IEEE P802.11
Wireless LANs

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| PDT for ML Reconfiguration |
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Abstract

This submission is based on TGbe D4.0. One CID is addressed.

19415

Revisions:

* Rev 0: Initial version of the document.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***CID*** | ***Clause*** | ***Page*** | ***Comment*** | ***Proposed Change*** | ***Resolution*** |
| 19415 | 35.3.6.4 | 515.61 | If considering more than one link is added, there is no inheritence rule defined for the Reconfiguration ML element. suggest to use the Basic Multi-link element intead for the link addition. | As in comment. | RevisedAgree in principle. To address the comment, the following changes are applied:1. Use the Basic Multi-link element to inform the link info
2. To avoid carrying the link info on the reporting STA/AP， the Link ID subfield of the Common Info field of the Basic Multi-link element is set to the link ID corresponding to one of links which are requested to be added.
3. Revise the definition of the reporting AP and add a new definition of the reference AP for the inheritance mechanism.
4. Simplify the formats of the Link Reconfiguration Request/Response frames

**TGbe editor, please make the changes in 11-23/1505r0** |

**Discussion:**

In this PDT, we try to revise the current draft text on the multi-link reconfiguration to follow the following viewpoins.

**Viewpoint 1**. The main difference between the multi-link reconfiguration (i.e. link addition) and the existing reassociation is no need to negotiate the PTK. Considering the above fact, we should allow the frame body of the Reassociation Request/Response as a whole to include within the Link Reconfiguration Request/Response frame. What we only need to do is to define which field or element is NOT present in this case.

**Viewpoint 2.** We should use the Basic Multi-link element to carry the link info for the link addition, rather than using the Reconfiguration Multi-link element. Thus, we can reuse the current inheritance mechanism defined for the Basic Multi-link element and don’t need to add almost the same fields in the Reconfiguration Multi-link element as the Basic Multi-link element.

**Viewpoint 3.** In order to avoid carrying the link info on the transmitting STA/AP within the Link Reconfiguration Request/Response frame, we shall set the Link ID field of the Common Info field of the Basic Multi-link element to the link ID of one of links which are requested to be added.

**Viewpoint 4.** Introduce a new definition for the inheritance mechanism, i.e. reference AP. And the inheritance mechanism is only applied to the reported AP. In addition, revise the definition of the reporting AP to clarify the relationship of the transmitting AP and the reporting AP.

**Proposed spec text**

***TGbe editor: Please make the following changes in subclause 3.2 (Definitions specific to IEEE 802.11)***

**reported access point (AP):** [reported AP] An AP that is identified in an element such as a Neighbor Report element or, a Reduced Neighbor Report element, or Per-STA Profile subelement of the Basic Multi-Link element.

**reporting access point (AP):** [reporting AP] A transmitting AP that is transmitting an element, such as a Neighbor Report element, a Reduced Neighbor Report element or Basic Multi-Link element, describing a reported AP.

**reference access point (AP):** [referred AP] An AP which is selected to be a reference of the inheritance mechanism.

***TGbe editor: Please make the following changes in subclause 9.4.2.312.4 (Reconfiguration Multi-link element):***

**9.4.2.312.4 Reconfiguration Multi-Link element**

The Reconfiguration Multi-Link element is used to announce an ML reconfiguration operation (see 35.3.6 (ML reconfiguration)) (#15985)by the AP MLD (see 35.3.6.3 (Removing affiliated APs(#18115))). This element is also used to initiate ML reconfiguration operation for deleting links to its existing ML setup by the non-AP MLD (see 35.3.6.4 (ML reconfiguration to the ML setup(#15985))) and to provide recommendation for ML reconfiguration by the AP MLD to its associated non-AP MLD(s) (see 35.3.6.5 (AP MLD recommendation for ML reconfiguration(#15985))).

The format of the Presence Bitmap subfield of the Multi-Link Control field in a Reconfiguration Multi-Link element is defined in Figure 9-1002u (Presence Bitmap subfield of the Reconfiguration Multi-Link element format(#15985)).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 |  |  | B1 B11 |
|  | MLD MAC Address Present |  |  | Reserved |
| Bits | 1 |  |  | 11 |

**Figure 9-1002u—Presence Bitmap subfield of the Reconfiguration Multi-Link element format**

The MLD MAC Address Present subfield is set to 1 if the MLD MAC Address field is present in the Common Info field. Otherwise, the subfield is set to 0.

The format of the Common Info field of the Reconfiguration Multi-Link element is defined in Figure 9-1002v (Common Info field of the Reconfiguration Multi-Link element format(#15985)).

|  |  |  |  |
| --- | --- | --- | --- |
| Common Info Length | MLD MAC Address |  |  |

 Octets: 1 1

**Figure 9-1002v—Common Info field of the Reconfiguration Multi-Link element format(#15985)**

The Common Info Length subfield indicates the number of octets in the Common Info field, including one octet for the Common Info Length subfield.

The MLD MAC Address subfield specifies the MAC Address of the MLD described by the Reconfiguration Multi-Link element.

Each Per-STA Profile subelement starts with a STA Control field, followed by a variable number of fields and elements, as defined in Figure 9-1002w (Per-STA Profile subelement for the Reconfiguration Multi-Link element(#15985)).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subelement ID | Length | STA Control | STA Info |  |

 Octets: 1 1 2 variable

**Figure 9-1002w—Per-STA Profile subelement for the Reconfiguration Multi-Link element(#15985)**

The format of the STA Control field is defined in Figure 9-1002x (STA Control field format for the Reconfiguration Multi-Link element(#15985)).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Link ID | Complete Profile | STA MACAddress Present | AP Removal Timer Present | Operation Update Type | Operation Parameters Present | NSTR Bitmap Size | Reserved |

Bits: 4 1 1 1 4 1 1 3

**Figure 9-1002x—STA Control field format for the Reconfiguration Multi-Link element(#15985)**

The Link ID subfield is as defined in 9.4.1.71 (Link ID Info field)(#15985). In a Reconfiguration Multi-Link element transmitted by an AP MLD, the Link ID subfield specifies a value that uniquely identifies the link that the reported AP is operating on. In a Reconfiguration Multi-Link element transmitted by a non-AP MLD, the Link ID subfield specifies the link for which a reconfiguration operation is indicated.

The Complete Profile subfield is set to (#15985)0.

The STA MAC Address Present subfield indicates the presence of the STA MAC Address subfield in the STA Info field and is set to 1 if the STA MAC Address subfield is present in the STA Info field; otherwise (#17664)the STA MAC Address Present subfield is set to 0.

The AP Removal Timer Present subfield is set to 1 to indicate the presence of the AP Removal Timer subfield in the STA Info field, otherwise it is set to 0.

The Operation Update Type subfield is set to indicate the type of MLO update (#15985)for the link indicated by the Link ID subfield as per Table 9-401k (Operation Update Type subfield encoding(#16433)).

Table 9-401k Operation Update Type subfield encoding(#16433)

|  |  |
| --- | --- |
| **Value** | **Name** |
| 0 |  AP Removal  |
| 1 | Operation Parameter Update |
| 2 | Add Link |
| 3 | Delete Link |
| 4 – 15 | Reserved |

The Operation Parameters Present subfield is set 1 to indicate the presence of the Operation Parameters subfield in the STA Info field; (#17653)and otherwise is set to 0.

(#15985)The NSTR Bitmap Size subfield indicates the size of the NSTR Indication Bitmap subfield (if present) in the STA Info field and is set to 1 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 2 octets and is set to 0 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 1 octet. This field is reserved if the NSTR Indication Bitmap subfield is not included in the STA Info field.

The STA Info field consists of fields whose presence is indicated by the subfields of the STA Control field (#17665)(#15954).

The format of the STA Info field is defined in Figure 9-1002y (STA Info field format for the Reconfiguration Multi-Link element).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| STA Info Length | STA MAC Address | AP Removal Timer | Operation Parameters | NSTR Indication Bitmap |

 Octets: 1 0 or 6 0 or 2 0 or 3 (#15481) 0 or 1 or 2

**Figure 9-1002y—STA Info field format for the Reconfiguration Multi-Link element**

The STA Info Length subfield indicates the number of octets in the STA Info field, including one octet for the STA Info Length subfield.

The STA MAC Address subfield of the STA Info field carries the MAC address of the (#15369)STA that operates on (#15985)or can operate on the link identified by the Link ID subfield and is affiliated with the same MLD as the STA that transmitted the Reconfiguration Multi-Link element.

The AP Removal Timer subfield indicates the number of TBTTs of the AP corresponding to the Per-STA Profile subelement until the AP is removed.

NOTE—In an NSTR mobile AP MLD, the TSF timer of the AP operating on the nonprimary link is the same as the AP operating on (#17668)the primary link and only the AP on the primary link is transmitting beacons (see 35.3.19 (NSTR mobile AP MLD operation)), so the AP Removal Timer subfield indicates the number of TBTTs corresponding to the AP operating on the primary link until the AP specified in the Per-STA Profile subelement is removed.

The Operation Parameters subfield is defined in Figure 9-1002z (Operation Parameters subfield format).

|  |  |
| --- | --- |
| Presence Indication | Operation Parameter Info |

 Octets: 1 2

**Figure 9-1002z—Operation Parameters subfield format**

The Presence Indication subfield in the Operation Parameters subfield is defined in Figure 9-1002aa (Presence Indication subfield format).

B0 B1 B2 B7

|  |  |  |
| --- | --- | --- |
| Maximum MPDU Length Present | Maximum A-MSDU Length Present | Reserved |

Bits: 1 1 6

**Figure 9-1002aa—Presence Indication subfield format**

The Maximum MPDU Length Present subfield is set to 1 if the Maximum MPDU Length subfield is present in the Operation Parameter Info subfield. Otherwise, the Maximum MPDU Length Present subfield is set to 0.

The Maximum A-MSDU Length Present subfield is set to 1 if the Maximum A-MSDU Length subfield is present in the Operation Parameter Info subfield. Otherwise, the Maximum A-MSDU Length Present subfield is set to 0.

The Operation Parameter Info subfield contains operation parameters to be updated and is shown in Figure 9-1002ab (Operation Parameter Info subfield format).

|  |  |  |
| --- | --- | --- |
| MaximumMPDU Length | A-MSDU Length | Pad |

 Bits: 0 or 2 0 or 1 Variable

**Figure 9-1002ab—Operation Parameter Info subfield format**

The Maximum MPDU Length subfield is in defined in Table 9-310 (Subfields of the VHT Capabilities Information field).

The A-MSDU Length subfield is defined in Table 9-221 (Subfields of the HT Capabilities Information field).

The Pad subfield contains all 0s. The number of bits in the Pad subfield is the number of bits required to make the length of the Operation Parameter Info subfield (#17670)2 octets.

(#15985)The NSTR Indication Bitmap subfield indicates NSTR link pairs for the non-AP MLD. Each bit Bj(j ≠ i) in the NSTR Indication Bitmap subfield included in the Per-STA Profile subelement with Link ID subfield equal to i (where 0 ≤ i < 15) is set to 1 if the link pair corresponding to link IDs equal to <i, j> is an NSTR link pair; otherwise bit Bj is set to 0. Bit Bi in the NSTR Indication Bitmap subfield included in the Per-STA Profile subelement with Link ID subfield value equal to i is reserved. The NSTR Indication Bitmap subfield is not included in the Reconfiguration Multi-Link element transmitted by an AP MLD.

The Vendor Specific subelements have the same format as their corresponding elements (see 9.4.2.25 (Vendor Specific element)). Zero or more Vendor Specific subelements are included in the list of optional subelements in the Link Info field.

**9.6.35.12 Link Reconfiguration Notify frame format(#15985)**

The Link Reconfiguration Notify frame is used by an AP MLD to recommend addition and/or deletion of link(s) to the ML setup of its associated non-AP MLD(s).

The Link Reconfiguration Notify frame is an Action frame of category Protected EHT. The Action field of a Link Reconfiguration Notify frame contains the information shown in Table 9-623n (Link Reconfiguration Notify frame Action field format(#15985)).

|  |
| --- |
| Table 9-623n—Link Reconfiguration Notify frame Action field format |
| Order | Information |
| 1 | Category  |
| 2 | Protected EHT Action |
| 3 | Dialog Token |
| 4 | Reconfiguration Multi-Link element (see 9.4.2.312.4 (Reconfiguration Multi-Link element)) |

The Category field is defined in 9.4.1.11 (Action field) and is set to Protected EHT.

The Protected EHT Action field is defined in 9.6.35.1 (Protected EHT Action field).

The Dialog Token field is a nonzero value chosen by the transmitting AP MLD to identify a notify/request/response sequence.

One Reconfiguration Multi-Link element is included as defined in 9.4.2.312.4 (Reconfiguration Multi-Link element).

**9.6.35.13 Link Reconfiguration Request frame format(#15985)**

The Link Reconfiguration Request frame is used by a non-AP MLD to request addition or deletion of links to its ML setup.

The Link Reconfiguration Request frame is an Action frame of category Protected EHT. The Action field of a Link Reconfiguration Request frame contains the information shown in Table 9-623o (Link Reconfiguration Request frame Action field format(#15985)).

|  |
| --- |
| Table 9-623o—Link Reconfiguration Request frame Action field format |
| Order | Information |
| 1 | Category  |
| 2 | Protected EHT Action |
| 3 | Dialog Token |
| 4 | Request Control |
| 5 | Reassociation Request Frame Body |
| 6 | Reconfiguration Multi-Link element (optional, see 9.4.2.312.4 (Reconfiguration Multi-Link element)) |
|  |  |

The Category field is defined in 9.4.1.11 (Action field) and is set to Protected EHT.

The Protected EHT Action field is defined in 9.6.35.1 (Protected EHT Action field).

The Dialog Token field is set to a nonzero value chosen by the non-AP MLD sending the Link Reconfiguration Request frame.

The format of the Request Control field is defined in Figure 9-xxx (Request Control field format).

B0 B1 B7

Reserved

Reassociation Request Frame Body Presence

Bits: 1 6

**Figure 9-xxx— Request Control field format**

The Reassociation Request Frame Body Presence subfield is set to 1 if the Reassociation Request Frame Body field is present; otherwise it is set to 0.

The Reassociation Request Frame Body field contains the information shown in Table 9-64 (Reassociation Request frame body) subject to the additional restrictions as defined in subclause 35.3.6.4 (ML reconfiguration to the ML setup).

One Reconfiguration Multi-Link element is optionally included as defined in 9.4.2.312.4 (Reconfiguration Multi-Link element).

**9.6.35.14 Link Reconfiguration Response frame format(#15985)**

The Link Reconfiguration Response frame is sent by an AP MLD in response to a Link Reconfiguration Request frame received from a non-AP MLD to accept or reject request for adding and/or deleting links to the ML setup of the non-AP MLD.

The Link Reconfiguration Response frame is an Action frame of category Protected EHT. The Action field of a Link Reconfiguration Response frame contains the information shown in Table 9-623p (Link Reconfiguration Response frame Action field format(#15985)).

|  |
| --- |
| Table 9-623p—Link Reconfiguration Response frame Action field format |
| Order | Information |
| 1 | Category  |
| 2 | Protected EHT Action |
| 3 | Dialog Token |
| 4 | Response Control |
| 5 | Reconfiguration Status List |
| 6 | Reassociation Response Frame body (optional) |
|  |  |
|  |  |
|  |  |

The Category field is defined in 9.4.1.11 (Action field) and is set to Protected EHT.

The Protected EHT Action field is defined in 9.6.35.1 (Protected EHT Action field).

The Dialog Token field is set to the value of the Dialog Token field from the corresponding Link Reconfiguration Request frame.

The format of the Response Control field is defined in Figure 9-xxx (Response Control field format).

B0 B3 B4 B6 B7

Reassociation Response Frame Body Presence

Reserved

Count

Bits: 4 63 1

**Figure 9-xxx— Response Control field format**

The Count subfield is set to the number of reconfiguration status duple in the Reconfiguration Status List subfield.

The Reassociation Response Frame Body Presence subfield is set to 1 if the Reassociation Response Frame Body field is present; otherwise it is set to 0.

The Reconfiguration Status List subfield contains one or more reconfiguration status duple as shown in 9-1201a (Reconfiguration Status Duple subfield format(#15985)).

|  |  |
| --- | --- |
| Link ID Info | Status |

 Octets: 1 2

 Figure 9-1201a–Reconfiguration Status Duple subfield format

The format of the Link ID Info subfield is defined in Figure 9-189f (EMLSR Parameter Update field format). The Link ID subfield of the Link ID Info subfield indicates the link identifier of the AP which is indicated for addition or deletion to existing ML setup in the corresponding Link Reconfiguration Request frame.

The Status subfield indicates the status of the link reconfiguration operation for the link corresponding to the Link ID subfield, as indicated in Table 9-78 (Status codes) and following the rules defined in 35.3.6.4 (ML reconfiguration to the ML setup(#15985)).

The Reassociation Response frame body field contains the information shown in Table 9-65 (Reassociation Response frame body) subject to the additional restrictions as defined in subclause 35.3.6.4 (ML reconfiguration to the ML setup).

|  |  |
| --- | --- |
|  |  |

**35.3.6.3 Removing affiliated APs(#18115)**

***TGbe editor: Please modify 5th paragraph of this subclause as shown below:***

(#15985)In the Reconfiguration Multi-Link element, the EML Capabilities Present subfield and the 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 subfields of the STA Control field set as following: The Link ID subfield shall identify the AP being removed, the Complete Profile subfield shall be set to 0, the STA MAC Address Present subfield shall be set to 0, (#15991)(#16433)the AP Removal Timer Present subfield shall be set to 1, and the Operation Update Type subfield shall be set to 0. The AP Removal Timer subfield in the STA Info field shall be set to the number of TBTTs of the affiliated AP before it is removed or for the NSTR mobile AP MLD the AP Removal Timer subfield shall be set to the number of the TBTTs of the AP operating on the primary link before the affiliated AP operating on the nonprimary link is removed. The initial value of the AP Removal Timer subfield should point to a TBTT value that provides (#17937)sufficient time to announce the removal of (#17939)the affiliated AP such that all associated non-AP MLDs including the ones in power save mode have the opportunity to receive (#17940)the Reconfiguration Multi-Link element at least once before the AP is removed(#15994).

**35.3.6.4 ML reconfiguration to the ML setup(#15985)**

Every EHT STA affiliated with an AP MLD or a non-AP MLD that supports ML reconfiguration operations for adding and deleting links to the ML setup of a non-AP MLD as described in this subclause and supports recommendation for ML reconfiguration to the ML setup of a non-AP MLD as described in 35.3.6.5 (AP MLD recommendation for ML reconfiguration(#15985)) shall set the dot11EHTLinkReconfigurationOperationActivated equal to true and shall set the Link Reconfiguration Operation Support subfield to 1 in the MLD Capabilities And Operations field of the Basic Multi-Link element and the Reconfiguration Multi-Link element that it transmits.

NOTE 1—The ML reconfiguration operations for adding a link or deleting a link to the ML setup of a non-AP MLD is performed between the two peer MLDs which are in State 4 (see Figure 11-21 (Relationship between state and services between a given pair of nonmesh STAs or nonmesh MLDs)). For a newly added link to the ML setup, the non-AP STA and the AP operating on that link inherit state from their respective MLDs and are in State 4. For a setup link which gets deleted from the ML setup, the non-AP STA and the AP which were previously operating on that link cease to inherit state from their respective MLDs and transition to State 1 (see Figure 11-21 (Relationship between state and services between a given pair of nonmesh STAs or nonmesh MLDs)).

A non-AP MLD in the associated state which has dot11EHTLinkReconfigurationOperationActivated equal to true may request ML reconfiguration to its ML setup by sending a Link Reconfiguration Request frame from an affiliated non-AP STA to the corresponding AP affiliated with the associated AP MLD which has the Link Reconfiguration Operation Support subfield set to 1 in the MLD Capabilities And Operations field of the Basic Multi-Link element that it transmits. The Link Reconfiguration Request frame shall contain a Reassociation Request frame body field to add link(s) to its ML setup and/or a Reconfiguration Multi-link element to delete link(s) from its ML setup.

The Reassociation Request frame body field of the Link Reconfiguration Request frame shall contain the information shown in Table 9-64 (Reassociation Request frame body).

The Link ID subfield of the Link ID Info field of the Common Info field of the Basic Multi-link element shall be set to the link ID of one of links which are requested to be added. If only one link is requested to be added, a Basic Multi-link element without the Link Info field shall be included in the Reassociation Request frame body field.In the Reconfiguration Multi-Link element included in a Link Reconfiguration Request frame a non-AP MLD shall set the MLD MAC Address Present subfield to 1 and shall set the MLD MAC Address subfield in the Common Info field to its non-AP MLD MAC Address.

* If the non-AP MLD is indicating to delete an existing link, it shall include a Reconfiguration Multi-link element within the Link Reconfiguration Request frame and set the fields in the Per-STA Profile subelement of the Reconfiguration Multi-link element as follows:
* The Link ID subfield shall be set to the link identifier of the AP affiliated with the AP MLD that is operating on the link that is requested to be deleted from the ML setup. The Complete Profile subfield shall be set to 0. The STA MAC Address Present subfield shall be set to 1. The AP Removal Timer Present subfield shall be set to 0. The Operation Update Type subfield shall be set to 3. The Operation Parameters Present subfield shall be set to 0.
* The STA MAC Address subfield in the STA Info field shall be set to the STA MAC address of the non-AP STA operating on the link indicated by the link ID, which is requested to be deleted.
* The NSTR Indication Bitmap subfield shall not be included.
* The STA Profile field shall not be included.

If the non-AP MLD is indicating to add one or more links, it shall include an OCI element within the Reassociation Request frame body field of the Link Reconfiguration Request frame to provide operating channel information for the current channel where the Link Reconfiguration Request frame is being transmitted if all the following conditions are met:

* dot11RSNAOperatingChannelValidationActivated is true for the non-AP MLD,
* the RSNE in last (Re)Association Request frame transmitted to the AP MLD indicated OCVC, and
* the RSNE in the Beacon of the AP corresponding to the current link indicates OCVC.

After receiving a Link Reconfiguration Request frame indicating request for adding one or more links from a non-AP STA affiliated with a non-AP MLD which indicated OCVC in its RSNE, and if the RSNE for the affiliated AP also indicates OCVC, an AP MLD shall validate the OCI element received in the request by ensuring that all of the followings are true:

* the OCI element is present,
* the Channel information in the OCI element matches current operating channel parameters (see 12.2.9 (Requirements for Operating Channel Validation)).

Otherwise, AP MLD shall reject the request by discarding the Link Reconfiguration Request frame.

The non-AP MLD shall not include an FTE within the Reassociation Request Frame Body field of the Link Reconfiguration Request frame.

After receiving a Link Reconfiguration Request frame from a non-AP MLD, the AP MLD shall respond with a Link Reconfiguration Response frame when no OCI element validation is required, or when OCI element validation is required and the validation is successful.

The AP MLD shall accept a delete link request for a link ID.

The Reassociation Response frame body field of the Link Reconfiguration Response frame shall contain the information shown in Table 9-65 (Reassociation Response frame body) subject to the additional restrictions as defined in this subclause.

If only one link is required to be added, a Basic Multi-link element without the Link Info field is included within the Reassociation Response frame body field of the Link Reconfiguration Response frame.

If more than one link is requested to be added, a Basic Multi-link element with the Link Info field is included within the Reassociation Response frame body field of the Link Reconfiguration Response frame.

If the AP MLD accepts the addition for one or more links, a FTE with the following setting shall be included within the Reassociation Response frame body fieldof the Link Reconfiguration Response frameand an MLO GTK subelemen, MLO IGTK, and MLO BIGTK subelement for each additional link shall be included within the FTE:

* set RSNXE Used subfield, Element Count subfield, ANonce, SNonce, and MIC fields set to 0;
* include an MLO GTK, MLO IGTK, and MLO BIGTK subelement for each link that is successfully added.

If the AP MLD accepts the link addition of one or more links, the AP MLD shall include an OCI element within the Reassocaition Response frame body field of the Link Reconfiguration Response frame to provide operating channel information for the current channel where the Link Reconfiguration Response frame is being transmitted if all of the following conditions are met:

* dot11RSNAOperatingChannelValidationActivated is true for the AP MLD,
* the RSNE in last (Re)Association Request frame received from the non-AP MLD indicated OCVC, and
* the RSNE in the Beacon of the AP corresponding to the current link indicates OCVC.

If the AP MLD rejects a link addition request, it shall set the corresponding Status Code subfield to an appropriate rejection status code as per Table 9-78 (Status codes).

After receiving a Link Reconfiguration Response frame that includes the FTE with the MLO GTK, MLO IGTK and MLO BIGTK subelement for each accepted additional link; if the AP indicated OCVC in its RSNE and the receiving non-AP STA RSNE also indicates OCVC, the non-AP MLD shall validate the OCI element received in the response by ensuring that all of the following conditions are true:

* the OCI element is present,
* the channel information in the OCI element matches current operating channel parameters (see 12.2.9 (Requirements for Operating Channel Validation)).

Otherwise, the non-AP MLD shall discard the Link Reconfiguration Response frame.

If an ML reconfiguration operation results in one or more links being added to the ML setup of a non-AP MLD, the non-AP MLD and the AP MLD shall operate with all the TIDs mapped to the newly added links until a new TID-to-link mapping is negotiated.

The power management mode of the affiliated non-AP STA corresponding to the added link shall be in the power save mode immediately after the acknowledgement of the Link Reconfiguration Response frame, and its power state shall be in the doze state.

If an ML reconfiguration deletes one or more links from the ML setup of a non-AP MLD and that results in a TID not being mapped to any of the remaining setup links (if one exists) in either direction for that non-AP MLD, then the non-AP MLD and the AP MLD shall operate with that TID mapped to all remaining enabled links for that direction after the deletion of the setup link, until a new TID-to-link mapping is established for that TID.

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

**35.3.3.1 General**

**TGbe editor: Please modify this paragraph as following:**

The requirements for including a Basic Multi-Link element in a Beacon frame or in a Probe Response frame are described in 35.3.4 (Discovery of an AP MLD). The requirements for including a Basic Multi-Link element (#15007)in an Authentication frame, in a (Re)Association Request frame, or in a (Re)Association Response frame are described in 35.3.5 (ML (re)setup). The requirements for including a Basic Multi-Link element in a Link Reconfiguration Request frame or in a Link Reconfiguration Response frame are described in 35.3.6 (ML reconfiguration).

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

**TGbe editor: Please modify this paragraph as following:**

NOTE 1—Only (#16759)(Re)Association Request/Response frames, Link Reconfiguration Request/Response frames and multi-link probe response can include the complete profile of a reported STA (see 35.3.5.4 (Basic Multi-Link element usage in the context of ML (re)setup, authentication, and FT action frame exchange between two MLDs(#16374)) and 35.3.4.2 (Use of multi-link probe request and response)).

**TGbe editor: Please modify this paragraph as following:**

Each Per-STA Profile subelement of the Basic Multi-Link element that is included in a Management frame transmitted by a STA affiliated with an MLD and that carries a complete profile shall consist of:

* the STA Control field (as defined in 9-1002n (STA Control field format of the Basic Multi-Link element)),
* the STA Info field (as defined in 9-1002o (STA Info field format of the Basic Multi-Link element)), and
* the STA Profile field containing fields and elements based on the following rules:
* If the transmitting STA is an AP, the STA Profile field corresponding to the reported AP:
	+ carries fields and elements in the same order and subject to the conditions as in:
		- Table 9-67 (Probe Response frame body) if the fields and elements are carried in a multi-link probe response.
		- Table 9-63 (Association Response frame body) if the frame is an Association Response frame.
		- Table 9-65 (Reassociation Response frame body) if the frame is a Reassociation Response frame or a Link Reconfiguration Response frame.
	+ is subject to inheritance rules defined in 35.3.3.6.1 (Inheritance in the per-STA profile of Basic Multi-Link element) and exceptions specified in 35.3.3.4 (Fields and elements not carried in a per-STA profile).
* If the transmitting STA is a non-AP STA, the STA Profile field corresponding to the reported non-AP STA:
	+ carries fields and elements in the same order and subject to conditions as in:
		- Table 9-62 (Association Request frame body) if the frame is an Association Request frame.
		- Table 9-64 (Reassociation Request frame body) if the frame is a Reassociation Request frame or a Link Reconfiguration Request frame.
	+ is subject to inheritance rules defined in 35.3.3.6.1 (Inheritance in the per-STA profile of Basic Multi-Link element) and exceptions specified in 35.3.3.4 (Fields and elements not carried in a per-STA profile).
* Optionally, a Non-Inheritance element appears as the last element in the STA Profile field and carries a list of elements that are not inherited by the reported STA from the reporting STA (see 35.3.3.6.1 (Inheritance in the per-STA profile of Basic Multi-Link element)).

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

**TGbe editor: Please modify this paragraph as following:**

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

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

**TGbe editor: Please modify the first paragraph as following:**

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

**TGbe editor: Please modify the third paragraph as following:**

A STA that transmits a Management frame carrying the Basic Multi-Link element shall include an element that is specific to the reported STA in the complete profile of the reported STA carried in the Basic Multi-Link element. An element, identified by an Element ID and Element ID Extension (if applicable), is considered specific to a reported STA if any of the following conditions are satisfied:

* at least one element with the same Element ID and Extended Element ID (if applicable) is present in the frame that carried the Basic Multi-Link element but the contents of the Information field are not the same for the reported STA if the reported STA were to transmit the same Management frame subtype.
* the reported STA satisfies the condition for that element to be included in the same Management subtype as the frame that carries the Basic Multi-Link element while the reference STA does not satisfy the corresponding condition.

**TGbe editor: Please modify the following paragraphes as following:**

If an element, identified by an Element ID and Element ID Extension (if applicable), is carried in a Management frame and the element is outside the Basic Multi-Link element and outside Multiple BSSID element (if included), and there is no element having the same Element ID and Element ID Extension (if applicable) in a complete profile of a reported STA carried in the Basic Multi-Link element, then the element is considered to be part of the reported STA’s profile and the value to use is the same as that of the corresponding element carried in the reference STA’s frame unless any of the following conditions are true, in which case the element is not considered to be part of the reported STA’s profile:

* the complete profile carries the Non-Inheritance element (see 9.4.2.239 (Non-Inheritance element)) and the element is listed in the Non-Inheritance element.
* the element is excluded from being included in the Per-STA Profile subelement as described in 35.3.3.4 (Fields and elements not carried in a per-STA profile).

If an element, identified by an Element ID and Element ID Extension (if applicable), is carried in a Management frame and the element is outside the Basic Multi-Link element, and there is an element having the same Element ID and Element ID Extension (if applicable) in a complete profile of a reported STA carried in the Basic Multi-Link element in that frame (i.e., the element is specific to the reported STA), then the STA receiving the Management frame shall consider the element received in the Management frame outside of the Basic Multi-Link element to not be part of the reported STA’s profile.