IEEE P802.11
Wireless LANs

|  |
| --- |
| Resolution for CIDs related to Restricted TWT Schedule Announcement (CC36) |
| Date: November 2nd, 2021 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Rubayet Shafin | Samsung Research America | 6625 Excellence Ave., Plano, TX, 75023 |  | r.shafin@samsung.com |
| Boon Loong Ng |  |  |
| Ahmed Ibrahim |  |  |
| Peshal Nayak |  |  |
| Vishnu Ratnam |  |  |
| Alfred Asterjadhi | Qualcomm Inc. |  |  |  |
| Tomoko Adachi | Toshiba |  |  |  |
| Boyce Bo Yang | Huawei |  |  |  |
| Kiseon Ryu | Ofinno |  |  |  |
| Rojan Chitrakar  | Panasonic |  |  |  |

 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 11-21/1768r1 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.

***TGbe editor: Please note Baseline is 11be D1.3***

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.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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 restricted TWT scheduling AP.**TGbe editor, please make change as shown in this doc 11-21/1768 tagged by 6414.** |

**Discussion:**

A restricted 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 after Figure 9-770 in 9.4.2.199***

Restricted TWT Schedule Full subfield is set to 1 to indicate that the corresponding restricted TWT schedule is *full*; otherwise, it is set to 0. A restricted TWT scheduling AP does not allow any new STA in the BSS to obtain membership of any *full* restricted TWT schedule. This subfield is valid when it is transmitted by an EHT AP that sets the Restricted TWT Support subfield in the EHT Capabilities element to 1 and reserved otherwise. This subfield can be ignored if the Negotiation Type subfield in the corresponding Restricted TWT Parameter Set field in the Broadcast TWT element is set to 3. (#6414)

**35.7.3 Restricted TWT service periods announcement**

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

A restricted TWT scheduling AP, while advertising a restricted TWT schedule (Negotiation Type subfield set to 2), shall indicate whether or not the schedule is available for accommodating any new membership. If the Restricted TWT Schedule Full subfield in Broadcast TWT Info subfield in a Restricted TWT Parameter Set field is set to 1, it indicates that the corresponding restricted TWT schedule is not available for accommodating any new membership; otherwise, it is available for new membership. A STA should not request to establish membership for a restricted TWT schedule if the Restricted TWT Schedule Full subfield in Broadcast TWT Info subfield in Restricted TWT Parameter Set field corresponding to the announced restricted TWT schedule is set to 1. (#6414)