IEEE P802.11  
Wireless LANs

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| 802.11  [CR for various comments by TGaz]  (relative to P802.11az/D2.4) | | | | |
| Date: 2020-10-20 | | | | |
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**Abstract**

This submission contains proposals to resolve LB#249 CIDs 3006, 3007, 3899, 3990, 4012, 3264, 3265, 3317, 3320, 3321, 3322, 3455, 3456 (13 CIDs total).

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| **CID** | **Page/**  **Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3006 | 38.2 | 8.3.4.4 | In 8.3.4.4 the text in the table refers to TRN\_SEQUENCE, and it is tied to Secure TRN. This is incorrect since non-secured TRNs can also be used. Needs fix. | Split the TRN\_SEQUENCE and the Secure TRNs details | Revised.  The regular (non-secured) TRN case does not require mentioning as this is a fixed value, as a result the vector description table only requires the case for secure, for clarity the parameter name TRN\_SEQUENCE was renamed to SECURE\_TRN\_SEQUENCE.  TGaz editor make changes to 11-20-1683r3 as shown below. |

**Resolution:**

**TGaz editor make the following changes to D2.4 P.39 L.2 as follows:**

1. Table 8-4 —Vector description

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| Parameter | Associated vector | Value |
| SECURE\_TRN\_SEQUENCE | TRNVECTOR | Indicates the Secure TRN bit sequences used in the EDMG secure ranging PPDU.  The Secure TRN bit sequences generation is defined in [12.2.11](#H12o2o11) (EDMG Secure Ranging Sequences). |

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| **CID** | **Page/**  **Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3007 | 38.11 | 8.3.5.14.2 | Text refers to code "IntegrityCheckError" for "RXERROR", but it is not included in the "RXERROR" definition. | Add the definition | **Revised**.  This is a (technical) duplicate of CID 3844, the parameter IntegrityCheckError was added to RXERROR, refer to D2.4 table 8-3 P.38 line 10.  Refer to discussion in submission 11-20-1257.  TGaz editor, no further action needed. |
| 3899 | 58.1 | 9.4.2.26 | Table 9-153, the note for the entry "Phase Shift Feedback Support" does not link this entry to a STA capable of the TB or NTB operation, although the entry is only applicable to a STA that supports TB or NTB ranging. | Modify the note so that the entry is only applicable to a STA that supports TB or NTB ranging. | **Revised.**  TGaz editor make changes as specified in 11-20-1683r3 below. |

**Discussion:**

The conditions to which setting “Phase Shift Feedback Support" in the extended capabilities element are specified in P.120 L.1 of D2.4, these require some update as Phase Shift can be supported with TB and NTB or Passive and does not require both TB and NTB. The Ext. Cap. element is updated to refer to those conditions.

**Resolution:**

**TGaz editor make the following changes to D2.4 P.59 L.1 table 9-153 ‘Phase Shift Feedback Support’ row:**

**Table 9-153—Extended Capabilities field** *(#****1295, #3940****)*

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| Bits | Information | Notes |
| <ANA> | Phase Shift Feedback Support | A STA sets the Phase Shift Feedback Support field to 1 or 0 as specified in 11.21.6.2 (FTM Capabilities).  It indicates the LMR transmitted by the STA can carry Phase Shift Feedback.. |

**TGaz editor make the following changes to D2.4 P.120 L.1-7:**

A STA shall set the Phase Shift Feedback Support field in the Extended Capabilities element to 1 if dot11PhaseShiftFeedbackImplemented is true and one of the following is true:

dot11TriggerBasedRangingRespImplemented ordot11NonTriggerBasedRangingRespImplemented or

dot11PassiveTBRangingInitiatorImplemented or

dot11PassiveTBRangingResponderImplemented (#3167, #3899)

Otherwise it shall set the Phase Shift Feedback Support field in the Extended Capabilities element to 0.

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| 3990 | 28.18 | 6.3.56.1 | Figure 6-16 in the baseline shows the frame exchange including the antenna level. Figures 6-17b and 6-17c should also be described in that level for clarity. | As in comment. | **Reject.**  Unlike the EDCA based FTM that uses MAC frames to capture timestamp at the antenna, the TB and NTB FTM measurement exchange does not use MAC frame to capture timestamps at the antenna and therefore are not shown in the corresponding figure of clause 6.  Furthermore the figure in clause 6 (6-17b,c) are meant to be illustrative and commenter is referred to details in the text of clause 11 and figures showing the capturing of timestamps under clause 11 (e.g. figure 11-37j). |
| 4012 | Non-provided | Non-provided | The draft still has lots of wrong instructions and those interrupt me from checking the technical contents. I might have missed more important issues... |  | **Reject.**  The comment is lacking sufficient detail level or instructions on how to resolve it. |

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| 3264 | 150.28 | 11.22.6.4.5 | "The NUM\_USER parameter is set to the number of ISTAs that the HE Ranging NDP PPDU is transmitted to." - Checking with the RX/TX Vector table, seems this parameter is only used \*if\* LTF\_SEQUENCE present, i.e., if in the secure mode - not clear from the description here. | Add text clarifying the difference of this parameter between secure mode and otherwise (not used or equal to "1" in non-secure). | **Revised.**  Agree in principle with the comment.  TGaz editor make changes as depicted in 11-20-1683r3 below. |

**Resolution:**

**Revised.**

**TGaz editor make changes as depicted below to P.168 L.13**

11.21.6.4.6 Transmission of a ranging NDP

An RSTA transmitting an HE Ranging NDP to one or more peer ISTAs shall set the TXVECTOR parameter as follows:

* The FORMAT parameter is set to HE\_SU
* The UPLINK\_FLAG parameter is set to 0
* The APEP\_LENGTH parameter is set to 0
* In the TB Ranging measurement exchange with Secure LTF (11.21.6.4.5.2), the NUM\_USER parameter is set to the number of ISTAs that the HE Ranging NDP is transmitted to.

**TGaz editor make changes as depicted below to table 27-1 P.212:**

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| NUM\_USERS | ~~FORMAT is HE\_SU, APEP\_LENGTH is 0, and LTF\_SEQUENCE is present~~  FORMAT is HE\_SU, RANGING\_FLAG is 1, and LTF\_SEQUENCE is present | Indicating the number of users of an HE Ranging NDP with randomized LTF sequence (#**2359**)  If NUM\_USERS is larger than 1, NUM\_STS, LTF\_REP, and LTF\_SEQUENCE will be MU | O | N |
| FORMAT is HE\_SU, RANGING\_FLAG is 1, and LTF\_SEQUENCE is not present.  FORMAT is HE\_SU, HE\_MU, HE\_ER, HE\_ER\_SU or HE\_TB | Not present.  NOTE-number of users for an HE SU PPDU, HE ER SU PPDU or HE TB PPDU is otherwise 1. The number of users for an HE MU PPDU is determined by RU\_ALLOCATION. | N | N |
| Otherwise | See corresponding entry in Table 21-1 (RXVECTOR and RXVECTOR parameters). | | |

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| 3265 | 151.35 | 11.22.6.4.5 | "In the secure variant TB ranging measurement exchange, the LTF\_OFFSET parameter is set to as defined in 11.22.6.4.6.2 (TB ranging measurement exchange for secure LTF). Otherwise, the LTF\_OFFSET parameter is not present." I don't see the point of having the LTF\_OFFSET in the RX/TX Vector, the transmitter does not need to know (it can construct LTFs based on N\_STS and N\_REP) while receiver needs this knowledge passed by MAC entity (while RXVECTOR is from PHY-to-MAC). | Remove here and from RX/TX Vector. Should be added to PHY SAP service primitive parameters, similar to (or as pat of) 8.3.5.20 PHY-RXLTFSEQUENCE.request; also compare with definition in Table 27-2a | **Revised.**  Agree in principle with commenter.  Changes to D2.4 (from D2.0) were made to remove the LTF\_OFFSET parameter from table 27-1.  TGaz editor no further action needed. |
| 3317 | 29.38 | 6.3.56.2.1 | Inconsistent use of terms: in the entire draft there are references to TB Sounding Exchange and non-TB Sounding Exchange. While this may be referencing the exchange of frames during the sounding phase, the sub-clauses that describe TB ranging and non-TB ranging are titled "TB Ranging Measurement exchange and Non-TB Ranging Measurement exchange). There is no definition of a TB Sounding or a non-TB Sounding Exchange. | Either define TB and non-TB Sounding Exchange or use TB ranging measurement exchange and non-TB ranging measurement exchange (prefer the latter). This occurs in multiple locations in the draft (only the first occurrence is identified here). | **Revised**.  Agree in principle with the comment.  TGaz editor change the following:   1. ‘Passive TB Sounding’ replace with ‘Passive TB Measurement Exchange’. 2. ‘Non-TB and TB sounding’ replace with ‘Non-TB and TB Measurement Exchange. 3. Non-TB Sounding replace with ‘Non-TB Measurement Exchange’ 4. ‘Non-TB and TB Measurement Sequence’ replace with ‘Non-TB and TB Measurement Exchange’. 5. Non-TB Sounding NDP replace with HE Ranging NDP. 6. TB sounding NDP replace with HE TB Ranging NDP.   Across the draft. |

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| 3320 | 32.20 | 6.3.53.2.3 | "Note that this causes the MLME to respond to the Trigger frame with type set to Location and subtype set to Polling to the specified peer entity." The trigger frame is send by the specified peer entity and the MLME responds on the receipt of the Trigger frame. So, the "set to Polling to the specified peer entity" should be "set to Polling, from the specified peer entity" | as in comment | **Accept.**  See discussion in 11-20-1683 below. |
| 3321 | 32.19 | 6.3.53.2.3. | A consistent format should be used to refer to the subvariants of the Trigger Frames of Ranging variant. While one could consider this as specification aesthetic, consistency renders the specification easy to read, comprehend and implement. | Use the term {Polling|Sounding|Secure Sounding| Report|Passive TB Sounding} subvariant of the Ranging Trigger Frame when referring to the Polling, Sounding, Secure Sounding, Report[ing] and Passive TB Sounding subvariants, in the entire draft. | Revised.  Agree in principle with the commenter.  TGaz editor make changes as depicted in 11-20-1683r3 below. |

Discussion:

In TB measurement exchange the ISTA respond to a polling frame from the RSTA.

**TGaz Editor make the changes to D2.4 P.35 L.12 as shown below**

* TB Sounding Exchange ([11.21.6.4.3](#H11o21o6o4o3)): the SME generates this primitive to request that a TB Sounding Exchange be initiated with the specified peer entity. NOTE—This causes the MLME to respond to the Trigger frame with type set to Location and subtype set to Poll from the specified peer entity. (#**1766, #3825, #3320**)

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| 3322 | 33.21 | 6.3.56.3.1 | Contradiction between the text in 6.3.56.3.1 which states that the confirm primitive indicates that the TB or non-TB ranging measurement successfully completed with the peer while 6.3.56.3.3 states that only the sounding exchange (sic) corresponding to the underlying measurement exchange has successfully completed (implies that the reporting phase is still pending). The text in 6.3.56.3.3 is correct (however the use of sounding exchange here is incorrect). | Update the text in 6.3.56.3.1 to be consistent with the statements made corresponding to TB and non-TB Measurement Exchange(s) in Cl. 6.3.56.3.3. | **Revise.**  Agree in principle with the commenter.  TGaz Editor make changes as depicted in 11-20-1683r3 below.  The Measurement exchange includes 3 phases: polling phase (for TB only), a sounding phase and a measurement reporting phase. Thus the use of the term “measurement exchange in the context of successful completion past the reporting phase is correct.  “Each availability window of the TB Ranging measurement exchange consists of one or more triplets of sequential phases: polling phase, measurement sounding phase and measurement reporting phase.” Also figure 11-37i for non-TB measurement exchange. |

**Resolution:**

**TGaz editor make the following changes:**

For EDCA based ranging measurement exchange ([11.21.6.4.2](#H11o21o6o4o2)), (#**1702**) this primitive indicates that a Fine Timing Measurement frame has been received by the peer STA to which it was sent. For [11.21.6.4.3](#H11o21o6o4o3) (TB Ranging measurement exchange), or [11.21.6.4.4](#H11o21o6o4o4) (Non-TB Ranging measurement exchange) this primitive indicates that the corresponding measurement (#exchange has (#**1702**) completed successfully with the specified peer entity.

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| 3455 | 230.38 | C.3 | MIB attributes with the name "Policy" (or, correctly, "PolicyActive") are to be used for non-signalled settings by an external policy control, per 11-15/0355. The attribute "dot11ISTA2RSTALMRFeedbackPolicy" appears to be a typical "Activated" type of attribute. | Rename "dot11ISTA2RSTALMRFeedbackPolicy" to "dot11ISTA2RSTALMRFeedbackActivated". | **Reject**.  The MIB variable set to 1 or 0 represents two different policies, not a single policy activated or not.  Furthermore the name of the MIB variable should include policy thus the name selection. |
| 3456 | C.3 | 231.8 | The MIB attribute "dot11NonTriggerBasedRangingImplemented" is never used in body text. From the description, it appears to be an "...Activated" type of attribute, and should be renamed. But, without any description of usage, it's hard to tell. If there is no description of usage needed, then just delete it. Same thing for "dot11TriggerBasedRangingImplemented". | Delete "dot11NonTriggerBasedRangingImplemented" and "dot11TriggerBasedRangingImplemented" MIB attributes. | **Revised**.  Agree with the commenter in principle, see discussion in 11-20-1683 below.  TGaz editor make changes identified in 11-20-1683r3 below. |

**Discussion**:

Both dot11NonTriggerBasedRangingImplemented and dot11TriggerBasedRangingImplemented MIB variables are not in use.

The variable that are in use are dot11NonTriggerBasedRangingRespImplemented, dot11NonTriggerBasedRangingRespImplemented, dot11PassiveTBRangingRespImplemented for responders. These MIB variables are responsible for the activation of the relevant extended capability bits.

**Resolution:**

**Revise.**

**TGaz editor delete the following MIB variables to D2.4 P.247 L.15:**

**TGaz editor delete the following MIB variables to D2.4 P.248 L.46:**