IEEE P802.11  
Wireless LANs

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| SA ballot: CR for 35.3.7.5.2 | | | | |
| Date: 2024-03-03 | | | | |
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Abstract

This submission proposes CR for 9 CIDs: 22030, 22036, 22059, 22060, 22061, 22095, 22096, 22279, 22327

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: updated due to offline comments.
* Rev 2: Updated with more offline comments during F2F meetings.
* Rev 3: more comments during F2F discussion

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** | **Commenter** | **Pg/Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- |
| 22279 | Tomoko Adachi | 537.33 | 35.3.7.5.2 | "…, each of the APs affiliated with an AP MLD shall advertise a TTLM in transmitted Beacon and Probe Response frames …" Is "TTLM" here intended to be the TID-To-Link Mapping element? If so, when the default mapping is applied, how the mapping policy will be treated when receiving the MLME-BSS-LINK-DISABLE.request is not clarified. As the default mapping consists of only the setup links which are all enabled, when receiving the MLME-BSS-LINK-DISABLE.request, it should be interpreted that the mapping is changed to the nondefault mode. Then the TID-To-Link Mapping element can include the Link Mapping Presence Bitmap subfield and the Link Mapping Of TID n fields by setting the Default Link Mapping subfield to 0. | Clarify that, when default mapping is applied but when receiving the MLME-BSS-LINK-DISABLE.request, the Default Link Mapping subfield of the TID-To-Link Mapping element is set to 0 and the Link Mapping Of TID n fields for all the TIDs will be present with the bit positions for the remaining links set to 1. | **Rejected**  The commenter has failed to indicate a technical issue in the specified text.  The cited paragraph deals with the case that following the reception of the MLME-BSS-LINK-DISABLE.request primitive, each of the APs affiliated with an AP MLD advertises a TTLM which includes one or more disabled links (as indicated in the soliciting primitive). This TTLM does not include a default mapping (due to the disabled link) and the disablement will start at the time indicated by the Mapping Switch Time field. The parameter setting of the advertised TTLM is not affected by the default mapping (if currently applied in that BSS). |
| 22061 | Michael Montemurro | 537.56 | 35.3.7.5.2 | [AK] According to P537L64 "the BSS Termination Included field is set to 0" in the BTM Request frame that is transmitted for non-MLD non-AP STAs that support BSS transition capability. Thus, the reasoning of the indication of the BTM Request frame, as mentioned in the following sentence is incorrect:"....in order to indicate the imminent termination of the BSS of these non-AP STAs:" Please correct the sentence as suggested | Please revise the sentence as follows:" Additionally, if there are associated non-MLD non-AP STAs that support BSS transition capability, the affiliated AP, that is operating on the link advertised as to become disabled, shall perform the following, in order to indicate the imminent \*Disassociation\* of these non-AP STAs " | **Accepted** |
| 22327 | Alfred Asterjadhi | 539.57 | 35.3.7.5.2 | [Xiandong Dong] There's an extra comma between "the affiliated AP" and "that". | As in comment | **Revised**  Agree with the comment. It seems that the reference to the page and line is erroneous: the comment refers to P/L 537/57  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22327.** |
| 22059 | Michael Montemurro | 538.11 | 35.3.7.5.2 | [AK] In case the BSS Termination Included field is set to 0 (as defined in P537L64), there is no need to include the BSS Termination Duration field. Please remove the entire paragraph, as suggested | Please remove the following sentence: "The BSS Termination Duration field shall be present and shall contain a BSS Termination Duration subelement (see 9.4.2.35 (Neighbor Report element)), with the BSS Termination TSF field set to the same time pointed by the Mapping Switch Time field value of the advertised TTLM element and the Duration field of the subelement set to the approximate value indicated by the Expected Duration field of the advertised TTLM element. " | **Accepted** |
| 22036 | Li-Hsiang Sun | 538.07 | 35.3.7.5.2 | In 35.3.6.3 BSS Termination TSF > Disassociation Timer However, " The Disassociation Timer field value shall point to a TBTT at or later than the time pointed to by the value of the Mapping Switch Time field for the advertised TTLM" and "the BSS Termination TSF field set to the same time pointed by the Mapping Switch Time field value of the advertised TTLM element " which means BSS Termination TSF <= Disassociation Timer | Make 35.3.7.5.2 timer durations consistent with 35.3.6.3 | **Revised**  Agree with the comment.  Following a related comment, CID 22059, that asked for removing the sentence “The BSS Termination Duration field shall be present and shall contain a BSS Termination Duration subelement (see 9.4.2.35 (Neighbor Report element)), with the BSS Termination TSF field set to the same time pointed by the Mapping Switch Time field value of the advertised TTLM element and the Duration field of the subelement set to the approximate value indicated by the Expected Duration field of the advertised TTLM element.”, the cited sentence is removed.  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22059.** |
| 22030 | Abhishek Patil | 540.11 | 35.3.7.5.2 | The 3rd subbullet under item 1 says that "BSS Termination Duration field shall be present". However the 1st bullet states that "other fields of the Request Mode field are set to 0". This conflicts with baseline rules (see REVme D4.2 P1702L54) which states that "The BSS Termination Duration field contains the BSS Termination Duration subelement (see 9.4.2.35 (Neighbor Report element)) for the current BSS and is present only when the BSS Termination Included field is 1 in the (#554)Request Mode field." | Update the text in the 1st subbullet (TGbe D5.0 P540L01) to state that the BSS Termination Included field is set to 1. | **Revised**  Agree with the comment.  However, based on the SP results on 11-23/1399r5 (from a related comments CID 1971 <https://mentor.ieee.org/802.11/dcn/23/11-23-1399-05-00be-lb275-cr-for-subclause-35-3-7-5-2-part-1.docx>) the BSS Termination Included field is set to 0.  Following a related comment, CID 22059, that asked for removing the sentence “The BSS Termination Duration field shall be present and shall contain a BSS Termination Duration subelement (see 9.4.2.35 (Neighbor Report element)), with the BSS Termination TSF field set to the same time pointed by the Mapping Switch Time field value of the advertised TTLM element and the Duration field of the subelement set to the approximate value indicated by the Expected Duration field of the advertised TTLM element.”, the cited sentence is removed.  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22059.** |
| 22096 | Michael Montemurro | 540.11 | 35.3.7.5.2 | [HGG] For the third bullet, the BSS Termination Duration field is present only when the BSS Termination Included field is 1. So the BSS Termination Included should be set to 1. | the BSS Termination Included field should be set to 1 | **Revised**  Based on the SP results on 11-23/1399r5 (from a related comments CID 1971 <https://mentor.ieee.org/802.11/dcn/23/11-23-1399-05-00be-lb275-cr-for-subclause-35-3-7-5-2-part-1.docx>). the BSS Termination Included field is set to 0.  Following a related comment, CID 22059, that asked for removing the sentence “The BSS Termination Duration field shall be present and shall contain a BSS Termination Duration subelement (see 9.4.2.35 (Neighbor Report element)), with the BSS Termination TSF field set to the same time pointed by the Mapping Switch Time field value of the advertised TTLM element and the Duration field of the subelement set to the approximate value indicated by the Expected Duration field of the advertised TTLM element.”, the cited sentence is removed.  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22059.** |
| 22060 | Michael Montemurro | 537.63 | 35.3.7.5.2 | [AK] According to 9.6.13.9 (P310L56): "The Link Removal Imminent (bit 5) field is reserved if one of the following conditions is met:…..The BSS Termination Included field is set to zero". Therefore, the setting of the Link Removal Imminent field to 1 in case that BSS Termination Included field is set to 0 is incorrect. Please revise the setting requirements, as suggested. | Please revise the sentence as follows: " The Disassociation Imminent field of the Request Mode field is set to 1, the BSS Termination Included field is set to 0, the Preferred Candidate List Included field is set according to 9.6.13.9 (BSS Transition Management Request frame format) if the BSS Transition Candidate List Entries field is included, and other fields of the Request Mode field are set to 0" | **Revised**  Based on the SP results on 11-23/1399r5 (CID 19711), (<https://mentor.ieee.org/802.11/dcn/23/11-23-1399-05-00be-lb275-cr-for-subclause-35-3-7-5-2-part-1.docx>), the BSS Termination Included field is set to 0.  However, the combination of BSS Termination Included field set to 0 and Link Removal Imminent set to 1 will be used by the AP MLD in case of broadcast BTM Request frame to indicate the associated non-AP MLD to ignore the imminent disassociation (indicated by the BTM Request frame for the associated non-MLD non-AP STAs).  A note is added to clarify this point.  In addition, the cited subclause in 9.6.13.9 needs to be modified to include this setting.  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22060.** |
| 22095 | Michael Montemurro | 539.64 | 35.3.7.5.2 | [HGG] Based on the current draft, the non-AP MLD can know the BSS Transition Request frame is send due to the link removal if the Link Removal Imminent subfield is equal to 1 and remove the link. Hence, the Link Removal Imminent subfield cannot be set to 1 for the link disablement. The link removal and the link disablement are totally different for the non-AP MLD. | Add a new field in the Request Mode field of the BSS Transition Request frame, i.e. Link Disablement Imminent. And change the first bullet as: The Disassociation Imminent, BSS Termination Included and Link Disablement Imminent fields of the Request Mode field shall be set to 1, the Preferred Candidate List Included... | **Revised**  Agree with the comment for the difference between Link Removal case and Affiliated AP link disablement case.  **TGbe editor please implement changes as shown in doc 11-24/0293r3 tagged as 22060.**  **Note to the commenter:** The resolution is the same as for CID 22060. |

*TGbe editor: Please note baseline is 11be D5.0 and REVme D**5.0*

#### Affiliated AP link disablement and enablement

* + - * 1. **General**

An AP MLD shall use the procedures described in [35.3.7.2.4 (Advertised TTLM in Beacon and Probe](#_bookmark42) [Response frames)](#_bookmark42) in order to disable or enable a link for all associated non-AP MLDs. Further rules pertaining to the disablement and enablement are described in the subclauses below.

#### Affiliated AP link disablement

Upon receiving an MLME-BSS-LINK-DISABLE.request primitive, each of the APs affiliated with an AP MLD shall advertise a TTLM in transmitted Beacon and Probe Response frames that does not map any TIDs to the link on which the AP that corresponds to the BSSID parameter indicated in that primitive is operating. If there is no currently advertised nondefault TTLM, the Mapping Switch Time field of the advertised TTLM shall point to the same time as indicated in the DisableTimer parameter of the MLME-BSS-LINK- DISABLE.request primitive.

Alternatively, if there is a currently advertised nondefault TTLM, upon receiving an MLME-BSS-LINK- DISABLE.request primitive, each of the APs affiliated with an AP MLD shall advertise an additional TTLM in transmitted Beacon and Probe Response frames that does not map any TIDs to the link on which the AP that corresponds to the BSSID parameter indicated in that primitive is operating and that will take effect after the expiry of the time indication in the Expected Duration field of the currently advertised TTLM. In this case, the duration indicated in the DisableTimer parameter of the MLME-BSS-LINK- DISABLE.request primitive may be used to update the Expected Duration field of the currently advertised TTLM according to the rules defined in [35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response](#_bookmark42) [frames)](#_bookmark42) .

The Expected Duration field of the advertised TTLM shall indicate the same duration as the ExpectedDuration parameter of the MLME-BSS-LINK-DISABLE.request primitive.

Additionally, if there are associated non-MLD non-AP STAs that support BSS transition capability, the affiliated AP (#22327) that is operating on the link advertised as to become disabled, shall perform the following in order to indicate the imminent (#22061) Disassociation of these non-AP STAs:

1. The affiliated AP shall follow the procedure in 11.21.7.3 (BSS transition management request) with the BSS Transition Management Request frame fields set as follows:
   * The Disassociation Imminent and Link Removal Imminent fields of the Request Mode field are set to 1, the BSS Termination Included field is set to 0, the Preferred Candidate List Included field is set according to 9.6.13.9 (BSS Transition Management Request frame format) if the BSS Transition Candidate List Entries field is included, and other fields of the Request Mode field are set to 0.
   * The Disassociation Timer field is set to the number of TBTTs of the affiliated AP before it transmits Disassociation frame(s) to the non-MLD non-AP STA(s) receiving the BSS Transition Management Request frame. The Disassociation Timer field value shall point to a TBTT at or later than the time pointed to by the value of the Mapping Switch Time field for the advertised TTLM.
   * (#22059)
   * The BSS Transition Candidate List Entries field, which contains one or more Neighbor Report elements, may be included to provide a BSS transition candidate list.
   * No other optional fields shall be present in the BSS Transition Management Request frame.
2. The affiliated AP shall start a disassociation timer with the initial value set to the value of the Disassociation Timer field, and shall decrement the timer by one after transmitting each Beacon frame, until the timer has the value of 0. The Disassociation Timer field in all subsequent transmitted BSS Transition Management Request frames shall be set to the value of this timer.
3. Once the disassociation timer is 0, the affiliated AP should follow the procedure in 11.3.6.8 (AP, AP MLD, or PCP disassociation initiation procedure) to transmit Disassociation frames to all associated non-MLD non-AP STAs (i.e., that are not affiliated with a non-AP MLD). The affiliated AP shall not transmit Disassociation frames until the disassociation timer is 0.

(#22060) NOTE: The BSS Transition Management Request frame(s) may be broadcast addressed or individually addressed (see 11.21.7.3 (BSS transition management request)). In case of broadcast BTM Request frame with BSS Termination Included field set to 0 and Link Removal Imminent field set to 1, the associated non-AP MLD might ignore the imminent disassociation indicated by the received (broadcast) BTM request frame (see 9.6.13.9).

* + - 1. **BSS Transition Management Request frame format**

## ***TGbe editor: Please modify the fifth paragraph as follows:***

* The BSS Termination Included (#22060) field indicates whether the BSS Termination Duration field is included. The value 0 in the BSS Termination Included field in the Request Mode field indicates that no BSS termination duration information is included in the BSS Transition Management Request frame, while the value 1 indicates that BSS termination duration information is included and the following applies:~~, the BSS is shutting down and the STA will be disassociated. The AP sets the BSS~~ ~~Termination Included bit in the Request Mode field to 1 to indicate that the BSS is shutting down.~~ ~~The BSS Termination Included bit is 0 if no BSS Termination Duration information is included in~~ ~~the BSS Transition Management Request frame.~~
  + For an AP that is not affiliated with an AP MLD, the BSS Termination Included field indicates that the corresponding BSS is shutting down and that the STA associated with the AP will be disassociated.
  + For an AP MLD that operates with only one affiliated AP, the BSS Termination Included field indicates that the AP MLD and the BSS are shutting down and that the STA and the non-AP MLD associated with the AP MLD or the corresponding affiliated AP will be disassociated.
  + For an AP MLD that operates with more than one affiliated AP,
    - If the Link Removal Imminent field in the Request Mode field is equal to 0, the BSS Termination Included field indicates that the AP MLD and all its BSSs are shutting down and that the STA associated with any affiliated AP and the non-AP MLD associated with the AP MLD will be disassociated.
    - If the Link Removal Imminent field in the Request Mode field is equal to 1, the BSS Termination Included field indicates that the BSS whose AP transmits this BSS Transition Management Request frame is shutting down, the STA associated with the AP or the non-AP MLD that has set up only this link will be disassociated and the non-AP MLD that has set up more than this link remains associated to the AP MLD with the remaining setup link(s).
* The ESS Disassociation Imminent (#22060)field indicates that the Session Information URL field is included, and that the STA or non-AP MLD will be disassociated from the ESS. The value 1 in the ESS Disassociation Imminent bit in the Request Mode field indicates that the STA or the non-AP MLD is to be disassociated from the ESS, while the value 0 indicates that disassociation from the ESS is not imminent. When the ESS Disassociation Imminent bit value is equal to 1, a Session Information URL field is included in the BSS Transition Management Request frame.
* (#22060) For an AP MLD that operates with more than one affiliated AP and sets the BSS Termination Included field to 1, it sets the Link Removal Imminent field (#22060)to 1 to limit the scope of the BSS termination to the link on which the request is being transmitted (see 35.3.6.3 (Removing affiliated APs)). For an AP MLD that operates with more than one affiliated AP and sets the BSS Termination Included field to 0, it sets the Link Removal Imminent field to 1 when broadcast BTM Request frame is transmitted during the Affiliated AP link disablement procedure (see 35.3.7.5.2 (Affiliated AP link disablement)) for the link on which the broadcast BTM Request frame is transmitted. Otherwise, the AP MLD sets the Link Removal Imminent field to 0. If a receiving STA is not affiliated with a non-AP MLD, the receiving STA will ignore the Link Removal Imminent (#22060) field.   
  When the BSS Termination Included field is set to 1 and the Link Removal Imminent (#22060)field is set to 1,
  + If a receiving STA is affiliated with a non-AP MLD that has set up only this link, then the non- AP MLD will be disassociated (see 35.3.6.3 (Removing affiliated APs)).
  + If a receiving STA is affiliated with a non-AP MLD that has set up more than this link, and the AP MLD is announcing that the AP will be removed according to procedures defined in 35.3.6.3 (Removing affiliated APs), then the non-AP MLD is still associated to the AP MLD with the remaining setup link(s).

When the BSS Termination Included field is set to 0 and the Link Removal Imminent field is set to 1,

* + If a receiving STA is affiliated with a non-AP MLD that has set up more than this link, then the non-AP MLD might ignore the imminent disassociation indicated by that broadcast BTM Request frame.

The Link Removal Imminent (#22060) field is reserved if one of the following conditions is met:

* + The transmitting AP is not affiliated with an AP MLD.
  + The transmitting AP is affiliated with an AP MLD that operates with only one affiliated AP.
  + (#22060).

Straw Poll:

Do you support to incorporate the proposed draft text in this document 11-24/0293r3 to the next revision of TGbe Draft 5.0, for addressing the following CIDs: 22030, 22036, 22059, 22060, 22061, 22095, 22096, 22279, 22327?

Result: Yes/No/Abstain