IEEE P802.11  
Wireless LANs

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| 802.11  Resolutions to a few LB249 comments – Part 1  (relative to IEEE 802.11 REVmd D3.0 and P802.11az D2.0) | | | | |
| Date: 2020-01-12 | | | | |
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**Abstract**

This submission proposes resolutions to the following LB249 CIDs: 3580, 3581, 3585, 3169, 3586, 3314, 3483, 3915, 3984, 3425, 3853, 3032, 3033, 3436, 3437, 3438,.

History:

R0: Initial Version

R1: Comments discussed in Thu AM1 session.

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| 3580 | 117.00 | 25 | 11.22.6.3.2 | "A STA that supports TB or Non-TB Ranging is not required to support EDCA-based HE. " -- a STA that doesn't support TB or non-TB randing is not required to support EDCA-based HE either, so this statement has no value | Delete the cited text | Revise. Incorporate the editor instructions corresponding to CID #3580 in submission 11-20/0183. |

Discussion: The intent of this statement was to state that STA operating in the 6GHz band (HE STA) are not required to support EDCA based ranging measurement exchange.

Resolution: Revise.

***TGaz Editor: modify P117L25 as shown below:***

A STA that supports TB or Non-TB Ranging is not required to support a Format And Bandwidth value of (#3580) EDCA-based HE.

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| 3581 | 117.00 | 20 | 11.22.6.3.2 | "at least one of 20 the STAs does not support TB or Non-TB Ranging" not clear: might mean does not support either, or does not support at least one of them | Change to "at least one of 20 the STAs does not support TB ranging and does not support Non-TB Ranging" | Revise. Incorporate the editor instructions corresponding to CID #3581 in submission 11-20/0126. |

Discussion: the intent was to state how [HE] STAs operating in the 6GHz band could negotiate the EDCA based ranging measurement exchange session if either the ISTA or the RSTA or both implementation(s) do(es) not support TB and non-TB ranging measurement exchange.

The definition of a Responding STA is a STA that has the Fine Timing Measurement Responder field of the Extended Capabilities element to 1.

Resolution: Revise

***TGaz Editor: Modify the paragraph in P117L19-24 as shown below:***

The initiating STA shall indicate an EDCA-based HE format in the Format And Bandwidth field sent to a responding STA if and only if the STAs are operating in the 6 GHz band, at least one of the STAs does not support TB or does not support (#3581) Non-TB Ranging; otherwise the STA shall not indicate an EDCA-based HE format in the Format And Bandwidth field.

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| 3585 | 117.00 | 26 | 11.22.6.3.2 | "For EDCA based ranging where the value of the corresponding Format and Bandwidth subfield is 26 in the range 31 through 41 (inclusive), the initiating STA shall indicate, in the Ranging Priority 27 subfield of the Fine Timing Measurement Parameters field of the Fine Timing Measurement 28 Parameters element in the initial Fine Timing Measurement Request frame, its ranging priority 29 according to Table 9-281c Definition of EDMG Ranging Priority Subfield" -- as the xref indicates, this is only defined for EDMG so is not defined when the FaB is 31. Also no idea what "corresponding" is trying to say here | Change to start "For EDCA based ranging where the Format and Bandwidth subfield indicates EDMG format,". Change next sentence to "Otherwise, the Ranging Priority subfield of the Fine 32 Timing Measurement Parameters field of the Fine Timing Measurement Parameters element is 33 reserved. (#1801) " | Revise. Incorporate editor instructions corresponding to CID #3585 in submission 11-20/0126.  Clarification to the commenter: “corresponding” refers to the initial Fine Timing Measurement Request and intial Fine Timing Measurement frames which include a Fine Timing Parameters element that has Format And Bandwidth subfield. The value of this subfield in these frames dictate if the Ranging Priority subfield is reserved or otherwise. |

Discussion: The first part of this comment – use of magic numbers 31 and 41 is addressed by the resolution to CID #3572.

Resolution: Revise.

***TGaz Editor: Modify the following paragraph in P117L26-34 as shown below:***

For EDCA based ranging where the value of the corresponding Format and Bandwidth subfield indicates DMG or EDMG format (see Table 9-281 Format And Bandwidth field) , the initiating STA shall indicate, in the Ranging Priority subfield of the Fine Timing Measurement Parameters field of the Fine Timing Measurement Parameters element in the initial Fine Timing Measurement Request frame, its ranging priority as described in Table 9-281c (Definition of EDMG Ranging Priority Subfield when included in the initial Fine Timing Measurement Request frame). (#3585) . Otherwise, the Ranging Priority subfield of the Fine Timing Measurement Parameters field of the Fine Timing Measurement Parameters element is reserved.

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| 3169 | 119.00 | 28 | 11.22.6.3..2 | "For EDMG ranging, the ISTA shall indicate," this paragraph partialy repeats the text in P117L26-34, it contains outdated terms and wrong references. | combine the two pargraphs, adding the second part of this pargraph at the end | Revise. Incorporate editor instructions corresponding to CID #3169 in submission 11-20/0126. |

Discussion: The first of the referred text is already covered in P116L26-34 (behaviour of the ISTA for EDCA based ranging while operating in DMG/EDMG bands). The second part of the referred text is misplaced. The second part only applies if the negotiation was successful, and hence should be part of the bulleted list that deals with behaviour when the negotiation is successful.

Resolution: REVISE.

***TGaz Editor: Insert a new bullet at the end of the list in P119L17 as shown below:***

— The responding STA’s selection of the value of the FTMs Per Burst field should be the same as the one requested by the initiating STA if the requested value of the Burst Duration field is set to a value indicating no preference (see Table 9-280 (Burst Duration field encoding)), subject to the responding STA’s policy on the maximum value of the FTMs Per Burst field.  
— The responding STA’s selection of Burst Period shall be greater than or equal the responding STA’s selection of Burst Duration

— when the Format And Bandwidth subfield indicates DMG or EDMG format, the responding STA’s setting of the Ranging Priority as defined in Table 9-281d (Definition of the EDMG Ranging Priority subfield when included in the initial Fine Timing Measurement frame). (#3169)

***TGaz Editor: delete the paragraph in P119L28-34.***

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| 3586 | 119.00 | 28 | 11.22.6.3.2 | "ISTA shall indicate, in the Ranging Priority subfield of the Fine Timing 28 Measurement Parameters field of the Fine Timing Measurement Parameters element in the initial 29 Fine Timing Measurement Request frame, its ranging priority according to Table x1 in 9.4.2.167. 30 The" duplicates 117.26 | Delete the cited text | Accept.  Resolution to CID #3169 in submission 11-20/0186 includes the action proposed by the commenter.  No further specification changes required. |
| 3314 | 22.00 | 18 | 4.3.19.19 | PASN is required if and only if the peers are not associated. Be explicit in describing the condition(s) under which PASN is required. | Replace "between two peers" with "between two unassociated peers" | Accept. |

Resolution: Accept.

***TGaz Editor: Modified the following paragraph in P22L18-20 as shown below:***

The Pre-association Security Negotiation protocol enables setting up the required security context to protect the frames exchanged in order to establish a FTM session between two unassociated (#3314) peers and on successful establishment of a FTM session to perform the measurement exchanges.

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| 3483 | 22.00 | 6 | 4.3.19.19 | The change tracking seems wrong. As far as I can tell, the baseline text for this subclause is just "Fine timing measurement allows a STA to accurately measure the round trip time (RTT) between it and another STA. With the regular transfer of Fine Timing Measurement frames it is possible for the recipient STA to track changes in its relative location with other STAs in the environment." | As it says in the comment | Revise. Incorporate editor instructions corresponding to CID #3483 in submission 11-20/0126. |

Discussion: The changes to the baseline text are incorrectly depicted in D2.0.

Resolution: Revise

***TGaz Editor: Modify baseline text showing how it was changed in TGaz, as shown below. Ensure that the text in the TGaz draft shows the deleted text in black color with the struck through attribute; and the inserted text is shown in black color with the underlined attribute***:

Fine timing measurement allows a STA to accurately measure the round trip time (RTT) between it and another STA. With the execution of the Fine Timing Measurement procedure (#3483) it is possible for the recipient STA to track changes in its relative location with other STAs in the environment.

***TGaz Editor: The text in the draft should look as shown below:***

Fine timing measurement allows a STA to accurately measure the round trip time (RTT) between it and another STA. With the ~~regular transfer of Fine Timing Measurement frames~~ execution of the Fine Timing Measurement procedure it is possible for the recipient STA to track changes in its relative location with other STAs in the environment.

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| 3915 | 22.00 | 26 | 4.3.19.19 | "When the negotiated FTM session is over DMG, security parameters can be negotiated to ensure that the measurement exchange is executed with the intended peer". Missing EDMG | Add EDMG to the text. | Revise.  Editor to incorporate instructions corresponding to CID #3915 in submission 11-20/0183. |

Resolution: Revise

***TGaz editor: Modify the paragraph in P22L24-28 as shown below:***

⎯EDCA based exchange of Fine Timing Measurement frames where location estimates are based on Time of Departure and Time of Arrival of the exchanged FTM frames and their corresponding acknowledgements. When the negotiated FTM session is over EDMG (#3915), security parameters can be negotiated to ensure that the measurement exchange is executed with the intended peer.

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| 3984 | 22.00 | 16 | 4.3.19.19 | "The changes are not required after discussed it ... ." This seems to be an editorial note that should be removed. | Remove the sentence. | Accept. |

Resolution: Accept (or Revise)

***TGaz editor: Either delete the text in P22L16-17 or explicitly label it as ‘editor notes’ to avoid interpretation of the deleted text below as part of the amendment.***

DMG and EDMG devices can also estimate the direction of the transmission (Angle of Departure) of frames transmitted to and reception (Angle of Arrival) of frames received from a peer, allowing for estimating position using measurements obtained from frame exchanges with a single peer (#**1759, #1760, #1901, #2485**, #**2486**, #**2487**, #**2488**).

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| 3425 | 29.00 | 2 | 6.3.56 | It is not clear what is the reference for the time difference | change the text per the comment. | Reject. The referred text is baseline text and not new in the TGaz amendment. Also the time reference is the timestamp counter (the counting rate of this counter is implementation specific). What the referred text states is that the timestamp counter value may be captured at a convenient point (implementation specific) in the transmit (or receive) path and appropriate compensation be applied to account for the difference in the timestamp counter value between when it was captured and the value of the timestamp counter corresponding to the event (at the tx or the rx antenna connector). |

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| 3853 | 71.00 | 14 | 9.4.2.296 | "The Ranging Parameters element contains a set of fields and optional subelements." is utterly content-free | Delete the cited text | Accept. |

Resolution: Accept

***TGaz Editor: Modify the paragraph in P71L14-19 as shown below:***

**9.4.2.296 Ranging Parameters element**

The Ranging Parameters element is optionally included in the initial Fine Timing Measurement Request frame, as described in 9.6.7.32 (Fine Timing Measurement Request frame format), and the initial Fine Timing Measurement frame, as described in 9.6.7.33 (Fine Timing Measurement frame format). The use of the Ranging Parameters element is described in 11.22.6 (Fine timing measurement (FTM) procedure).

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| 3032 | 72.00 | 6 | 9.4.2.296 | Field name "Value" in figure 9-1006 is not a descriptive name. The text refers to it and explains, but the field name should be more descriptive. | Use a better name | Reject. The baseline has a similar subfield (see 9.4.2.167 Fine Timing Measurement Parameters element).  The name is descriptive – the value associated with the Status Indication.  Note that the descriptiveness of the field name can be subjective. |
| 3033 | 72.00 | 6 | 9.4.2.296 | Table in figure 9-1006 has Reserved bits in the middle, without any reason. Pack the used bits and have ALL reserved bits at the end. | Pack the used bits and have ALL reserved bits at the end. | Reject. The Ranging Parameters field in the Ranging Parameters element is similar to the Fine Timing Measurement Parameters field in the Fine Timing Measurement Parameters element.   1. The reserved bits (B22 and B23) allows for keeping the fields (where possible and makes sense) aligned at an octet boundary 2. This enables reuse of implementation to parse these fields whereever possible. Packing the bits and moving the reserved bits to the end will not allow for this. |
| 3436 | 72.00 | 14 | 9.4.2.296 | The field name of ""Value" doesn't provide the meaning of the field. | Change the field name. | Reject. Duplicate of CID #3032. |

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| 3437 | 73.00 | 11 | 9.4.2.296 | This is not a normal IEEE language. | Remove it or attach it to another sentence | Revise. Incorporate the editor instructions corresponding to CID #3437 in submission 11-20/0126 |

Resolution: Revise

***TGaz Editor: concatenate the paragraph in P73L11 with the previous paragraph.***

The ISTA2RSTA LMR Feedback subfield in the Initial Fine Timing Measurement frame is set to 1 to indicate that the RSTA requests an LMR report from the ISTA at the end of each ranging exchange, and is set to 0 otherwise. See 11.22.6.4.2.4 (TB Measurement Reporting Phase) and 11.22.6.4.3.3 (Measurement Report). (#3437)

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| 3438 | 73.00 | 12 | 9.4.2.296 | This statement is not true since per the paragraph of P123L33 an ISTA can set this field to 1 while a RSTA set it to 0. | change the text per the comment. | Reject.  The referred statement is not in contradiction with the one P123L33. The statement in deals with the case where the ISTA has indicated (using Secure LTF Support field) of its support for Secure LTF feature which the RSTA (that supports Secure LTF) to require Secure LTF for the negotiated session. |