IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Initial SA ballot – CR for misc CIDs | | | | |
| Date: 2024-04-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Laurent Cariou |  |  |  | laurent.cariou@intel.com |

Abstract

Spec text proposal for resolution of following CIDs for Initial SA Ballot on 11be D5.0:

22276 22358 22404 22400 22399 22309 22308 22273 22029 22073 22178 22281 22072 22105 22280 22031 22071 22070 22330 22069 22068 22262 22353 22015 22267 22329 22100 22054 22053 22052 22051 22050 22049 22048 22047 22046 22099 22045 22044 22002

22105 22280 22031 22071 22070 22330 22069 22068 22262 22353 22015 22267 22329 22100 22054 22053 22052 22051 22050 22049 22048 22047 22046 22045 22044

22276 22358 22404 22400 22399 22309 22308 22273 22029 22073 22178 22281 22002

R6:

22099, 22230, 22072, 22069, 22068

22000, 22001 (if resolution in doc 699 is not approved)

1. **Introduction**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 22276 | 35.3.7.2.2 | 0.00 | To be clear, it seems better to add a note that, when the TID-To-Link Mapping Negotiation Support subfield is set to 0, this default mapping mode is always applied. | As in comment. | Revised – Agree with the commenter. Add the following Note at the end of the subclause: NOTE – When the TID-To-Link Mapping Negotiation Support subfield is set to 0 by the AP MLD, the default mapping mode is always applied. |
| 22358 | 32 | 0.00 | [Al Petrick] Note in Table 9-404j states "applicable to all smaller values." "smaller values" needs to be clarified in the note. Clarify what is meant by smaller values. | As commented | Revised – Modify the sentence in Table 9-404j: “NOTE—Indicating support for TTLM 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.” Into: “NOTE—Indicating support for TTLM negotiation by setting the TID-To-Link Mapping Negotiation Support subfield to a nonzero value also indicates support for negotiations applicable to values smaller than the indicated value (for instance, value 3 indicates support for value 3, value 1 and 0)” |
| 22404 | 9.4.2.44 | 221.06 | "sent by a transmitted BSSID" should be modified to "sent by an AP corresponding to a transmitted BSSID". | As in comment. | Accept |
| 22400 | 35.3.4.2 | 506.52 | "the AP is a transmitted BSSID" should be modified to "the AP is corresponding to a transmitted BSSID". | As in comment. | Revised – Change "the AP is a transmitted BSSID" to "the AP is corresponding to a transmitted BSSID" on Page 508 L52. |
| 22399 | 35.3.4.2 | 506.53 | "the AP" should be modified to "the BSSID of the AP". | As in comment. | Reject – the sentence “the AP is part of a multiple BSSID set” is used a lot in baseline. If we are to refer to the BSSID of the AP instead of the AP to be part of a Multiple BSSID set, then we need to change a lot of occurrences in baseline, and this should be brought to REVm. |
| 22309 | 35.3.4.2 | 510.27 | [Liuming Lu] The description of "..in its Probe Request frame..." is incomplete. | Suggest to change the sentence to "NOTE 7—If a non-AP MLD has requested, in its multi-link Probe Request frame, the complete profile of several ..." | Revised – change “in its Probe Request frame” to “in its multi-link probe request”. |
| 22308 | 35.3.4.3 | 510.54 | [Liuming Lu] The description of "a Management frame that carries a Neighbor Report element" is incomplete as the following sentence mentions that there are two or more Neighbor Report elements | Suggest to change "a Management frame that carries a Neighbor Report element" to "Neighbor Report elements carried in Management frames" | Revised – change “a Management frame that carries a Neighbor Report element” to “a Management frame that carries Neighbor Report element(s)” |
| 22273 | 35.3.7.2.1 | 530.01 | There is a sentence "An MLD with dot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link Mapping Negotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to 3.". However, the MIB variable dot11EHTBaseLineFeaturesImplementedOnly doesn't exist in the spec any more so it's not clear what this sentence means. | Remove the whole sentence. | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22029 | 35.3.7.2.1 | 530.02 | dot11EHTBaseLineFeaturesImplementedOnly has been removed but still in the requirement | remove 'with dot11EHTBaseLineFeaturesImplementedOnly equal to true' in the sentence | Revised – 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22073 | 35.3.7.2.1 | 530.02 | [AK] The dot11EHTBaseLineFeaturesImplementedOnly is not defined anywhere in the 802.11be draft. Thus, the current sentence is meaningless - please remove this sentence!! | As in comment | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22178 | 35.3.7.2.1 | 530.02 | "dot11EHTBaseLineFeaturesImplementedOnly" is not defined (only occurence is here). There is no MIB variable because the release-like feature has been dropped. Delete the sentence "An MLD with dot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link Mapping Negotiation Support subfield of MLD Capabilities field of the Basic Multi-Link element to 3." The current draft is clear in subsequent subclause 35.3.7.2.3 about how to set the value of this subfield. | As in comment | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22281 | 35.3.7.2.1 | 530.02 | This is the only place "dot11EHTBaseLineFeaturesImplementedOnly" appears. It is not defined in Annex C. And the TID-To-Link Mapping Negotiation Support field is set to 3 when dot11TIDtoLinkMappingActivated is true and the MLD supports the mapping of each TID to the same or different link set (see Table 9-404j). | Delete the sentence, "An MLD with dot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link Mapping Negotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to 3.". | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22072 | 35.3.7.2.1 | 530.09 | [AK] The case where " An MLD that includes two TID-To-Link Mapping elements in a frame shall set the Direction subfield in one of the TID-To-Link Mapping elements to 0 and the Direction subfield in the other TID-To-Link Mapping element to 1" should be moved to 35.3.7.2.3 (Negotiation of TTLM) and the sentence shall be aligned with 9.6.35.2 (TID-To-Link Mapping Request frame) and 9.6.35.3 (TID-To-Link Mapping Response frame) for each of the frames it can be included. Please revise the sentence as suggested. | 1. Add the following paragraph in 35.3.7.2.3, as follows:" when a STA affiliated with an MLD transmits a TID-To-Link Mapping Request frame, the TID-To-Link Mapping Request frame may include one or two TID-To-Link Mapping elements, as defined in 9.4.2.314 (TID-To-Link Mapping element). When the TID-To-Link Mapping field contains two TID-To-Link Mapping elements, the Direction subfield in one of the TID-To-Link Mapping elements shall be set to 0 and the Direction subfield in the other element shall be set to 1." 2. Add the following paragraph in 35.3.7.2.3, as follows:" when a STA affiliated with an MLD transmits a TID-To-Link Mapping Response frame, the TID-To-Link Mapping Response frame may include zero, one, or two TID-To-Link Mapping elements as defined in 9.4.2.314 (TID-To-Link Mapping element). The TID-To-Link Mapping field shall contain one or two TID-To-Link Mapping elements if the Status Code field is set to 134 (PREFERRED\_TID\_TO\_LINK\_MAPPING\_SUGGESTED) and when it contains two TID-To-Link Mapping elements, the Direction subfield in one of the TID-To-Link Mapping elements shall be set to 0 (Downlink) and the Direction subfield in the other element shall be set to 1 (Uplink)" 3. Please remove the cited sentence from 35.3.7.2.1 | Revised – agree with the commenter. Please apply the changes marked as #22072 in this document, andPlease remove the sentence cited by the comment on P530L09 from 35.3.7.2.1. and please change “Duration field” to “Direction field’ in P534L29 |
| 22105 | 35.3.7.2.1 | 530.09 | The text in paranthesis is repeated in page 531, lines 57-63. Delete the text in paranthesis or justify the inclusion in both locations | as in comment | Revised – Change the following sentence: “When a nondefault TTLM is applied according to the procedure defined in 35.3.7.2.3 (Negotiationof TTLM), 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames), and (An MLD thatincludes two TID-To-Link Mapping elements in a frame shall set the Direction subfield in one of the TIDTo-Link Mapping elements to 0 and the Direction subfield in the other TID-To-Link Mapping element to 1,except when the AP is transitioning from an established advertised TTLM to a new advertised TTLM, inwhich case the AP advertises a future TID-To- Link Mapping element in addition to the established one withthe Direction subfield in both elements set to 2 (see 35.3.7.5.2 (Affiliated AP link disablement)).), then aTID can be mapped to a link set, which is a subset of setup links, spanning from only one setup link to all thesetup links, with restrictions defined in 35.3.7.2.3 (Negotiation of TTLM).” to “When a nondefault TTLM is applied according to the procedure defined in 35.3.7.2.3 (Negotiationof TTLM) and 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames), then aTID can be mapped to a link set, which is a subset of setup links, spanning from only one setup link to all thesetup links, with restrictions defined in 35.3.7.2.3 (Negotiation of TTLM) and in 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames).” |
| 22280 | 35.3.7.2.1 | 530.09 | "…, 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames), and (An MLD that includes two TID-To-Link Mapping elements …" In the above, the part starting with "(An MLD that includes two TID-To-Link Mapping elements ...)" should refer to a subclause. In the past, this place was referring to 35.3.7.2.5 (Association procedures for TTLM) in D4.0, which is now moved to 35.3.7.2.3 (Negotiation of TTLM). As 35.3.7.2.3 (Negotiation of TTLM) is already referred to in the first half of this sentence, there is no need to add a subclause reference here. | Change the sentence "When a nondefault TTLM is applied according to the procedure defined in 35.3.7.2.3 (...), 35.3.7.2.4 (...), and (An MLD that includes two TID-To-Link Mapping elements … to 2 (see 35.3.7.5.2 (Affiliated AP link disablement)).), then a TID can be …" to "When a nondefault TTLM is applied according to the procedure defined in 35.3.7.2.3 (...) and 35.3.7.2.4 (...), then a TID can be …" | Revised – apply the resolution for CID22105 |
| 22031 | 35.3.7.2.1 | 530.10 | "(An MLD that includes ...)" seems to be in a wrong place | move it to a separate paragraph as a separate requirement | Revised – apply the resolution for CID22105 |
| 22071 | 35.3.7.2.1 | 530.13 | [AK] The sentence "...except when the AP is transitioning from an established advertised TTLM to a new advertised TTLM, in which case the AP advertises a future TID-To- Link Mapping element in addition to the established one with the Direction subfield in both elements set to 2 (see 35.3.7.5.2 (Affiliated AP link disablement))." is redundant since it is already mentioned in 35.3.7.2.4 (P535L6):"An AP that advertises a TTLM shall map all TIDs to the same link set in the advertised TTLM, both for DL and UL. The Direction field of an advertised TID-To-Link Mapping element shall be set to 2." | Please remove the cited sentence from 35.3.7.2.1 | Revised – apply the resolution for CID22105 |
| 22070 | 35.3.7.2.1 | 530.38 | [AK] BlockAckReq frame does not request TID(s), but Block ACK bitmaps that corresponds to TIDs. Please revise the sentence as suggested. | The sentence should be revised as follows:"..., except that a BlockAckReq frame requesting \*for\* TID(s) that are not mapped to a link shall not be transmitted ... " | Revised – agree with the commenter. Change sentence as follows: “..., except that a BlockAckReq frame requesting \*status for\* TID(s) that are not mapped to a link shall not be transmitted ... |
| 22330 | 35.3.7.2.1 | 531.09 | [Xiandong Dong] The content in brackets after "and" may be an incorrect insertion or redundant because of the same expression in the last paragraph in this subclause (35.3.7.2.1). | As in comment | Revised – apply the resolution for CID22105 |
| 22069 | 35.3.7.2.1 | 531.57 | [AK] The case where " An MLD that includes two TID-To-Link Mapping elements in a frame shall set the Direction subfield in one of the TID-To-Link Mapping elements to 0 and the Direction subfield in the other TID-To-Link Mapping element to 1" should be moved to 35.3.7.2.3 (Negotiation of TTLM) and the sentence shall be aligned with 9.6.35.2 (TID-To-Link Mapping Request frame) and 9.6.35.3 (TID-To-Link Mapping Response frame) for each of the frames it can be included. Please revise the sentence as suggested. | 1. Add the following paragraph in 35.3.7.2.3, as follows:" when a STA affiliated with an MLD transmits a TID-To-Link Mapping Request frame, the TID-To-Link Mapping Request frame may include one or two TID-To-Link Mapping elements, as defined in 9.4.2.314 (TID-To-Link Mapping element). When the TID-To-Link Mapping field contains two TID-To-Link Mapping elements, the Direction subfield in one of the TID-To-Link Mapping elements shall be set to 0 and the Direction subfield in the other element shall be set to 1." 2. Add the following paragraph in 35.3.7.2.3, as follows:" when a STA affiliated with an MLD transmits a TID-To-Link Mapping Response frame, the TID-To-Link Mapping Response frame may include zero, one, or two TID-To-Link Mapping elements as defined in 9.4.2.314 (TID-To-Link Mapping element). The TID-To-Link Mapping field shall contain one or two TID-To-Link Mapping elements if the Status Code field is set to 134 (PREFERRED\_TID\_TO\_LINK\_MAPPING\_SUGGESTED) and when it contains two TID-To-Link Mapping elements, the Direction subfield in one of the TID-To-Link Mapping elements shall be set to 0 (Downlink) and the Direction subfield in the other element shall be set to 1 (Uplink)" 3. Please remove the cited sentence from 35.3.7.2.1 | Revised – apply the resolution for CID22072 |
| 22068 | 35.3.7.2.1 | 531.59 | [AK] The sentence "...except when the AP is transitioning from an established advertised TTLM to a new advertised TTLM, in which case the AP advertises a future TID-To- Link Mapping element in addition to the established one with the Direction subfield in both elements set to 2 (see 35.3.7.5.2 (Affiliated AP link disablement))." is redundant since it is already mentioned in 35.3.7.2.4 (P535L6):"An AP that advertises a TTLM shall map all TIDs to the same link set in the advertised TTLM, both for DL and UL. The Direction field of an advertised TID-To-Link Mapping element shall be set to 2." | Please remove the cited sentence from 35.3.7.2.1 | Revised – apply the resolution for CID22072 |
| 22262 | 35.3.7.2.2 | 532.01 | The TTLM modes 1 and 3 are not clearly defined. Up to now, the group have always assumed that these modes 1 and 3 came from the TTLM Negotiation Support subfield defined in the MLD Capabilities And Operations subfield. However, the definition of TTLM Negotiation Support and TTLM Modes are not exactly the same. So it deserves to define clearly the TTLM modes. | Add a definition for TTLM modes 1 and 3 | Reject – the TTLM rules are defined in a generic way so that they apply to all capabilities. There are no mentions of TTLM modes, just different levels of capabilities. Doesn’t seem to deserve a definition of mode. |
| 22353 | 35.3.7.2.1 | 532.01 | [Mikael Lorgeoux] The MIB variable indicated in the following sentence is no more defined: "An MLD with dot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link Mapping Negotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to 3." | Remove this sentence. | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22015 | 35.3.7.2.1 | 532.02 | There is no longer a "baseline only" concept or MIB. | Delete, "An MLD with dot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link Mapping Negotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to 3." | Revised – 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22267 | 35.3.7.2.1 | 532.02 | "dot11EHTBaseLineFeaturesImplementedOnly" is no longer defined. | Remove the whole sentence "An MLD with dot… to 3." | Revised – agree with the commenter. 11be doesn’t use dot11EHTBaseLineFeaturesImplementedOnly. Remove the sentence: “An MLD withdot11EHTBaseLineFeaturesImplementedOnly equal to true shall not set the TID-To-Link MappingNegotiation Support subfield of MLD Capabilities And Operations field of the Basic Multi-Link element to3.” on P532L1. |
| 22329 | 35.3.7.2.1 | 533.08 | [Xiandong Dong] Typo: the term "including" may be redundant in this sentence. | As in comment | Revised – change “including” by “including transmitting them” |
| 22100 | 35.3.23 | 586.41 | "A STA affiliated with an MLD shall follow the procedure define in 11.21.7 (BSS transition management), except that:" This statement is wrong because the MLD SME is the entity that would perform BTM. | Change "A STA affiliated with an MLD shall follow the procedure define in 11.21.7 (BSS transition management), except that: The procedure is applied between the SMEs of an AP MLD and the SME of a non-AP MLD and not between the SMEs of an AP affiliated with an AP MLD and the SME of a non-AP STA affiliated with a non-AP MLD." to "An SME of an MLD shall follow the procedures defined in 11.21.7 (BSS transition management) in addition to the following requirements: - BTM frames between an AP MLD and non-AP MLD are exchanged between an affiliated AP and affiliated STA, respectively" | Accept |
| 22054 | 35.3.23 | 586.45 | [AK] According to 4.9.6 (P74L53), the non-AP MLD contains a single upper MAC layer which can operate at any given time as either MLO over one or more lower MAC and PHY pairs for association to an AP MLD, or as a non-MLD non-AP STA using only one lower MAC and PHY pair for association to an AP (which might or might not be affiliated with an AP MLD). Thus, in non-AP MLD there is only SME for the non-AP MLD but not for the affiliated non-AP STA. Please revise the sentence as follows. | Please revise the sentence as follows:" The procedure is applied between the SMEs of an AP MLD and the SME of a non-AP MLD and not between the SMEs of an AP affiliated with an AP MLD and the SME of a \*(non-MLD)\* non-AP STA ". | Revised – apply the resolution of CID22100 |
| 22053 | 35.3.23 | 586.49 | [AK] The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. Please revise the sentence as suggested. | Please revise the sentence as follows: " If the Neighbor Report element that is carried in the BSS Transition Candidate List Entries field of a BSS Transition Management Query, Request or Response frame includes a Basic Multi-Link \*subelement\*, then the Neighbor Report element..." | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22052 | 35.3.23 | 586.53 | [AK] According to the format defined in 9.4.2.35: 1. The Preference field is contained in BSS Transition Candidate Preference subelement of the Neighbor Report element. 2. The Basic Multi-Link subelement may be included in the Neighbor Report element, but not Basic Multi-Link element. Please revise the sentence as suggested. | Please revise the sentence as follows: " The Preference field value of \*BSS Transition Candidate Preference subelement that is contained in\* a Neighbor Report element that includes a Basic Multi-Link \*subelement corresponding to\* an AP MLD provides the indication of preference for the given AP MLD, within the given list at the given time." | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22051 | 35.3.23 | 586.60 | [AK] 1. The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. 2. In addition, need to clarify that the Basic Multi-link subelement is included in the Neighbor Report element that correspond to the AP affiliated with the AP MLD. Please revise the sentence as suggested. | Please revise the sentence as follows:" include a Neighbor Report element \*carried in the BSS Transition Candidate List Entries field and that corresponds to\* one of the APs affiliated with the AP MLD, and include a Basic Multi-Link \*subelement\* in \*that\* Neighbor Report \*element\*." | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22050 | 35.3.23 | 586.63 | [AK] The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. Please revise the sentence as suggested. | Please revise the sentence as follows:" not include any Per-STA Profile subelement in the Basic Multi-Link \*subelement\*" | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22049 | 35.3.23 | 587.07 | [AK] 1. The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. 2. The value of the field and not the field itself corresponds to the AP reported in the Neighbor Report element. Please revise the sentence as suggested. | Please revise the sentence as follows:" it shall include a Link ID Info field in the Common Info field of the Basic Multi-Link \*subelement\* with the field \*set to the value\* corresponding to the AP reported in the Neighbor Report element" | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22048 | 35.3.23 | 587.10 | [AK] The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. Please revise the sentence as suggested. | Please revise the sentence as follows:" it shall set to 0 all subfields of the Presence Bitmap subfield of the Basic Multi-Link \*subelement\* included in the Neighbor Report element of the reported AP except the Link ID Info Present subfield " | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22047 | 35.3.23 | 587.13 | [AK] The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. Please revise the sentence as suggested. | Please revise the sentence as follows:" it shall include in the Basic Multi-Link \*subelement\* in the Neighbor Report element…. " | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22046 | 35.3.23 | 587.17 | [AK] The sentence includes 2 different conditions that should be separated and rephrased for better clarity. Please revise as suggested. | Please split this bullet into 2 different bullets, as follows:" 1. The BSS Transition Candidate List Entries field shall include only a single Neighbor Report element with a Basic Multi-link subelement that corresponds to an AP affiliated with an AP MLD. 2. Multiple Neighbor Report elements of a BSS Transition Candidate List Entries field with a Basic Multi-Link subelement that corresponds to the same AP MLD shall include BSS Transition Candidate Preference subelement with different values in the Preference field" | Reject – the meaning of the current bullet is different than what the commenter interprets. There can be multiple NRs for the same AP MLD with different subsets of recommended APs. |
| 22099 | 35.5.23 | 587.22 | It's the MLD that transmits the frame through an affiliated STA | At 587.22 and 587.28, change: "When an AP affiliated with an AP MLD transmits a BSS Transition Management Request frame …" to "When an AP MLD transmits a BSS Transition Management Request frame through an affiliated AP …" | Revised – both wordings are used in current 11be spec. Agree with the commenter that in this context, the proposed wording is more explicit.  Change the following text: "--- 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 35.3.6.3 (Removing affiliated APs) and 35.3.7.5.2 (Affiliated AP link disablement)."  To  "--- When an AP MLD transmits a BSS Transition Management Request frame through an affiliated AP 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 MLD transmits a BSS Transition Management Request frame through an affiliated AP 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 35.3.6.3 (Removing affiliated APs) and 35.3.7.5.2 (Affiliated AP link disablement)." |
| 22045 | 35.3.23 | 587.34 | [AK] 1. According to 9.6.13.9 (P310L56): "The Link Removal Imminent (bit 5) field is reserved if one of the following conditions is met:…..The BSS Termination Included field is set to zero". 2. According to 35.3.7.5.2 (P537L64), in case of affiliated AP link disablement the setting of the BSS Termination Included field is 0. Therefore, the Link Removal Imminent field shall be set to 0 (as any reserved field setting) in case of affiliated AP link disablement. Please remove this part from the sentence, as suggested. | Please revise the sentence as follows: "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 35.3.6.3 (Removing affiliated APs)." | Revise – the condition to set the Link Removal imminent field got changed by the resolution of CID22060 in 24/0293r3.  This resolves this comment. |
| 22044 | 35.3.23 | 589.05 | [AK] The Neighbor Report element does not include a Basic Multi-Link element, but Basic Multi-Link subelement as defined in 9.4.2.35, Table 9-210. Please revise the sentence as suggested. | Please revise the sentence as follows:" it shall include a Neighbor Report element \*carried in the BSS Transition Candidate List Entries field and that corresponds to\* one of the recommended APs affiliated with the AP MLD, and \*shall\* include a Basic Multi-Link \*subelement\* in the Neighbor Report element of this reported AP" | Reject – Direction of the group is to not use the term “subelement” anymore. |
| 22002 | 35.3.23 | 589.14 | Due ot the nature of how this feature is being rolled out, it desirable to add a non-AP MLD capability bit for the receipt of | Add a capability bit so a client can indicate it supports reception of a Neighbor Report element with a Basic ML element that includes a Per STA Profile subelement. | Revised – agree with the commenter. Define a new capability. Apply the changes marked as #22002 in this document |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 22001 | 35.3.23 | 587.01 | This subclause specifies the rules on how the Neighbor Report element is used to recommend a subset of links for an AP MLD (which could be the current AP MLD itself) in the BTM request. The same rules can also be applied for other usage of Neighbor Report element to recommend a subset of links for an AP MLD. E.g. (Re)Association Response when the association is rejected with REJECTED\_WITH\_SUGGESTED\_ BSS\_TRANSITION or in the Neighbor Report Response frame. | Add text to capture rules about usage of Neighbor Report element to recommend a subset of links for an AP MLD (which could be the current AP MLD itself) in other places where this element is used (besides the BTM), including for the scenarios mentioned in the comment. Commenter will bring a contribution. | Reject – proposal has been discussed in doc 699r1 but couldn’t reach consensus within the group, for the reason that there is a fear by some members that this would lead to more association rejections. |
| 22000 | 35.3.23 | 587.17 | Per baseline the Neighbor Report element format supports providing a Preference value (Table 9-211 in REVme D4.0) and a Preference value of 0 indicates that the BSS listed is an excluded BSS and the STA should refrain from associating to excluded BSS. When an AP MLD is using BTM to recommend subset of links for a reported AP MLD, it can use Preference 0 to indicate link/AP where it can not accept association (e.g. due to high Channel load or too many associated STAs already) for that AP MLD. | Capture rules that an AP MLD can explicitly indicate that certain link/AP of a reported AP MLD is not accepting association by using Preference value 0 for a Neighbor Report element for that AP, when it is recommending a subset of links for that reported AP MLD in the BTM. Commenter will bring a contribution. | Reject – proposal has been discussed in doc 699r1 but couldn’t reach consensus within the group, for the reason that there is a fear by some members that this would lead to more association rejections. |
| 22230 | 9.4.2.44 | 220.59 | The EHT Capabilities and EHT Operation elements are mandated to be same for the transmitted BSS and all the nontransmitted BSSs in the set. This is somewhat unfortunate since a potential use case for MBSSID would be in using the TX BSS as an interoperability BSS for deployed STAs that have issues with some newer RSN options (e.g., enabling of PSK and SAE AKMs in a single BSS or enabling of management frame protection). Such a deployment case would want to remove some AKMs (e.g., SAE or potentially only the newer SAE AKM :24) or management frame protection from the TX BSS while enabling these in a non-TX BSS with the same SSID for STAs that do not have such interop issues. This kind of combination would unfortunately be against strict interpretation of 12.12 constraints since EHT is being enabled in the TX BSS. There does not seem to be any mechanism for avoiding this conflict in the current draft. I understand that it might be inconveniently complex to allow different sets of EHT parameters to be allowed, so it might be necessary to provide rules to ignore the EHT elements in the TX BSS under certain conditions or at least indicate that a non-AP STA and a non-AP MLD shall process the non TX BSSs in the same Beacon frame even if the TX BSS has this type of a conflict due to the EHT elements and rules described in 12.12. | Allow EHT to be effectively disabled in the TX BSS of Multiple BSSID set while it is enabled in non TX BSS(s). | Reject – Capabilities and operation elements have always been inherited in previous standards as these elements can’t be included in non-transmitted BSSID profiles. In 11be, we have followed the same approach and it is now too late to change this approach. |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. **Proposed spec text**

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

**TGbe editor: please modify Figure 9-1001l—Extended MLD Capabilities And Operations subfield format as follows: (#22002)**

B0 B1 B4 B5 Bx Bx B15

Bits: 1 4 1 1 9

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Operation Parameter Update Support | Recommended Max Simultaneous Links | NSTR Status Update Support | BTM MLD Recommendation For Multiple APs Support |  | Reserved |

**Figure 9-1001l—Extended MLD Capabilities And Operations subfield format**

**TGbe editor: please add the following line in Table 9-404k—Subfields of the Extended MLD Capabilities And Operations subfield as follows: (#22002)**

**Table 9-404k—Subfields of the Extended MLD Capabilities And Operations subfield**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| BTM MLD Recommendation For Multiple APs Support | Indicates whether or not a non-AP MLD supports receiving a BTM Request frame with a Neighbor Report element with a Basic Multi-Link element that includes one or more Per STA Profile subelement(s) providing recommended links for an AP MLD. | For a non-AP MLD:  Set to 1 if dot11EHTBTMMLDRecommendationForMultipleAPsImplemented is true.  Set to 0 otherwise.  For an AP MLD:  Reserved |

**Annex C**

(normative)

**ASN.1 encoding of the MAC and PHY MIB**

**C.3 MIB Detail**

***TGbe editor: Please add following new MIB attribute in Annex C as shown below (#(#22002)):***

Dot11EHTStationConfigEntry ::=

SEQUENCE{

dot11EHTPPEThresholdsRequired TruthValue,

dot11TIDtoLinkMappingActivated TruthValue,

dot11EHTEPCSPriorityAccessActivated TruthValue,

dot11MSDTimerDuration Unsigned32,

(#16903)dot11MSDTXOPMax Unsigned32,

dot11MultiLinkActivated TruthValue,

dot11MLDAssociationSAQueryMaximumTimeout Unsigned32,

dot11EHTMCSFeedbackOptionImplemented INTEGER,

dot11EHTEMLSROptionImplemented TruthValue,

dot11EHTEMLSROptionActivated TruthValue,

dot11EHTEMLMROptionImplemented TruthValue,

dot11EHTEMLMROptionActivated TruthValue,

dot11OperationParameterUpdateImplemented TruthValue,

dot11EHTLinkReconfigurationOperationActivated TruthValue,

dot11EHTNSTRStatusUpdateImplemented. TruthValue,

dot11EHTBTMMLDRecommendationForMultipleAPsImplemented TruthValue

}

….

dot11EHTBTMMLDRecommendationForMultipleAPsImplemented OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable.

Its value is determined by device capabilities.

This attribute, when true, indicates that the station implementation is

capable of receiving a BTM Request frame with a Neighbor Report element with a Basic Multi-Link element that includes one or more Per STA Profile subelement(s) providing recommended links for an AP MLD.

"

DEFVAL {false}

::= { dot11EHTStationConfigEntry X }

**TGbe editor: please modify subclause 35.3.23 BSS transition management for MLDs as follows: (#22002)**

* + 1. BSS transition management for MLDs

A STA affiliated with an MLD shall follow the procedure define in 11.21.7 (BSS transition management), except that:

* The procedure is applied between the SMEs of an AP MLD and the SME of a non-AP MLD and not between the SMEs of an AP affiliated with an AP MLD and the SME of a non-AP STA affiliated with a non-AP MLD.
* If the Neighbor Report element that is carried in the BSS Transition Candidate List Entries field of a BSS Transition Management Query, Request or Response frame includes a Basic Multi-Link element, then the Neighbor Report element describes the preference for a target AP MLD candidate and not for a target BSS candidate, otherwise, it describes the preference for a target BSS candidate.
* The Preference field value of a Neighbor Report element that includes a Basic Multi-Link element describing an AP MLD provides the indication of preference for the given AP MLD, within the given list at the given time.
* If an AP MLD intends to provide a preference for a reported AP MLD without recommendations about specific affiliated APs, it shall:
  + include a Neighbor Report element for one of the APs affiliated with the AP MLD, and include a Basic Multi-Link element in the Neighbor Report.
  + set to 0 all subfields of the Presence Bitmap subfield.
  + not include any Per-STA Profile subelement in the Basic Multi-Link element.
* If an AP MLD intends to provide a preference for a reported AP MLD with only a subset of recommended affiliated APs
  + it shall include a Neighbor Report element for one of the recommended APs affiliated with the AP MLD, and include a Basic Multi-Link element in the Neighbor Report element of this reported AP.
  + it shall include a Link ID Info field in the Common Info field of the Basic Multi-Link element with the field value set to that corresponding to the AP reported in the Neighbor Report element.
  + it shall set to 0 all subfields of the Presence Bitmap subfield of the Basic Multi-Link element included in the Neighbor Report element of the reported AP except the Link ID Info Present sub- field.
  + it shall include in the Basic Multi-Link element in the Neighbor Report element of the reported AP a Per-STA Profile subfield only for each of the other recommended affiliated APs (if any) to a non-AP MLD that has dot11EHTBTMMLDRecommendationForMultipleAPsImplemented set to 1, and with all the fields set to 0 in the STA Control field, except the Link ID field.
  + The AP MLD shall not include more than one Neighbor Report element reporting the same AP MLD with the same recommended subset of affiliated APs. If multiple Neighbor Report ele- ments are used to report the same AP MLD with a different recommended subset of affiliated APs, the Preference field value in these elements may be different.
* 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 [35.3.6.3 (Removing affiliated APs)](#_bookmark31) and [35.3.7.5.2 (Affiliated AP link disablement)](#_bookmark46).

A non-AP MLD with dot11EHTBTMMLDRecommendationForMultipleAPsImplemented equal to true shall set the BTM MLD Recommendation For Multiple APs Support field to 1 in the in the Extended MLD Capabilities And Operations subfield in the Basic Multi-Link element.

If an AP MLD uses the BTM protocol to recommend a non-AP MLD to do (re)association with the same AP MLD with a different set of links, the non-AP MLD may follow the recommendation by either:

* (re)associating with the same AP MLD with the recommended set of links or
* initiating an ML reconfiguration negotiation by following the procedures in [35.3.6.4 (Link](#_bookmark32) [reconfiguration to the ML setup)](#_bookmark32) to operate with the recommended set of setup links or
* initiating a TTLM negotiation (see [35.3.7.2.3 (Negotiation of TTLM)](#_bookmark41)) if the enabled links would match the set of recommended links.

NOTE—A non-AP EHT STA is also an HE STA and therefore has dot11BSSTransitionActivated equal to true (see

11.21.7.1 (BSS transition capability)).

#### 35.3.7.2.3 Negotiation of TTLM

**TGbe editor: please add the following paragraph after the 8th paragraph in subclause 35.3.7.2.3 Negotiation of TTLM as follows: (#22072)**

During TTLM negotiation, an MLD may include one or two TID-To-Link Mapping elements in a frame, as defined in 9.4.2.314 (TID-To-Link Mapping element). When the frame includes two TID-To-Link Mapping elements, the MLD shall set the Direction subfield in one of the TID-To-Link Mapping elements to 0 and the Direction subfield in the other TID-To-Link Mapping

element to 1.