IEEE P802.11
Wireless LANs

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| TB NDP Ranging Synchronization  |
| Date: 2019-03-10 |
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Abstract

This submission proposes the text for TB NDP ranging synchronization.

Revisions:

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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 TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGaz Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGaz Editor: Editing instructions preceded by “TGaz Editor” are instructions to the TGax editor to modify existing material in the TGaz draft. As a result of adopting the changes, the TGaz editor will execute the instructions rather than copy them to the TGaz Draft.***

**The text preceded by “Discussion” is not part of the adopted changes.**

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| **CID** | **Section** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 1888 | 11.22.6.4.3 | 93 | 14 | The method to synchronize STA(ISTA) with AP(RSTA) for TN NDP ranging should be defined | As in comment | RevisedDiscussion: Generally agree with the comment. ISTA needs to synchronize its TSF time with RSTA. Otherwise ISTA may miss the negotiated TB NDP ranging service period. The synchronization method through Beacon/Probe Response may not be suitable for ISTAs working in off channel.  TGax editor, please make changes as showing in 11-19/0470r0 with the tag CID 1888 |

**9.3.1.19 VHT/HE/Ranging NDP Announcement frame format**

***TGaz editor: add the following text at the end of subclause 9.3.1.19:***

(1888)When AID11/RID11 has value 2044, the STA Info field is defined as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 B10 | B11 B26 | B27 | B28 | B29 B31 |
|  | AID11/RID11 | Partial TSF | Disambiguation | Reserved | Token |
| Bits: |  11 | 16 | 1 | 1 | 3 |

(1888) Two STA Info fields with AID11/RID11 field equal to 2044 are present in a Ranging NDP Announcement frame when Ranging NAP Announcement is for TB NDP ranging. The STA Info fields with AID11/RID11 field equal to 2044 are the first two STA Info fields within Ranging NDP Announcement frame. The Partial TSF field in the first STA Info field with AID11/RID11 field equal to 2044 is set to the 2 least significant octets of the value of TSF. The Partial TSF field in the second STA Info field with AID11/RID11 field equal to 2044 is set to the value of the TSF[31:16]. Two STA Info fields with AID11/RID11 field equal to 2044 carry 4 least significant octets of the TSF when the RSTA transmits Trigger Poll frame that procedes the Ranging NDP Anouncement frame.

(1888) The Token field is set to the value of Token field of the Trigger Poll frame whose prartial transmission TSF time is carried.

**9.3.1.23.9 Ranging Trigger variant**

***TGaz editor: change figure Figure 9-61d*** *Trigger Dependent Common Info subfield for the Ranging Trigger variant**as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B3 | B4 | B5 B7 |
|  | Ranging Trigger Subtype | Reserved | Token |
| Bits: |  4 | 1 | 3 |

***TGaz editor: add the following paragraph at the end of 9.3.1.23.9:***

(1888) The Token field is reserved in Ranging Trigger other than Trigger Poll frame. In a Trigger Poll frame, the Token field is used to match the Trigger Poll frame with the partial TSF time in Ranging NDP Announcement frame.

**11.22.6.4.3 Measurement Exchange in TB Mode**

**11.22.6.4.3.3 TB Ranging Measurement Sounding Part**

***TGaz editor: add the following paragraph in 11.22.6.4.3.3:***

(1888) A RSTA maintains a trigger poll counter. Before transmitting a Trigger poll frame, the RSTA shall increase trigger poll counter by one (modulo 16) and set the Token field of the Trigger Poll per the value in trigger poll counter.

(1888) When transmitting a Ranging NDP Announcement frame, a RSTA shall include the 4 least significant octets of the TSF time when the AP transmits the Trigger Poll frame that procedes the Ranging NDP Anouncement frame. Additionally, the RSTA shall set the Token subfield in the STA Info filed with AID11/RID11 subfield equal to 2044 to the value of Token subfield in Trigger Poll frame whose partial TSF time is carried in the Ranging NDP Annoucnement frame.

(1888) An ISTA that does TB NDP ranging with the RSTA may use the partial TSF in the received Ranging NDP Announcementr frame to to synchronize its TSF with the RSTA’s TSF in order to determine the start of subsequent TB NDP ranging service period.