IEEE P802.11
Wireless LANs

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| Remaining CR for Section 11.22.6.4.3.2, 11.22.6.5 |
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Abstract

This document proposes resolution to LB 240 CIDs on 11.22.6.4.3.2, 11.22.6.5: 3116, 3679, 3683, 3813, 3127, 3299, 3814, 3815, 3816.

Revisions:

* Rev 0: Initial version of the document.

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| **3116** | 137.12 | 11.22.6.4.3.2 | Modify the text "Each polling phase instance includes a single (#1890) a Ranging Trigger frame of subvariant Poll" to "Each polling phase instance includes a single (#1890) Ranging Trigger frame of subvariant Poll when at least one ISTA responses to the Poll". | As per comment | **Revised.**It is possible that no ISTA responds to the Trigger frame Poll. However, in order to clarify that there could be more than one TF Ranging Poll before the measurement, we replaced the word “single” with “atleast one”. See 11-20-0641.  |
| **3679** | 137.15 | 11.22.6.4.3.2 | "responding with a CTS-to- 15self in an S-MPDU within an HE TB PPDU (#1336) in its designated RU allocation" suggests that UL OFDMA has to be used, and UL MU-MIMO cannot be used (or cannot be used without UL OFDMA too). And Figure 11-36d/e show that UL MU-MIMO, apparently without UL OFDMA, can be used | Delete "in its designated RU allocation" | **Revised.**The intention behind this text is to only support UL OFDMA for polling. For Figure 11-36d/e UL MU-MIMO is shown to be used for sounding and not polling. Note that only full Bandwidth UL MU-MIMO support is signalled during negotiation. We have revised the text to clarify this further. See 11-20-0641.  |
| **3683** | 138.1 | 11.22.6.4.3.2 | The More TF subfield is only defined in the context of TWT, in the baseline  | Delete " The More TF subfield is set as defined in 26.8.2 (Individual TWT agreements)and 26.8.3.2 (Rules for TWT scheduling AP)." from the baseline (in 9.3.1.22.1 General) | **Revised.** Instead of deleting we propose to add 11.22.6.4.3 TB Ranging measurement exchange as another instance where the use of More TF is defined. Please see 11-20-0641 |
| **3813** | 174.24 | 11.22.6.5.1 | There is no such thing as an "FTM frame", and a Fine Timing Measurement frame is an Action frame | Change " The FTM frame is of type Action no Ack" to " The Fine Timing Measurement frame is modified from being an Action frame to an Action No Ack frame" | **Revised.** We clarify in Section 9.6.7.33 when the FTM frame is of type Action and when it is not. **See 11-20-0641** |
| **3127** | 175.28 | 11.22.6.6.2 | Is there a need to limit ISTA's transmission to RSTA only during the availability window for TB Ranging? If so add "inside availability window for TB Ranging" at the end of the first sentence | As per comment | **Revised.** Agree in principle. See 11-20-0641.  |
| **3299** | 175.4 | 11.22.6.6.2 | We should alllow to have multiple FTM ranging sessions to go on between an RSTA and an ISTA pair at the same time. There are many reasons why this is desired. Right now we are limited to having only one FTM ranging session going on between an RSTA-ISTA pair. A reason for this is that we don't have a way to identify a ranging session and as such specify which, assuming we have more than one, ranging session to terminate when we request to terminate an FTM ranging session. For this reason we should introduce the concept of an identifier, e.g. a number, for a ranging session. In a request to terminate an FTM ranging session we can then refer to this number. | As per comment. | **Reject.** The commenter failed to identify a problem with current scheme in enough details.  |
| **3814** | 175.18 | 11.22.6.6.2 | " in the Ranging addressed to it Parameters field" -- wut? | As it says in the comment | **Revised.** Agree with the commenter refer to revised text in 11-20-0641.TGaz editor make the changes identified below. |
| **3815** | 175.25 | 11.22.6.6.2 | A Fine Timing Measurement frame is an Action frame | Change "a Fine Timing Measurement frame with the Dialog Token field set to zero and of type Action noACK" to "a Fine Timing Measurement frame with the Dialog Token field set to zero and modified from being an Action frame to an Action No Ack frame" | **Revised.** We clarify in Section 9.6.7.33 when the FTM frame is of type Action and when it is not. **See 11-20-0641** |
| **3816** | 175.30 | 11.22.6.6.2 | A Ranging Parameters field is present in a Ranging Parameters element and nowhere else, right? | Change "field" to "element" | **Accept.** See 11-20-0641 |

**11.22.6.4.3.2 Polling Phase of TB Ranging**

***TGaz editor: Change the line in Page 129L3 as (#3116):***

Each polling phase instance includes at least one (#**1890, 3116**) Ranging Trigger frame of subvariant Poll;

***TGaz editor: Modify the text in P129L5 as (#3679):***

The RSTA shall allocate each RU in the TF Ranging poll to only one ISTA (#3679). Any ISTA addressed by a User Info field in a TF Ranging Poll can
request to participate in measurements in this availability window by responding with a CTS-to-
self in an S-MPDU within an HE TB PPDU (#**1336**) in its designated RU allocation as identified
in the TF Ranging Poll (see Figure 11-36c).

***TGaz editor: Modify the text in P134L44 as (#3679):***

This TF shall allocate uplink resources to ISTAs that negotiated I2R LMR and were allocated resources in the preceding measurement sounding phase. The RSTA shall allocate each RU in the TF Ranging LMR to only one ISTA ***(#3679)***.

***Modify the following text in* 9.3.1.22.1** ***of 11ax document draft 6.0 starting on P120L34 as (#3683):***

The More TF subfield of the Common Info field indicates whether or not a subsequent Trigger frame is
scheduled for transmission. The More TF subfield is set as defined in 26.8.2 (Individual TWT agreements)
, 26.8.3.2 (Rules for TWT scheduling AP) and 11.22.6.4.3 (TB Ranging measurement exchange). (#3683)

***TGaz editor: Modify the text in Section 9.6.7.33 in REVmd draft 3.2 Page 1556L23 as (#3813, #3815):***

The Fine Timing Measurement frame is used to support the FTM procedure described in 11.22.6 (Fine
timing measurement (FTM) procedure). The Fine Timing Measurement frame is of type Action No Ack when aggregated along with an RSTA2ISTA LMR in an FTM session based on TB Ranging (see 11.22.6.5.1 Availability Window parameter modification) and Non-TB Ranging (see 11.22.6.6.2 TB Ranging and non-TB Ranging session termination). Otherwise, the Fine Timing Measurement frame is of type Action (#3813, 3815).

***TGaz editor: Modify the text in Section 11.22.6.5.1 in Page 164L41 as (#3813):***

The Fine Timing Measurement frame shall contain a Ranging Parameters field containing an TB-Specific subelement. (#3813)

***TGaz editor: Modify the text in Section 11.22.6.6.2 in Page 165L32 as (#3815):***

— At any time during the session when the responding STA is permitted to transmit an
RSTA2ISTA LMR frame, the responding STA sends an A-MPDU containing an LMR frame and
a Fine Timing Measurement frame with the Dialog Token field set to zero (#3815).

***TGaz editor: Modify the text in Section 11.22.6.4.3.1 in Page 126L24 as (#3127):***

Within each availability window the RSTA and ISTAs shall not transmit or trigger transmission
of any Data frames; they shall only perform ranging activities related to polling, measurement
sounding and measurement reporting, as well as signaling of modification of availability window
parameters, see 11.22.6.5.2 (Availability window parameter modification) and TB ranging session termination, see 11.22.6.6.2 (TB ranging and non-TB ranging session termination) (#3127).

***TGaz editor: Modify the text in Section 11.22.6.6.2 in Page 165L37 as (#3127):***

At any time during the session the initiating STA sends a Fine Timing Measurement Request
frame with the Trigger field set to 0. For TB Ranging the ISTA may send this frame outside the Availability Window (#3127).

***TGaz editor: Modify the text in Section 11.22.6.6.2 in Page 165L25 as (#3814):***

The length of this interval is equal to the duration signaled in the *Max Session Exp* field, present in the TB Ranging Specific subelement in the Ranging Parameters field in the initial FTM frame. (#**1475, 3814**)

***TGaz editor: Modify the text in Section 11.22.6.6.2 in Page 165L38 as (#3816):***

This frame shall not include the following:
 — Ranging Parameters element (#3816).
 — Measurement Request element