IEEE P802.11
Wireless LANs

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| 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, 3676, 3677, 3678, 3679, 3680, 3683, 3811, 3813, 3126, 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 | **Rejected**It is possible that no ISTA responds to the Trigger frame Poll.  |
| **3676** | 137.17 | 11.22.6.4.3.2 | "In the CTS-to-self frame, the Duration/ID field is set 17to the value obtained from the Duration/ID field of the TF Ranging Poll that preceded the CTS- 18to-self frame minus the time, in microseconds, between the end of the PPDU carrying the Trigger 19frame and the end of the PPDU carrying the CTS-to-self frame. " -- the rules for the Duration field should be in Clause 9, with all the existing rules | Delete the cited text | **Accept.**See 11-20-0607.  |
| **3677** | 137.17 | 11.22.6.4.3.2 | "In the CTS-to-self frame, the Duration/ID field is set 17to the value obtained from the Duration/ID field of the TF Ranging Poll that preceded the CTS- 18to-self frame minus the time, in microseconds, between the end of the PPDU carrying the Trigger 19frame and the end of the PPDU carrying the CTS-to-self frame. " -- the rules for the Duration field should be in Clause 9, with all the existing rules | Delete the cited text | **Accept.**See 11-20-0607.  |
| **3678** | 137.10 | 11.22.6.4.3.2 | The polling phase should use NFRP triggers, since these are more efficient (allow more STAs to respond more quickly) than using CTS-to-selfs | As it says in the comment | **Reject**The group discussed multiple possibilities and selected CTS-to-self frame as the response frame because ow low overhead and ability to reuse an existing widely implemented frame.  |
| **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" | **Reject**The intention behind this text is preceisely 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.  |
| **3680** | 137.15 | 11.22.6.4.3.2 | "responding with a CTS-to- 15self" -- there are various baseline rules on transmission of a CTS in response to an MU-RTS Trigger frame; these need to be extended to cover transmission of a CTS in response to a Ranging Trigger frame | As it says in the comment | **Reject.**The rules of transmitting CTS frames for polling are same as transmission of HE TB PPDUs in response to 11ax Basic Trigger frame. This is already clarified in P128L10 of draft 2.1: “An ISTA shall follow the rules defined in subclause 26.5.2 (UL MU Operation) whentransmitting any HE TB PPDUs for TB Ranging with the exceptions defined in 11.22.6.4.3.2(Polling Phase of TB Ranging), 11.22.6.4.3.3 (Measurement Sounding Phase of TB Ranging) and 11.22.6.4.3.4 (Reporting phase of TB Ranging measurement)” |
| **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 11-20-0607 |
| **3811** | 174.6 | 11.22.6.5 | At least the case where a Fine Timing Measurement Parameters element is present is duplication of baseline behaviour | As it says in the comment | **Revised.** Agreed in principle with the commenter. The new text relative to baseline is now underlined as per 11-20-0607.  |
| **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" | **Accept.** **See 11-20-0607** |
| **3126** | 175.23 | 11.22.6.6.2 | Add the phrase "(within the availability window for TB Ranging)" after "responding STA is permitted to transmit" | As per comment | **Revised.** We have revised the text in 11-20-0607.  |
| **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. We have clarified the text in 11-20-0607.  |
| **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.** We have revised this text as per 11-20-0607. |
| **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" | **Accept.** See 11-20-0607 |
| **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 11-20-0607 |

**11.22.6.4.3.2 Polling Phase of TB Ranging**

TGaz Editor: Delete the line starting at Page 129L8 as follows:

***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: Change the Section 11.22.6.5 in Page 164 as (#3811):***

During an FTM session, an initiating STA may terminate the current session and request a new session with
modified session parameters by transmitting a Fine Timing Measurement Request frame with Trigger field set
to 1 and including a new Fine Timing Measurement Parameters element if the corresponding FTM session is based on a Fine Timing Measurement ranging phase (11.22.6.4.2 EDCA based ranging measurement exchange), or Ranging Parameters element if the corresponding FTM session is based on Non-TB Ranging (11.22.6.4.4 Non-TB Ranging measurement exchange) or TB Ranging (11.22.6.4.3 TB Ranging measurement exchange.). (#3811)

NOTE- This allows upto obne ranging session between a given ISTA and RSTA at any time. (#1566)

The existing FTM session is
terminated upon reception of such a Fine Timing Measurement Request frame. This Fine Timing Measurement
Request frame is an initial Fine Timing Measurement Request frame for the new FTM session, which follows
the behavior described in 11.22.6.3 (Fine timing measurement procedure negotiation).

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

The Fine Timing Measurement frame is modified from being an Action frame to an Action No Ack frame and 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 (#3126):***

At any time during the session when the responding STA is permitted to transmit an
RSTA2ISTA LMR frame within the Availability Window for TB Ranging (#3126), 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 and of type Action no
ACK. In the FTM frame the Follow Up Dialog Token field is set as 0. The FTM frame shall not
include any Ranging Parameters field.

***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 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 and modified from being an Action frame to Action no ACK frame (#3815).

***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

[place document body text here]

**References:**