IEEE P802.11
Wireless LANs

|  |
| --- |
| 11be D3.0 CR for 35.3.5 |
| Date: 2023-03-07 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Po-Kai Huang | Intel |  |  |  |

Abstract

This submission proposes resolutions for the following CIDs:

15049, 15399, 17889, 15682, 15860, 15982, 18194, 16091, 18278, 16240,

18277, 16695, 17888, 17890, 17891, 17892, 18192, 18193, 18195, 18196,

18197, 18198, 18199, 18200

Revisions:

* Rev 0: Initial version of the document.

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 D3.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbe D3.0 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** | **Commenter** | **Clause** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 15049 | Xiangxin Gu | 35.3.5.1 | 505.33 | For MLD level signaling, it's better to change the description to "When a non-AP MLD initiates a multi-link (re)setup with an AP MLD, it shall transmit an (Re)Association Request frame through one of its affiliated STA whose link it desires to use as part of the multi-link (re)setup." This change can be applied throughout the spec. | as the comment | Rejected – Transmission means over-the-air transmission which is done by the affiliated STA. |
| 15399 | John Wullert | 35.3.5.1 | 505.32 | Use of definite article in "on the link" suggests that there is only one, when the non-AP MLD might be able to choose among several. | Revise as "a STA that is affiliated with the non-AP MLD shall transmit an (Re)Association Request frame on a link that it desires to use as part of the multi-link (re)setup." | Revised –The intention is that when a STA is chosen, then the corresponding link that is part of the multi-link setup is chosen.We revise the sentence correspondingly.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 15399 |
| 17889 | Gaurang Naik | 35.3.5.1 | 505.33 | "... shall transmit an (Re)Association Request frame on \*the\* link that it desires ... " should be "... shall transmit an (Re)Association Request frame on \*a\* link that it desires ..." | As in comment | Revised –The intention is that when a STA is chosen, then the corresponding link that is part of the multi-link setup is chosen.We revise the sentence correspondingly.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 15399 |
| 15682 | Oren Kedem | 35.3.5 | 547.01 | Oren Kedem | Since the AP MLD requires to send the (Re)Assoc on the same setup link, AP should assume that the Non-AP STA remain Awake after sending the (Re)Assoc Rsp. Non-AP MLD shall remain Awake after sending (Re)Assoc Req until receiving (Re)Assoc Rsp or until timeout was expiered | Rejected – Before association is done, there is no power management behavior defined for both sides. This is the same behavior as non-MLO and there is no texts like this for non-MLO. |
| 15860 | Chunyu Hu | 35.3.5.1 | 507.15 | It's not clear what "mapping" refers to here. | Clarify or remove this sentence. | Rejected – “Mapping” is used due to the baseline language below.*For a non-GLK STA that is not affiliated with an MLD, the act of becoming associated with an AP invokes the association service, which provides the STA to AP mapping to the DS. For a non-AP MLD, the act of becoming associated with an AP MLD invokes the association service (see 11.3 (STA authenticationAuthentication and association)), which provides the non-AP MLD to AP MLD mapping to the DS.* |
| 15982 | Binita Gupta | 35.3.5.1 | 506.16 | The last part of Note 5 can be misleading. An AP MLD likely won't decide to add back an AP because it received an Association Request requesting a link to an AP which existed before and was removed. There may be different reasons why an AP MLD decides to add an AP back. The last part of note should be modified to be more generic about addition of the AP and not imply that AP gets added back because a request was received to add that link to ML setup by a non-AP MLD. | Modify to "NOTE 5--The link requested by the non-AP MLD might not exist because the corresponding affiliated AP has been removed from the AP MLD (see 35.3.6.2.2 (Removing affiliated APs)) in which case the AP MLD rejects the requested link, unless the affiliated AP gets added back to the AP MLD (see 35.3.6.2.1 (Adding affiliated APs)) in which case the AP MLD might accept the requested link" | Revised –It is indeed not suitable to describe all the potential AP add scenarios. The sentence does cite 35.3.6.2.1 and in that subclause it is generic for AP MLD to add AP. The important thing is that while the link is accepted, the corresponding AP exists. We revise to emphasize that part and delete the sentence if citing the reference is not enough to make it general. TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 15982 |
| 18194 | Gaurav Patwardhan | 35.3.5.1 | 506.17 | A non-AP MLD requesting to add a link before it can even discover that an additional affiliated AP to the same AP MLD can exist on that link is not possible. Additionally a non-AP MLD cannot request an AP MLD to add a link. Please remove the following part of Note 5: "or the AP MLD might add the corresponding affiliated AP (see 35.3.6.2.1 (Adding affiliated APs)) and the AP MLD might accept the requested link." | As in comment | Revised –The important thing is that while the link is accepted, the corresponding AP exists. We revise to emphasize that part and delete the sentence if citing the reference is not enough to make it general. TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 15982 |
| 16091 | Insun Jang | 35.3.5.1 | 505.56 | Even for this paragrph, it would be better to clarify the second case where the subset shall include the link on which (Re)Association Respone frame is transmitting, even though we already had the conditions (P506L50) | As in the comment | Revised – Agree in principle with the commenter. TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 16091 |
| 18278 | Mark Hamilton | 35.3.5.1 | 507.18 | The term/concept "MLD association" has been removed. | Delete "MLD" from "MLD association" in the cited NOTE, and also at P95.37 (but see other comment) and P512.54. | Revised – Agree in principle with the commenter. For P95L37, the sentence already has “For MLO” at the beginning, and propose to simply delete the refereed part. For P512.54, we use “corresponding".TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 18278 |
| 16240 | Stephen McCann | 35.3.5.1 | 507.18 | MLD association is not described in the referenced clause 11.3. | Change "MLD association" to "association". The same change needs to be made at P95L37. | Revised – Agree in principle with the commenter. For P95L37, the sentence already has “For MLO” at the beginning, and propose to simply delete the refereed part.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 18278 |
| 18277 | Mark Hamilton | 6.3.8.4.2 | 95.37 | Extra unneeded (and confusing) text. | Delete "when a reassociation is an MLD association (see 11.3)" | Accepted - |
| 16695 | Yonggang Fang | 35.3.5.1 | 507.28 | Suggest to move the example of multi-link setup from the normtive text body to the annex so as to reduce the size of normtive text body. | See in the comment | Revised – Agree in principle with the commenter.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 16695 |
| 17888 | Gaurang Naik | 35.3.5.1 | 505.30 | The link setup can be either between two MLDs or between affiliated STAs. The current statement says non-AP MLD sets up links with AP(s) affiliated with AP MLD. Shouldn't it say "A non-AP MLD may initiate a multi-link setup with an AP MLD to (re)set up one or more links with the AP MLD."? | As in comment | Rejected – Link are set between non-AP STAs and APs. APs are mentioned to emphasize that point.  |
| 17890 | Gaurang Naik | 35.3.5.1 | 505.36 | Is there a possibility where (Re)Association Request includes ML element but (Re)Association Response does not? If not, the statement should be revised as "A (Re)Association Request/Response frame exchange is for a multi-link setup only if the (Re)Association Request frame includes a Basic Multi-Link element." and add a statement like "If the (Re)Assoc Request frames include the Basic ML element, then the (Re)Assoc Response shall include the Basic ML element." | As in comment | Revised – The commenter is asking to exclude the case when (Re)Association Request includes ML element but (Re)Association Response does not. This case is already excluded due to the description in 9.3.3.6 Association Response frame format and 9.3.3.8 Reassociation Response frame format*The Basic Multi-Link element is present if dot11MultiLinkActivated is true and the Association Response frame is sent to a nonAP STA affiliated with a non-AP MLD; otherwise it is not present.*Propose to simply add the last part suggested by the commenter. TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 17890 |
| 17891 | Gaurang Naik | 35.3.5.1 | 506.08 | NOTE 3 and NOTE 4 seem to be talking about similar things. Seems better to merge them. | As in comment | Revised – Agree in principle with the commenter.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 17891 |
| 17892 | Gaurang Naik | 35.3.5.1 | 507.23 | It is not clear what is the intention of this statement. Is it trying to state that certain functionalities that were traditionally between the AP and non-AP STA are not at the MLD level (i.e., between the AP MLD and non-AP MLD)? Please clarify the statement. A NOTE with an example (such as Block Ack or security) will be helpful to clarify the intention. | As in comment | Rejected – The intention is that functionalties between STAs like TWT are all preserved. Functionalities like BA that are extended between MLD are not between STAs anymore. A note with example just about BA may lead to questions on why only list BA rather than other things.  |
| 18192 | Gaurav Patwardhan | 35.3.5.1 | 505.46 | This sentence can be interpreted as a subset of APs out of all affiliated APs. Change it as follows "..with a subset out of all APs affiliated with the AP MLD". This proposed change will include the case where a single AP is affiliated with an AP MLD. | As in comment | Revised –We simply use (s). TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 18192 |
| 18193 | Gaurav Patwardhan | 35.3.5.1 | 506.09 | Include the single AP affiliated with the AP MLD case in the note by changing the text as follows: "The link(s) that are requested for resetup are independent of the existing setup link(s) with an associated AP MLD." | As in comment | Accepted - |
| 18195 | Gaurav Patwardhan | 35.3.5.1 | 506.46 | Two links (re)setup is a bit restrictive. It can be any number of links (up to 15 as allowed by the normative text in D3.0). Please rephrase accordingly. | As in comment | Revised – The intention is indeed for any two links that are part of the links requested or accepted by the multi-link (re)setup.TGbe editor to make the changes shown in 11-23/0323r0 under all headings that include CID 18195 |
| 18196 | Gaurav Patwardhan | 35.3.5.1 | 507.15 | Delete the sentence " For each setup link .... provided to the DS." and the Note 8 that immediately follows the sentence, as it is out of context in this subclause. Subclause 4.5 covers this aspect in detail. | As in comment | Rejected- The cited sentence has the right context because the sentence before talks about keeping the associated state. As a result, it is important to specify that keeping the associated state does not lead to create additional DS mapping as implied by 4.5. |
| 18197 | Gaurav Patwardhan | 35.3.5.1 | 507.26 | Rephrase "... and specified otherwise" to "... and/or specified otherwise" to cover all cases. | As in comment | Rejected –It is not clear why we need “or”.If the funcitonaltieis has been extended to MLD, then it will be specified otherwise. *For each setup link, the functionalities between a non-AP STA affiliated with the non-AP MLD and its associated AP affiliated with the AP MLD are enabled unless the functionalities have been extended to the MLD level and specified otherwise.* |
| 18198 | Gaurav Patwardhan | 35.3.5.2 | 508.18 | Replace "when" with "if" | As in comment | Accepted -  |
| 18199 | Gaurav Patwardhan | 35.3.5.2 | 508.25 | Replace the sentence "Different APs affiliated with an AP MLD use different GTK/IGTK/BIGTK." with "Each AP(s) affiliated with an AP MLD uses a unique GTK/IGTK/BIGTK." as it is a much better way of saying the same thing. | As in comment | Rejected – Use of “different” in similar style can be seen in baseline as shown below. *Different MAC SAPs are presented to higher layers if different MAC addresses are used by each STA.* |
| 18200 | Gaurav Patwardhan | 35.3.5.3 | 508.47 | Rephrase as "... the non-AP MLD and all the non-AP STA(s) affiliated with the non-AP MLD...." as it reads better | As in comment | Accepted - |

**Discussion:**

*TGbe editor: Change Clause 35.3.5 as follows (track change on):*

* + 1. **Multi-link (re)setup**
			1. **Multi-link (re)setup procedure**

The multi-link (re)setup procedure sets up link(s) between a non-AP MLD and an AP MLD and is completed through the exchange of (Re)Association Request and (Re)Association Response frames. The non-AP MLD and AP MLD shall follow the (re)association procedure between MLDs as described in 11.3 (STA authenticationAuthentication and association).

NOTE 1—Prior to utilizing (Re)Association Request/Response frame exchange to perform multi-link (re)setup with an AP MLD, the non-AP MLD and AP MLD follow the authentication procedure between MLDs as described in 11.3 (STA authenticationAuthentication and association).

A non-AP MLD may initiate a multi-link setup with an AP MLD to (re)set up one or more links with AP(s) affiliated with the AP MLD. When a non-AP MLD initiates a multi-link (re)setup with an AP MLD, a STA that is affiliated with the non-AP MLD and is corresponding to a link that is part of the multi-link (re)setup shall transmit an (Re)Association Request frame on the link(#15399).

A (Re)Association Request/Response frame exchange is for a multi-link setup only if both the (Re)Association Request frame and the (Re)Association Response frame include a Basic Multi-Link element. If a (Re)Assoc Request frame includes the Basic Multi-Link element, then the (Re)Assocociation Response sent in response to the (Re)Association Request frame shall include the Basic Multi-link element.(#17890)

In the (Re)Association Request frame, the non-AP MLD indicates the link(s) that are requested for (re)setup and the capabilities and operational parameters of the non-AP STA(s) affiliated with the non-AP MLD corresponding to the requested link(s) as described in [35.3.5.4 (Usage and rules of Basic Multi-Link element](#bookmark46) [in the context of multi-link (re)setup, authentication, and FT action frame exchange between two MLDs)](#bookmark46). A non-AP MLD may request to (re)set up link(s) with a subset of AP(s)(#18192) affiliated with the AP MLD.

In the (Re)Association Response frame, the AP MLD shall indicate the requested link(s) that are accepted and the requested link(s) that are rejected for (re)setup and the capabilities and operational parameters of the requested link(s) as described in [35.3.5.4 (Usage and rules of Basic Multi-Link element in the context of](#bookmark46) [multi-link (re)setup, authentication, and FT action frame exchange between two MLDs)](#bookmark46). The AP MLD may do one of the following:

* accept all the links that are requested for (re)setup, or
* accept a subset of the links that are requested for (re)setup and include the link on which the (Re)Association Request frame was received(#16091), or
* reject all the links that are requested for (re)setup.

The (Re)Association Response frame shall be transmitted by the AP MLD through the affiliated AP that receives the (Re)Association Request frame.

A link that is requested by the non-AP MLD for (re)setup in the (Re)Association Request frame and is accepted by the AP MLD in the (Re)Association Response frame is a setup link between the AP MLD and the associated non-AP MLD.

NOTE 2—The corresponding AP of the setup link might be removed after the (Re)Association Request/Response frame exchange as defined in [35.3.6 (Multi-Link reconfiguration)](#bookmark47).

NOTE 3—The link(s)(#18193) that are requested for resetup are independent of the existing setup links with an associated AP MLD. (#17891)The capability and operation parameters of each requested link during multi-link resetup are independent of the capability and operation parameters of each existing setup link with an associated AP MLD.

NOTE 4(#17891)—The link requested by the non-AP MLD might not exist while the AP MLD prepares the (Re)Association Response frame because the AP MLD has removed the corresponding affiliated AP (see [35.3.6.2.2 (Removing affiliated APs)](#bookmark49)) in which case the AP MLD might reject the requested link.(#15982)

The AP MLD shall not accept a link that is requested for (re)setup if any of the following condition is true:

* The non-AP STA affiliated with the non-AP MLD corresponding to the link does not support all of the rates in the BSSBasicRateSet parameter and all of the membership selectors in the BSSMembershipSelectorSet parameter of the AP affiliated with the AP MLD corresponding to the link in the MLME-START.request primitive.
* The non-AP STA affiliated with the non-AP MLD corresponding to the link does not support all of the MCSs in the Basic HT-MCS Set field of the HT Operation parameter of the AP affiliated with the AP MLD (if present) corresponding to the link in the MLME-START.request primitive.
* The non-AP STA affiliated with the non-AP MLD corresponding to the link does not support all of the <VHT-MCS, NSS> tuples indicated by the Basic VHT-MCS And NSS Set field of the VHT Operation parameter of the AP affiliated with the AP MLD (if present) corresponding to the link in the MLME-START.request primitive.
* The non-AP STA affiliated with the non-AP MLD corresponding to the link does not support all of the <HE-MCS, NSS> tuples indicated by the Basic HE-MCS And NSS Set field of the HE Operation parameter of the AP affiliated with the AP MLD corresponding to the link in the MLME- START.request primitive.
* The non-AP STA affiliated with the non-AP MLD corresponding to the link does not support all of the <EHT-MCS, NSS> tuples indicated by the Basic EHT-MCS And NSS Set field of the EHT Operation parameter of the AP affiliated with the AP MLD corresponding to the link in the MLME- START.request primitive.

An MLD that requests or accepts multi-link (re)setup ensures that for any two links that are part of the links requested or accepted by the multi-link (re)setup, each link is located on different nonoverlapping operating channels.(#18195)

If the link on which the (Re)Association Request frame was received cannot be accepted by the AP MLD, the AP MLD shall treat the multi-link (re)setup as a failure and shall not accept any requested links. If the link on which the (Re)Association Request frame was received is accepted by the AP MLD, the multi-link (re)setup is successful.

NOTE 5(#17891)—See [35.3.5.4 (Usage and rules of Basic Multi-Link element in the context of multi-link (re)setup,](#bookmark46) [authentication, and FT action frame exchange between two MLDs)](#bookmark46) for the setting of the Status Code field.

An AP MLD shall assign a single AID to a non-AP MLD upon successful multi-link setup. All the non-AP STAs affiliated with the non-AP MLD shall have the same AID as the one assigned to the non-AP MLD during multi-link setup.

NOTE 6(#17891)—In a multiple BSSID set, the first 2*n* bits of the partial virtual bitmap of TIM element are reserved for the indication of group addressed frame for the BSSIDs in the set (see 11.1.3.8.5 (Traffic advertisement in a multiple BSSID set)). As a result, an AP affiliated with an AP MLD does not assign, to a non-AP MLD, an AID value that is less than 2*N*

where *N* is the maximum of the value carried in the MaxBSSID Indicator (*n*) field of the Multiple BSSID element corresponding to each link that is accepted as part of the multi-link (re)setup where the AP affiliated with the AP MLD belongs to a multiple BSSID set.

After successful multi-link (re)setup between a non-AP MLD and an AP MLD, the non-AP MLD is associated with the AP MLD following the (re)association procedure between MLDs as described in 11.3 (STA authenticationAuthentication and association) (i.e., in State 3 or State 4, see 11.3.2 (State variables)), and the non-AP MLD and the AP MLD set up link(s) for multi-link operation (see [35.3 (Multi-link](#bookmark10) [operation)](#bookmark10).

For each setup link, the corresponding non-AP STA affiliated with the non-AP MLD is in the same associated state as the non-AP MLD and is associated with the corresponding AP affiliated with the AP MLD. For each setup link, there is no mapping between the non-AP STA affiliated with the non-AP MLD and the AP affiliated with the AP MLD provided to the DS.

NOTE 7(#17891)—The non-AP MLD and the AP MLD have an (#18278)association (see 11.3 (STA authenticationAuthentication and association)), and the DS is notified of this mapping between the non-AP MLD and the AP MLD (see 4.5.3.3 (Association)).

For each setup link, the functionalities between a non-AP STA affiliated with the non-AP MLD and its associated AP affiliated with the AP MLD are enabled unless the functionalities have been extended to the MLD level and specified otherwise.

(#16695)

* + - 1. **Multi-link security**

After a successful multi-link (re)setup between a non-AP MLD and an AP MLD, a PMKSA and a PTKSA are established between the non-AP MLD and the AP MLD. In addition, a GTKSA, an IGTKSA if management frame protection is enabled, and a BIGTKSA if beacon protection is enabled, are established between the non-AP MLD and the AP MLD for each setup link (see Clause 12 (Security)). The PTKSA is used for cryptographic encapsulation and decapsulation of individually addressed MPDUs across all setup links and the GTKSA of a link is used for cryptographic encapsulation and decapsulation of group addressed MPDUs on the link as described in 12.5.2.3 (CCMP cryptographic encapsulation), 12.5.4.3 (GCMP cryptographic encapsulation), 12.5.2.4 (CCMP decapsulation), and 12.5.4.4 (GCMP decapsulation). If(#18198) management frame protection is enabled, the IGTKSA of a link is used to provide integrity protection for group addressed robust management frames across on the link as described in 12.6.19 (Protection of robust Management frames). When beacon protection is enabled, the BIGTKSA of a link is used to provide integrity protection for Beacon frames on the link as described in 12.6.23 (Protection of Beacon frames).

Different APs affiliated with an AP MLD use different GTK/IGTK/BIGTK. Each AP and the corresponding non-AP STA affiliated with an associated non-AP MLD maintains a single PN/IPN/BIPN for each GTK/ IGTK/BIGTK. The GTK/IGTK/BIGTK of each setup links are delivered to the non-AP MLD using a single 4-way handshake as defined in 12.7.6 (4-way handshake). When a GTK/IGTK/BIGTK update is triggered for an AP affiliated with the AP MLD, the updated GTK/IGTK/BIGTK may be delivered to the non-AP MLD using the Group key handshake over any enabled link as defined in 12.7.7 (Group key handshake).

NOTE—When a non-AP MLD changes the link used for group addressed frame reception, the non-AP MLD supplicant is able to request a group addressed handshake by sending an EAPOL-Key frame to the AP MLD authenticator with the Key Type set to Group (0) and the Request bit set to 1 (see 12.7.7.1 (General)) to refresh Key RSC/BPN/IPN.

* + - 1. **Multi-link tear down procedure**

An MLD tears down all the setup links with an associated MLD by sending a Disassociation frame through one of the STAs affiliated with the MLD, on a setup link, to the STA affiliated with the associated MLD subject to additional constraints (see [35.3.7 (Link management)](#bookmark50)). The MLD and the associated MLD shall follow the MLD disassociation procedure as described in 11.3 (STA authenticationAuthentication and association).

After multi-link teardown, the non-AP MLD and all the non-AP STAs affiliated with the non-AP MLD (#18200)are in the unassociated state (see 11.3.2 (State variables)).

*TGbe editor: Change Clause 6.3.8.4 as follows (track change on):*

* + - 1. **MLME-REASSOCIATE.indication**

**6.3.8.4.2 Semantics of the service primitive**

***Change the primitive parameters as follows (not all existing parameters are shown):***

The primitive parameters are as follows: MLME-REASSOCIATE.indication(

...

EHTCapabilities, MultiLink,

TID-To-Link Mapping, VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| ... |  |  |  |
| CurrentAPAddress | MAC address | Any valid individual MAC address | Specifies the address of the AP or PCP or MLD with which the peer STA is currently associated. |
| ListenInterval | Integer |  0 | For non-MLO, specifies~~Specifies~~ how often the STA awakens and listens for the next Beacon frame, if it enters power save mode.For MLO, specifies how often at least one STA affiliated with the MLD awakens and listens for the next Beacon frame, if all STAs affiliated with the MLD enter power save mode.(#18278) |
| ... |  |  |  |
| EHTCapabilities | As defined in EHT Capabilities element | As defined in 9.4.2.313 (EHT Capabilities element) | Specifies the parameters in the EHT Capa- bilities element that are supported by the peer STA. The parameter is present if dot11EHTOptionImplemented is true and the EHT Capabilities element is present in the Reassociation Request frame received from the STA; otherwise not present. |
| MultiLink | Basic Multi-Link element | As defined in 9.4.2.312 (Multi-Link element) | Indicates the Multi-Link parameters of the peer MLD. This parameter is present if dot11MultiLinkActivated is true and is absent otherwise. |
| TID-To-Link Mapping | TID-To-Link Mapping element | As defined in 9.4.2.314 (TID-To-Link Mapping element) | Indicates links on which frames belonging to each TID can be exchanged. This parameter is present if dot11MultiLinkActivated is true, dot11TIDtoLinkMappingActivated is true, and the STA affiliated with an MLD initiates both an association with an AP MLD and a TID-to-link mapping negotiation. Otherwise it is not present. |
| VendorSpecificInfo | A set of elements | As defined in9.4.2.25 (Vendor Specific element) | Zero or more elements. |

*TGbe editor: Change Clause 35.3.6.2.2 as follows (track change on):*

**35.3.6.2.2 Removing affiliated APs**

(…existing texts…)

At the TBTT indicated by the value of the AP Removal Timer subfield in transmitted Reconfiguration Multi-Link elements, an associated non-AP MLD shall consider the link corresponding to the removed AP nonexistent, and the SME of the affiliated non-AP STA associated with the removed affiliated AP shall delete any information maintained for that link. After a non-AP MLD deletes any information maintained for the link corresponding to the removed AP, if there are no other setup links with the AP MLD, then the non-AP MLD shall consider that it has been disassociated from the AP MLD and shall delete correspondingassociation information(#18278).

(…existing texts…)

*TGbe editor: Add one Annex as follows:*(#16695)

**Annex XXX**

(informative)

**Examples of MLO**

**xxx.1 Example 1—Multi-link setup**

**XXX1**