IEEE P802.11
Wireless LANs

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| LB253 Passive TB Ranging CR – Part IV |
| Date: 2021-07-15 |
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Abstract

This document proposes resolutions to TGaz LB253 comments, for the most related to Passive TB Ranging. The changed described here are in relation to [1].

The TGaz LB253 CID addressed in this document are the CIDs:

5011,

5024,

5028,

5257, 5255, 5256, and 5232.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5011 | 72.14 | 9.4.2.297 | Update Table 9-322h23fa to include Format column and add HE format. similar to Table 9-322h23fb | As per comment | Revised.TGaz editor. Make changes as directed in document https://mentor.ieee.org/802.11/dcn/20/11-21-1113-01-00az-lb253-passive-tb-ranging-cr-part-iv.docx. |

***TGaz Editor: Change the text in Subclause 9.4.2.297 (RSTA Availability Window element) as follows:***

**9.4.2.297 RSTA Availability Window element**

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|  |  |  |
| --- | --- | --- |
|  | B0 B5 | B6 B7 |
|  | Format And Bandwidth | Reserved |
| Bits: | 6 | 2 |

**Figure 9-788edf—** **Passive TB Ranging parameters subfield (#5011)**

The Format And Bandwith subfield is defined in Table 9-322h23fb (#**5011**)(Format And Bandwidth subfield), and indicates the requested or allocated PPDU format and nominal bandwidth used to transmit the I2R/R2I NDP exchanged as part of the Passive TB Ranging measurement exchangein the Passive TB Ranging availability window. Depending on the medium availability, the bandwidth used for the exchanged frames is equal to or smaller than the nominal bandwidth. (#**1646**, #**1103, #3310**)

***TGaz Editor: Remove Table 9-322h23fa (BW subfield for Availability Window field in the Passive TB Ranging Availability element)***

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5024 | 88.03 | 9.4.2.304 | delete 'via' from the sentence | As per comment | Revised.TGaz editor. Make changes as directed in document https://mentor.ieee.org/802.11/dcn/20/11-21-1113-01-00az-lb253-passive-tb-ranging-cr-part-iv.docx. |

***TGaz Editor: Change the text in Subclause 9.4.2.304 (ISTA Passive TB Ranging Measurement Report element) as follows:***

**9.4.2.304 ISTA Passive TB Ranging Measurement Report element (#2340)**

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. **(#3273)**

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*F is the Max Error Exponent, and* (#**5024**)

*Emax* is the maximum timestamp error, respectively, in units of picoseconds

The Max Error Exponent subfield contains the Max Error Exponent, *F*, in equation (9-4a) for the value specified in the Timestamp subfield. (#**5024**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5028 | 182.13 | 11.21.6.4.8.4 | In order to facilitate the RSTA passing on of the timestamps from the ISTA in the Secondary RSTA Broadcast Passive TB Ranging Measurement Report, we may want to clarify, for the case of Passive TB Ranging, the ISTA's LMR reports are sent without PMF. | Clarify that for the case of Passive TB Ranging, the ISTA's LMR reports are sent without PMF, even if the ISTA is associated to the RSTA. | Revised.TGaz editor. Make changes as directed in document https://mentor.ieee.org/802.11/dcn/20/11-21-1113-01-00az-lb253-passive-tb-ranging-cr-part-iv.docx. |

***TGaz Editor: Change the text in Subclause 11.21.6.4.8.4 (Passive TB Ranging measurement reporting phase) as follows:***

**11.21.6.4.8.4 Passive TB Ranging measurement reporting phase**

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In the Passive TB Ranging measurement reporting phase, an RSTA shall send a Passive TB Ranging Measurement Report frame and the LMR Subvariant Ranging Trigger to one or more ISTAs that sent an HE Ranging NDP in the preceding Passive TB Ranging measurement sounding phase. An ISTA addressed by the LMR Subvariant Ranging Trigger frame shall transmit an ISTA Passive TB Ranging Measurement Report frame a SIFS time after the LMR Subvariant Ranging Trigger frame transmission to report its I2R LMR.

In order to facilitate broadcasting of the ISTA’s timestamps by the RSTA the ISTA Passive TB Ranging Measurement Report frame shall be transmitted as a public action frame. (#**5028**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5257 | 179.33 | 11.21.6.4.8.3 | We may need to set an EVM requirement for NDPs used in Passive Location Ranging. | Look into if we need to specify the EVM requirement for NDPs used in Passive Location Ranging, and if we do specify it. | Rejected.There is not need for a special EVM requirement for NDP frames used in Passive TB Ranging. |
| 5255 | 152.34 | 11.21.6.4.3.4 | It is not entirely clear how the Sounding Dialog Token is managed by the RSTA in TB and Passive TB Ranging. Add text to clarify this. | Add text clarifying how the Sounding Dialog Token is managed by the RSTA in TB and Passive TB Ranging. This is especially important for the Passive TB Ranging case as PSTAs are reading the dialog token to understand to which measuement sounding phase the varios frame and messages belong or refer to, but there is probably no reason to have TB and Passive TB Ranging to differe here. Not that I am saying it does in D3.0, but some clairyfying text for this would be useful. Though, to be clear, at least for the Passive TB Ranging case, all usages of the Sounding Dialog Token in a Measurement Sounding Phase has to be the same, i.e. they cannot differ from ISTA to ISTA. | Rejected. The rules specified for the Sounding Dialog Token Number for TB Ranging applies also to Passive TB Ranging and are sufficient and also addresses the commenters concern. |
| 5256 | 118.01 | 11.21.6.1.3 | We don't have explicit texty that specifes what frames and/or PPDUs a PSTA needs to be able to receive. We should add this text. | Add text that details what frames and/or PPDUs a PSTA needs to be able to receive in order to be able to use the measurement exchanges and LMR reports exchanged in Passive TB Ranging.. | Rejected. We are not specifying the behaviour of the PSTA in 802.11az. |
| 5232 | 98.27 | 9.6.7.49 | In the current draft we have provisions, via the use of LTF repetition, enabling a modem via the \*not standardized cooperation\* of the peer modem in the ranging exchange, to check if the Ranging NDP has been attacked by an attacking device overlaying its own 'Ranging NDP like' PPDU over the authentic Ranging NDP. However, we are missing a provision enabling a modem to detect such an attack \*without\* relying on "not standardized cooperation" from the peer modem in the ranging exchange. This is a shortcoming that we should address. | In the current draft we have provisions, via the use of LTF repetition, enabling a modem via the \*not standardized cooperation\* of the peer modem in the ranging exchange, to check if the Ranging NDP has been attacked by an attacking device overlaying its own 'Ranging NDP like' PPDU over the authentic Ranging NDP. However, we are missing a provision enabling a modem to detect such an attack \*without\* relying on "not standardized cooperation" from the peer modem in the ranging exchange. This is a shortcoming that we should address. | Rejected.We already have a way to protect ranging from PHY attacks specified. |

**References:**

**[1] Draft P802.11az\_D3.1**