IEEE P802.11
Wireless LANs

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| Resolution for CIDs related to Restricted TWT Schedule Announcement (CC36) |
| Date: November 2nd, 2021 |
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 Abstract

This submission proposes resolutions for following 1 comment received for TGbe CC36:

* 1 CID: 6414

SP: Do you agree to the resolutions provided in doc 11-21/1768r4 for the following CIDs for inclusion in the latest 11be draft?

6414

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Removed additional information on STA Congestion Info and STA Congestion Threshold Info. Instead, as per the suggestion from commenters and other members, consolidated schedule-occupancy information in a single-bit subfield.
* Rev 2: Incorporated further comments and suggestion received from TGbe members.
* Rev 3: Editorial changes.
* Rev 4: Based on comments from other members, instead of using single bit, created an encoding using two contiguous reserved bits to leave more space for potential future extension.

***TGbe editor: Please note Baseline is 11be D1.31***

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.

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| **CID** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 6414 | M. Kumail Haider | 35.6.3 | 298.30 | The text specifies that modified version of broadcast TWT element shall be used for restricted TWT schedule announcements in Management frames as specified in 26.8.3 (Broadcast TWT operation). A PDT and motion(#2920) was also passed to make changes to TWT element to accommodate restricted TWT announcements. However, broadcast TWT element does not convey occupancy information of SPs. For example, AP may announce r-SP schedule to invite membership but no STAs have established membership in such a schedule. In that case, EHT STAs supporting r-TWT operation should not have to end their TXOPs prior to such unoccupied SPs. Moreover, r-SP announcement via b-TWT element does not present a consolidated timeline view of future occurrence of r-SPs and r-SP start boundaries to be used by EHT STAs supporting r-TWT operation to end their TXOPs. | Additional signaling should be introduced to indicate r-SP occupancy information and present a consolidated channel-time view of r-SP occurrence and start boundaries | **Revised.**TWT element format is updated to accommodate restricted TWT schedule occupancy information announced by an r-TWT scheduling AP.**TGbe editor, please make change as shown in this doc 11-21/1768r4 tagged by 6414.** |

**Discussion:**

An r-TWT scheduling AP can advertise or announce the restricted TWT schedules in its BSS. During this advertisement phase, congestion/occupancy information about the advertised schedule is not carried in the corresponding Broadcast TWT element. However, such information can be crucial for an STA intending to establish restricted TWT schedule for judiciously deciding whether or not it should request to join an advertised schedule. Moreover, such schedule-occupancy information helps provide sufficient information, in terms of occupancy for restricted TWT, of the entire timeline between two beacons, and therefore, upon receiving such schedule-occupancy information, a STA intending to request for a new restricted TWT schedule can also better select the corresponding restricted TWT parameters.

This contribution provides a tool to enable announcement of such schedule-occupancy information by a simple extension of the existing broadcast TWT framework.

**9. Frame formats**

**9.4.2.199 TWT element**

***TGbe editor: Please change Figure 9-770 (Broadcast TWT Info subfield format) as follows:***



**Figure 9-770: Broadcast TWT Info subfield format (#6414)**

***TGbe editor: Please add the following paragraph and the table after Figure 9-770 in Clause 9.4.2.199***

Restricted TWT Schedule Activity subfield contains the restricted TWT schedule occupancy information. This subfield is valid when the corresponding restricted TWT Parameter Set field is carried in a TWT element with Negotiation Type subfield set to 2, and the TWT element is transmitted by an EHT AP with dot11RestrictedTWTOptionImplemented set to true; otherwise, the subfield is reserved. The encoding of the Restricted TWT Schedule Activity subfield is described in Table 9-340a (Encoding of the Restricted TWT Schedule Activity subfield in Broadcast TWT Info subfield).

**Table 9-340a: Encoding of the Restricted TWT Schedule Activity subfield in Broadcast TWT Info subfield (#6414)**

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| --- | --- |
| **Restricted TWT Schedule Activity subfield value** | **Description when included in a Restricted TWT Parameter set field in a Broadcast TWT element** |
| 0 | Indicates that the corresponding restricted TWT schedule is a full schedule. A full schedule refers to a schedule for which the r-TWT scheduling AP is unlikely to accept a request from a STA in the BSS to establish a new membership in the corresponding schedule. |
| 1 | Indicates that the corresponding restricted TWT schedule is available for establishing new membership.  |
| 2 | Reserved |
| 3 | Reserved |

***TGbe editor: Please change the title of clause 35.7.3 as “Restricted TWT announcement”***

**35.7.3 Restricted TWT announcement**

***TGbe editor: Please add the following paragraphs after the first paragraph in clause 35.7.3***

An r-TWT scheduling AP, while advertising a restricted TWT schedule, shall indicate whether or not the schedule is available for accommodating any new membership. If the Restricted TWT Schedule Activity subfield in the Broadcast TWT Info subfield in a Restricted TWT Parameter Set field is set to 0, it indicates that the corresponding restricted TWT schedule is full and not available for accommodating any new membership; if the subfield is set to 1, the schedule is available for new membership. A STA should not request to establish membership in a restricted TWT schedule advertised by the r-TWT scheduling AP with Restricted TWT Schedule Activity subfield set to 0. (#6414)