IEEE P802.11
Wireless LANs

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| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jason Yuchen Guo | Huawei |  |  | guoyuchen@huawei.com |
| Ming Gan | Huawei |  |  |  |
| Yunbo Li | Huawei |  |  |  |
| Guogang Huang | Huawei |  |  |  |
| Mengyao Ma | Huawei |  |  |  |
| Yue Zhao | Huawei |  |  |  |
| Maolin Zhang | Huawei |  |  |  |

 Abstract

This submission proposes resolutions for following 6 CIDs received for TGbe initial SA ballot :

22065 22196 22064 22063 22062 22035

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 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.***

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 22065 | Michael Montemurro | 35.3.7.2.4 | 535.50 | [AK] The following sentence " The Mapping Switch Time field should initially be set to a sufficiently large value" is vague and out of context. It is not clear what is considered "sufficiently large" value: 1 TU ? 100 TU? 1000TUs? Additionally, the sentence does not explain for what reason or purpose a large value in the Mapping Switch time field is required. | Please revise the sentence to address the questions posed in the comment or simply remove this sentence. | RevisedAgree in principle with the comment. Some clarifications are added.TGbe Editor: please implement the changes in this document tagged as #22065 |
| 22196 | John Wullert | 35.3.7.2.4 | 535.50 | The phrase "sufficiently large value" is not particularly useful because it provides no basis for determining what is large enough. | Expand the sentence to indicate what basis should be used for detemining the size. For example, in the REVme description of dot11MaxTransmitMSDULifetie, the text says that value should be "sufficiently large that the STA does not discard MSDUs or MMPDUs due to the transmit MSDU/MMPDU timer being exceeded..." Similar guidance is required here. | RevisedAgree in principle with the comment. Some clarifications are added.TGbe Editor: please implement the changes in this document tagged as #22065 |
| 22064 | Michael Montemurro | 35.3.7.2.4 | 535.51 | [AK] The Expected Duration does not indicate an accurate time (as does the Mapping Switch time field) but a duration - see also the definition of Expected Duration field in 9.4.2.314 (P291L12). Please revise the sentence as suggested | The sentence should be revised as follows:" After an advertised TTLM is established, the duration indicated by Expected Duration field shall indicate the duration for which the proposed TTLM is expected to be effective in units of TUs, starting from the mapping’s establishment time indicated in the Mapping Switch Time field." | RevisedIt is true that the Expected Duration field indicates a duration, but the starting point is the most recent TBTT before the frame since the Mapping Switch Time field is not present after an advertised TTLM is established.The text is polished to align with the definition of the Expected Duration field in clause 9. TGbe Editor: please implement the changes in this document tagged as #22064 |
| 22063 | Michael Montemurro | 35.3.7.2.4 | 535.52 | [AK] The Expected Duration does not indicate an accurate time (as does the Mapping Switch time field) but a duration - see also the definition of Expected Duration field in 9.4.2.314 (P291L12). Please revise the sentence as suggested | The sentence should be revised as follows:" During the advertisement of the TTLM the \*value\* indicated in the Expected Duration field may be \*decreased\* to indicate \*a shorter duration for which the proposed TTLM will be effective\* than initially indicated, but shall not be \*increased\* to indicate a \*longer duration for which the proposed TTLM will be effective\* than initially indicated. ." | RevisedThe Expected Duration field indeed indicates a duration, however, since the starting point for calculating the duration is deterministic, it also indicates the expected ending time of the advertised TTLM.A note is added in Clause 9 to clarify that the Expected Duration field also indicates the ending time.TGbe Editor: please implement the changes in this document tagged as #22063 |
| 22062 | Michael Montemurro | 35.3.7.2.4 | 535.62 | [AK] The Expected Duration does not indicate an accurate time (as does the Mapping Switch time field) but a duration - see also the definition of Expected Duration field in 9.4.2.314 (P291L12). Please revise the sentence as suggested | The sentence should be revised as follows:"...or at the time \*that is greater by a value of\* the Expected Duration field \*from the time indicated by the Mapping Switch time field\* of an existing advertised TTLM that will be replaced by the default mapping,... " | RevisedThe Expected Duration field indeed indicates a duration, however, since the starting point for calculating the duration is deterministic, it also indicates the expected ending time of the advertised TTLM.A note is added in Clause 9 to clarify that the Expected Duration field also indicates the ending time.TGbe Editor: please implement the changes in this document tagged as #22063 |
| 22035 | Li-Hsiang Sun | 35.3.7.2.4 | 535.18 | If transmitting BSSID is disabled by advertised T2LM, then non-TXBSSID should also be disabled by advertised T2LM for the same expected duration | as in comment | RejectedThe comment fails to identify a technical issue. The current draft has already provided sufficient tools to satisfy the operation mentioned by the comment. |

*TGbe editor: Please update the following paragraphs in this subclause as shown below:*

**35.3.7.2.4 Advertised TTLM in Beacon and Probe Response frames**

An AP MLD may advertise a mandatory TTLM by including a TID-To-Link Mapping element in the Beacon and Probe Response frames that the APs affiliated with the AP MLD transmit.

An AP that advertises a new TTLM shall include the Mapping Switch Time field in the TID-To-Link Mapping element and shall set it to the time, in units of TUs, of the TBTT of a DTIM beacon of one of the APs affiliated with the AP MLD. If a link is going to be enabled according to the advertised TTLM, the AP MLD should enable that link one TU before the TBTT of that DTIM Beacon frame, and shall not initiate a TXOP to any non-AP STA on that link before the TBTT of that DTIM Beacon frame. If a link is going to be disabled according to the advertised TTLM, the AP MLD shall disable that link no earlier than the TBTT of that DTIM Beacon frame, and should end the TXOP with any non-AP STA on that link at least one TU before the TBTT of that DTIM Beacon frame. Beginning at the time indicated in the Mapping Switch Time field, the indicated TTLM is established and the Mapping Switch Time field is no longer included.

NOTE 1—A non-AP MLD might receive more than one TID-To-Link Mapping element on more than one link that indicate different times for the advertised TTLM to be established due to the granularity of the Mapping Switch Time field. In that case, if the non-AP MLD receives the mapping switch time on the link to be disabled, the non-AP MLD uses that as the time for the advertised TTLM to be disabled and otherwise, the non-AP MLD might choose any time as indicated in the received TID-to-link Mapping elements as the time for the advertised TTLM to be established.

An example of an advertised TTLM taking effect on all links is shown in AF.6 (Example of TTLM frame exchange).

An AP that advertises a TTLM shall map all TIDs to the same link set in the advertised TTLM, both for DL and UL. The Direction field of an advertised TID-To-Link Mapping element shall be set to 2.

NOTE 2—An advertised TTLM will include a mapping for all TIDs.

An AP with dot11MultiBSSIDImplemented set to true shall follow the rules described in 11.1.3.8.4 (Inheritance of element values) for inheriting or not inheriting an advertised TTLM. Specifically:
— If the advertised TTLM for the transmitted BSSID does not apply to a nontransmitted BSSID in the same multiple BSSID set and the nontransmitted BSSID does not have an active advertised TTLM, then the profile for that nontransmitted BSSID carries a Non-Inheritance element that includes the Element ID Extension of the TID-To-Link Mapping element.
— If the transmitted BSSID and a nontransmitted BSSID in the same multiple BSSID set have different advertised TTLMs, then the profile for that nontransmitted BSSID includes TID-To-Link Mapping element(s) to indicate the advertised TTLM for the nontransmitted BSSID.
— If the configuration of links (such as link ID assignments, number of links, etc.) is not the same for the AP MLD of the transmitted BSSID and the AP MLD of a nontransmitted BSSID in the same multiple BSSID set, and the nontransmitted BSSID is advertising TTLM, then the profile for that nontransmitted BSSID includes TID-To-Link Mapping element(s) to indicate the advertised TTLM for the nontransmitted BSSID.

An AP MLD shall include two TID-To-Link Mapping elements in the Beacon and Probe Response frames that the APs affiliated with the AP MLD transmit, if there is already an established advertised TTLM and the AP MLD intends to replace it with a nondefault advertised TTLM. In this case, the AP MLD shall not include the Mapping Switch Time field in the currently established advertised TID-To-Link Mapping element, and shall include the Mapping Switch Time field in the other TID-To-Link Mapping element, in order to indicate an advertised TTLM that will be established in the future. The value of the Expected Duration field of the currently established TID-To-Link Mapping element shall indicate a remaining duration that ends at the same time as indicated by the Mapping Switch Time field of the other TID-To-Link Mapping element.

NOTE 3—If the currently advertised TTLM is going to be replaced by the default mapping, the AP MLD sets the Expected Duration field of the currently advertised TTLM element to the remaining time until the default mapping is established as described in 9.4.2.314 (TID-To-Link Mapping element). After the establishment of the default mapping, no TID-To-Link Mapping elements are included in the Beacon or Probe Response frames transmitted by the APs affiliated with the AP MLD.

All APs affiliated with an AP MLD that advertises a TTLM shall include the same mapping in all Beacon and Probe Response frames from the time at which the TTLM is first advertised until the time at which the TTLM is no longer advertised, and shall include the Expected Duration field in all TID-To-Link Mapping elements in Beacon frames. The Mapping Switch Time field should initially be set to a sufficiently large value (#22065)such that all associated non-AP MLDs including the ones that have all affiliated non-AP STAs in power save mode have the opportunity to receive the TID-To-Link Mapping element at least once before the advertised TTLM is established. After an advertised TTLM is established, the duration indicated by Expected Duration field shall indicate the (#22064)remaining duration for which the advertised TTLM is expected to be effective. During the advertisement of the TTLM the time indicated in the Expected Duration field may be updated to indicate an earlier time than initially indicated, but shall not be updated to indicate a later time than initially indicated. The duration indicated by Expected Duration field shall be exact when the duration is smaller than two DTIM periods of the AP transmitting the frame carrying the field.

At the time indicated by the Mapping Switch Time field of a TID-To-Link Mapping element in a Beacon or a Probe Response frame received by a non-AP STA affiliated with a non-AP MLD from an AP affiliated with its associated AP MLD, or at the time indicated by the Expected Duration field of an existing advertised TTLM that will be replaced by the default mapping, the non-AP MLD shall update its TTLM according to the rules that establish a TTLM in this subclause and with the consequences of the updated mapping defined in 35.3.7.2.1 (General) unless the current TTLM for the non-AP MLD is a negotiated TTLM and the enabled link set in the current mapping is a subset of the enabled link set in the advertised mapping.

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*TGbe editor: Please update the following paragraphs in this subclause as shown below:*

**9.4.2.314 TID-To-Link Mapping element**

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When the Mapping Switch Time field is present, the Expected Duration field indicates the duration for which the proposed TTLM is expected to be effective(#22064), in units of TUs, starting from the mapping’s establishment time indicated in the Mapping Switch Time field. When the Mapping Switch Time field is not present, the Expected Duration field indicates the remaining duration for which the established TTLM is expected to be effective(#22064), in units of TUs, with the starting point of the remaining duration being the TBTT corresponding to that Beacon if the frame carrying the element is a Beacon frame or the most recent TBTT preceding the transmission of the frame if the frame carrying the element is not a Beacon frame. The Expected Duration field is present if the TID-To-Link Mapping element is carried in a Beacon, Probe Response, or (Re)Association Response frame transmitted by an AP affiliated with an AP MLD, and is not present otherwise.

(#22063)Note-The Expected Duration field also indicates the time when the advertised TTLM is expected to end given that the starting point of the Duration for which the advertised TTLM is deterministic.

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