IEEE P802.11
Wireless LANs

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| LB 266: CR for r-TWT related CIDs in 9.4.2.199 |
| Date: July 12, 2022 |
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 Abstract

This submission proposes resolutions for following 13 CIDs received for TGbe LB266:

10454, 10455, 10905, 12289, 11508, 11864, 12054, 12967, 13227, 13315, 13316, 13464, 13740

**Revisions:**

* Rev 0: Initial version of the document.

***TGbe editor: The baseline for this document is 11be D2.0 and REVme 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.

***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 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** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 10455 | Yonggang Fang | 9.4.2.199 | 207.37 | The DL TID Bitmap and UP TID Bitmap size should be 2 octets as the maximum number of TIDs is 16. Please change 1 octet to 0 or 2 in the Figure 90770a. | in the comment | **Rejected**TID Bitmap size of 8 was chosen to be consistent with TID indication in range of 0-7 (3 bits) used in various other QoS management signaling in the spec e.g., 3 bit TID subfield in QoS Control field, TID-To-Link Mapping encompasses TIDs 0-7.  |
| 10454 | Yonggang Fang | 9.4.2.199 | 207.42 | If using Traffic Info Control to indicate validity of DL TID Bitmap and UL TID Bitmap, the size of those bitmaps should be 0 or 2. It is not necessary to reserve those fields if not valid because it can increase the payload of broadcast message and reduce efficiency. | suggest change "1" to "0 or 2" | **Rejected**r-TWT TIDs are indicated in range 0-7 (see also resolution to #10455)The bitmaps are always present to keep the length of r-TWT parameter set field constant as TWT element does not have a length field. |
| 11508 | Xiaofei Wang | 9.4.2.199 | 207.54 | The design of restricted TWT traffic info field doesn't make sense; if there is no valid TID bitmap for DL or UL,those fields should be not included; it is just waste of bits. | as in comment | **Rejected**Restricted TWT Traffic Info field is included to indicate which TIDs, in UL and DL, are identified as latency sensitive traffic and this identification is crucial for r-TWT membership setup. If the TID Bitmap Valid bitsare set to 0, the Bitmap fields are still included to keep the length of r-TWT parameter set field constant as TWT element does not have a length field.  |
| 10905 | Akira Kishida | 9.4.2.199 | 205.19 | There is no rule for the maximum value of the duration of r-TWT SP. Though it is reasonable that Nominal Minimum TWT Wake Duration for r-TWT is reused from Broadcast TWT, the maximum value of the duration of r-TWT SP and frame field to notify the value should be defined because r-TWT is a feature of prioritization for latency sensitive traffic. | The frame field of "Maximum TWT Wake Duration" should be defined in Restricted TWT Traffic Info field format (Figure 9-770a), for example. | **Rejected**r-TWT uses broadcast TWT signaling as basis for setup/announcement and hence maximum duration of r-TWT SP is already defined in baseline bTWT; Nominal Minimum TWT Wake Duration. No further indication is needed. |
| 12289 | KENGO NAGATA | 9.4.2.199 | 205.19 | There is no rule for the maximum value of the duration of r-TWT SP. Though it is reasonable that Nominal Minimum TWT Wake Duration for r-TWT is reused from Broadcast TWT, the maximum value of the duration of r-TWT SP and frame field to notify the value should be defined because r-TWT is a feature of prioritization for latency sensitive traffic. | The frame field of "Maximum TWT Wake Duration" should be defined in Restricted TWT Traffic Info field format (Figure 9-770a), for example. | **Rejected**r-TWT uses broadcast TWT signaling as basis for setup/announcement and hence maximum duration of r-TWT SP is already defined in baseline bTWT; Nominal Minimum TWT Wake Duration. No further indication is needed. |
| 11864 | Alfred Asterjadhi | 9.4.2.199 | 206.37 | What is the difference of a B-TWT that contains a mix of b-TWT shcedules and r-twt schedules and a BTWT that only contains r-TWT schedules? I.e., do we need the term r-TWT element? | As in comment. | **Rejected**The term r-TWT element is defined for the special case when the element carries only r-TWT parameter set fields, for ease of reference. It will be useful to keep the term for any such reference, e.g., if an announcement or TWT setup only encompasses TWT element with r-TWT parameter set fields only, r-TWT element may be used. |
| 12054 | Massinissa Lalam | 9.4.2.199 | 207.54 | There is no description whet the DL TID Bitmap Valid subfield is equal to 1. I'm assuming that when this subfield is set to 1, then its associated bitmap subfield Restricted TWT DL TID Bitmap shall not be set to all 1s or something like that. A sentence like "When the value is set to 1, it indicates that only DL traffic of some TIDs is identified as latency sensitive traffic, and the Restricted TWT DL TID Bitmap field indicates those TIDs."... but I could be wrong. Please precise what is the intended behavior when this subfield is set to 1. This comment applies also to the UL TID Bitmap Valid subfield. | As in comment | **Revised**The text is revised to clarify the case when Valid bit is set to 1.**TGbe editor, please make the changes as indicated by the resolution for CID 12054.** |
| 13464 | Liwen Chu | 9.4.2.199 | 207.63 | add the condition that "when UL/DL TID Bitmap Valid field has value 1" | As in comment | **Rejected**The proposed resolution to LB266 CID# 12054 above clarifies the case for Valid bit subfields set to 1, and that the Restricted TWT UL/DL TID Bitmap subfields are reserved when the corresponding Bitmap Valid bits are set to 0. Hence it would be redundant to add that Valid field set to 1 condition again here. |
| 12967 | Chunyu Hu | 9.4.2.199 | 207.64 | Improve wording: "which TID(s) are" ==> "the TID(s) identified" | As in comment | **Revised****TGbe editor, please make the changes as indicated by the resolution for CID 12967.** |
| 13227 | Binita Gupta | 9.4.2.199 | 206.55 | The text "A Restricted TWT Traffic Info Present subfield, when included in the Restricted TWT Parameter Set field,is set to 1 to indicate that the Restricted TWT Traffic Info field is present; and set to 0 otherwise. It is reserved for non-EHT STAs." seems to imply that the Restricted TWT Traffic Info Present subfield may not be included in some cases, which is not correct. This subfield is always included in the Restricted TWT Parameter Set field. Modify text to clarify this. | Update text as follows: "A Restricted TWT Traffic Info Present subfield in the Restricted TWT Parameter Set field is set to 1 to indicate that the Restricted TWT Traffic Info field is present; and set to 0 otherwise." | **Revised**The text is revised based on suggestion.**TGbe editor, please make the changes as indicated by the resolution for CID 13227.** |
| 13315 | Muhammad Kumail Haider | 9.4.2.199 | 207.54 | The DL and UL TID Bitmap subfield definitions should specify, in case of value set to 0, that traffic of all TIDs "mapped to the corresponding link" is considered latency sensitive. | Rephrase the sentence as "ï»¿When the value is set to 0, it indicates that DL traffic of all TIDs mapped to the link on which the r-TWT membership is being setup is identified as latency sensitive traffic, and the Restricted TWT DL TID Bitmap field is reserved." Similar change for UL case | **Revised**The text is revised based on proposed resolution.**TGbe editor, please make the changes as indicated by the resolution for CID 13315.** |
| 13316 | Muhammad Kumail Haider | 9.4.2.199 | 207.64 | "..ï»¿identified by the TWT scheduling AP or the TWT scheduled STA" --> "ï»¿identified by the r-TWT scheduling AP or the r-TWT scheduled STA" | as in comment | **Revised**The text is revised based on suggestion.**TGbe editor, please make the changes as indicated by the resolution for CID 13316.** |
| 13740 | Yunbo Li | 9.4.2.199 | 205.55 | When multiple Broadcast TWT Parameter Set fields are carried in a TWT element in Beacon frame, a legacy STA can will think that all of the Broadcast TWT Parameter Set fields have equal length which is 9 octets, but acctually the Broadcast TWT Parameter Set field for rTWT is 12 octets. This legacy STA will treat the last 3 octets Broadcast TWT Parameter Set field for rTWT as the first 3 octects of a following Broadcast TWT Parameter Set field. | Please provide a solution to solve this problem | **Rejected**When included in a Beacon frame (and any other broadcast frame where the TWT element has Negotiation Type set to 2), r-TWT parameter set fields do not carry the Restricted TWT Traffic Info fields as per 35.9.2.2 in 11beD2.0. As such, r-TWT parameter set fields have the same length (9 octets) as broadcast TWT parameter set fields and the issue raised by the commenter does not exist.  |

**9.4.2.199 TWT element**

***TGbe editor: Please modify the 4th paragraph in this subclause (A Restricted TWT …) on Page 206 in 11beD2.0 as shown below:***

﻿(#13227)The Restricted TWT Traffic Info Present subfield in the Restricted TWT Parameter Set field is set to 1 to indicate that the Restricted TWT Traffic Info field is present; and set to 0 otherwise. It is reserved for non-EHT STAs.

***TGbe editor: Please modify the last three paragraphs in this subclause as shown below:***

The DL TID Bitmap Valid subfield, when set to value 1, indicates that the Restricted TWT DL TID Bitmap field is valid and indicates the TIDs that are identified as latency sensitive traffic in the downlink direction(#12054). When the value is set to 0, it indicates that DL traffic of all TIDs, mapped in DL to the link on which the r-TWT membership is being setup(#13315), is identified as latency sensitive traffic, and the Restricted TWT DL TID Bitmap field is reserved.

The UL TID Bitmap Valid subfield, when set to value 1, indicates that the Restricted TWT UL TID Bitmap field is valid and indicates the TIDs that are identified as latency sensitive traffic in the uplink direction(#12054). When the value is set to 0, it indicates that UL traffic of all TIDs, mapped in UL to the link on which the r-TWT membership is being setup(#13315), is identified as latency sensitive traffic, and the Restricted TWT UL TID Bitmap field is reserved.

﻿The Restricted TWT DL TID Bitmap and Restricted TWT UL TID Bitmap subfields specify the TIDs that(#12967) are identified by the r-TWT(#13316) scheduling AP or the r-TWT(#13316) scheduled STA as latency sensitive traffic streams in ﻿the downlink and uplink direction, respectively. A value of 1 at bit position k in the bitmap indicates that TID k is classified as latency sensitive traffic stream. A value of 0 at bit position k in the bitmap indicates that TID k is not classified as latency sensitive traffic stream.