IEEE P802.11
Wireless LANs

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| LB275 CR for CIDs in clause 9 |
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Abstract

This submission proposes resolutions of comments received from TGbe comment collection LB275 based on TGbe D4.0.

19830 20006 19738 19739 19603 19591 19858 19831 19832 19596 19631 (11 CIDs)

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Editorial change from Vishnu and resolution update for #19832
1. **Introduction**

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. The introduction and the explanation of the proposed changes are 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 802.11be 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** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 19830 | 9.4.2.198 | 0.00 | Aligned TWT subfield in Control field of TWT element should be reserved for broadcast TWT element (broadcast bit set to 1), since it is redundant with a per schedule Aligned bit in the broadcast TWT parameter set | As in comment | Revised-Agree with the comment in principle. Apply the changes marked as #19830 in this document. |
| 20006 | ï»¿9.4.1.4 | 193.53 | The CUF is set to 1 in both the cases - 1) when the Reconfig ML element is added and 2) when the Reconfig ML element is modified as a result of adding a new Per-STA Profile subelement. | Clarify that adding a new Per-STA Profile subelement to Reconfig ML element also results in setting CUF to 1, as captured by text in 35.3.10. | Revised-Agree with the comment in principle. Apply the changes marked as #20006 in this document. |
| 19738 | 9.4.2.21 | 220.45 | Clarify that a value greater than 127 in the Quiet Count field is only possible when Quiet IE is carried within the Per-STA Profile subelement in a Basic ML IE. Otherwise, the value can be greater than 127 if transmitted by a non-EHT AP and is less than or equal to 127 if transmitted by an EHT AP. | As in comment | Revised-Agree with the comment in principle. Apply the changes marked as #19738 in this document. |
| 19739 | 9.4.2.21 | 220.53 | The sentence starts with a reference to subclause 35.3.11. There is no need to repeat the same reference in the bullet. | Delete this reference to 35.3.11. | Accepted- |
| 19603 | 9.4.2.21 | 220.56 | "Until" seems not a right word here | change to "... the number of TBTTs in the past since the beacon interval during which the ongoing quiet interval started." | Accepted- |
| 19591 | 9.4.2.198 | 233.48 | Aligned TWT field may conflict Aligned subfield in Request Type field format in Broadcast TWT Parameter Set field | resolve the conflict | Revised-Agree with the comment in principle. Apply the changes marked as #19591 in this document. |
| 19858 | 9.4.2.198 | 234.45 | The Aligned TWT field in the Control field is only for individual TWT. | Please provide necessary description as in the comment | Revised-Agree with the comment in principle. Apply the changes marked as #19858 in this document. |
| 19831 | 9.4.2.198 | 236.25 | It is not clear why the Target Wake Time field setting for TWT Requesting STA for the command "Request TWT" is changed for Aligned TWT case. It is to cover option when the STA doesn't want to indicate any time and leave it to AP to decide. Refer to 11ax TWT rules for definition of this command (Table 9-342 in REVmeD3.0) "A TWT requesting or TWT scheduled STA requests to join a TWT without specifying a target wake time". If STA needs to provide a time, other commands like Demand TWT may be used". | The exception of aligned schedules is not needed, and should be removed. | RejectedThe exception does not prohibit that option when the STA doesn't want to indicate a time and leave it to AP to decide. If the STA does not want to indicate a time and leave it to AP to decide, then it could either not request individual TWT alignment across multiple links through multiple TWT elements, or request individual TWT alignment across multiple links through a single TWT element. |
| 19832 | 9.4.2.198 | 236.25 | If the rule for "Request TWT" command for Aligned TWT case needs to be amended, it should be modified at other places throughout TWT clauses in the spec, E.g., Table 9-342 TWT Setup Command field values. Further please clarify whether the rule applies for both individual TWT and broadcast TWT, or just individual TWT and amend spec text as needed. | As in comment | Revised-The exception rule is for an individual TWT. Apply the changes marked as #19832 in this document. |
| 19596 | 9.4.2.312.2 | 246.46 | should be "incremented by 1 modulo 256 when..." since the BSS Parameters Change Count is capped by 256 | See comment | Revised-Agree with the comment in principle. Apply the changes marked as #19596 in this document. |
| 19631 | 9.4.2.198 | 285.34 | "The Aligned TWT field indicates whether an alignment of the TWTs across the setup links that point to start times that are aligned across these links and have the same TWT parameters on these links is requested or confirmed..." this sentence is unnecessirely complicated and should to be simplified. Also its not clear what does the term confirmed mean and there is a missing period at the end of this paragraph | Please fix this paragraph | Revised-Agree with the comment in principle. Apply the changes marked as #19631 in this document. |

**Discussion:** None.

***TGbe Editor: please add the following paragraph***

9.4.2.198 TWT element

***Insert the following two paragraphs after the eighth paragraph (“The Wake Duration Unit sub­field indicates the unit...”):***

(#19830, 19591, 19858) When the TWT element contains an individual TWT parameter set sent by an MLD, the Aligned TWT field indicates whether an alignment of the individual TWTs across two or more setup links is requested or being provided, where the aligned individual TWTs point to start times that are aligned across these links and have the same TWT parameters. The Aligned TWT Link Bitmap subfield is present if the Aligned TWT field is equal to 1; other­wise, the Aligned TWT Bitmap subfield is not present. (#19631)

When the TWT element contains one or more broadcast TWT parameter sets, the Aligned TWT field is reserved. (#19830, 19591, 19858)

***Change the now-shifted 28th paragraph as follows:***

If transmitted by a TWT requesting STA or a TWT scheduled STA and the TWT Setup Command subfield contains a value corresponding to the command “Suggest TWT” or “Demand TWT”, the Target Wake Time field contains a positive an unsigned integer corresponding to a TSF time at which the STA requests to wake. If transmitted by a TWT requesting STA or a TWT scheduled STA and the TWT Setup Command subfield contains the value corresponding to the command “Request TWT”, the Target Wake Time field contains the value 0 except when TWT alignment across links is requested through multiple TWT elements in which case the Target Wake Time field contains a positive unsigned integer corresponding to a TSF time at which the TWT requesting (#19832) STA requests to wake (see 35.3.24 (TWT operation)). The Target Wake Time field is 8 octets if the Broadcast field is 0; oth­erwise, it is 2 octets with the lowest bit of the 2 octets corresponding to bit 10 of the relevant TSF value. If a TWT responding STA with dot11TWTGroupingSupport equal to 0 transmits a TWT element to the TWT requesting STA, the TWT element contains a value in the Target Wake Time field corresponding to a TSF time at which the TWT responding STA requests the TWT requesting STA to wake for the corresponding TWT SP and it does not contain the TWT Group Assignment field.

**Table 9-339—TWT Setup Command field values**

|  |  |  |
| --- | --- | --- |
| **TWT Setup Command field value** | **Command name** | **Description** |
| 0 | Request TWT | A TWT requesting or TWT scheduled STA requests to join a TWT without specifying a target wake time except when TWT alignment across links is requested through multiple TWT elements in which case the Target Wake Time field contains a positive unsigned integer corresponding to a TSF time at which the TWT requesting STA requests to wake (see 35.3.24 (TWT operation)). (#19832)This command is valid if the TWT Request field is equalto 1; otherwise, the command is not applicable. |

**10.46 Target wake time (TWT)**

**10.46.1 TWT overview**

***TGbe Editor: Change the 10th paragraph as follows:***

The result of an exchange of TWT Setup frames between a TWT requesting STA and a TWT responding STA is defined in Table 10-40 (TWT setup exchange command interpretation(11ax)) .

— “Request TWT” indicates that the requesting STA does not provide a set of TWT parameters for a

TWT agreement, leaving the choice of parameters to the responding STA except when TWT alignment across links is requested through multiple TWT elements in which case the Target Wake Time field contains a positive unsigned integer corresponding to a TSF time at which the TWT requesting STA requests to wake (see 35.3.24 (TWT operation)) (#19832).

— “Suggest TWT” indicates that the requesting STA offers a set of preferred TWT parameters for a TWT agreement but might accept alternative TWT parameters that the responding STA indicates.

— “Demand TWT” indicates that the requesting STA will currently accept only the indicated TWTparameters for a TWT agreement

**9.4 Management and Extension frame body components**

**9.4.1 Fields that are not elements**

***Change the title of the subclause 9.4.1.4 as follows:***

**9.4.1.4 Capability Information And Status Indication field**

An AP affiliated with an AP MLD sets the Critical Update Flag subfield to 1 if any of the following condi­tions are met:

—There is a change to a value carried in the BSS Parameters Change Count subfield of the MLD Parameters field in the Reduced Neighbor Report element for any reported AP affiliated with the same AP MLD as the AP.

—There is a change to a value carried in the BSS Parameters Change Count subfield in the Common Info field of the Basic Multi-Link element corresponding to the AP.

—A new affiliated AP is added to the AP MLD with which the AP is affiliated following the procedure defined in 35.3.6.2 (Adding affiliated APs).

—A Reconfiguration Multi-Link element is included or modified by adding a new Per-STA Profile subelement (#20006) by the AP affiliated with an AP MLD, following the procedure defined in 35.3.6.3 (Removing affiliated APs).

—A TTLM is advertised by the AP MLD.

**9.4.2.21 Quiet element**

~~The~~If sent by a non-EHT AP, the Quiet Count field is set to the number of TBTTs until the beacon interval during which the next quiet interval starts. If sent by an EHT AP (see 35.3.11 (Multi-link procedures for (extended) channel switching and channel quieting)):

—the Quiet Count field is set to a value less than or equal to 127 if the Quiet Count field is not carried in the Per-STA Profile subelement of the Basic Multi-Link element; otherwise, the Quiet Count field is set to a value up to 255.(#19738)

—the Quiet Count field is equal to the number of TBTTs until the beacon interval during which the next quiet interval starts if the field is set to a value less than or equal to 127.

—a Quiet Count field value greater than 127 indicates a quiet interval that has already started(#19739). If the Quiet Count field is set to a value greater than 127, the Quiet Count field minus 127 is equal to the number of TBTTs in the past since (#19603) the beacon interval during which the ongoing quiet interval started.

**9.4.2.312.2.3 Common Info field of the Basic Multi-Link element**The BSS Parameters Change Count subfield in the Common Info field carries an unsigned integer, initial­ized to 0. The value carried in the subfield is incremented by 1 (modulo 256 excluding the value 255) (#19596) when a critical update (as defined in 11.2.3.14 (TIM Broadcast) and 35.3.10 (BSS parameter critical update procedure)) occurs to the BSS parameters of the AP that is affiliated with an AP MLD which is described in the Basic Multi-Link element and satisfies one of the following:

—It is the AP that transmitted the Basic Multi-Link element.

—It is the AP that corresponds to a nontransmitted BSSID that is a member of the same multiple BSSID set as the AP that transmitted the Multiple BSSID element containing the profile for the non­transmitted BSSID which includes the Basic Multi-Link element.