IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB266 – CR for misc CIDs | | | | |
| Date: 2022-08-31 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Laurent Cariou |  |  |  | laurent.cariou@intel.com |

1. **Introduction**

R5: updated resolution for CIDs 12803 12804 11326 10072 13355 11325 13356 and 12818, after offline discussion.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 12800 | 9.4.2.161 | 0.00 | Transmit Power related rules need to be amended for 320 MHz. | Make the changes as proposed as doc 1208r13 |  |
| 11186 | 9.2.4.1.8 | 119.55 | The added text describes AP MLD behavior and should not be provided in clause 9. Also this behavior is described in clause 35.3.7.1 and 35.3.12.4, so there is no need to repeat it here. Therefore delete the added text. | Delete the added text: "or, if the AP is affiliated with an AP MLD, to indicate that the AP MLD has additional buffered BUs corresponding to frames with TIDs that are mapped to the link on which the AP operates by the most recent DL TID-to-link mapping (negotiated TID-to-link mapping or default mode mapping, see 35.3.7.1 (TID-to-link mapping)) or Management frames that are not a TPC Request frame or a Link Measurement Request frame (see 35.3.12.4 (Traffic indication))" | Reject – if we don’t do it the description in clause 9 is no longer accurate. The description added here is mostly an indication that the description is different for the MLD and that we need to check subcluse 35.3 |
| 10966 | 9.2.4.1.8 | 119.61 | It's hard to figure out what "it" means here. Does it mean "the AP"?. Please clarify. | As in comment | Revised – instruct the editor to change “it”, by “the AP” at the location indicated by the CID (page 119 line 61 of 11be D2.0). |
| 12235 | 9.2.4.1.8 | 119.61 | The change to this long sentence means that "it" on line 61 is no longer clear. I think "it" is referring to the AP. | Change the initial text on line 61 to "35.3.12.4 (Traffic indication)) if the AP has received a frame that contains a QoS Info field..." | Revised – instruct the editor to change “it”, by “the AP” at the location indicated by the CID (page 119 line 61 of 11be D2.0). |
| 11187 | 9.2.4.1.8 | 120.40 | The added text describes AP MLD behavior and should not be provided in clause 9. Also this behavior is described in clause 35.3.7.1, 35.3.12.4, and 35.3.7.1.6, so there is no need to repeat it here. Therefore delete the added text. | Delete the added text: "For a non-AP MLD, an AP affiliated with an AP MLD uses the More Data subfield to indicate to a non-AP STA in PS mode affiliated with the non-AP MLD that more BUs, corresponding to Data frames with TIDs that are mapped to this link by the most recent DL TID-to-link mapping (negotiated TID-to-link mapping or default link mapping, see 35.3.7.1 (TID-to-link mapping)) or Management frames that are not a TPC Request frame or a Link Measurement Request frame (see 35.3.12.4 (Traffic indication)) are buffered for the non-AP MLD at the AP MLD (see 35.3.7.1.6 (Use of More Data subfield by an MLD)). The More Data subfield is valid in individually addressed Data or Management frames transmitted by an AP affiliated with an AP MLD to a STA affiliated with a non-AP MLD that is in PS mode and in certain control frames as defined below.: | Reject – if we don’t do it the description in clause 9 is no longer accurate. The description added here is mostly an indication that the description is different for the MLD and that we need to check subcluse 35.3 |
| 10537 | 9.4.1.4 | 177.50 | The text under B6 in Figure 9-132 needs to be underlined since it is an addition to baseline spec | As in comment | Revised – agree with the commenter. Instruct the editor to underline the text “Critical Update Flag” under B6 Page177 line 50. |
| 11183 | 9.4.1.4 | 178.04 | An AP affiliated with an AP MLD is not defined, An affiliated STA is defined, but that definitions does not define affiliated AP or an AP affiliated within AP MLD. To minimize beacon overhead, it was agreed that AP MLDs will not transmit beacons, and that "legacy APs" contained in the same physical device as the AP MLD would transmit beacons containing the MLD Basic Multi-Link element as described in 35.3.2 and 35.3.4. It should be clearly stated that it is the non-MLD AP that needs to set the Critical Update Fage subfield when the MLD Parameters field, ... change. Please add the necessary description to make it clear that logical entity that transmits Beacon frames must set the flag under these conditions. | As in comment. | Reject – AP affiliated with an AP MLD is used everywhere in the spec and is very clearly defined.  The conditions to set the flag are also clearly defined here, and no, it is not the non-AP MLD that sets these fields. |
| 10538 | 9.4.1.4 | 178.05 | The phrase 'outside the Basic Multi-Link element' is confusing and doesn't convey the intended meaning. The Capability Information field will be included in Per-STA Profile subelement of the Basic Multi-Link element only when the subelement includes complete profile of the reported AP. This eliminates Beacon frame and non-ML probe response since they can never carry complete profile. That leaves the case of ML probe response carrying complete profile. In this case, the B6 of the Cap Info field carried in the per-STA profile will be reserved. Rephrase the paragraph to capture the above intention. | As in comment | Reject – the description seems clear. In ML probe, when the Cap Info field is included in the per-STA profile, the Critical Update flag is also reserved. |
| 10539 | 9.4.1.4 | 178.30 | The description for nonTxBSSID CUF needs to be updated to cover the case when the Capability Information field is carried in Basic Multi-Link element carrying a complete profile for a reported AP. In this case, the B7 of the Capability Information field carried in the per-STA profile will be reserved. Add a sentence to cover this case.  As in comment. | As in comment | Revised – agree with the commenter. Add “outside the Basic multi-link element” to add another condition. Apply the changes marked as #10539 in this document. |
| 10540 | 9.4.1.4 | 178.35 | Update the description to clarify that the Nontransmitted BSSID Critical Updates Flag subfield is set to 1 for inherited updates as well | As in comment | Revised – The commenter points actually to where the critical event is considered and intends to add a clarification that the insertion/modification of an element that generates a critical event can be included in a nontransmitted BSSID or inherited from the transmitted BSSID.  Apply the changes marked as #10540 in this document |
| 10541 | 9.4.1.4 | 179.10 | Add a NOTE here or in clause 35.3.12.6 to clarify that the ListenInterval value for a non-AP MLD remains unchanged even if the AP MLD does not accept the link which had the maximum BI or the link was accepted but later removed as part of the ML Reconf procedure (35.3.6). | As in comment | Revised – Add a note in 35.3.12.6 to say that the listen Interval value is unchanged after MLD association.  Apply the changes as in document 1487r4  Note: no further actions needed for this CID in this document. |
| 13146 | 9.4.2.22 | 194.40 | The value 0 needs to be reserved for EHT STAs too | Add "The value of 0 is reserved." to the end of the first bullet | Revised – agree with the commenter. Add a sentence to define this. Apply the changes marked as #13146 in this document. |
| 10544 | 9.4.2.22 | 194.41 | Since value 0 applies to both EHT and non-EHT case, move it as the first sentence. | As in comment | Revised – agree with the commenter. Add a sentence to define this. Apply the changes marked as #13146 in this document. |
| 10545 | 9.4.2.22 | 194.45 | Add a NOTE to explain intention or point to normative text (if present) that explains the intention | As in comment | Revised – agree with the commenter in principle. Add a reference to subclause 35.3.11 for the related procedure. Apply the changes marked as #10545 in this document |
| 12961 | 9.4.2.22 | 194.45 | Add reference to 35.3.11 for the usage of value larger than 127 to make it clear. | As in comment | Revised – agree with. Add a reference to subclause 35.3.11 for the related procedure. Apply the changes marked as #12961 in this document |
| 12962 | 9.4.2.22 | 194.48 | In the NOTE, the two sentences are conflicting with each other. The first one says no value should be > 127, and then the second one states an exception. Fix the wording. | Change to: An EHT AP must not advertise the quiet count value greater than 127 except when the Quiet element is carried in the per-STA profile of Basic Multi-Link element. | Revised – agree with the commenter. Use the definition of the field in order to remove the ambiguity in the sentence. Apply the changes marked as #12962 in this document. |
| 13147 | 9.4.2.22 | 194.48 | "NOTE--An EHT AP must not advertise the quiet count value greater than 127. A quiet count value greater than 127 is possible when the Quiet element is carried in the per-STA profile of Basic Multi-Link element." -- "must" is not a clear verb, and the first sentence does not make sense anyway as the second sentence indicates that an EHT AP can advertise a value above 127. And "the quiet count value" is unclear | Change to "NOTE--An EHT AP might use a value greater than 127 when the Quiet element is carried in the per-STA profile of Basic Multi-Link element." Ditto at 202.16 | Revised – agree with the commenter. Use the definition of the field in order to remove the ambiguity in the sentence. Apply the changes marked as #12962 in this document. |
| 13461 | 9.4.2.22 | 194.48 | It is not clear why the past quiet period is announced in Multi-Link element. | Remove such annoucnement and only announce the future quiet period. | Reject – it is needed to make sure the STA operating on the link where the quiet interval applies will not violate the Quiet element rules. |
| 10547 | 9.4.2.36 | 195.37 | The number of reserved bit should be 10 not 9 | As in comment | Revised – agree with the commenter. Apply the changes marked as #10547 in this document |
| 12877 | 9.4.2.36 | 195.37 | In Figure 9-398, the number of reserved bits must be 10. | Please fix the number of Reserved bits. | Revised – agree with the commenter. Apply the changes marked as #10547 in this document |
| 12963 | 9.4.2.36 | 195.51 | The sentence is broken: the subject (the Basic Multi-Link element) is lack of a verb. | Fix the grammatical error | Revised – agree with the commenter. Apply the changes marked as #12963 in this document |
| 10548 | 9.4.2.36 | 195.53 | Multiple usage of 'included' | reword the sentence to say: "... in the report, the fields in the subelement are identical ..." | Revised – agree with the commenter. Apply the changes marked as #10548 in this document |
| 10988 | 9.4.2.157 | 201.43 | Extension of Transmit Power Envelope element for 320MHz and puncturing is missing. | Please add the extension for completeness. |  |
| 10551 | 9.4.2.164 | 202.16 | Provide a reference to 9.4.2.22 and normative clause which explains why | As in comment | Revised – agree with the commenter.Apply the changes marked as #10551 |
| 12964 | 9.4.2.164 | 202.16 | In the NOTE, the two sentences are conflicting with each other. The first one says no value should be > 127, and then the second one states an exception. Fix the wording. | Change to: An EHT must not advertise the quiet count value great than 127, except it is possible when the Quiet element is carried in the per-STA profile of Basic Multi-Link element. | Revised – agree with the commenter. Modify the first sentence and use the definition of the field in order to remove the ambiguity. Apply the changes marked as #12964 in this document. |
| 11948 | 9.4.2.170 | 204.06 | Many enterprise networks transmit Beacons and probe responses at 54 Mbit/s. A STA is getting more radios. For instance, a STA has a data radio and low power receive radio. The 802.11be should provide means for STA to select whether it can use the low power receive radio to scan the APs. | Please add Beacon Type signaling to the MLD Parameters subfield of the TBTT Information field of the Reduced Neighbor Report element. This bit should be set to 1, if the AP transmits beacons in non-HT or non-HT Duplicate PPDUs | Reject – this proposal didn’t reach consensus in previous discussions. |
| 10288 | 10.3.2.11 | 282.10 | Wording could be improved | At cited location, change "without regard to the" to "regardless of the". | Revised – Apply the changes shown in this document with the tag #10288 |
| 12818 | 35.3.1 | 404.54 | DMS procedures should be defined for an MLD. It seems that we simply need to apply the mechanism at the MLD level, instead of at the STA level. | Define Multi-link DMS procedures. An example of such mechanism has been introduced in doc 1208r7 | Revised – agree with the commenter. Define Multi-link DMS procedures by simply applying it at the MLD level. Apply the changes marked as #12818 in this document |
| 11553 | 35.3.4.1 | 414.61 | This rule has implicit requirements for beacon intervals for different APs affiliated with the same AP MLD; the rule should be explictly stated. | as in comment | Revised – Add a sentence to clarify the implications on beacon intervals. Apply the changes marked as #11553 in this document |
| 10615 | 35.4.3.2 | 415.41 | If Per-STA Profile subelement is absent, then all APs affiliated with the identified MLD are requested (see P416L5). Therefore, one or more is incorrect. Delete 'one or more' and rephrase the sentence. | As in comment | Rejected – there are 2 sentences to cover the 2 cases (whether per-STA profile is included or not). The sentence that the commenter talks about is for the second case only and is therefore correct. |
| 10616 | 35.4.3.2 | 415.43 | Per the previous paragraph, MLD ID subfield is conditionally present. Also 'subfielfd' is missing after MLD ID. Add "subfield (if present)" after "MLD ID" | As in comment | Revised – agree with the commenter. Apply the changes marked as #10616 in this document |
| 10617 | 35.4.3.2 | 415.56 | Split the sentence in two - case 1) when (Ex)Request IE is carried in the frame body outside the ML IE and inherited and case 2) when each profile includes its own (Ex)Request IE. Alternatively consider simplifying the design by removing inheritance such that each profile explicitly includes (Ex)Req element for requesting one or more elements. | As in comment | Revised – agree with the commenter. The clarification of the 2 cases is proposed in document 1428r2.  Apply the changes as defined in document 1428r2.  No more changes are needed in the current document. |
| 10618 | 35.4.3.2 | 415.59 | Which Complete Profile subfield is this referring to? Basic variant or Probe Request variant? Please clarify or consider renaming the field name so that it is clear if the Complete Profile subfield is requested or reported. | As in comment | Revised – clarify the sentence to avoid ambiguities. This change is proposed in document 1428r2.  Apply the changes as defined in document 1428r2.  No further changes are needed in this document |
| 10619 | 35.4.3.2 | 416.01 | Absence of per-STA profile subelement means the non-AP MLD is requesting all links. However, there can be scenarios where the non-AP MLD is performing ML probing for only one link. For example, if an AP MLD is operating as a single link MLD with only one affiliated AP (this is possible due to ML reconfiguration) or if the AP MLD and non-AP MLD have only one overlapping link (e.g., non-AP MLD is capable of operating on 2.4 & 5 GHz only while AP MLD is operating on 5 & 6 GHz), then how does ML probing work? | As in comment | Reject – procedure is very clear. If the AP MLD only has one link. The ML probe request can include no per-STA profile to request information for all affiliated APs (single AP), or the ML probe request can include the per-STA profile of the only affiliated AP. |
| 10620 | 35.4.3.2 | 416.15 | Clarify AP MLD behavior if either the MLD ID or the Link ID in the ML Probe Request frame doesn't match any of the MLD ID/Link ID known to the AP MLD. | As in comment | Reject – the spec typically does not describe all bad conditions that could happen as the list could be endless for every scenario. |
| 10621 | 35.4.3.2 | 416.50 | The sentence on line 50 is not needed. The following sentence mentions that MLD ID is present. | Delete the cited sentence | Revised – agree with the commenter. Apply the changes marked as #10621 in this document. |
| 12798 | 35.3.4.2 | 415.20 | MLDID doesn't need to be present either if the requested AP MLD is the AP MLD of the AP whose address is indicated in A1 or A3, even if this AP is a transmitted BSSID or if it is not in a MBSSID set. | Add the rule for this case as well. | Revised – we need to clarify these 2 sentences that are very unclear. The proposal in 1428 was the clearest but the changes were not acceptable for some members (without providing reasons).  This resolution then preserves current spec concept, but clarifies the language.  Apply the changes marked as #12798 in this document. |
| 12803 | 35.3.4.5 | 418.14 | Important to loosen the requirement for active scanning because of potential risk with legacy APs. | as in comment | Revised – agree with the commenter. Ensure that basic elements are included, including the Supported rates and DSSS parameters in 2.4 GHz.  Apply the changes marked as #12803 in this document. |
| 12804 | 35.3.4.5 | 418.14 | Clarify the language that if the STA may include elements it would then disregard the normative behavior in 9.3.3.9 | as in comment | Revised – agree with the commenter. Disregarding the rules in 9.3.3.9 is indeed the consequence of the current text and need to be explicitly spelled out.  Apply the changes marked as #12804 in this document |
| 11326 | 35.3.4.5 | 418.16 | This could be phrased more concisely. The only pertinent information is that the SSID element is always present and a limit set of other elements are permitted in the context of active scanning [whatever that means]. | Change to: A Probe Request frame sent by a non-AP EHT STA shall include the SSID element, and, if sent in the context of active scanning [whatever that means] shall not include elements other than the following: - Request element - SSID List element - etc. (from second bullet) [There is no need for the "outside the context of active scanning" statement] | Revised – based on other comments, we need to clarify the sentence to be more explicit about disregarding the rules in 9.3.3.9 and to clarify the different probing context (ML probe or not).  Apply the changes marked as #11326 in this document |
| 10072 | 35.3.4.5 | 418.18 | why the probe request frame must carry SSID element, it's easy to track by the third party and conflict with the baseline rule. see"While discovering networks, a STA can refrain from gratuitously transmitting Probe Request frames containing SSIDs of favored BSS networks. " while the SSID is not clear hear, specify SSID or wildcard SSID? | follow the baseline to say "The probe request is sent with the SSID and BSSID from the received MLME-SCAN.request primitive." | Revised – modify the sentence so that the SSID element is populated based on the legacy rules.  Apply the changes marked as #10072 in this document |
| 13355 | 35.3.4.5 | 418.25 | Change to "outside the context of active scanning..."or change to "in ML Probe Request..." | As in the comment | Revised – agree with the commenter. Change the 2 different types into ML probe or not ML probe. Apply the changes marked as #13355 in this document. |
| 11325 | 35.3.4.5 | 418.27 | It is not clear what is meant by "the context of active scanning" or being outside the context of active scanning. According to REVmd/D1.1 (11.1.3.3.1): Active scanning involves the generation of Probe Request frames and the subsequent processing of received probe responses. So talking about probe requests "outside the context of active scanning: does not make any sense. | Clarify "outside the context of active scanning" as it relates to the use of Probe Request frames. | Revised – the terms in the context of active scanning and outside the context of active scanning are used in baseline and are clear. That said, here, as suggested by other comments, it would be simpler and clearer to talk about ML probe or not ML probe.  Apply the changes marked as #11325 in this document |
| 13356 | 35.3.4.5 | 418.27 | Change to "in the context of active scanning..." or change to "in Porbe Request that is not ML Probe Request..." | As in the comment | Revised – agree with the commenter. Apply the changes marked as #13356 in this document. |
| 13357 | 35.3.4.5 | 418.27 | the bullet is not in line with the subclause name | Move the bullet to another subclause or change the subclause name | Revised – agree with the commenter. Modify the title of the subclause to better reflect the content. Apply the changes marked as #13357. |
| 13326 | ï»¿35.3.7.1.1 | 427.13 | Qos->QoS | as in comment | Revised – the sentence was modified by document 22/1429r3 and the term QoS is removed.  Apply the changes as in document 1429r3. |
| 13327 | ï»¿35.3.7.1.1 | 427.28 | The phrase "ï»¿which means that a TIDto-link mapping change is only valid and successful if it will not result in having a single TID for which the link set is made of zero setup links" is grammatically inconsistent with the intended meaning of the phrase. One suggested fix is to replace "a single TID" with "any TID". | as in comment | Reject – draft 2.0 has already that sentence fixed with the suggestion that the commenter is proposing. |
| 13329 | ï»¿35.3.7.1.5 | 430.31 | "ï»¿The AP associated to the STA affiliated with the non-AP MLD ...". An AP is not associated to the STA but other way around. Sentence should be rephrased as "ï»¿The AP with which the STA affiliated with the non-AP MLD is associated with and operating on the setup link may not maintain a power management status that indicates in which power management mode the STA is currently operating." | as in comment | Revised – agree with the commenter. Modify the sentence so that it is the STA that is associated to the AP. Apply the changes marked as #13329 in this document |
| 10123 | 35.3.12.4 | 442.43 | there is no much differenct to recommend a non-AP MLD to obtain the individually addressed BU or group addressed BU, need to consider the reommendation for group addressed BU, and non-AP MLD can decide the receving link | To make it completed, add the recommandation for group addressed BU. | Reject – group addressed BUs are buffered and transmitted on all links, there is therefore no point in providing recommendations for group address delivery |
| 12413 | 35.3.12.4 | 442.43 | In draft 2.0, unicast traffic indication is stated: "An AP MLD may recommend a non-AP MLD to use one or more enabled links to retrieve individually addressed buffered BU(s). The AP's indication may be carried in a broadcast or a unicast frame." However, no unicast traffic indication method is defined in draft 2.0. | Please define a unicast ML taffic indication method. |  |
| 12809 | 35.3.12.4 | 442.44 | Define the unicast link recommendation mechanism. | Allow the link recommendation frame to be sent in unicast manner. |  |
| 13919 | 35.3.12.4 | 442.44 | unicast way is missing, please complete it | please complete the case of unicast way |  |
| 12819 | 35.3.25 | 480.58 | This subclause doesn't incorporate the Link Removal Imminent field. Some changes are needed in this subclause in order to be accurate. | Apply the changes described in the comment. A proposal is defined in doc 1208r12 | Revised – agree with the commenter. The fields are treated differently if the Lin Removal Imminent field is set to 1, while the current subclause describes the behavior when this subfield is set to 0. Clarify that condition. Note that the procedure for when the field is set to 1 is covered in another subclause and does not need to be duplicated here.  Apply the changes marked as #12819 in this document |
| 11978 | 11.49 | 332.54 | This paragraph describes the used of a Reduced Neighbor Report element with multiple APs operating on the same class/channel stating "some" are affiliated with an AP MLD and "some" are not. The term "some" is an undetermined amount . Changing "some" to state "at least 1 or more" clarifies a minimum number of affiliated MLDs. | Change "some affiliated with an AP MLD" to " as least one or more affiliated with an AP MLD" Change "some not affiliated with an AP MLD" to "at least one or more not affiliated with an AP MLD" | Revised – agree with the commenter. Apply the change as marked as #11978 in this document. |

1. **Proposed spec text**

**9.2.4.1.8 More Data subfield**

**TGbe editor: modify the following paragraph in subclause 9.2.4.1.8 More Data subfield (#10966, #12235)**

The AP can set the More Data subfield to 1 to indicate that it has a pending transmission for the STA or, if the AP is affiliated with an AP MLD, to indicate that the AP MLD has additional buffered BUs correspond- ing to frames with TIDs that are mapped to the link on which the AP operates by the most recent DL TID-to- link mapping (negotiated TID-to-link mapping or default mode mapping, see 35.3.7.1 (TID-to-link map- ping)) or Management frames that are not a TPC Request frame or a Link Measurement Request frame (see

35.3.12.4 (Traffic indication)) if the AP has received a frame that contains a QoS Info field in which the More Data Ack subfield is equal to 1 from the STA and one of the following conditions is true:

* + - 1. **Capability Information field**

**TGbe editor: modify the following Figure 9.132 (Capability Information field format (non-DMG STA) (#10537)**

***Change*** [***Figure 9-132 (Capability Information field format (non-DMG STA))***](#bookmark78) ***as follows:***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| ESS | IBSS | Reserved | Reserved | Privacy | Short Preamble | ~~Reserved~~ Critical Update Flag | ~~Reserved~~ Nontransmitted BSSIDs Critical Update Flag |
| B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Spectrum Management | QoS | Short Slot Time | APSD | Radio Measurement | EPD | Reserved | Reserved |

**Figure 9-132—Capability Information field format (non-DMG STA)**

**9.4.1.4 Capability Information field**

**TGbe editor: modify the following paragraph in subclause 9.4.1.4 Capability Information field (#10539)**

The Nontransmitted BSSIDs 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 corresponding to the transmitted BSSID in a multiple BSSID set and there exists at least one AP in the multiple BSSID set that is affiliated with an AP MLD. 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 is set to 1 in at least one nontransmitted BSSID profile in the Multiple BSSID element in the same frame. Otherwise the AP sets the subfield to 0.

**9.4.2.22 Quiet element**

**TGbe editor: modify the following paragraph in subclause 9.4.2.22 Quiet element**

~~The~~For a non-EHT AP, the Quiet Count field is set to the number of TBTTs until the beacon interval during which the next quiet interval starts. For an EHT AP **(#10545, #12961)** (see 35.3.11 Multi-link procedures for channel switching, extended channel switching, and channel quieting):

* the Quiet Count field is equal to the number of TBTTs until the beacon interval during which the next quiet interval starts if the field is set to a value lower than or equal to 127.
* the Quiet Count field minus 127 is equal to the number of TBTTs in the past to reach the beacon interval during which the ongoing quiet interval started if the field is set to a value higher than 127.
* **(#13146, #10544)** The value of 0 is reserved for a non-EHT AP and an EHT AP.

(#12962, #13147) NOTE—An EHT AP must not advertise a number of TBTTs that is greater than 127 until the beacon interval during which the next quiet interval starts. A quiet count value greater than 127 is possible when the Quiet element is carried in the per-STA profile of Basic Multi-Link element.

**9.4.2.36 Neighbor Report element**

**TGbe editor: modify the following figure 9-398 BSSID Information field (#10547, #12877)**

## Change [Figure 9-398 (BSSID Information field format)](#bookmark103) as follows:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| B0 B1 | B2 | B3 | B4 B9 | B10 | B11 | B12 | B13 | B14 | |
| AP  Reachability | Security | Key Scope | Capabilities | Mobility Domain | High Throughput | Very High Throughput | FTM | High Efficiency | |
| 2 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 1 |  |
| B15 | B16 | B17 | B18 | B19 | B20 | B21 | ~~B21~~B22 |  | B31 |

Bits:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ER BSS | Co- Located AP | Unsolicited Probe Responses Active | Members Of ESS With  2.4/5 G Co-  Located AP | OCT  Supported With Reporting AP | Co-Located With 6 G AP | Extremely High Throughput | Reserved |

Bits: 1 1 1 1 1 1 1 10

**Figure 9-398—BSSID Information field format**

**TGbe editor: modify the following paragraph in subclause 9.4.2.22 Quiet element (#12963, #10548)**

When the Extremely High Throughput subfield is set to 1, and when the Basic Multi-Link element is present as a subelement in the report, the fields included in the Basic Multi-Link element are identical in content to the corresponding fields that are pres- ent in the Basic Multi-Link element included in the neighboring AP’s Beacon frame.

**9.4.2.164 Quiet Channel element**

**TGbe editor: modify the following paragraph in subclause 9.4.2.22 Quiet element (#10551, #12964)**

## Insert the following note at the end of the subclause:

NOTE—An EHT AP must not advertise a number of TBTTs that is greater than 127 until the beacon interval during which the next quiet interval starts. A quiet count value greater than 127 is possible when the Quiet element is carried in the per-STA profile of Basic Multi-Link element (See 9.4.2.22 Quiet element).

**10.3.2.11 Acknowledgment procedure**

**TGbe editor: modify the following paragraph in subclause 10.3.2.11 Acknowledgment procedure (#10288)**

## Change the fifth paragraph as follows:

Otherwise, upon reception of a frame that requires immediate acknowledgment and, for an AP, with the To DS subfield equal to 1, a STA that is not NSTR limited shall transmit an Ack or BlockAck frame after a SIFS, regardless of the busy/idle state of the medium and a STA that is NSTR limited may transmit an Ack or BlockAck frame after a SIFS, regardless of the busy/idle state of the medium. (See Figure 10- 12 (Individually addressed data/Ack/BlockAck frame)).

* + - * 1. **Power state and TWT schedules after disablement**

**TGbe editor: modify the following paragraph in subclause 35.3.7.1.2 Power state and TWT schedules after disablement (#13329)**

(#10243, #11567)The AP to which the STA affiliated with the non-AP MLD is associated and operating on the link may cease maintaining a power management status that indicates in which power management mode the STA is currently operating.

TGbe editor: modify the title of subclause 35.3.4.5 Active scanning for a non-AP EHT STA as follows. (#13357)

**35.3.4.5 Probe Request frame content for a non-AP EHT STA**

TGbe editor: modify the following paragraph in subclause 35.3.4.5 Active scanning for a non-AP EHT STA as follows. (#12803, #12804, #11326, #10072, #13355, #11325, #13356)

If a non-AP EHT STA is sending a Probe Request frame that is not an multi-link probe request:

* + - * + it shall follow the rules defined in 9.3.3.9 (Probe Request frame format) regarding the inclusion of the SSID element, the Supported Rates and BSS Membership Selectors field, the Request element, the Extended Supported Rates and BSS Membership Selectors element, the DSSS Parameter Set element, the SSID List element, the Extended Request element, the FILS Request Parameters element, the Short SSID List element, Vendor Specific elements and the Known BSSID element,
        + it may not include the other elements listed in 9.3.3.9 (Probe Request frame format) and may disregard the normative requirements in 9.3.3.9 (Probe Request frame format) for these other elements.

If a non-AP EHT STA is sending an multi-link probe request:

* + - * + it shall follow the rules defined in 9.3.3.9 (Probe Request frame format) regarding the inclusion of the SSID element, the Supported Rates and BSS Membership Selectors field, the Extended Supported Rates and BSS Membership Selectors element, the DSSS Parameter Set element,
        + it shall follow the rules defined in 35.3.4.2 (Use of multi-link probe request and response) regarding the inclusion of the Request element, the Extended Request element, the Probe Request Multi-Link element,
        + it shall not include the other elements listed in 9.3.3.9 (Probe Request frame format) and shall disregard the normative requirements in 9.3.3.9 (Probe Request frame format) for these other elements.

An EHT AP shall not discard a received Probe Request frame addressed to it if the frame does not contain some of the elements described in Table 9-66 (Probe Request frame body) when the soliciting non-AP STA follows the rules described in this subclause.

***TGbe editor: Add the following subclause Modify subclause 35.3.14.4 Multi-link DMS procedures as shown below: (#12818)***

**35.3.14.3 Multi-link DMS procedures**

An MLD that implements DMS shall indicate its capability by setting to 1 the DMS field of the Extended Capabilities element that is transmitted by its affiliated STAs. All STAs affiliated with an MLD shall advertise the same DMS capability.

For an MLD, directed multicast service (DMS) is a service that may be provided by an AP

MLD to associated non-AP MLDs that support DMS, where the AP MLD transmits group addressed MSDUs as individually addressed A-MSDUs.

DMS procedures shall be performed at the MLD level by following the procedure defined in 11.21.16.2 (DMS procedures), except that the following shall apply:

* The DMS provider shall be an AP MLD
* The DMS recipient shall be a non-AP MLD that uses DMS.
* The DMS Response frame shall be sent on the link used to send the DMS Request frame,
* If the Response Type field in the DMS Response frame is set to “accept”, the sequence number of the first group addressed MSDU that is sent after the DMS Response frame as an individually addressed A-MSDU to the non-AP MLD shall be equal to the sequence number of the group addressed MSDU that was last transmitted (at the time when the DMS Response frame is sent) by the AP affiliated with the AP MLD on the same link +1.

**9.4.2.88 DMS Response element**

***TGbe editor: Add the following subclause Modify subclause 9.4.2.88 DMS Response element as shown below: (#12818)***

When the Response Type field is “Terminate” and the Last Sequence Control field is supported, Bit 0 to Bit 3 of the Last Sequence Control field is 0, and Bit 4 to Bit 15 of the Last Sequence Control field contains the sequence number of the last group addressed frame:

* that the AP delivered to the non-AP STA that is the recipient of the DMS Response frame for non-MLO,
* that the AP MLD with which the AP is affiliated delivered to the non-AP MLD with which the STA that is the recipient of the DMS Response is affiliated, for MLO.

If the Response Type field is “Terminate” and the last frame received by the non-AP STA prior to DMS termination has not also been sent using a group addressed frame, the Last Sequence Control field is set to 65 534.

**35.3.4.2 Use of multi-link probe request and response(#11318)**

***TGbe editor: Modify the following paragraph in subclause 35.3.4.2 Use of multi-link probe request and response as shown below: (#10616)***

If the (#10413)Probe Request Multi-Link element in the (#11318)multi-link probe request includes one or more per-STA profiles, then only APs affiliated with the same AP MLD as the AP identified in the Address 1 or Address 3 field or (#10453) in the AP MLD ID subfield (if present) of the multi-link probe request and whose link ID is equal to the value in the Link ID field in a per-STA profile in the (#10413)Probe Request Multi-Link element in the multi-link probe request shall be requested APs.

***TGbe editor: Modify the following paragraph in subclause 35.3.4.2 Use of multi-link probe request and response as shown below: (#10621)***

An AP corresponding to the transmitted BSSID in a multiple BSSID set shall transmit a (#11318)multi-link probe response in response to a multi-link probe request that is soliciting information of an MLD with which an AP corresponding to the nontransmitted BSSID in the same multiple BSSID set is affiliated. Such a (#11318)multi-link probe response shall carry a Basic Multi-Link element containing information of the solicited AP MLD and one or more APs affiliated with it. The Basic Multi-Link element shall be carried in the frame body of the (#11318)multi-link probe response, whose location is outside of the Multiple BSSID element carried in the frame. The (#10453)AP MLD ID Present subfield of the Presence Bitmap subfield of the Basic Multi-Link element shall be set to 1 and the (#10453)AP MLD ID subfield of the Common Info field of the Basic Multi-Link element shall be set to the same value as the BSSID Index subfield of the Multiple-BSSID Index element carried in the Nontransmitted BSSID Profile subelement of the Multiple BSSID element(#10622).

***TGbe editor: Modify the following paragraph in subclause 35.3.4.2 Use of multi-link probe request and response as shown below: (#10621)***

(#11607)If an AP that is affiliated with an AP MLD receives a (#11318)multi-link probe request requesting complete profile and responds with a multi-link probe response (per 11.1.4.3.4 (Criteria for sending a response)), the Address 1 field of the Probe Response frame may be set to the broadcast address.

***TGbe editor: Modify the following paragraph in subclause 35.3.4.2 Use of multi-link probe request and response as shown below: (#12798)***

If either the Address 1 field or the Address 3 field of the multi-link probe request is set to the MAC address of an AP affiliated with an AP MLD that corresponds to a nontransmitted BSSID, then the MLD ID subfield shall not be present in the Probe Request Multi-Link element of the Multi-Link probe request and the AP MLD shall be the targeted AP MLD.

If either the Address 1 field or the Address 3 field of the multi-link probe request is set to the MAC address of an AP affiliated with an AP MLD that corresponds to a transmitted BSSID or that is not part of a multiple BSSID set, and the AP MLD is the targeted AP MLD, then the MLD ID subfield shall be present and set to 0 in the Probe Request Multi-Link element of the multi-link probe request.

If either the Address 1 field or the Address 3 field of the multi-link probe request is set to the MAC address of an AP that is not a nontransmitted BSSID and the AP is not affiliated with the targeted AP MLD, then the MLD ID subfield shall be present in the Probe Request Multi-Link element of the multi-link probe request and the targeted AP MLD is identified by the MLD ID subfield, which is set to the same MLD ID value as the one used by the AP that is addressed by the multi-link probe request to identify the AP MLD in the Beacon and Probe Response frames that it transmits.

**35.3.23 BSS transition management for MLDs**

***TGbe editor: Please modify the following paragraphs in subclause 35.3.23 BSS transition management for MLDs as follows (#12819)***

— When an AP affiliated with an AP MLD transmits a BSS Transition Management Request frame with the Link Removal Imminent subfield equal to 0 and the Disassociation Imminent field equal to 1 to a non-AP MLD, the Disassociation Timer field in the BSS Transition Management Request frame shall be set to 0 or set to the number of TBTTs that will occur prior to the AP MLD disassociating the non-AP MLD.

— When an AP affiliated with an AP MLD transmits a BSS Transition Management Request frame with the Link Removal Imminent subfield equal to 0 and the BSS Termination Included field equal to 1 to a non-AP MLD, the BSS termination means that the AP MLD is shutting down, and the non-AP MLD will be disassociated from the AP MLD.

— A non-AP MLD that receives a BSS Transition Management Request frame with the Link Removal Imminent subfield equal to 1 follows the procedure defined in 35.3.6.2.2 (Removing affiliated APs).

**9.6.13.9 BSS Transition Management Request frame format**

***TGbe editor: Please modify the following paragraphs in subclause 9.6.13.9 BSS Transition Management Request frame format as follows (#12819)***

— (#10575)For an AP MLD that operates with more than one affiliated AP, it sets the Link Removal Imminent field (bit 5) to 1 to limit the scope of the BSS termination to the link on which the request is being transmitted if the BSS Termination Included field (bit 3) is set to 1 (see 35.3.6.2.2 Removing affiliated APs), and otherwise, it sets the field to 0. If a receiving STA is not affiliated with a non-AP MLD, it will ignore the Link Removal Imminent (bit 5) field. When the Link Removal Imminent (bit 5) field is set to 1,

• If a receiving STA is affiliated with a non-AP MLD that has set up only this link, then the nonAP MLD will be disassociated (see 35.3.6.2.2 Removing affiliated APs).

• If a receiving STA is affiliated with a non-AP MLD that has set up more than this link, then the non-AP MLD is still associated to the AP MLD with the remaining setup link(s) (see 35.3.6.2.2 Removing affiliated APs).

The Link Removal Imminent (bit 5) field is reserved (#10575)if one of the following conditions is met:  
• ~~when the~~The transmitting AP is not affiliated with an AP MLD.

• The transmitting AP is affiliated with an AP MLD that operates with only one affiliated AP.~~or when the BSS Termination Included field is zero, and is ignored by a receiving STA that is not  
affiliated with a non-AP MLD or when the BSS Termination Included field is zero. The field is  
set to 1 to limit the scope of the BSS termination to the link on which the request is being transmitted, and is set to 0 otherwise.~~

• The BSS Termination Included field is set to zero.

**11.49 Reduced neighbor report**

***TGbe editor: Please modify the following paragraph in subclause 11.49 Reduced neighbor report as follows (#11978)***

An AP that reports in a Reduced Neighbor Report element multiple APs operating on the same operating class/channel, among which at least one AP is affiliated with an AP MLD and at least one AP is not affiliated with an AP MLD should include two Neighbor AP Information fields for the same operating class/channel, one for the set of APs that are affiliated with an AP MLD (for which the MLD Parameters subfield is included in the TBTT Information field of a reported AP) and one for the set of APs that are not affiliated with an AP MLD (for which the MLD Parameters subfield is not included in the TBTT Information field of a reported AP).

**~~35.3.12.6 Operation for MLD listen interval~~**

***~~TGbe editor: Please modify the following paragraph in subclause 35.3.12.6 Operation for MLD listen interval as follows (#10541)~~***

~~(#12072)NOTE—The value of the Listen Interval field is not changed after successful multi-link (re)setup.~~

**35.3.4.1 AP behavior**

***TGbe editor: Please modify the following paragraph in subclause 35.3.12.6 Operation for MLD listen interval as follows (#11553)***

The TBTT offset between two APs affiliated with the same AP MLD shall never be larger than 254 TUs. The beacon intervals for APs affiliated with the same AP MLD shall be chosen to ensure such a TBTT offset requirement is satisfied.

**11.1.2.3.15 TIM Broadcast**

***TGbe editor: Please modify the following NOTE in subclause 11.2.3.15 TIM Broadcast (#10540)***

NOTE 4—Modification of an element means that at least (#1031)one field in the element is changed, although not all fields in an element can be changed (e.g., the fields that advertise the basic MCS sets in HT Operation, VHT Operation, and HE Operation elements do not change). Inclusion of an element means that the element is included in a Beacon frame. The nsertion of an element means that the element was not present in the previous Beacon frame, is present in the current Beacon frame, and will be carried in the next Beacon frame.(11ax) Inclusion/modification of an element for a nontransmitted BSSID is done in a Beacon frame transmitted by the transmitted BSSID either by including/modifying the element in the nontransmitted BSSID profile of the Multiple BSSID element or by including/modifying the element for the transmitted BSSID if that element is inherited for the nontransmitted BSSID (see 1.1.3.8.4 Inheritance of element values).