**IEEE P802.11  
Wireless LANs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CC36 CR for Restricted TWT Setup | | | | |
| **Date**: July 22, 2021 | | | | |
| **Author(s):** | | | | |
| **Name** | **Affiliation** | **Address** | **Phone** | **email** |
| Muhammad Kumail Haider | Facebook Inc. |  |  | haiderkumail@fb.com |
| Chunyu Hu |  |  |  |
| Chitto Ghosh |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Abstract**

This submission proposes resolutions for following CIDs received for TGbe (CC36):

4778, 6408, 4781, 6413, 4782

Revisions:

* Rev 0: Initial version of the document.

***TGbe Editor: Please note, the baseline for this document is REVme D0.1 and 802.11be D1.01***

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 TGaxbe 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** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 4778 | Chunyu Hu | 298.23 | 35.6.2 | rTWT can build in support for a peer-to-peer link so the latency sensitive traffic over the peer-to-peer link can also enjoy any applicable benefit of rTWT (e.g. channel access, txop sharing), regardless how the peer-to-peer link sets up some service periods for latency sensitive traffic (softAP/STA, TDLS or other p2p protocol out of 802.11 scope). The current rTWT is lack of such support. | Please add support of rTWT for p2p. For example, dcn 11-21/462r5 defines the <peer-to-peer> field in Fig. 9-689a for the peer-to-peer latency sensitive traffic tx/rx SP to be aware at AP. (The authors removed this field as there wasn't enough time to discuss.)  There might be some details or other aspects (in addition to the setup procedure) to make the rTWT support of P2P to work. Please add. | **Agreed and Revised**  **TGbe editor, please make change as shown in this doc 11-21/1224 tagged by 4778.** |
| 6408 | Muhammad Kumail Haider | 126.18 | 9.4.2.199 | A PDT and motion(#2920) was passed to make changes to TWT element to accommodate restricted TWT schedule announcements and negotiations. However, the passed version of PDT and motion does not address how the TWT element can be used to signal r-TWT usage for peer-to-peer links of a STA. STAs should be able to use r-TWT operation to provide protection for latency sensitive traffic on their p2p links as well, as it aligns with 802.11be direction to expand support for low-latency traffic and p2p links. | Broadcast TWT parameter set field should have a field/subfield to indicate if the r-TWT schedule is also used by peer-to-peer traffic. | **Agreed and Revised**  **TGbe editor, please make change as shown in this doc 11-21/1224 tagged by 6408.** |
| 4781 | Chunyu Hu | 298.58 | 35.6 | Both the TWT request and response setup frames have DL/UL TID indications (in the restricted TWT traffic info field). What is the expected values in response frames? Are the indicated TIDs per request as notification and/or they can be negotiable? Current text (per 11-21/462r9) is not clear about it. Need to add text in 35.7 (Restricted TWT agreement setup) per 11-21/462r9 and any other necessary place to clarify. | As in comment. | **Agreed and Revised**  **TGbe editor, please make change as shown in this doc 11-21/1224 tagged by 4781.** |
| 6413 | Muhammad Kumail Haider | 298.30 | 35.6.3 | A PDT and motion(#2920) was passed to make changes to TWT element to accommodate restricted TWT schedule announcements and negotiations. Part of proposed changes is to introduce a r-TWT traffic info field to indicate latency sensitive traffic TIDs. However, it is not specified whether TIDs are also within the scope of TWT setup negotiations. That is, TIDs are also negotiated as part of TWT setup. | TIDs included in TWT request frame should be treated as such (a request) and TWT negotiations (and Setup Commands) should apply to TWT parameters only, not TIDs to simplify the negotiation. | **Agreed and Revised**  **TGbe editor, please make change as shown in this doc 11-21/1224 tagged by 6413.** |
| 4782 | Chunyu Hu | 298.23 | 35.6.2 | In the draft text brought in by 11-21/462r9, the third paragraph (When included in an individually addressed TWT Setup frame ...) describes the setting of the Restricted TWT Traffic Info Present field in individually addressed TWT Setup frame, but misses the setting in frames with Negotiation Type set to 2. 11-21/462r8 had the text but didn't get time for discussion and, the text was removed for progress. But we need to add text to address this. | As commented | **Agreed and Revised**  Added text to specify setting for frames with Negotiation Type 2.  **TGbe editor, please make change as shown in this doc 11-21/1224 tagged by 6413.** |

**9. Frame formats**

**9.4.2.199. TWT element**

***TGbe editor: change Figure 9-689a (Broadcast TWT Info subfield format) of P802.11be D1.01 as follows:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2~~0~~        B2 | B3         B7 | B8                B15 |
|  | Restricted TWT Traffic Info Present | Peer-to-Peer | Reserved | Broadcast TWT ID | Broadcast TWT Persistence |
| Bits: | 1 | 1 | ~~2~~1 | 5 | 8 |
| * **Broadcast TWT Info subfield format** | | | | | |

***TGbe editor: insert the following paragraph after paragraph 1 at Page 133 of P802.11be D1.01 (A Restricted TWT Traffic Info…) as follows:***

The Peer-to-Peer subfield, when included in a Restricted TWT Parameter Set field transmitted by a restricted TWT scheduling AP, is set to 1 to indicate that the AP allows the restricted TWT scheduled STA to transmit or receive latency sensitive traffic for its peer-to-peer link(s) during the restricted TWT SPs of this schedule; and set to 0 otherwise. [CID 4778, 6408]

The Peer-to-Peer subfield, when included in a Restricted TWT Parameter Set field transmitted by a restricted TWT scheduled STA, is set to 1 to indicate that the STA intends to transmit or receive latency sensitive traffic over its peer-to-peer link(s) as part of latency sensitive traffic to be delivered in the corresponding restricted TWT SPs; and set to 0 otherwise. [CID 4778, 6408]

The Peer-to-Peer subfield, when included in a non-Restricted TWT Parameter Set field, is reserved. [CID 4778, 6408]

**35.7. Restricted TWT**

**35.7.2.2. The setup procedure**

***TGbe editor: insert the following paragraphs after paragraph 7 at Page 319 of P802.11be D1.01 (When included in an individually addressed…) as follows:***

If the Negotiation Type subfield of a broadcast TWT element is set to 2, the Restricted TWT Parameter Set field, if included, shall have the Restricted TWT Traffic Info Present subfield set to 0, and shall not include the Restricted TWT Traffic Info field accordingly. [CID 4782]

If the DL TID Bitmap Valid bit in the Traffic Info Control subfield of TWT element in a TWT Request frame is set to 1, the ﻿Restricted TWT DL TID Bitmap of the TWT Response frame shall be the same as that of TWT Request frame. If the UL TID Bitmap Valid bit in the Traffic Info Control subfield of TWT element in a TWT Request frame is set to 1, the ﻿Restricted TWT UL TID Bitmap of the TWT Response frame shall be the same as that of TWT Request frame. [CID 4781, 6413]