IEEE P802.11
Wireless LANs

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| LB275 CR for All TWT field in the TWT Info Frame  |
| Date: 2023-10-07 |
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Abstract

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

19442 19450 19458 19579 19989 (5 CIDs)

Revisions:

* Rev 0: Initial version of the document.
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** |
| 19442 | 35.3.24.2 | 578.33 | Iit will be useful to add signaling capability to indicate a particular r-TWT schedule the TWT Information field applies to. | as in comment | Revised-Agree with the comment in principle. Use of TWT Information frames for R-TWT is added. Apply the changes marked as #19442 in this document. |
| 19450 | 35.3.24.2 | 578.29 | RTWT is desiged for low latency traffic, while a non-RTWT broadcast TWT may mainly for power save. Considering the different use cases, it is better to distiguish RTWT from non-RTWT. | when a MLD intend to suspend broadcast TWTs, the spec should provide a way to identify all TWT, all TWT except R-TWTs, or all R-TWTs. | Revised-Agree with the comment in principle. Use of TWT Information frames for R-TWT is added. Apply the changes marked as #19450 in this document. |
| 19458 | 35.3.24.2 | 578.33 | Suspending/resuming each individual r-TWT schedule is necessary as different non-AP STAs/applications are operating independently. Current TWT Information frame format only has All TWT field applicable to bTWT. | Add necessary design and/or procedure. | Revised-Agree with the comment in principle. Use of TWT Information frames for R-TWT is added. Apply the changes marked as #19458 in this document. |
| 19579 | 35.3.24.3 | 580.36 | If the "All TWT fielld" set to 1 in a the TWT Information frame, the R-TWT schedules may to be suspended after a TWT Information frame exchange between an AP MLD and non-AP MLD. This will impact the transimission of the Low-latency traffic. | As in comment | Revised-Agree with the comment in principle. Use of TWT Information frames for R-TWT is added. Apply the changes marked as #19579 in this document. |
| 19989 | 35.3.24.3 | 580.22 | Aligned scheduled in defined in 11be. According to current 802.11 specification, while the TWT Information frame can be used for suspending and resuming all the broadcast TWT schedules followed by a broadcast TWT scheduled STA, the TWT Information frame cannot be used for suspending or resuming broadcast TWT SPs on a per-schedule basis. In 802.11be, with the inclusion of restricted TWT schedule, which is a variant of broadcast TWT schedule, it would be important to better manage the broadcast TWT schedules/restricted TWT schedules and hence, a mechanism is needed to suspend and resume particular broadcast/restricted TWT schedules while maintaining the others. | Please add procedures and mechanisms to enable suspension/resumption of TWT schedules on a per-schedule basis. | Revised-Agree with the comment in principle. Use of TWT Information frames for R-TWT is added. Apply the changes marked as #19989 in this document. |

**Discussion:** None.

***TGbe editor: please modify the following subclause 9.4.1.60 (TWT Information field) : (#19442 19450 19458 19579 19989)***

**9.4.1.60 TWT Information field**

The TWT Information field is present in the TWT Information frame (see 9.6.24.12 (TWT Information frame format)). The TWT Information field format is shown in Figure 9-189 (TWT Information field format).

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| --- |
| B0 B2 B3 B4 B5 B6 B7 B8 Bn |
|  | TWT FlowIdentifier/All TWT Type | ResponseRequested | Next TWTRequest | Next TWTSubfield Size | All TWT | Next TWT |
| Bits: 3 1 1 2 1 0,32,48, or 64 |
| Figure 9-189—TWT Information field format  |

The TWT Flow Identifier subfield is present when the All TWT subfield is set to 0 and contains the TWT flow identifier for which TWT information is requested or being provided.

The All TWT Type subfield is present when the All TWT subfield is set to 1 and is encoded as defined in Table 9-xxx ( All TWT Type subfield encoding)

Table 9-xxx All TWT Type subfield encoding

|  |  |
| --- | --- |
| Values | Descriptions |
| 0 | The TWT Information frame reschedules all TWTs as defined in 26.8.4 (Use of TWT Information frames) |
| 1 | The TWT Information frame reschedules all TWTs except R-TWTs as defined in 26.8.4 (Use of TWT Information frames) |
| 2 | The TWT Information frame reschedules all R-TWTs as defined in 35.8.7 (TWT Information frame exchange for R-TWT) |
| 3-7 | Reserved |

The Response Requested subfield indicates whether the transmitter of the frame containing the TWT Information field is requesting a TWT Information frame to be transmitted in response to this frame. The Response Requested subfield is set to 0 to request the recipient to not transmit a TWT Information frame in response to the frame. The Response Requested subfield is set to 1 to request the recipient to transmit a TWT Information frame in response to the frame.

The Next TWT Request subfield is set to 1 to indicate that the TWT Information frame is a request for the delivery of a TWT Information frame containing a nonzero length Next TWT field. Otherwise, it is set to 0.

The Next TWT Subfield Size subfield describes the size of the Next TWT subfield according to Table 9-112

(Next TWT Subfield Size subfield encoding).

The All TWT subfield is set to 1 by an HE STA to indicate that the TWT Information frame reschedules all TWTsas defined in 26.8.4 (Use of TWT Information frames). Otherwise, it is set to 0.

The All TWT subfield is set to 1 by an EHT STA that supports R-TWT operation to indicate that the TWT Information frame reschedules all TWTs, all TWTs except R-TWTs, or all R-TWTs as indicated by the All TWT Type subfield and defined in 26.8.4 (Use of TWT Information frames) and 35.8.6 (TWT Information frame exchange for R-TWT). Otherwise, it is set to 0.

***TGbe editor: please add the following new subclause 35.8.6（R-TWT schedule suspension and resumption）: (#19442 19450 19458 19579 19989)***

**35.8.6 TWT Information frame exchange for R-TWT**

An R-TWT scheduling AP may transmit a TWT Information frame to an R-TWT scheduled STA to suspend and/or resume existing R-TWT schedules if the R-TWT scheduled STA has set the TWT Information Frame Disabled field to 0 in the TWT element sent when joining the R-TWT schedule. An R-TWT scheduled STA may transmit a TWT Information frame to an R-TWT scheduling AP to suspend and/or resume existing R-TWT schedules if the R-TWT scheduling AP has set the TWT Information Frame Disabled field to 0 in the broadcast TWT element it transmits.

An R-TWT sheducled STA that receives a TWT Information frame or an acknowledgment in response to a TWT Information frame transmitted by the STA that contains an All TWT subfield equal to 1 and an All TWT Type subfield equal to 0 shall follow the rules defined in 26.8.4.3 (TWT Information frame exchange for broadcast TWT).

An R-TWT sheducled STA that receives a TWT Information frame or an acknowledgment in response to a TWT Information frame transmitted by the STA that contains an All TWT subfield equal to 1 and an All TWT Type subfield equal to 1 shall follow the rules defined in 26.8.4.3 (TWT Information frame exchange for broadcast TWT), except that the broadcast TWT schedules does not include the R-TWT schedules.

An R-TWT sheducled STA that receives a TWT Information frame or an acknowledgment in response to a TWT Information frame transmitted by the STA that contains an All TWT subfield equal to 1 and an All TWT Type subfield equal to 2 shall follow the rules defined in 26.8.4.3 (TWT Information frame exchange for broadcast TWT), except that the broadcast TWT schedules only include the R-TWT schedules.

The Next TWT subfield carried in a TWT Information frame sent by an R-TWT scheduling AP or an R-TWT scheduled STA may contain any nonzero value.