. Same resolution as 16012TGbe editor, please make changes as shown in 11-23/0296r9 tagged 16012 |
| 16501 | Arik Klein | 35.3.7.1.7 | 519.46 | In case of different Link ID of each AP in a multiple BSSID set and affiliated with different MLDs, need to clarify that each nontransmitted BSSID shall include two TID-to-link mapping elements. | Add a note to clarify the issue raised in the comment. | RevisedAgree with the comment. Same resolution as 16012TGbe editor, please make changes as shown in 11-23/0296r9 tagged 16012 |
| 16445 | Laurent Cariou | 35.3.7.1.7 | 519.40 | Note is not very clear. It really means that Advertised T2LM is not inherited by NonTransmitted BSSIDs in a MultiBSS, so can be re-worded that way | as in comment | RevisedAgree with the comment. Same resolution as 16012TGbe editor, please make changes as shown in 11-23/0296r9 tagged 16012 |
| 18092 | Abhishek Patil | 9.4.2.312.2.3 | 254.01 | Within the setup links (i.e., associated links), an AP MLD may want to limit the number of links any non-AP MLD is allowed to be active on at any given time | Standard must provide a mechanism for an AP MLD to advertise such information and provide guidance for a non-AP MLD to conform to AP MLD's requirements. The commenter will provide a contribution to address this comment. | RevisedAgree with the comment. The proposed change provides a mechanism for an AP MLD to indicate its constraint and a recommendation for a non-AP MLD to follow to help meet the limitation. A non-AP MLD has freedom to choose the links to meet the AP’s request. A non-AP is encouraged to follow the AP’s request so that the AP is not forced to take more drastic actions such as enforcing advertised T2LM (which would lead to a non-AP being forced to operate on links that it doesn’t prefer).TGbe editor, please make changes as shown in 11-23/0296r9 tagged 18092 |
| 18114 | Abhishek Patil | 35.3.4.2 | 492.52 | Table 9-34 specifies a limit on the PPDU length (octets) and duration (ms). If an AP MLD is operating several links and a non-AP MLD sends a multi-link probe request that does not contain Link Info field, the AP is expect to provide complete profile of all the affiliated APs. This is a lot of information which may not fit within the same frame (per Table 9-34) | The standard must clarify that an AP affiliated with an AP MLD provides partial list of profiles in response to an ML probe if it cannot fit all the requested complete profiles to meet the requirement in Table 9-34. An interested non-AP MLD can perform subsequent (targeted) ML probing to gather information of affiliated APs that were not reported in the initial response. | RevisedAgree with the comment. A NOTE is added at the end of 35.3.4.2 to clarify that an AP’s probe response might not be able to fit all the content while meeting the requirements from Table 9-34. Another NOTE is added after the 1st paragraph in 35.3.4.3 to clarify that a non-AP MLD can perform another multi-link probe to solicit information of the missing profiles if the previously solicited ML probe response doesn’t include information of all the requested APs.TGbe editor, please make changes as shown in 11-23/0296r10 tagged 18114 |

x-x-x-x-x-x-x-x- Start of changes related to CID 15356 - x-x-x-x-x-x-x-x

**9.4.1.4 Capability Information field**

***TGbe editor: Please replace the 1st paragraph in this subclause as shown below:***

The Critical Update Flag subfield is reserved when the Capability Information field is carried in:

* A frame transmitted by a non-AP STA or
* A frame transmitted by an AP that is not affiliated with an AP MLD or
* Frames other than a Beacon frame or a Probe Response frame transmitted by an AP affiliated with an AP MLD or
* A Per-STA Profile subelement contained in a Basic Multi-Link element that includes a complete profile of a reported AP.

Otherwise, the Critical Update Flag subfield is present in the Capability Information field.

***TGbe editor: Please update the 3rd paragraph and the following NOTE in this subclause as shown below:***

Otherwise, the AP sets the Critical Update Flag subfield to 0.

NOTE—An AP sets the Critical Update Flag subfield to 1 in Beacon frame(s) until and including the next DTIM Beacon frame [17483]following the procedure defined in 35.3.10 (BSS parameter critical update procedure).

***TGbe editor: Please add the following paragraph before the 4th paragraph in this subclause as shown below:***

The Nontransmitted BSSIDs Critical Update Flag subfield is reserved when the Capability Information field is carried in:

* A frame transmitted by a non-AP STA or
* A frame transmitted by an AP that is not affiliated with an AP MLD or
* A frame transmitted by an AP that is affiliated with an AP MLD and does not belong to a multiple BSSID set or
* The Nontransmitted BSSID Capability element contained within the Nontransmitted BSSID Profile subelement of the Multiple BSSID element transmitted by an AP corresponding to the transmitted BSSID in a multiple BSSID set or
* Frames other than a Beacon frame or a Probe Response frame transmitted by an AP affiliated with an AP MLD which corresponds to a transmitted BSSID in a multiple BSSID set or
* A Per-STA Profile subelement contained in a Basic Multi-Link element that includes a complete profile of a reported AP.

Otherwise, the Nontransmitted BSSIDs Critical Update Flag subfield is present in the Capability Information field.

***TGbe editor: Please update the now shifted 4th paragraph in this subclause as shown below:***

An AP affiliated with an AP MLD sets the Nontransmitted BSSIDs Critical Update Flag subfield to 1 if the Critical Update Flag subfield of the Nontransmitted BSSID Capability field (see 9.4.2.71 (Nontransmitted BSSID Capability element)) is set to 1 in at least one Nontransmitted BSSID Profile subelement carried in the Multiple BSSID element in the same frame. Otherwise, the AP sets the Nontransmitted BSSIDs Critical Update Flag subfield to 0.

x-x-x-x-x-x-x-x- End of changes related to CID 15356 - x-x-x-x-x-x-x-x

x-x-x-x-x-x-x-x- Start of changes related to CID 17551- x-x-x-x-x-x-x-x

**9.4.2.61 Link Identifier element**

***TGbe editor: Please update the contents of this subclause as shown below:***

 If the frame carrying the Link Identifier element is transmitted by:

* A non-AP STA that is not affiliated with a non-AP MLD, then the BSSID field is set to the BSSID of the BSS of which the TDLS initiator is a member.
* A non-AP STA affiliated with a non-AP MLD that intends to establish a single link TDLS direct link, then the BSSID field is set to the BSSID of the AP that is operating on the link where the non-AP MLD intends to establish a single link TDLS direct link, and the AP is affiliated with the AP MLD with whom the non-AP MLD has performed ML setup.

The TDLS initiator STA Address field is set to the TDLS initiator’s MAC address.

NOTE – When the transmitting non-AP STA is affiliated with a non-AP MLD, the TDLS initiator MAC address is set to the MLD MAC address of the non-AP MLD.

The TDLS responder STA Address field is set to the TDLS responder’s MAC address.

NOTE – When the transmitting non-AP STA is affiliated with a non-AP MLD, the TDLS responder MAC address is set to the MLD MAC address of the non-AP MLD.

**12.7.8.2 TPK handshake**

***TGbe editor: Please update the following text (P429L32 in TGbe D3.0) in this subclause as shown below:***

BSSID is the value carried in the BSSID field of the Link Identifier element as described in 9.4.2.61 (Link Identifier element)

x-x-x-x-x-x-x-x- End of changes related to CID 17551- x-x-x-x-x-x-x-x

**9.4.2.240 Non-Inheritance element**

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

[17594]When present in the STA Profile field of a Basic Multi-Link element, the Non-Inheritance element identifies one or more elements that are not inherited by the reported STA corresponding to that per-STA profile. Each element identified by the Non-Inheritance element is present in the frame that carries the Basic Multi-Link element and is not present within the STA Profile field that carries the Non-Inheritance element (also see 35.3.3.6.1 (Inheritance in the per-STA profile of Basic Multi-Link element)).

**9.4.2.312.1 General**

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

[17610]The Type subfield is defined in Table 9-401b (Type subfield encoding) and is used to differentiate the variants of the Multi-Link element. The format of each vari­ant of the Multi-Link element is defined in the subclauses below.

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

[17613]The Common Info field carries information that is common to all the links except for the Link ID Info subfield and the BSS Parameters Change Count subfield of the Basic Multi-Link element (see 9.4.2.312.2.3 (Common Info field of the Basic Multi-Link element)).

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

***TGbe editor: Please add the following paragraph after the 4th paragraph in this subclause as shown below:***

[16453]Link ID Info subfield in the Common Info field is not present if the Basic Multi-Link element is sent by a non-AP STA.

***TGbe editor: Please update the NOTE in Table 9-401i in this subclause as shown below:***

**Table 9-401i—Subfields of the MLD Capabilities and Operations field**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| … | … | … |
| [18093]NOTE—Indicating support for TID-to-link mapping negotiation by setting the TID-To-Link Mapping Negotiation Support subfield to a nonzero value also indicates support for negotiations applicable to all smaller values. Also see 35.3.7.1.1 for rules related to performing ML (re)setup with an AP MLD that has this subfield set to a nonzero value. |

x-x-x-x-x-x-x-x- Start of changes related to CID 18092- x-x-x-x-x-x-x-x

TGbe editor: Baseline for this resolution is TGbe D3.2

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

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

 B0 B1 B4 B5 B15

Reserved

Recommended Max Simultaneous Links

Operation Parameter Update Support

Bits: 1 4 11

**Figure 9-1002l— Extended MLD Capabilities And Operations subfield format**

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

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| Recommended Max Simultaneous Links | Recommended maximum number of enabled links that a non-AP MLD can operate on for simultaneous frame exchanges. | Reserved for a non-AP STA.Indicates the recommended maximum number of enabled links on which a non-AP MLD can operate on for simultaneous frame exchanges. A value of 0 indicates that the AP MLD does not advertise any such limit. The value 1 is reserved.See 35.3.7.1 (General). |

**35.3.7 Link management**

35.3.7.1 General

***TGbe editor: Please add a new paragraph as the last paragraph in this subclause as shown below:***

When an AP MLD advertises a value L (where L is greater than 1) in the Recommended Max Simultaneous Links subfield of the Basic Multi-Link element, an associated non-AP MLD should not exchange frames simultaneously on more than L links.

x-x-x-x-x-x-x-x- End of changes related to CID 18092- x-x-x-x-x-x-x-x

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

***TGbe editor: Please update the 2nd and 3rd paragraphs in this subclause as shown below:***

[17882]The TSF Offset Present subfield is set to 1 if the TSF Offset subfield is present in the STA Info field; otherwise, the TSF Offset Present subfield is set to 0. A non-AP STA sets the TSF Offset Present subfield to 0 in the transmitted Basic Multi-Link element. An AP affiliated with an NSTR Mobile AP MLD sets this subfield to 0. An AP affiliated with an AP MLD that is not an NSTR Mobile AP MLD sets this subfield to 1 when the element carries complete profile.

**35.3.3 Advertisement of multi-link information in Multi-Link element**

**35.3.3.1 General**

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

[17864]

**35.3.3.3 Advertisement of complete or partial per-link information**

***TGbe editor: Please update the Figure 35-3 in this subclause as shown below:***



**Figure 35-3—Example of Basic Multi-Link element in an Association Request frame**[17819]

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

[16763]NOTE 4—Since the listen interval is applied at the MLD level, the Listen interval field is not included within a STA Profile field (see 35.3.3.4 (Fields and elements not carried in a per-STA profile)) of the Basic Multi-Link element carried in an Association Request frame. As a result, the Capability Information field is the only field carried in the STA Profile field of the Basic Multi-Link element carried in an Association Request frame and is followed by elements applicable to the reported STA.

**35.3.3.4 Fields and elements not carried in a per-STA profile**

***TGbe editor: Please update the contents of this subclause as shown below:***

[18248]An AP affiliated with an AP MLD shall not include a Timestamp field, a Beacon Interval field, an AID field, a BSS Max Idle Period element, a Neighbor Report element, a Reduced Neighbor Report element, a Multiple BSSID element, TIM element, Multiple BSSID-Index element, Multiple BSSID Configuration element, TID-to-Link Mapping element, Multi-Link Traffic Indication element or another Multi-Link element in the STA Profile field of the Basic Multi-Link element.

[16765]

[16765]NOTE 1a – [15968]by receiving a Beacon frame, a Probe Response frame or a TIM frame or can be determined based on the TSF Offset subfield carried in the STA Info field corresponding to the reported AP

[16765]NOTE 1b – The The the [16180] are carried outside the Basic Multi-Link element

An AP affiliated with an AP MLD shall not include [16764]an SSID element in the [18248]STA Profile field of the Basic Multi-Link element for a reported AP unless both of the following conditions are satisfied for the element:

* The Basic Multi-Link element carries complete profile of the reported AP.[18248]
* The Basic Multi-Link element is contained in a multi-link probe response transmitted by the AP corresponding to the transmitted BSSID in a multiple BSSID set in response to a multi-link probe request directed to an AP corresponding to the nontransmitted BSSID in the same multiple BSSID set.[18248]

[18241]A non-AP STA affiliated with a non-AP MLD shall not include a Listen Interval field, a Current AP Address field, an SSID element, BSS Max Idle Period element or another Multi-Link element in the STA Profile field of the Basic Multi- Link element.

NOTE 2—[16766]The Listen Interval field and [16766]the Current AP Address field apply at the MLD level and [16181]are carried outside the Basic Multi-Link element.

NOTE 3—All APs affiliated with the same AP MLD advertise the same SSID (see 35.3.1 (General)) and therefore, the same (SSID) value applies to a reported (AP or non-AP) STA.

[16767]A STA affiliated with an MLD shall not include the FTE and the MDE for each reported STA in the reported STA’s STA Profile field of the Basic Multi-Link element carried in a (Re)Association Request frame or a (Re)Association Response frame that it transmits. Also see 13.4.2 (FT initial mobility domain association in an RSN) and 13.7 (FT reassociation).

[16767]NOTE 4—No RSNE/RSNXE is included in the Basic Multi-Link element carried in a (Re)Association Request frame because there is only one RSNE/RSNXE provided by the non-AP MLD during multi-link (re)setup. See 12.6.3.1 (General). An AP MLD can have a different MFPR carried in the RSNE for each of its affiliated APs and in such case, the (Re)Association Response frame includes the RSNE in the corresponding STA Profile field of Basic Multi-Link element. See 12.6.2 (RSNA selection).

**35.3.3.6.1 Inheritance in the per-STA profile of Basic Multi-Link element**

***TGbe editor: Please update the contents of the 1st and 2nd paragraphs in this subclause as shown below:***

[16770]It is likely that STAs affiliated with the same MLD have similar capabilities and operational parameters for operating on their respective links. As a result, an element that is applicable to a reported STA might have the same value as the corresponding element applicable to a reporting STA which is carried in the frame outside the Basic Multi-Link element. To reduce the frame size, when a Per-STA Profile subelement carries a complete profile for a reported STA, it inherits the elements from the reporting STA based on the rules defined in this subclause.

The inheritance mechanism described in this subclause shall apply only when the Per-STA Profile subelement of the Basic Multi-Link element carries a complete profile of the reported STA (i.e., the Complete Profile subfield in the STA Control field of the subelement is set to 1).

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

[16772]When an AP corresponding to a transmitted BSSID in a multiple BSSID set transmits a multi-link probe response in response to a multi-link probe request directed to an AP corresponding to a nontransmitted BSSID in the same multiple BSSID set and the Basic Multi-Link element corresponding to the AP MLD of the nontransmitted BSSID carries a complete per-STA profile for a requested AP, then the inheritance (or non-inheritance) for the per-STA profile is with respect to the elements carried in the Probe Response frame that are outside the Multiple BSSID element.

x-x-x-x-x-x-x-x- Start of changes related to CID 18114- x-x-x-x-x-x-x-x

**35.3.4.2 Use of multi-link probe request and response**

***TGbe editor: Please add the following NOTE at the end of this subclause as shown below:***

NOTE – If a non-AP MLD has requested, in its Probe Request frame, the complete profile of several (or all) APs affiliated with an AP MLD (either explicitly or implicitly by not including the Link Info field in the Probe Request Multi-Link element), then it is possible that the responding AP might not be able to fit all the requested profiles due to size or duration limits specified in Table 9-34 (Maximum data unit sizes (in octets) and durations (in microseconds)).

**35.3.4.3 Non-AP MLD behavior**

***TGbe editor: Please add the following NOTE after the 1st paragraph in this subclause as shown below:***

NOTE – If a non-AP MLD receives a multi-link probe response that does not carry profile for one or more requested APs, then it can send another multi-link probe request to solicit information of the missing profile(s) that are of interest to it by including the corresponding Per-STA Profile subelement(s) in the Probe Request Multi-Link element.

x-x-x-x-x-x-x-x- End of changes related to CID 18114- x-x-x-x-x-x-x-x

**35.3.4.6 Frame exchange sequences during MLO discovery and multi-link setup**

***TGbe editor: Please update the Figure 35-8 in this subclause as shown below:***



**Figure 35-8—Possible frame exchange sequences during MLO discovery and multi-link setup when the AP operating on the channel does not correspond to a nontransmitted BSSID**[17823]

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

In the following, contents of [16788]the Management frames transmitted by a non-AP STA affiliated with a non-AP MLD during MLO discovery and multi-link setup are illustrated as follows:

—A [15605]Probe Request frame that is not a multi-link probe request in Figure 35-9a (Contents of a [15605]Probe Request frame that is not a multi-link probe request transmitted by a non-AP STA affiliated with a non-AP MLD during MLO discovery[15605]),

—A multi-link probe request in Figure 35-9b (Contents of a multi-link probe request transmitted by a non-AP STA affiliated with a non-AP MLD during MLO discovery[15605]),

—An Authentication frame in Figure 35-9c (Contents of an Authentication frame transmitted by a non-AP STA affiliated with a non-AP MLD during [15605]multi-link setup), and

—A (Re)Association [16789]Request frame in Figure 35-9d (Contents of a (Re)Association Request frame transmitted by a non-AP STA affiliated with a non-AP MLD during [15605]and multi-link setup).

***TGbe editor: Please update Figure 35-9a and its caption in this subclause as shown below:***



[15605, 15978]**Figure 35-9a—Contents of a Probe Request frame that is not a multi-link probe request transmitted by a non-AP STA affiliated with a non-AP MLD during MLO discovery**

***TGbe editor: Please update Figure 35-9b and its caption in this subclause as shown below:***



[15605, 15978]**Figure 35-9b—Contents of a multi-link probe request transmitted by a non-AP STA affiliated with a non-AP MLD during MLO discovery**

***TGbe editor: Please update the caption for Figure 35-9c and 35-9d in this subclause as shown below:***

[15605]**Figure 35-9c—Contents of an Authentication frame transmitted by a non-AP STA affiliated with a non-AP MLD during multi-link setup**

[15605]**Figure 35-9d—Contents of a (Re)Association Request frame transmitted by a non-AP STA affiliated with a non-AP MLD during multi-link setup**

[15605]**Figure 35-10a—Contents of a Beacon frame or Probe Response frame that is not a multi-link probe response transmitted by an affiliated AP that is not a member of a multiple BSSID set during MLO discovery**

[15605]**Figure 35-10b—Contents of a multi-link probe response transmitted by an affiliated AP that is not a member of a multiple BSSID set during MLO discovery**

[15605]**Figure 35-10c—Contents of an Authentication frame transmitted by an affiliated AP that is not a member of a multiple BSSID set during multi-link setup**

[15605]**Figure 35-10d—Contents of a (Re)Association Response frame transmitted by an affiliated AP that is not a member of a multiple BSSID set during multi-link setup**

[15605]**Figure 35-12a—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**

[15605]**Figure 35-12b—Contents of a multi-link probe response, when soliciting frame was directed to transmitted BSSID, transmitted by an AP affiliated with an AP MLD that is a member of multiple BSSID set during MLO discovery**

[15605]**Figure 35-12d—Contents of an Authentication frame transmitted by an AP affiliated with an AP MLD that is a member of multiple BSSID set during multi-link setup**

[15605]**Figure 35-12e—Contents of a (Re)Association Response frame transmitted by nontransmitted BSSID corresponding to index 5 during multi-link setup**



[15605, 15981]**Figure 35-12c—Contents of a multi-link probe response, when soliciting frame was directed to nontransmitted BSSID corresponding to index 5, transmitted by an AP affiliated with an AP MLD that is a member of multiple BSSID set during MLO discovery**

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

In the following, contents of Management frames transmitted by an affiliated AP that is not a member of a multiple BSSID set during MLO discovery and multi-link setup are illustrated as follows:

—A Beacon frame or Probe Response frame that is not a multi-link probe response in Figure 35-10a (Contents of a Beacon frame or Probe Response frame that is not a multi-link probe response transmitted by an affiliated AP that is not a member of a multiple BSSID set during MLO discovery[15605]),

—A multi-link probe response in Figure 35-10b (Contents of a multi-link probe response transmitted by an affiliated AP that is not a member of a multiple BSSID set during MLO discovery[15605]),

—An Authentication frame in Figure 35-10c (Contents of an Authentication frame transmitted by an affiliated AP that is not a member of a multiple BSSID set during multi-link setup[15605]), and

—A (Re)Association Response[16789] frame in Figure 35-10d (Contents of a (Re)Association Response frame transmitted by an affiliated AP that is not a member of a multiple BSSID set during multi-link setup[15605]).

**9.4.1.9 Status Code field**

***TGbe editor: Please update the following row in Table 9-78 this subclause as shown below:***

**Table 9-78—Status codes *(continued)***

|  |  |  |
| --- | --- | --- |
| **Status code** | **Name** | **Meaning** |
| 139 | [16789]DENIED\_LINK\_ON\_WHICH\_THE\_(RE)ASSOCIATION\_REQUEST\_FRAME\_IS\_TRANSMITTED\_NOT\_ACCEPTED | Link not accepted because the link on which the (Re)Association Request frame is transmitted is not accepted. |

**35.3.5.4 Usage and rules of Basic Multi-Link element in the context of multi-link (re)setup, authentication, and FT action frame exchange between two MLDs**

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

[16789]For each Per-STA Profile subelement included in the Link Info field, the Complete Profile subfield of the STA Control field shall be set to 1 (see 35.3.3.3 (Advertisement of complete or partial per-link information)) and the Status Code field included in the STA Profile subfield of the Per-STA Profile subelement shall indicate SUCCESS if the link is accepted or the failure cause if the link is not accepted. The Status Code field in the (Re)Association Response frame body shall indicate, as defined in 9.4.1.9 (Status Code field), whether the link on which the (Re)Association Request frame is received is accepted or not. The Status Code field included in the STA Profile subfield of the Per-STA Profile subelement shall indicate DENIED\_LINK\_ON\_WHICH\_THE\_(Re)ASSOCIATION\_REQUEST\_FRAME\_IS\_ TRANSMITTED\_NOT\_ACCEPTED if the Status Code is not set to REFUSED\_REASON\_UNSPECIFIED and the link corresponding to the Per-STA Profile subelement is not accepted only because the link on which the (Re)Association Request frame is transmitted is not accepted.

**35.3.7.1.7 Advertised TID-to-link mapping in Beacon and Probe Response frames**

***TGbe editor: Please replace NOTE 2 in this subclause with the following paragraph shown below:***

[16012]An AP with dot11MultiBSSIDImplemented set to true shall follow the rules described in 11.1.3.8.4 (Inheritance of element values) for inheriting or not inheriting an advertised TID-to-Link mapping. Specifically:

* If the advertised TID-To-Link mapping for the transmitted BSSID in a Beacon or Probe Response frame does not apply to a nontransmitted BSSID and the nontransmitted BSSID does not have an active advertised TID-to-Link mapping, then the profile for that nontransmitted BSSID carries a Non-Inheritance element which includes the Element ID Extension of the TID-to-Link Mapping element.
* If the advertised TID-to-Link mapping for the transmitted BSSID in a Beacon or Probe Response frame is not the same for a nontransmitted BSSID or the configuration of links (such as link ID assignments, number of links, etc.) are not the same for the corresponding AP MLDs of the transmitted and the nontransmitted BSSIDs, then the profile for that nontransmitted BSSID includes TID-To-Link Mapping element(s) to indicate the advertised TID-to-Mapping for the nontransmitted BSSID.

**35.3.20 Multi-link operation in a multiple BSSID set or co-hosted BSSID set**

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

NOTE—When an AP corresponding to a transmitted BSSID in a multiple BSSID set transmits a multi-link probe response in response to a multi-link probe request directed to an AP corresponding to a nontransmitted BSSID in the same multiple BSSID set, the Probe Response frame:

—carries a[16974] Basic Multi-Link element, outside the Multiple BSS element, containing a profile of the requested AP(s) affiliated with the AP MLD with which the AP corresponding to that nontransmitted BSSID is affiliated with and the AP MLD ID subfield of the Common Info field of the Basic Multi-Link element is set to the BSSID Index of the nontransmitted BSSID.

—can include a[16974] Basic Multi-Link element corresponding to the AP MLD(s) of other APs corresponding to the nontransmitted BSSIDs in the multiple BSSID set. Such Basic Multi-Link element(s) do not carry complete profile for any reported AP(s) and are carried in the corresponding nontransmitted BSSID profile(s) (if present)[18176] contained in the multiple BSSID element.

—carries [16974]a Reduced Neighbor Report element containing information of the other AP(s) affiliated with the transmitting AP’s (transmitted BSSID’s) AP MLD and the information of other AP(s) affiliated with the AP MLD(s) of all the nontransmitted BSSIDs in the same multiple BSSID set by following the rules in 35.3.4.1 (AP behavior).

***TGbe editor: Please update Figure AA-6 as shown below:***



**Figure AA-6—Example of affiliated APs from different multiple BSSID sets**[16076]