IEEE P802.11
Wireless LANs

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| 802.11Resolutions to a few LB249 comments – Part 3(relative to IEEE 802.11 REVmd D3.0 and P802.11az D2.0) |
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**Abstract**

This submission proposes resolutions to the following LB249 CIDs: 3134, 3611, 3441, 3442, 3828, 3490, 3034, 3035, 3231, 3232, 3965 and 3840.

History:

R0: Initial Version

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| 3134 | 73.00 | 27 | 9.4.2.296 | "set to 0 to indicate that the first path reporting in the ISTA2RSTA LMR" - what about first path Reproting - something is missing in this sentence. | May be change "first path reporting" to "first path reported" | Revise. Incorporate the editor instructions corresponding to CID #3134 in submission 11-20/0126. |

Resolution: Revise

***TGaz Editor: Modify the paragraphs in P73L18-32 as shown below:***

The R2I TOA Type subfield is set to 1 in the initial Fine Timing Measurement Request frame to set the TOA feedback type in the RSTA2ISTA LMR to phase shift type ToA feedback which corresponds to the average linear phase across the subcarriers. Otherwise, the R2I TOA Type is set to 0 and the RSTA2ISTA LMR TOA feedback type will be first path type TOA feedback. The R2I TOA Type subfield is set to 1 in the initial Fine Timing Measurement frame to indicate that the RSTA estimates TOA by averaging linear phase across the subcarriers; and set to 0 to indicate that the RSTA estimates TOA using first path type TOA (#**1648**).

The I2R TOA Type subfield in the initial Fine Timing Measurement Request frame is set to 1 to indicate that the ISTA supports phase shift type TOA feedback and is set to 0 to indicate that the first path type TOA feedback in the ISTA2RSTA LMR. The I2R TOA type in the initial Fine Timing Measurement frame is set to 1 to indicate that the RSTA requires the TOA feedback type in the ISTA2RSTA LMR to be phase shift type TOA feedback, corresponding to the average linear phase across the subcarriers and is set to 0 to indicate that the RSTA requires the first path type TOA feedback in the (#3134) ISTA2RSTA LMR. The I2R TOA Type subfield is reserved in the initial Fine Timing Measurement Request frame and the initial Fine Timing Measurement frame, if the I2R LMR Feedback subfield in the corresponding frame is set to 0.

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| 3611 | 73.00 | 26 | 9.4.2.296 | "The I2R TOA Type subfield in the initial Fine Timing Measurement Request frame is set to 1 to 26indicate that the ISTA supports phase shift type TOA feedback and is set to 0 to indicate that the 27first path reporting in the ISTA2RSTA LMR. The I2R TOA type in the initial Fine Timing 28Measurement frame is set to 1 to indicate that the TOA feedback type in the ISTA2RSTA LMR 29to be phase shift type of TOA, corresponding to the average linear phase across the subcarriers 30and is set to 0 to indicate that, and the ISTA2RSTA LMR TOA feedback type to be the first path 31reporting. " -- as far as I can tell in the IFTMR it's a capability indication and in the IFTM it's the request | Change to "The I2R TOA Type subfield in the initial Fine Timing Measurement Request frame is set to 1 toindicate that the ISTA supports phase shift type TOA feedback in the ISTA2RSTA LMR and is set to 0 to indicate that it does not. The I2R TOA type in the initial Fine TimingMeasurement frame is set to 1 to request that the TOA feedback in the ISTA2RSTA LMRbe the phase shift type TOA feedback, corresponding to the average linear phase across the subcarriers,and is set to 0 to request that the ISTA2RSTA LMR TOA feedback type be first pathreporting. " | Revise. This issue is resolved as a result of addressing CID # 3134.No further specification changes required. |
| 3440 | 74.00 | 13 | 9.4.2.296 | The first sentence is not needed since it is clear per the the format. | Remove the first sentnce. | Revise. Incorporate the editor instructions corresponding to CID #3440 in submission 11-20/0126. |

Resolution: Revise.

***TGaz Editor: Modify the paragraph in P74L13 as shown below:***

The Immediate R2I Feedback and Immediate I2R Feedback subfields indicate if the R2I and I2R Location Measurement Report (LMR) is delayed or immediate (#3440). The value of 0 indicates a delayed feedback, in which case the measurement results included in the received LMR frame are from the previous measurement; the value of 1 indicates an immediate feedback, in which case the measurement results included in the LMR frame are from the received measurement. The Immediate R2I Feedback and Immediate I2R Feedback subfields correspond to the RSTA-to-ISTA LMR or ISTA-to-RSTA LMR respectively.

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| 3441 | 74.00 | 15 | 9.4.2.296 | It is not in the current LMR frame. It is in the LMR frames of the negotiated ranging session. | change the text per the comment. | Revise. The issue identified in this CID is addressed by the resolution to CID #3441. No further specification changes are required. |
| 3442 | 74.00 | 26 | 9.4.2.296 | In the initial Fine Timing Measurement frame the Immediate I2R Feedback should be reserved. | change the text per the comment. | Revise. Incorporate the editor instructions corresponding to CID #3442 in submission 11-20/0126. |

Discussion: To render consistency between how the Immediate R2I LMR Feedback is set in IFTMR and how the Immediate I2R LMR Feedback is set in IFTM, the Immediate I2R Feedback in IFTM should be rendered reserved.

Resolution: Revise

***TGaz Editor: Modify the paragraph in P74L24-28 as shown below:***

The Immediate I2R Feedback field in the initial Fine Timing Measurement Request frame is set to one to indicate immediate feedback in the ISTA-to-RSTA LMR and is set to zero to indicate delayed feedback. In the initial Fine Timing Measurement frame the Immediate I2R Feedback field is reserved**.** (#3441, #3442)

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| 3828 | 74.00 | 13 | 9.4.2.296 | "The Immediate R2I Feedback and Immediate I2R Feedback subfields are each one bit wide. The" is duplication of the figure | Change to "For the Immediate R2I Feedback and Immediate I2R Feedback subfields," | Revise. Duplicate of CID #3440. |
| 3490 | 75.00 | 9 | 9.4.2.296 | "The Device Class and Full Bandwidth I2R MU-MIMO subfields are defined in Table 9-322b, 9Subfields of the HE PHY Capabilities Information field." -- no such table, and the table caption should be in parens, not after a comma. There is a Table 9-321b--Subfields of the HE PHY Capabilities Information field, but it doesn't contain a "Full Bandwidth I2R MU-MIMO subfield" (for obvious reasons) | As it says in the comment | Revise.Incoporte the editor instructions corresponding to CID #3490 in submission 11-20/0126. |

Discussion: The correct reference is Table 9-321b is in PIEEE802.11ax D6.0. The Full Bandwidth I2R MU-MIMO in Table 9-321b is Full Bandwidth UL MU-MIMO.

Resolution: Revise.

***TGaz Editor: Modify the paragraph in P75L9-12 as shown below:***

The Device Class and Full Bandwidth I2R MU-MIMO subfields correspond to the Device Class and Full Bandwidth UL MU-MIMO fields (#3490) defined in Table 9-322b (Subfields of the HE PHY Capabilities Information field). For associated STAs the value of the Device Class and Full Bandwidth I2R MU-MIMO subfields are equal to that of the value of the Device Class and Full Bandwidth UL MU-MIMO fields respectively that is exchanged during association.

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| 3034 | 76.00 | 3 | 9.4.2.296 | What is "Subelement ID (0)" ? What is the "(0)"? Should be a better name than (0) and (1) | Use a more descriptive name | Reject. The field name is Subelement ID (and is descriptive of the function it serves). The value in parenthesis identifies the value of the Subelement ID as defined in Table 9-1001. |
| 3035 | 76.00 | 22 | 9.4.2.296 | What is "Subelement ID (1)" ? What is the "(1)"? Should be a better name than (0) and (1) | Use a more descriptive name | Reject. The field name is Subelement ID (and is descriptive of the function it serves). The value in parenthesis identifies the value of the Subelement ID as defined in Table 9-1001. |

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| 3231 | 76.00 | 3 | 9.4.2.296 | Figure 9-1007--Non-TB specific subelement format still has a field "Immediate LMR Feedback". Since the Ranging Parameters field has both I2R and R2I Immediate feedback subfields, this is redundant | Remove and change to "Reserved" | Revise.Incorporate the editor instructions corresponding to CID #3231 in submission 11-20/0126. |

Discussion: Agree that the Immediate LMR Feedback field needs to be removed. Should this bit be rendered reserved? Or should the Min Time Between Measurements be rendered 24 bits wide?

Resolution: Revise.

***TGaz Editor: Modify Figure 9-1007 Non-TB specific subelement format as shown below:***

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|  | B0 B7 | B8 B15 | B16 | B17 B39 | B40 B59 | B60 B63 |
|  | Subelement ID (0) | Length | Reserved(#3231) | Min Time Between Measurements | Max Time Between Measurements | Reserved |
| Bits: | 8 | 8 | 1 | 23 | 20 | 4 |

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| 3232 | 76.00 | 22 | 9.4.2.296 | In Figure 9-1008--TB Specific subelement format the "Availability Window" field is in the middle, wouldn't it be easier to put this variable length field at the end so all the other fields are in predictable positions? | Move "Availability Window" field to the end of the element | Reject. While the size of the Availability Window is variable, its size is known (and is indicated by the value in the length field of the Availability Window element). Hence it does not matter if the field is in the middle of the sub-element or at the end; and is still deterministically parseable. |
| 3965 | 76.00 | 21 | 9.4.2.296 | Figure 9-1008--TB Specific subelement format shows a "Response" bit.The bit is not defined and there is no reference to this bit. | Remove "Response" bit | Revise. Incorporate the editor instructions corresponding to CID #3965 in submission 11-20/0126. |

Resolution: Revise.

***TGaz Editor: Modify Figure 9-1008 TB specific subelement format as shown below:***

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|  | Subelement ID (1) | Length | Availability Window | AID/RSID | Reserved(#3965) | Trigger Frame Padding Duration | Passive TB Ranging | Max Session Exp | BSS Color Information |
| Bits: | 8 | 8 | Variable | 16 | 1 | 2 | 1 | 4 | 8 |

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| 3840 | 78.00 | 16 | 9.4.2.296 | "The range of valid values for Max Session Exp is 0 to 15 with corresponding 16maximum time duration values ranging from 256 milliseconds to 140 minutes." -- this is obvious for a 4-bit field. This would only be needed to be stated if not all possible 4-bit values were allowed, but they are | Delete the cited text | Accept.Incorporate the editor instructions corresponding to CID #3840 in submission 11-20/0126. |

Resolution: Accept.

TGaz Editor: Modify the paragraph in P78L14-18 as shown below:

The Max Session Exp field is the time before which a new measurement exchange between the ISTA and RSTA should be initiated and completed. This value is computed as 2(Max Session Exp + 8) milliseconds. The Max Session Exp field is reserved in an initial FTM Request frame.