IEEE P802.11
Wireless LANs

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| Recirc SA - CR for D6.0 CIDs  |
| Date: 2024-06-14 |
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 Abstract

This submission proposes resolutions for following CIDs received in TGbe Recirculation SA Ballot on P802.11be D6.0:

23001 23006 23008 23010 23043 23048 23049 23050 23051 23052

23053 23058 23059 23060 23061 23062 23063 23064 23065 23066

23067 23068 23069 23070 23084 23170 23016 23017 23171 23172

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Incorporated green tagging and edits suggested by Alfred
* Rev 2: Some changes made during the TGbe call.

***TGbe editor: The baseline for this document is 11be D6.0.***

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.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 23001 | 35.3.6.3 | 544.51 | The second part of the NOTE 7 is not very precise. It needs to indicate that the transmitted BSSIDs do not include the TBTT information field for the removed AP. | Change the NOTE 7 to "﻿NOTE 7—Once an AP affiliated with an AP MLD is removed, the other APs affiliated with the same AP MLD do not include the TBTT Information field for the removed AP in the Reduced Neighbor Report element. \*Further, the TBTT Information field for the removed AP is not included in the RNR element by the transmitted BSSID of a multiple BSSID set (if any) that has the nontransmitted BSSID corresponding to an affiliated APof the AP MLD with which the removed AP was affiliated\*." | RevisedAgree with the commenter. Revised the NOTE as per suggestion.TGbe editor, please make the changes tagged by CID #23001 in 11-24/1028r2. |
| 23006 | 35.3.6.4 | 548.63 | The Basic ML element included in the Link Reconfiguration Response frame should also include the Common Info field, similar to the Basic ML element in the (Re)Association Response frame. Need to add text to clarify this. | As in the comment. | RevisedAgree with the commenter. Added the text to clarify as per suggestion.TGbe editor, please make the changes tagged by CID #23006 in 11-24/1028r2. |
| 23008 | 9.4.2.321.2.2 | 249.25 | The Basic Multi-ink element is also included in the Link Reconfiguration Response frame. For consistent behavior associated with the Basic ML element, the Link Reconfiguration Response frame should also be listed as a frame where the ﻿MLD Capabilities And Operations Present subfield is set to 1 in the Basic ML element. | Include Link Reconfiguration Response frame in the list of frames where MLD Capabilities And Operations Present subfield is set to 1 in the Basic ML element. | RevisedAgree with the commenter. Text is revised as per suggestion.TGbe editor, please make the changes tagged by CID #23008 in 11-24/1028r2. |
| 23010 | 35.3.6.3 | 542.10 | Clarify that the ﻿Reconfiguration Multi-Link element here is referring to the element included in the Beacon or Probe Response frames, since the ﻿Reconfiguration Multi-Linkelement is also included in the Link Reconfiguration Request frame. | Change to "﻿In the Reconfiguration Multi-Link element \*﻿included in the Beacon or Probe Response frames of the affiliated APs\*, the EML Capabilities Present subfield, the MLD CapabilitiesAnd Operations Present subfield, and the Extended MLD Capabilities And Operations Present subfield shall be set to 0." | RevisedAgree with the commenter. Text is revised as per suggestion.TGbe editor, please make the changes tagged by CID #23010 in 11-24/1028r2. |
| 23043 | 9.3.3.10 | 191.30 | In a multiple BSSID case, it is possible to have more than one Reconfig Multi-Link element carried within the Probe Response frame (i.e., within the nonTxBSSID profile(s) inside the Multiple BSSID element and outside the Multiple BSSID element). Therefore, the text "... and a single Reconfiguration Multi-Link element ..." is incorrect. | Revise the text to be similar to the Basic Multi-Link element for the multiple BSSID case. Also replace 'the' with 'a single' on line 23 for the non-multiple BSSID case (previous paragraph). | RevisedThe indicated text in Probe Response frame applies for including Multi-Link element directly in the Probe Response frame body, not embedded within another element (like Multiple BSSID element). In the case of multiple BSSID, still only a single Reconfig ML element is included in the Probe Response frame body, the one that applies for the transmitted BSSID. Revised text for the 2nd part of the comment. TGbe editor, please make the changes tagged by CID #23043 in 11-24/1028r2. |
| 23048 | 35.3.6.4 | 545.29 | [AK] typo: "thesetup" --> "the setup" (add space) | As in comment | Accepted |
| 23049 | 35.3.6.3 | 545.12 | [AK] Please revise the sentence for better clarity as suggested | Please replace the words "associated with" with "corresponding to" in the cited sentence as follows:" If an AP affiliated with an AP MLD is removed and if the link \*corresponding to\* the removed AP is one of the EMLSR links or the EMLMR links for one or more non-AP MLDs,.... " | Accepted |
| 23050 | 35.3.6.3 | 544.32 | [AK] Please revise the sentence for better clarity as suggested | Please replace the word "of" with "transmitted by" in the cited sentence, as follows: "A non-AP MLD identifies one or more affiliated APs being removed from its associated AP MLD from the Reconfiguration Multi-Link element received in the Beacon or Probe Response frames \*transmitted by\* the APs affiliated with the associated AP MLD, .... " | Accepted |
| 23051 | 35.3.6.3 | 544.25 | [AK] Please revise the sentence for better clarity as suggested | Please replace the word "of" with "transmitted by" in the cited sentence, as follows: "At the TBTT indicated by the value of the AP Removal Timer subfield in the Reconfiguration Multi-Link element included in the Beacon or Probe Response frames \*transmitted by\* the affiliated APs, .... " | Accepted |
| 23052 | 35.3.6.3 | 544.09 | [AK] Please revise the sentence for better clarity as suggested | Please replace the word "of" with "transmitted by" in the cited sentence, as follows: "At the TBTT indicated by the value of the AP Removal Timer subfield in the Reconfiguration Multi-Link element included in the Beacon or Probe Response frames \*transmitted by\* the affiliated APs, .... " | Accepted |
| 23053 | 35.3.6.1 | 540.32 | [AK] The word "to" refers to the adding links operation but not for the deleting links operation. Please revise the sentence as suggested. | The sentence should be revised as follows in order to adapt for both operation of adding and deleting links:" The ML reconfiguration also defines procedure for adding and deleting links dynamically to \*and from\* the setup links of a non-AP MLD without requiring (re)association between the peer MLDs as described in 35.3.6.4…." | RevisedAgree with the commenter. Revised text in the indicated place and two other places.TGbe editor, please make the changes tagged by CID #23053 in 11-24/1028r2. |
| 23058 | 35.3.6.4 | 549.58 | Revise the term "shall consider that link to be added to its setup links…" (consideration of non-AP MLD is not a well-defined, measured action) to a simple and practical term "shall add that link to its setup links…"Please revise the sentence as suggested | Please revise the sentence as follows:" After receiving a Link Reconfiguration Response frame indicating SUCCESS status for an add link operation and sending an acknowledgement for the response frame, the non-AP MLD shall add that link to its setup links" | RevisedAgree with the commenter. Text is revised.TGbe editor, please make the changes tagged by CID #23058 in 11-24/1028r2. |
| 23059 | 35.3.6.4 | 549.51 | [AK] The sentence "the non-AP MLD shall consider that link to be deleted from its setup links " is impractical and meaningless for implementation. Please remove it since the following sentence actually includes practical normative behavior that the non-AP MLD can apply.Please revise the sentence as suggested. | Please revise the sentence as follows:" After receiving a Link Reconfiguration Response frame indicating SUCCESS status for a delete link operation and sending an acknowledgement for the response frame, the non-AP MLD shall delete any information maintained for that link from its setup links." | RevisedAgree with the commenter. Text is revised.TGbe editor, please make the changes tagged by CID #23059 in 11-24/1028r2. |
| 23060 | 35.3.6.4 | 549.48 | [AK] Revise the term "shall consider that link to be added to the setup links…" (consideration of AP MLD is not a well-defined, measured action) to a simple and practical term "shall add that link to the setup links…"Please revise the sentence as suggested | Please revise the sentence as follows:" After sending a Link Reconfiguration Response frame to a non-AP MLD indicating SUCCESS status for an add link operation and receiving the acknowledgement for the response frame from the non-AP MLD, theAP MLD shall \*add\* that link to the setup links of the associated non-AP MLD" | RevisedAgree with the commenter. Text is revised.TGbe editor, please make the changes tagged by CID #23060 in 11-24/1028r2. |
| 23061 | 35.3.6.4 | 549.42 | [AK] The sentence "the AP MLD shall consider that link to be deleted from the setup links of the associated non-AP MLD " is impractical and meaningless for implementation. Please remove it since the following sentence actually includes practical normative behavior that the AP MLD can apply.Please revise the sentence as suggested. | Please revise the sentence as follows:" After sending a Link Reconfiguration Response frame to a non-AP MLD indicating SUCCESS status for a delete link operation and receiving the acknowledgement for the response frame from the non-AP MLD, the AP MLD shall delete any information maintained for that link from the setup links of that non-AP MLD" | RevisedAgree with the commenter. Text is revised.TGbe editor, please make the changes tagged by CID #23061 in 11-24/1028r2. |
| 23062 | 35.3.6.4 | 546.08 | [AK] Need to add the Extended MLD capabilities and operations to the list of elements that the AP MLD keep maintaining when not accepting the updated parameters in case of adding a link to the setup links of a non-AP MLD.Please revise the sentence as suggested. | Please revise the sentence as follows: "Otherwise, the AP MLD shall not update these parameters and shall continue to use the last accepted MLD capabilities \*And\* operations \* and the Extended MLD capabilities And operations \* and the EML capabilities for that non-AP MLD " | RevisedAgree with the commenter. Text is revised per suggestion.TGbe editor, please make the changes tagged by CID #23062 in 11-24/1028r2. |
| 23063 | 35.3.6.4 | 546.05 | [AK] Need to add the Extended MLD capabilities and operations to the list of elements that the AP MLD can accept when adding a link to the setup links of a non-AP MLD.Please revise the sentence as suggested. | Please revise the sentence as follows: "If the AP MLD accepts link addition for one or more links for a non-AP MLD, the AP MLD shall update the MLD capabilities \*And\* operations \* and/or the Extended MLD Capabilities And Operations\* and/or the EML capabilities for that non-AP MLD... " | RevisedAgree with the commenter. Text is revised per suggestion.TGbe editor, please make the changes tagged by CID #23063 in 11-24/1028r2. |
| 23064 | 35.3.6.4 | 546.01 | NOTE 2 does not add any further information that is described in the preceding normative behavior text paragraphs in P545L45-L64 and seems redundant. Please remove NOTE 2. | As in comment | Accepted Agree with the commenter. The text before NOTE 2 already captures same information as in NOTE 2. Hence, ok to remove NOTE 2. |
| 23065 | 35.3.6.3 | 544.04 | [AK] The subclause in P542L58-P543L36 discusses the case where BTM Request frame is transmitted by the AP to be removed. Specifically, it includes the requirement that this AP "shall terminate the BSS corresponding to the affiliated AP at the time indicated by the BSS Termination TSF field."[AK] Thus, NOTE 5 seems a duplication that does not add any meaningful information - please remove NOTE 5. | As in comment | AcceptedNOTE 5 was added to provide context related to when BSS is terminated for the case when BTM is sent. Agree that the same req is captured on the P543L34. Hence, ok to remove NOTE 5.  |
| 23066 | 35.3.6.3 | 543.64 | [AK] The conclusion derived from NOTE 4 completely aligns with the normative behavior requirement states in the subclause in P543L58-L62 and does not add any significant information. Please remove NOTE 4. | As in comment | RejectedThe normative text on P543L58-L62 refers to terminating the ﻿BSS \*at or after\* the TBTT indicated by the value of the AP Removal Timer. NOTE 4 provides a clarification specifically for the case when the BSS is terminated \*after\* the TBTT indicate by the AP Removal Timer. It adds information for that case and was added based on member’s feedback for clarification. No changes needed. |
| 23067 | 35.3.6.3 | 543.64 | [AK] BTM is not the name of feature that is supported, but "BSS Transition" (see also 802.11 REVme D5.0 section 11.21.7). In addition in the 9.4.2.25 Extended Capabilities element, the name of the corresponding capability is "BSS Transition" and not "BTM". Therefore, the support is for BSS transition (or BSS transition capability) and not for BTM. Please revise the sentence as suggested | The sentence should be revised as follows:" f the affiliated AP being removed has any associated non-MLD non-AP STAs that do not support \*BSS Transition\* capability and the AP transmits Disassociation frame(s) to those STAs (after the TBTT indicated by the AP Removal..." | Accepted |
| 23068 | 35.3.6.3 | 543.43 | [AK] BTM is not the name of feature that is supported, but "BSS Transition" (see also 802.11 REVme D5.0 section 11.21.7). In addition in the 9.4.2.25 Extended Capabilities element, the name of the corresponding capability is "BSS Transition" and not "BTM". Therefore, the support is for BSS transition (or BSS transition capability) and not for BTM. Please revise the sentence as suggested | The sentence should be revised as follows:" An affiliated AP that is being removed should transmit a Disassociation frame to associated non-MLD nonAP STAs that do not support \*BSS Transition\* capability. ." | Accepted  |
| 23069 | 35.3.6.3 | 543.29 | [AK] The procedure described in 11.3.5.8 includes the case where the Disassociation is initiated by the SME (which is not relevant for the case in the cited sentence). The affiliated AP that is being removed should follow the detailed procedure in 11.3.5.8.2 Please revise the reference as suggested. | The sentence should be revised as follows: " Once the disassociation timer reaches a value of 0, and before the TSF indicated by the BSS Termination TSF field, it shall follow the procedure in 11.3.5.8.2 (AP or PCP disassociation initiation detailed procedure) to transmit Disassociation frame(s) to all non-MLD non-AP STAs associated with the AP being removed. " | AcceptedTGbe editor, please replace “﻿11.3.5.8 (AP, AP MLD, or PCP disassociation initiation procedure)” in the cited sentence with “11.3.5.8.2 (AP or PCP disassociation initiation detailed procedure)”. |
| 23070 | 35.3.6.3 | 542.45 | [AK] BTM is not the name of feature that is supported, but "BSS Transition" (see also 802.11 REVme D5.0 section 11.21.7). Therefore, the support is for BSS transition (or BSS transition capability) and not for BTM. Please revise the sentence as suggested | The sentence should be revised as follows:" An affiliated AP that is being removed may transmit BSS Transition Management Request frame(s) to notify of the termination of its BSS to associated non-MLD non-AP STAs that support \*BSS Transition capability\*." | Accepted  |
| 23084 | 9.4.2.321.2.2 | 249.25 | (for Frank Hsu)Link reconfiguration response frame also can carry Basic Multi-link element. The setting of the MLD Capabilities And Operations Present subfield in the link reconfiguration response frame needs to be clarified. | Add the link reconfiguration response frame to the frame list of P249L25 | RevisedAgree with the commenter. Same resolution as CID for 23008.TGbe editor, please make the changes tagged by CID #23008 in 11-24/1028r2. |
| 23016 | 9.4.2.35 | 224.04 | NOTE 2 should also capture exception for including Link Info in the Basic ML element in a Neighbor Report element carried in a (Re)Association Response frame recommending neighboring APs. | Modify NOTE 2 to capture the additional exception for including Link Info in the Basic ML element. | RevisedAgree with the commenter. The Basic ML element can already be included in a Neighbor Report in a (Re)Association Response frame, and it makes sense to allow including Link Info field as well there to recommended multiple APs. TGbe editor, please make the changes tagged by CID #23016 in 11-24/1028r2. |
| 23017 | 35.3.3.1 | 519.53 | The baseline allows Neighbor Report to be carried in the (Re)Association Response frame when indicating failure and recommending other Neighbor APs. The Basic ML element in the Neighbor Report can include Link Info field in such case recommending more than one AP of the AP MLD. This text should be modified to include that exception case as well. | Modify text as follows - "﻿The Basic Multi-Link element when carried in the Neighbor Report element shall not include a Link Info field, except as described in 35.3.23 (BSS transition management for MLDs) \*or except when Neighbor Report element is carried in a (Re)Association Response frame recommending neighboring APs\*." | RevisedAgree with the commenter. The Basic ML element can be already included in a Neighbor Report in a (Re)Association Response frame and it makes sense to allow including Link Info field as well to recommended multiple APs. TGbe editor, please make the changes tagged by CID #23017 in 11-24/1028r2. |
| 23171 | 35.3.6.1 | 540.26 | Submitted on behalf of Po-Kai. There has been discussion on some limits of maximum setup links to be 3 when an AP MLD advertises more than 3 links. If AP MLD has this limitation, then some mechanims in the spec to accommodate the interop is required. At a minimum, we have to introduce a status code to let the client know when AP MLD has this constraints. We also have to limit the status code to be used only when the condition is indeed met. | Add the status code "REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED". Add the following sentences. "The AP MLD may not accept an add link request which results in number of setup links becoming greater than 3, after the number of setup links is updated to reflect delete link operation(s) (if any) in the Link Reconfiguration Request frame and in this case, the appropriate Status Code in the Link Reconfiguration Response frame to reject an add link request is REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED." Add the following sentences"The AP MLD may reject an add link operation received in the Link Reconfiguration Request frame if the number of existing setup link(s) that are not requested to be deleted, plus the number of setup link(s) that are requested to be deleted, plus the number of setup link(s) that are requested to be added is greater than 3." Add the following sentences, "Except the scenarios discussed above, an AP MLD shall not use REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED status code to reject an add link request in the Link Reconfiguration Response frame ." | RejectedThis topic of adding a new status code to indicate Max Setup Links limit reached condition from the AP has been discussed in the last two rounds. See 24/354r1 from last round for proposed resolution. However, group could not reach consensus on this. |
| 23172 | 35.3.5.1 | 535.20 | Submitted on behalf of Po-Kai. There has been discussion on some limits of maximum setup links to be 3 when an AP MLD advertises more than 3 links. If AP MLD has this limitation, then some mechanims in the spec to accommodate the interop is required. At a minimum, we have to introduce a status code to let the client know when AP MLD has this constraints. We also have to limit the status code to be used only when the condition is indeed met. | Suggest to add the following "“If AP MLD advertise larger than or equal to 3 links, then the AP MLD shall support setup of at least 3 links.”" Alternatively, add the following explicit normative texts. “If AP MLD advertise less than or equal to 3 links, then the AP MLD shall not use the REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED status code to reject any requested link. If AP MLD advertise larger than 3 links, then the AP MLD shall not use the REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED status code to reject any requested link if the total number of requested links is less than or equal to 3. If AP MLD advertise larger than 3 links and the number of requested links is larger than 3, then the AP MLD shall not use the REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED status code to reject any requested link if the total number of accepted links after using the REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED status code on a request link is less than 3. NOTE- The above rules implies that AP MLD supports setup of at least 3 links.”Add the status code "REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED". Add the following "The AP MLD may not accept number of requested links for the ML (re)setup greater than 3 and in this case, the appropriate Status Code in the STA Profile subfield of the Per-STA Profile subelement in a (Re)Association Response frame transmitted by an AP MLD to reject an requested link is REJECTED\_MAX\_SETUP\_LINKS\_LIMIT\_REACHED. " | RejectedThis topic of adding a new status code to indicate Max Setup Links limit reached condition from the AP has been discussed in the last two rounds. See 24/354r1 from last round for proposed resolution. However, group could not reach consensus on this. |
| 23170 | 9.4.2.321.2.3 | 257.17 | Submitted on behalf of Po-Kai. For "Recommended MaxSimultaneous Links", it is clear that the fields regulate STR, but it is not clear if this include NSTR. The confusion is there because the description say "simultaneous frame exchange" but NSTR is "non simultaneous" In the previous round, there are interpretation for this field to include both STR and NSTR. If that is the case, clarify in the column. | Change "Recommended maximum number of enabled links that a non-AP MLD canoperate on for simultaneous frameexchanges. Reserved when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum numbe" to "Recommended maximum number of enabled links that a non-AP MLD canoperate on for STR or NSTR frameexchanges. Reserved when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum number" | RevisedAgree with the commenter. The Recommended MaxSimultaneous Links field applies for both STR and NSTR. Revised text as per the suggestion.TGbe editor, please make the changes tagged by CID #23170 in 11-24/1028r2.  |

﻿**9.3.3.10 Probe Response frame format**

﻿

﻿ **Table 9-67—Probe Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| … |  |  |
| <Last assigned + 1> | Multi-Link | If dot11MultiLinkActivated is true and dot11MultiBSSIDImple- mented is false, then a single Basic Multi-Link element is present and (#23043)a single Reconfiguration Multi-Link element is optionally present (see 35.3.6.3 (Removing affiliated APs)).If dot11MultiLinkActivated is true and dot11MultiBSSIDImple- mented is true, one or more Basic Multi-Link element is (are) present as defined in 35.3.20 (MLO in a multiple BSSID set or co- hosted BSSID set) and a single Reconfiguration Multi-Link ele- ment is optionally present (see 35.3.6.3 (Removing affiliated APs)). Otherwise, the Multi-Link element is not present. |
| … |  |  |

**9.4.2.35 Neighbor Report element**

…

﻿NOTE 2—A Basic Multi-Link subelement included in a Neighbor Report element does not carry the Link Info field as described in 35.3.3 (Advertisement of ML information in Multi-Link element), except as described in 35.3.23 (BSS transition management for MLDs)(#23016) or except when the Neighbor Report element is carried in a (Re)Association Response frame.

**9.4.2.321.2.2 Presence Bitmap subfield of the Multi-Link Control field in a Basic Multi-Link element**

**…**

﻿The MLD Capabilities And Operations Present subfield is set to 1 if the MLD Capabilities And Operations subfield is present in the Common Info field. Otherwise, the MLD Capabilities And Operations Present subfield is set to 0. The MLD Capabilities And Operations Present subfield is set to 1 when the Basic Multi-Link element is carried in Beacon, Probe Response, (Re)Association Request, (#23008)(Re)Association Response and Link Reconfiguration Response frames.

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

**…**

**Table 9-404k—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 when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum number of enabled links on which a non-AP MLD can operate on for simultaneous frame exchanges (#23170)for STR or NSTR. 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). |

﻿**35.3.3.1 General**

**…**

**﻿**The Basic Multi-Link element when carried in the Neighbor Report element shall not include a Link Info field, except as described in 35.3.23 (BSS transition management for MLDs) (#23017) or except when Neighbor Report element is carried in a (Re)Association Response frame.

**﻿35.3.6 ML reconfiguration**

**35.3.6.1 General**

ML reconfiguration refers to a set of procedures through which an AP MLD can add one or more affiliated

APs to the AP MLD as described in 35.3.6.2 (Adding affiliated AP(s)), or remove one or more affiliated APs

from the AP MLD as described in 35.3.6.3 (Removing affiliated AP(s)). The ML reconfiguration also

defines procedure for adding and deleting links dynamically (#23053)to/from the setup links of a non-AP MLD without requiring (re)association between the peer MLDs as described in 35.3.6.4 (Link reconfiguration to the setup links) and for AP MLD to recommend ML reconfiguration to the setup links of its associated non-AP

MLD(s) as described in 35.3.6.5 (AP MLD recommendation for link reconfiguration).

**35.3.6.3 Removing affiliated APs**

**…**

**﻿**In the Reconfiguration Multi-Link element (#23010) ﻿included in Beacon and Probe Response frames, the EML Capabilities Present subfield, the MLD Capabilities And Operations Present subfield, and the Extended MLD Capabilities And Operations Present subfield shall be set to 0. For each affiliated AP that the AP MLD intends to remove, the Reconfiguration Multi-Link element shall include a Per-STA Profile subelement with the fields set as follows:

…

NOTE 7—Once an AP affiliated with an AP MLD is removed, the other APs affiliated with the same AP MLD do not

include the TBTT Information field for the removed AP in the Reduced Neighbor Report element. Further, (#23001)the TBTT Information field for the removed AP is not included in a Reduced Neighbor Report element sent by an AP corresponding to a transmitted BSSID of a multiple BSSID set (if any), that has a nontransmitted BSSID which corresponds to an AP affiliated with the AP MLD of the removed AP.

**35.3.6.4 Link reconfiguration to the ML setup**

﻿…

﻿NOTE 1—The ML reconfiguration operations for adding and/or deleting link(s) (#23053)to/from the setup links of a non-AP MLD is

performed between the two peer MLDs that are in State 4 (see Figure 11-23 (Relationship between state and services

between a given pair of nonmesh STAs or nonmesh MLDs)). For a newly added link to the setup links, the non-AP STA

and the AP operating on that link inherit state from their respective MLDs and are in State 4. For a link that gets deleted

from thesetup links, the non-AP STA and the AP that were previously operating on that link cease to inherit state from

their respective MLDs and transition to State 1 (see Figure 11-23 (Relationship between state and services between a

given pair of nonmesh STAs or nonmesh MLDs)).

…

﻿If the non-AP MLD is requesting to add a link in the Link Reconfiguration Request frame, then the non-AP

MLD:

— may update its MLD capabilities and operations by setting the MLD Capabilities And Operations

Present subfield to 1 in the Reconfiguration Multi-Link element and by including the MLD

Capabilities And Operations subfield in the Common Info field. Otherwise, the non-AP MLD shall

set the MLD Capabilities And Operations Present subfield to 0.

— may update its (#23062) extended MLD capabilities and operations by setting the Extended MLD Capabilities And

Operations Present subfield to 1 in the Reconfiguration Multi-Link element and by including the

Extended MLD Capabilities And Operations subfield in the Common Info field. Otherwise, the nonAP MLD shall set the Extended MLD Capabilities And Operations Present subfield to 0.

…

﻿

If the AP MLD accepts link addition for one or more links for a non-AP MLD, the AP MLD shall update the

MLD capabilities and operations (23063)and/or the extended MLD capabilities and operations and/or the EML capabilities for that non-AP MLD to the values received (if any) in the corresponding Link Reconfiguration Request frame. Otherwise, the AP MLD shall not update these parameters and shall continue to use the last accepted MLD capabilities and operations(#23062), the extended MLD capabilities and operations and the EML capabilities parameters for that non-AP MLD.

…

﻿If the AP MLD accepts link addition for one or more links, it shall include in the Link Reconfiguration

Response frame a Basic Multi-Link element that includes (#23006)the Common Info field and one Per-STA Profile subelement for each AP operating on the link that is accepted by the AP MLD for addition to the setup links of the non-AP MLD. ﻿The Basic Multi-Link element shall not include any other Per-STA Profile subelements. For each Per-STA Profile subelement included in the Basic Multi-Link element, the Complete Profile subfield in the STA

Control field shall be set to 1, and the STA Profile field corresponding to that AP shall be complete and

consists of all the elements and fields that would be included in the STA Profile field for that AP in a

Reassociation Response frame that includes the corresponding AP as a reported AP in the Basic Multi-Link

element as defined in 35.3.3.3 (Advertisement of complete or partial per-link information) and 35.3.3.4

(Fields and elements not carried in a Per-STA Profile subelement), except no inheritance is applied and all

the applicable elements and fields are included in the STA Profile field itself.

﻿(#23006)NOTE —The conditions for the presence of subfields in the Common Info field in the Basic Multi-Link element are defined in 9.4.2.321.2 (Basic Multi-Link element).

…

﻿After sending a Link Reconfiguration Response frame to a non-AP MLD indicating SUCCESS status for a

delete link operation and receiving the acknowledgement for the response frame from the non-AP MLD, the

AP MLD (#23061)shall delete that link from the setup links of that non-AP MLD and shall delete any information maintained for that link from the setup links of that non-AP MLD.

After sending a Link Reconfiguration Response frame to a non-AP MLD indicating SUCCESS status for an

add link operation and receiving the acknowledgement for the response frame from the non-AP MLD, the

AP MLD shall (#23060)add that link to the setup links of that non-AP MLD.

After receiving a Link Reconfiguration Response frame indicating SUCCESS status for a delete link

operation and sending an acknowledgement for the response frame, the non-AP MLD shall (#23059) delete that link from its setup links and shall delete any information maintained for that link from its setup

links.

After receiving a Link Reconfiguration Response frame indicating SUCCESS status for an add link

operation and sending an acknowledgement for the response frame, the non-AP MLD shall (#23058)add that link to its setup links.

...

﻿**35.3.6.5 AP MLD recommendation for link reconfiguration**

An AP MLD may recommend link(s) to be added and/or deleted (#23053)to/from the setup links of an associated non-AP MLD by sending an individually addressed Link Reconfiguration Notify frame to that non-AP MLD. The Link Reconfiguration Notify frame shall contain a Reconfiguration Multi-Link element that includes one

Per-STA Profile subelement for each affiliated AP that the AP MLD is recommending to the non-AP MLD

to add to or delete from its setup links.