IEEE P802.11
Wireless LANs

|  |
| --- |
| LB275 CR for Clause 35.3.7.5.2 - Part 1 |
| Date: 2023-08-25 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Arik Klein | Huawei | Huawei TLV Research Center |  | arik.klein@huawei.com  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes CR for 15 CIDs: 19413, 19414, 19435, 19709, 19710, 19711, 19712, 19713, 19715, 19716, 19868, 19952, 20050, 20051, 20076 (LB275)

Revisions:

* Rev 0: Initial version of the document.
* Rev1: revised text due to offline comments.
* Rev2: more offline comments, during presentation and offline discussions during F2F meetings.

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** |
| --- | --- | --- | --- | --- | --- | --- |
| 19952 | Rubayet Shafin | 528/10 | 35.3.7.5.2 | It needs to be clarified that at this time there will be two TTLM elements included in the beacons and probe response frames. One for the existing advertised TTLM (with the Mapping Switch Time not present) and the other for the new advertised TTLM for the disablement of the indicated link. | as in comment. | **Revised**The current text already implies that there are 2 advertised TTLM (new and currently advertised). However, the text is slightly revised to explicitly note this, as the commenter has requested.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19952.** |
| 20050 | Binita Gupta | 528/14 | 35.3.7.5.2 | In this case, the Mapping Switch Time field in the advertised TTLM should be set to the larger of DisableTimer parameter or the Expected Duration field of the currently advertised TTLM. | Add text to specify how the Mapping Switch Time field is set in the scenario described in 2nd para. | **Rejected**The exact setting of the Mapping Switch Time field in the second advertised TTLM is already detailed in 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames), where the reader is already referred to. This case has no exception that requires additional description or rules. |
| 19709 | Arik Klein | 528/20 | 35.3.7.5.2 | The sequence of actions that detailed in this paragraph is done by the affiliated AP that is operating on the link to become disabled, not by the SME of the AP MLD. Please revise the sentence as suggested. | Please remove the following words "SME of the" from the sentence, to receive the revised 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 termination of the BSS of these non-AP STAs:" | **Accepted** |
| 19710 | Arik Klein | 528/27 | 35.3.7.5.2 | In case of affiliated AP Link disablement, the Link Removal Imminent field should be reserved. Please change the setting of this field as suggested | Please remove the words "and Link removal Imminent" from the cited sentence. (It will be included in the last part of the sentence "and other subfields of the Request Mode field are reserved") | **Revised**Agree with the comment. Add a text that the Link Removal Imminent field should be reserved.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19710.** |
| 19711 | Arik Klein | 528/28 | 35.3.7.5.2 | The BSS Termination Included field shall be set to 1 in order to indicate the non-MLD non-AP STA that the BSS it is operating on is to be terminated when the Affiliated AP operating on this BSS/link is disabled. | As in comment | **Revised**Agree with the comment. The BSS Termination Included field setting is changed as requested.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19711.** |
| 20076 | Li-Hsiang Sun | 528/27 | 35.3.7.5.2 | In comment resolution discussion of the last letter ballot there was a proposal of setting ""BSS Termination Included"" to 1 for the BTM request because Link Removal Imminent field is reserved when the BSS Termination Included field is set to zeroIf the group agrees to have BSS Termination Included field set to 1, whether this paragraph can directly reference 35.3.6.3 steps (1),(2),(3) since the settings are the same?" | as in comment | **Revised**The BSS Termination Included field is set to 1 in order to indicate the non-MLD non-AP STA that the BSS is terminated. There is no point to refer to 35.3.6.3 since there is AP Link Disablement Disregard field is added and need to be set differently in this case.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19711.** |
| 19713 | Arik Klein | 528/29 | 35.3.7.5.2 | In case the BTM Request frame is transmitted in broadcast manner, the non-AP MLD will experience a conflict when the BTM Request frame indicates the termination of the BSS of the affiliated AP that is operating on the link to become disabled (while the BSS is actually terminated for the non-MLD non-AP STA, but NOT for the non-AP MLD). Need to revise the indication in BTM Request Mode field as suggested. | 1. Need to add an explicit indication in the BTM Request Mode field for the non-AP MLD to ignore/ disregard the BTM Request frame in case the AP MLD is advertising a disabled link (using the advertised TTLM) in Beacon and Probe Response frames it transmits.2. This indication will be used only when the BTM Request frame is transmitted in Broadcast manner in parallel to advertised TTLM with indicating disabled link. | **Revised**Agree with the comment and with the proposed solution to add explicit indication for disregard the BTM Request frame by non-AP MLD in case of affiliated AP link disablement and sending broadcast BTM Request frame.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19713.** |
| 19435 | Guogang Huang | 528/28 | 35.3.7.5.2 | Based on the third subbullet, the Preferred Candidate List Included field can be set to either 1 or 0. So add the following text in the first subbullet:the Preferred Candidate List Included field shall be set per 9.6.13.9 (BSS Transition Management Request frame format) if the BSS Transition Candidate List Entries field is included;" | As in comment. | **Accepted** |
| 19712 | Arik Klein | 528/29 | 35.3.7.5.2 | The other fields of the Request Mode field that are not needed in the case of sending the BTM Request frame when a links on which an affiliated AP is operating should not be considered as reserved, but rather should be set to 0 (since they are used by the non-MLD non-AP STAs). Please revise the sentence as suggested | The sentence should be revised as follows: " ...and other subfields of the Request Mode field are set to 0" | **Accepted** |
| 19414 | Guogang Huang | 528/28 | 35.3.7.5.2 | The BSS Termination Included subfield shall be set to 1 to inform the legacy STA the corresponding BSS will be terminated. And add the text to clarify the setting of the BSS Termination TSF and Duration fields. And add the text to further clarify the relationship between the Mapping Switch Time and the BSS Termination TSF. | As in comment. | **Revised**The comment that corresponds to BSS Termination Included field setting is addressed by another comment (i.e. CID 19711 in 11-23/1399r2). The comment regarding the setting of BSS Termination TSF field and Duration field of the BSS Termination Duration subelement is addressed in a new separate sentence.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19414 and 19711.** |
| 19715 | Arik Klein | 528/33 | 35.3.7.5.2 | In case the Disassociation timer is pointing to a TBTT that is at or later than the time pointed to by the value of the Mapping Switch Time field in the advertised TTLM, the affiliated AP will not be able to transmit the Disassociation frame (since it is disabled). Please revise the condition as suggested | The sentence should be revised as follows: " The Disassociation Timer field value shall point to a TBTT \*earlier\* than the time pointed to by the value of the Mapping Switch Time field for the advertised TTLM." | **Rejected**According to 35.3.7.2.1:” A STA affiliated with an MLD that operates on a link disabled by an advertised TTLM (see 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames)) shall suspend operations between the STA and the AP on that link until the link is enabled.” So all the suspended operations refer to non-MLD STAs but not for non-MLD non-AP STAs. Thus, the time setting should remain unchanged and the Disassociation frame can be sent for non-AP MLDs after the link is disabled. |
| 19413 | Guogang Huang | 528/31 | 35.3.7.5.2 | The setting of the Disassociation Timer field conflicts with the definition of the link disablement. Because the AP which is disabled shall not transmit or receive any frame. Please fix this bug | Please revise this bullet as:The Disassociation Timer field is set to the number of TBTTs of the affiliated AP before it transmits Disassociation frame(s) to the STA(s) receiving the BSS Transition Management Request frame. The Disassociation Timer field value shall point to a TBTT earlier than the time pointed to by the value of the Mapping Switch Time field for the advertised T2LM. | **Rejected**According to 35.3.7.2.1:” A STA affiliated with an MLD that operates on a link disabled by an advertised TTLM (see 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames)) shall suspend operations between the STA and the AP on that link until the link is enabled.” So all the suspended operations refer to non-MLD STAs but not for non-MLD non-AP STAs. Thus, the time setting should remain unchanged and the Disassociation frame can be sent for non-AP MLDs after the link is disabled. |
| 19868 | Ming Gan | 528/31 | 35.3.7.5.2 | "The Disassociation Timer field value shall point to a TBTT earlier than the time pointed to by the value of the Mapping Switch Time field for the advertised T2LM. Otherwise, it will conflict with the following text:"The AP affiliated with an AP MLD that is operating on that link shall not transmit any frame to any of the non-AP STAs affiliated with its associated non-AP MLD (see 35.3.7.2.1 (General))." | As in comment. | **Rejected**According to 35.3.7.2.1:” A STA affiliated with an MLD that operates on a link disabled by an advertised TTLM (see 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames)) shall suspend operations between the STA and the AP on that link until the link is enabled.” So all the suspended operations refer to non-MLD STAs but not for non-MLD non-AP STAs. Thus, the time setting should remain unchanged and the Disassociation frame can be sent for non-AP MLDs after the link is disabled. |
| 20051 | Binita Gupta | 528/32 | 35.3.7.5.2 | "The Disassociation frame(s) are transmitted to the non-MLD non-AP STAs as captured by this existing text ""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)." | Change 'STA(s)' to 'non-MLD non-AP STA(s)' | **Revised**Agree with the comment. The individually addressed Disassociation frame(s) should be sent to the non-MLD non-AP STA(s). **TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 20051.** |
| 19716 | Arik Klein | 528/35 | 35.3.7.5.2 | If the BSS Transition Candidate List Entries field is included, need to set the corresponding indication in the Request Mode field - by setting the "Preferred Candidate List Included" field to 1. | Please revise the sentence that describes the settings of the Request Mode field (P528L27) with the following: "The Preferred Candidate List Included field shall be set to 1 if the BSS Transition Candidate List Entries field is added" | **Revised**Agree with the comment. The Preferred Candidate List Included field should be set according to the rules in 9.6.13.9 (BSS Transition Management Request frame format), not only to 1.**TGbe editor please implement changes as shown in doc 11-23/1399r2 tagged as 19435.** |

*TGbe editor: Please note baseline is 11be D4.0 and REVme D**3.0*

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

## Update [Figure 9-1152 (Request Mode field](#bookmark284) [format)](#bookmark284), as follows:

(#19713) The Request Mode field is defined in [Figure 9-1152 (Request Mode field format)](#bookmark284).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
|  | Preferred Candidate List Included | Abridged | Disassociation Imminent | BSSTermination Included | ESSDisassociation Imminent | Link Removal Imminent | AP Link Disablement Imminent | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**Figure 9-1152—Request Mode field format**

***Add the following sub-paragraph at the end of the fifth paragraph:***

* (#19713) The AP Link Disablement Imminent field indicates to the non-AP MLD to follow the rules stated in Affiliated AP Link disablement operation (see 35.3.7.5.2).
If the AP Link Disablement Disregard field is equal to 1, then the non-AP MLD follows the advertised TTLM in the most recent Beacon or Probe Response frames, as defined in 35.3.7.5.2 (Affiliated AP link disablement).
If the AP Link Disablement Disregard field is equal to 0, the non-AP MLD follows the reception of the broadcast BTM Request frame as defined in 35.3.23 (BSS transition management for MLDs).

NOTE: The AP Link Disable Imminent field is ignored by a non-MLD non-AP STA.

###### **Affiliated AP link disablement and enablement**

###### **Affiliated AP link disablement**

***Change the 2nd paragraph, as follows:***

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 (#19952) 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 TID-to-link mapping according to the rules defined in 35.3.7.2.4 (Advertised TTLM in Beacon and Probe Response frames) .

***Change the 4th paragraph, as follows:***

Additionally, if there are associated non-MLD non-AP STAs that support BSS transition capability, (#19709) the affiliated AP, that is operating on the link advertised as to become disabled, shall perform the following, in order to indicate the imminent termination of the BSS 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:
	* (#19711) The BSS Termination Included, Disassociation Imminent, (#19710) fields of the Request Mode field are set to 1, (#19713) the AP Link Disablement Imminent is set to 1 if a broadcast BSS Transition Management Request frame is transmitted, (#19435) 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, (#19710) the Link Removal Imminent field is reserved and other fields of the Request Mode field are (#19712) 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 (#20051) 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.
	* The BSS Transition Candidate List Entries field may be included which contains one or more Neighbor Report elements in order 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.

Straw Poll:

Do you support to incorporate the proposed draft text in this document 11-23/1399r2 to the next revision of TGbe Draft 4.0, for addressing the following CIDs:

19413, 19414, 19435, 19709, 19711, 19712, 19716, 19868, 19952, 20076, 19710, 19713, 19715, 20050, 20051 (LB275)?

Result: Yes/No/Abstain