IEEE P802.11
Wireless LANs

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| 802.11Resolutions to a set of LB240 CIDs (Part-6)(relative to IEEE 802.11 REVmd D2.0 and P802.11az D1.4) |
| Date: 2019-09-19 |
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**Abstract**

This submission proposes a set of LB240 CIDs -- 2051, 2061, 2064, 2065, 2073, 2105, 2108, 2113, 2114, 2115, 2116, 2118, 2121, 2123, 2133 and 2135.

History:

R0: Initial Version.

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| 2051 | 25.00 | 9.3.3.12 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]"If Status Code field is 0, then" is not the way it's expressed in the baseline | Align with baseline wording | Revise.Incorporate editor instructions corresponding to CID 2051 in 11-19-1559. |

Discussion: The baseline uses the format “x, y and z fields are present if status field is 0” e.g. see Table 9-43.

Resolution: Revise.

***TGaz Editor: Modify the ‘Presence of fields 4 onwards” entries in Table 9-43***

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| **Authentication Algorithm** | **Authentication Transaction Sequence Number** | **Status Code** | **Presence of fields 4 onwards** |
| PASN Authentication | 1 | Reserved | RSNE is present.PASN Parameters element is present.Timeout Interval element may be present.Wrapped Data element is present if wrapped data format in PASN parameters element is non-zero and not reserved.Fragment element may be present if any of the elements are fragmented. |
| PASN Authentication | 2 | Staus | RSNE is present PASN Parameters element is present if Status Code field is 0.Timeout Interval element may be present if Status Code field is 0.Wrapped data element is present if wrapped data format in PASN parameters element is non-zero and not reserved; and Status Code field is 0.MIC element is present Fragment element may be present if any of the elements are fragmented and Sttaus Code field is 0. |
| PASN Authentication | 3 | Status | PASN Parameters element is present if Status Code field is 0.Wrapped data element is present if wrapped data format in PASN parameters element is non-zero and not reserved; and Status Code field is 0.MIC element is present Fragment element may be present if any of the elements are fragmented and Status Code field is 0. |

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| 2061 | 32.20 | 9.4.2.246 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]I think that in the baseline the "Rangingsubelements" subfield is called "Optional Subelements" (in part because it can contain vendor-specific subelements too) | Rename as it says in the comment | Accept. TGaz Editor to incorporate editor instructions corresponding to CID 2061 in 11-19-1659. |

Discussion: The baseline uses the convention where subelements that are optionally augmented to elements be collectively referred to as Optional subelements. In D1.4 the optional sublements that can augment the Ranging Parameters element is referred to as Ranging subelements. Renaming Ranging subelements to Optional subelements will make the P802.11az draft aligned with the convention in the baseline(s).

Resolution: Revise.

***TGaz Editor: Replace all occurrences of Ranging subelement(s) with Optional subelement(s) in the P802.11az draft, as shown below:***

9.4.2.279 Ranging Parameters element

***TGaz Editor: Modify Figure 9-1005 as shown below:***

The format of the Ranging Parameters element is shown in figure 9-1005 (Ranging Parameters element format).

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|  | Element ID | Length | Element ID extenstion | Ranging Parameters | Optional subelements |
| Octets | 1 | 1 | 1 | 6 | Variable |

***TGaz Editor: Modify the paragraph (P68L20-23) and the caption to Table 9-1001 as shown below:***

The Optional subelements field contains one or more subelements. The subelement format and ordering of the subelements are defined in 9.4.3 (Subelments). The Subelement ID field values for the defined subelements are shown in Table 9-1001 (Optional subelement IDs for Ranging Parameters).

**Table 9-1001—Optional subelement IDs for Ranging Parameters**

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| 2064 | 33.17 | 9.4.2.246 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]"The ISTA2RSTA LMR Feedback subfield in the Ranging Parameters field is set to 1 in the Initial Fine Timing Measurement Request frame indicates that" -- broken grammar | Delete "is" | Revise. The referred text is reworded in D1.4 (P66L4-9) and reads as follows:The ISTA sets the ISTA2RSTA LMR Feedback subfield in the Ranging Parameters field of the Ranging Parameters element in the initial Fine Timing Measurement Request frame:⎯to 0 to indicate that it does not transmit ISTA2RSTA LMR at the end of each measurement exchange, if requested by the RSTA, or⎯to 1 to indicate that transmits ISTA2RSTA LMR at the end of each measurement exchange if requested by the RSTA.No text changes required. |
| 2065 | 33.19 | 9.4.2.246 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]What does "included" mean here? | Change to "set to 1" | Revise. The referred text and the corresponding issue is addressed in D1.4. See the discussion under CID 2065 in submission 11-19-1659 that shows the text from the draft on which comment collection was performed and the corresponding text that is in D1.4.No text changes required. |

Discussion:

Reference from the Draft on which the comment collection was done:

The ISTA2RSTA LMR Feedback subfield in the Ranging Parameters field is set to 1 in the Initial Fine Timing Measurement Request frame indicates that the ISTA is willing to report the estimated LMR to the RSTA; when included in the Initial Fine Timing Measurement frame indicates that the RSTA requires a LMR report from the ISTA at the end of each ranging exchange. Otherwise the ISTA2RSTA LMR Feedback subfield is set to 0. See 11.22.6.4.2.4 (HEz Measurement Reporting Part) and 11.22.6.4.3.3 (Measurement Report)

The text above is modified to what is shown below in P802.11az D1.4:

The ISTA sets the ISTA2RSTA LMR Feedback subfield in the Ranging Parameters field of the Ranging Parameters element in the initial Fine Timing Measurement Request frame:
⎯to 0 to indicate that it does not transmit ISTA2RSTA LMR at the end of each measurement exchange, if requested by the RSTA, or

 ⎯to 1 to indicate that transmits ISTA2RSTA LMR at the end of each measurement exchange, if requested by the RSTA.

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.

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| 2073 | 34.29 | 9.4.2.246 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]^ | Use superscript | REVISE. TGaz Editor to incorporate the editor instructions corresponding to CID 2073 in 11-19-2659. |

Discussion:

Referred text from the draft on which the Comment Collection was performed:

Maximum time duration for which the responder retains the computed ToA value = 2^(MaxToAAvailableExp+8) milliseconds. The range of valid values for MaxToAAvailableExp is 0 to 15 with corresponding maximum time duration values ranging from 256 msecs to 140 minutes.

In P802.11az D1.4, the parameters that govern non-TB ranging defined in the non-TB specific subelement no longer use the description referred in the comment. However the notion of MaxToAAvailableExp is used in the TB specific subelement – the text referred in the comment will have to be moved to the TB specific subelement and use of superscripts (instead of ^) to resolve this comment still applies.

Resolution: Revise.

***TGaz Editor: Replace the description of MaxToAAvailableExp in Cl. 9.4.2.279 Ranging Parameters element (P71L13) as shown below:***

The MaxToAAvailableExp field is four Bits length and indicates the maximum time duration for which the responder retains the computed ToA value. Maximum time duration for which the responder retains the computed ToA value = 2 (MaxToAAvailableExp+8) milliseconds. The range of valid values for MaxToAAvailableExp is 0 to 15 with corresponding maximum time duration values ranging from 256 millisecond to 140 minutes. The MaxToAAvailableExp field is reserved in an initial Fine Timing Measurement Request frame.

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| 2105 | 44.37 | 11.22.6.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]Why is it "FTM Measurement Exchange" but "$blah Ranging" for all the others? | Clarify | Revise. Submission 11-19-1483 includes editor instructions that the measurement exchange corresponding to the three mechanisms as follows:EDCA based ranging measurement exchange, TB ranging measurement exchange and non-TB ranging measurement exchange.No text changes required. |
| 2108 | 45.26 | 11.22.6.1.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]If "burst instance" is being changed to "availability window instance", it should be changed everywhere (including in the baseline) | As it says in the comment | Revise. Burst Instance is not replaced by Availability Window. Burst Instance is defined for the EDCA based ranging measurement exchange while Availability Window is defined for TB ranging measurement exchange. The subtle distinction is that in the Burst Instance two or more Fine Timing Measurement frames are exchanged while within an Availability Window only one measurement exchange is executed (with each peer that is part of the subset to which the Availability Window was assigned during negotiation). |

Discussion: The overview in Cl. 11.22.6.1.1 replaced ‘burst window instance’ by ‘availability window instance’ giving the impression to the reader of the specification that the notion of Burst Period (which is used in the Fine Timing Measurement protocol defined in IEEE802.11-2016) is being replaced by Availability Window.

Resolution: Revise.

***TGaz Editor: Modify the second paragraph of Cl. 11.22.6.1.1 as shown below:***

The initiating STA in Figure 11-33 (Concurrent FTM sessions) establishes sessions with responding STA 1 and responding STA 2 on different channels. Since the initiating STAs may not be able to be on channel (for instance, the initiating is in the middle of some other activity) at the start of the negotiated time window (i.e., burst instance in the case of EDCA based ranging measurement exchange or availability window in the case of TB ranging measurement exchange) to execute the measurement exchange, within each instance of the negotiated time window, the initiating STA indicates it availability to start the measurement exchange.

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| 2113 | 46.13 | 11.22.6.1.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]What's "an FTM Request"? If it's a frame, say which and say "frame" | As it says in the comment | REVISE. Editor to incorporate the editorial instructions corresponding to CID 2113 in 11-19-1659. |
| 2114 | 46.10 | 11.22.6.1.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]"In HEz" should be "In trigger based channel access" | As it says in the comment | REVISE. Editor to incorporate the editorial instructions corresponding to CID 2113 in 11-19-1659. |
| 2115 | 46.12 | 11.22.6.1.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]Duplicate of sentence at line 14 | Delete sentence starting at line 12 | REVISE. Editor to incorporate the editorial instructions corresponding to CID 2113 in 11-19-1659. |
| 2116 | 46.14 | 11.22.6.1.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]The FTMR is sent at the start of the burst instance (or whatever that's called now) | Say so, as is said for TBCA | REVISE. Editor to incorporate the editorial instructions corresponding to CID 2113 in 11-19-1659. |

Discussion: submission 11-19-1843 did not address some of the terminology related cleanup that is needed in Clause 11.22.6.1.1.

***TGaz Editor: Modify the last two paragraphs of Cl. 11.22.6.1.1 as shown below:***

* In EDCA based ranging measurement exchange, the ISTA indicates it availability to start the measurement exchange by sending of an FTM Request frame with the trigger field set to 1 after the start of the corresponding burst instance,
* In TB ranging measurement exchange, the ISTA indicates its availability to start the measurement exchange by responding to the Ranging Trigger frame of subvariant Poll from the RSTA.

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| 2118 | 47.04 | 11.22.6.1.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]"ISTA centric scheduling FTM operation is called VHTz operation" is not clear. Is this trying to say that the only ISTA centric mode is one used with VHTz (I note VHTz can also use RSTA centric mode, per 46.9) | Clarify | Revise. This clause has been rewritten in D1.4, and later amended by 11-19-1483, removing “ISTA Centric Scheduling”No text changes required. |
| 2121 | 47.09 | 11.22.6.1.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]F11-35a seems to suggest that FTM frames cannot be sent at times where both RSTAs are available, but there is no justification and indeed the text below suggests either RSTA would be available if addressed during those times | Show one double-ended arrow overlapping with one dotted bubble | REJECT. Agree that two RSTAs may be available to initiate measurement exchange with an ISTA. However, an ISTA at any point in time can initiate measurement exchange with one (and only one) RSTA (and when two or more RSTAs become available, the ISTA will have to make a determination to choose one and send the FTMR to initiate the measurement exchange).  |
| 2123 | 48.01 | 11.22.6.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]"Single User Range Measurement field of the Extended Capabilities element" -- no such field. Ditto "Multi User" | Add to EC element | Revise. Cl. 11.22.6.3.2 in D1.4 has removed references to Single User Range Measurement and Multi User Range Measurement fields of the Extended Capabilities element.No text changes required. |
| 2133 | 48.44 | 11.22.6.3.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]Articles all over the place, and general inconsistency | Change to " This initial Fine Timing Measurement frame shall include a Fine Timing Measurement Parameters element or a Ranging Parameters element. The FTM parameters element includes a DMGz Specific subelement or an EDMGz Specific subelement if the Measurement Exchange (11.22.6.4 Measurement Exchange) is performed over a 60 GHz link. The Ranging Parameters element includes a VHTz Specific subelement or an HEz Specific subelement." | Revise. The refered text has undergone significant changes; and the corresponding text in D1.4 has an error (see discussion in 11-19-1659 corresponding to CID 2133).TGaz editor to incorporate editor instructions in 11-19-1659 corresponding to CID 2133. |

Discussion: The referred text has significantly changed in D1.4. And some of the referred text is now moved to the specific ranging mechanism.

***TGaz Editor: Change the following content in Clause. 11.22.6.3.1 (P105L38-40) as shown below:***

This initial Fine Timing Measurement frame shall include a Fine Timing Measurement Parameters element or a Ranging Parameters element. The value of the Status Indication field indicates the outcome of the request

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| 2135 | 50.23 | 11.22.6.3.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.]Bad grammar | Change ". In which case," to ", in which case". Ditto 69.21 and 65.25 and 66.1 | Revise. Editor to incorporate editor instructions associated with CID 2135 in 11-19-1659. |

Discussion: The instances mentioned in the proposed resolution to the comment – 69.21, 65.25 and 66.1 no longer exist in D1.4. Only the occurrence 50.23 is also present in D1.4 and is addressed by the editorial instruction below.

*TGaz Editor: Change the first paragraph of Cl. 11.22.6.3.4 as shown below:*

**11.22.6.3.4 Secure LTF measurement setup**

An ISTA and an RSTA may activate a secure LTF measurement exchange mode of the non-TB ranging and TB Ranging measurement exchange for using randomized LTF sequences in an I2R NDP and a R2I NDP, in which case the ISTA and the RSTA follow the rules described in the subclause 11.22.6.4.6 (Secure LTF Measurement Exchange Protocol).