IEEE P802.11  
Wireless LANs

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| 802.11  [LB253 CR for various comments by TGaz]  (relative to P802.11az/D3.0) | | | | |
| Date: 2021-07-12 | | | | |
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**Abstract**

This submission contains proposals to resolve LB#253 CIDs ??? (?? CIDs total).

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| **CID** | **Page/**  **Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 5206 | 175.14 | 11.21.6.4.6 | "The TXOP\_DURATION parameter is set to either 127 or a value defined in Equation (27-2)" - the link is incomplete or missing | Clarify | Revised.  This is a duplicate of 5208.  The link to Eq. 27-3 is not missing, as equation 27-3 is an 802.11ax equation. However the correct reference to Tx OP duration is not eq. 27-3 but eq 26-3.  TGaz editor make change identified in url below. |
| 5208 | 175.14 | 11.21.6.4.6 | "The TXOP\_DURATION parameter is set to either 127 or a value defined in Equation (27-2)" - the link is incomplete or missing | Clarify | Revised.  This is a duplicate of 5208.  The link to Eq. 27-3 is not missing, as equation 27-3 is an 802.11ax equation. However the correct reference to Tx OP duration is not eq. 27-3 but eq 26-3.  TGaz editor make change identified in url below. |

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| **CID** | **Page/**  **Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 5389 | 115.10 | 11.21.6.4.4.3 | The meaning of range in this context is not clear. Also the distinction between range and relative range is not clear. Clarification needed. | Maybe: "determine the absolute distance between the STA and another STA, determine the relative distance between the STA and two or more other STAs, or determine direction of another STA" | Revise.  TGaz editor make changes identified in URL???? below. |

**Resolution:**

TGaz editor make changes below to D.3.0 P115L.10 as follows:

“The FTM procedure allows a STA to determine its range (#1699), relative range and its direction to or from another STA using Time Of Flight (TOF), time difference of arrival and phase measurement. In order for a STA to obtain its location, the STA may perform this procedure with multiple STAs whose locations are known.”

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| **CID** | **Page/**  **Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 5366 | 115.27 | 11.21.6.1 | The first to paragraphs a this location look out-of-place with respect to earlier text in this sub-clause | Move the two paragraphs at the cited location into their own sub-clause, called "FTM timestamp derivation" | **Revise**. Agree in principle with the commenter, 11.21.6.1 is the overview section of the FTM,  As such describes the purpose and high level behavior of the FTM while the requirements derived from P.115L.27 are low level ones dealing with TOA.  Furthermore under measurement exchange, the requirement is identical to all PHYs and measurement exchange sequences (EDCA, TB, NTB, 60GHz). TGaz make changes identified in 11-21-??? URL  Other option – add separate requirement for each measurement exchange method.??? |
| 5390 | 115.27 | 11.21.6.1 | Is it the frequency of the clock (a numerical value) or is it the clock itself that is derived from the reference oscillator? Needs clarification. | Change to: "The FTM timestamp shall be derived from the same reference oscillator as that used to derive the transmit center frequency and symbol clock frequency of a transmitted PPDU." | **Reject**.  The comment does not identify a problem but ask a question in seek of information. The comment fails to identify ambiguity in the text.  The original text: “The frequency of the clock for the FTM timestamps shall be derived from the same reference 27 oscillator as…” seems accurate and concise.  Never the less as courtesy to the commenter the requirement correlates between frequency of the clock for timestamp and frequency of the baseband oscillator. |

**Resolution:**

TGaz editor delete lines of D.3.0 P115L.27 to 31.

TGaz editor change 11.21.6.4 D3.0 P.136 L. and insert the deleted text to clause

**11.21.6.4 Measurement exchange**

*Insert the following subclauses in 11.21.6.4 as shown below:*

11.21.6.4.1 FTM measurement exchange overview

FTM measurement has three basic ranging mechanisms:

— EDCA based ranging described in 11.21.6.4.2 (EDCA based ranging measurement exchange)

— TB Ranging described in 11.21.6.4.3 (TB Ranging measurement exchange), and 11.21.6.4.8 (Measurement exchange in Passive TB Ranging mode)

— Non-TB Ranging described in 11.21.6.4.4 (Non-TB Ranging measurement exchange)

For the measurement of RTT the FTM measurement exchange sequences make use of TOA and TOD measurements of a local FTM timestamps. The frequency of the clock for the FTM timestamps shall be derived from the same reference oscillator as the transmit center frequency and the symbol clock frequency. (#3279)

NOTE – The transmit center frequency and symbol clock frequency are derived from the same reference oscillator, as per the specifications for the different PHYs. (#3279)