IEEE P802.11
Wireless LANs

|  |
| --- |
| LB275 CR on Misc. CIDs—Part 1 |
| Date: Oct 25th, 2023 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Rubayet Shafin | Samsung Research America | 6625 Excellence Way., Plano, TX, 75023 |  | r.shafin@samsung.com |
| Boon Loong Ng |  |  |
| Peshal Nayak |  |  |
| Vishnu Ratnam |  |  |
| Yue Qi |  |  |
| Elliot Jen |  |  |

 Abstract

This submission proposes resolutions for the following 5 comments received for TGbe LB275:

* 5 CIDs: 19605, 19961, 19991, 19997, ~~20106, 19990~~

SP: Do you agree to the resolutions provided in doc 11-23/1779r0 for the following CIDs for inclusion in the latest 11be draft?

19605, 19961, 19991, 19997, ~~20106, 19990~~

Revisions:

* Rev 0:
	+ Initial version.

***TGbe editor: Please note Baseline is 11be D4.1***

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.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part-1: TWT with TDLS\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 19605 | 235.05 | This sentence Implies a TWT schedule is available on more than one links. However, we have clerified that TWT schedule is per link. | Change the sentence to "The Aligned subfield set to true indicates more than one link of the AP MLD have the aligned TWT schedules." | **Rejected**TWT operation is still on a per-link basis, and the suggested text is already captured by the existing text which says, “ |
| 19961 | 580.22 | clarify that the Broadcast TWT ID of the two aligned schedules advertised on the two links can be the same or different (this is not a timing parameter). | as in comment. | **Revised**Agree in principle. The Broadcast TWT ID subfield is used for identifying a schedule and the Last Broadcast Parameter Set subfield is related to the position of the parameter set within the broadcast TWT element. These do not pertain to the operational characteristics of a schedule, and hence can be independent of different schedules across the links.**TGbe editor, please make changes as shown in this doc 11-23/1779r0 tagged by #19961.** |
| 19991 | 580.22 | An r-TWT scheduled STA can be done with transmitting latency-sensitive traffic much earlier than the nominal r-TWT SP end time. Currently there is no guidance in the spec on the behavior of the STA for the remaining portion of the r-TWT SP. | Please provide rules/guidance depicting the behavior of STA and AP in regards with TWT SP termination specific for restricted TWT operation. | **Revised**Agree in principle. Instead of transmitting latency-tolerant TIDs, the R-TWT member STA should inform the AP about the depletion of the R-TWT TIDs so that the AP can prioritize another R-TWT member STAs if needed.**TGbe editor, please make change as shown in this doc 11-23/1779r0 tagged by #19997.** |
| 19997 | 580.22 | For Restricted TWT (rTWT) operation, if an STA is done with transmitting latency-sensitive packets in uplink before the end of restricted TWT service period (SP) and there is no packet waiting for that STA in downlink for remainder of the SP, then it causes channel under-utilization for that STA if the STA is prohibited to transmit latency-tolerant traffic for remainder of the SP. Channel under-utilization due to under-utilized restricted TWT SP can be reduced by allowing latency-tolerant traffic in addition to latency-sensitive traffic for transmission during rTWT SP. Once the scheduled STA is done transmitting latency-sensitive traffic during rTWT SP, and if there is still time remaining in the SP, the scheduled STA can choose to transmit its latency-tolerant packets (if any) during remaining of the SP. This will improve the channel utilization for the STA . However, it creates fairness issue. Regarding contention among the scheduled STAs, if one scheduled STA starts transmitting latency-tolerant traffic during the restricted TWT SP, it is not fair for other scheduled STAs that are still transmitting latency-sensitive traffic during the SP. Also, an STA with ill intention may abuse this functionality by setting up TWT parameters such that there is always additional time left in the restricted TWT SP after transmitting latency-sensitive packets. How to handle these situation is not clear. | The spec needs to provide mechanisms and procedures to handle the r-TWT fairness issue as described in the comment. | **Revised**Agree in principle. Instead of transmitting latency-tolerant TIDs, the R-TWT member STA should inform the AP about the depletion of the R-TWT TIDs so that the AP can prioritize another R-TWT member STAs if needed.**TGbe editor, please make change as shown in this doc 11-23/1779r0 tagged by #19997.** |

***TGbe editor: Please revise the first paragraph in clause 35.3.24.3 (Broadcast TWT operation) (#19961):***

A TWT scheduling AP affiliated with an AP MLD, while announcing a broadcast TWT schedule in the AP’s BSS, may explicitly indicate whether that schedule is an aligned schedule by setting the Aligned subfield in the corresponding Broadcast TWT Parameter Set field to 1. An aligned schedule is a broadcast TWT schedule that is available across multiple links such that the target wake times of the schedules on the multiple links are aligned. Other TWT parameters of the aligned schedules on those multiple links remain the same as each other, except for the values for the Broadcast TWT ID subfield and the Last Broadcast Parameter Set subfield, which can be the same or different. (#19961)

***TGbe editor: Please insert the following paragraphs as the last two paragraphs in clause 35.8.5 (Traffic delivery)***

An R-TWT scheduled STA, before transmitting during the R-TW SP any QoS Data frame of a TID that is not within the R-TWT UL TID(s), should send the buffer status report to the R-TWT scheduling AP for the TIDs corresponding to the R-TWT UL TID(s).

NOTE-- The R-TWT scheduling AP may use the buffer status report in prioritizing among the members of the R-TWT schedule.