IEEE P802.11
Wireless LANs

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| LB253 Passive TB Ranging CR |
| Date: 2021-06-08 |
| Author(s): |
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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 17 CIDs:

5235, 5252, 5253, 5020, 5021,

5026, 5032, 5033, 5367, 5391, 5034, 5035,

5043,

5073, 5074,

5076, ans 5242

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5235 | 48.01 | 9.3.1.22.10 | The name of the Ranging Trigger frame subvariant for Ranging Trigger Subtype field value of 4 should be "Passive TB Sounding" and not "Passive TB Measurement Exchange". Looks like this got changed basically by mistake when we did a wholesale replacement of the term "Passive TB Sounding" to "Passive TB Measurement Exchange" in the whole draft document. | Change the name of the Ranging Trigger frame subvariant for Ranging Trigger Subtype field value of 4 from "Passive TB Measurement Exchange" to "Passive TB Sounding". Also change in all other places in the draft where we refer to the name of this subvariant. | Revised. Agree in principle but use the term Passive Sounding for the subvariant.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |

***TGaz Editor: Change the numbering of Subclause 9.3.1.22.10 (Ranging Trigger variant) as follows:***

**9.3.1.22.10 Ranging Trigger variant (#1707)**

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**Table 9-30ka — Ranging Trigger Subtype field encoding**

|  |  |
| --- | --- |
| Ranging Trigger Subtype field value | Ranging Trigger frame subvariant |
| 0 | Poll |
| 1 | Sounding |
| 2 | Secure Sounding |
| 3 | Report |
| 4 | Passive Sounding (#**2284**, #**5235**)  |
| 5-15 | Reserved |

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5252 | 86.09 | 9.4.2.304 | Change the name of the 'Dialog Token' in the 'ISTA Passive TB Ranging Measurement Report element' to 'Sounding Dialog Token' to better reflect what this Dialog Token field contains. | As per comment. | Revised. Is better to use the more precise name Sounding Dialog Token Number. Also, the description of the ‘Dialog Token’ field here needs to be corrected.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5253 | 89.06 | 9.4.2.305 | Change the name of the 'Dialog Token' in the 'RSTA Passive TB Ranging Measurement Report element' to 'Sounding Dialog Token' to better reflect what this Dialog Token field contains. | As per comment. | Revised. Is better to use the more precise name Sounding Dialog Token Number. TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5020 | 86.14 | 9.4.2.304 | Modify the text 'The Dialog Token field is the Sounding Dialog Token field in the Ranging....' to | The Dialog Token field is the same value of the Sounding Dialog Token field in the Ranging... | Revised. Agree in principle. Also refer to CID 5252 on the same topic.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5021 | 86.27 | 9.4.2.304 | Add 'given by the RSTA' to the end of the sentence | As per comment | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.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)**

The ISTA Passive TB Ranging Measurement Report element, defined in Figure 9-788edx (ISTA Passive TB Ranging Measurement Report Element), is used to convey measurement results and associated parameters from an ISTA to the RSTA in a Passive TB Ranging exchange.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ElementId | ElementLength | ElementIDExtension | Sounding Dialog Token Number | CFO | More & N Timestamp Measurement Reports | Timestamp Measurement Reports |
| Octets: | 1 | 1 | 1 | 1 | 2 | 1 | variable |

**Figure 9-788edx—** **ISTA Passive TB Ranging Measurement Report element (#1510, #5252)**

The Element ID, Length and Element ID Extension fields are defined in 9.4.2.1 (General).

The value of the Sounding Dialog Token Number field is the value of the Sounding Dialog Token Number subfield in the Ranging NDP Announcement frame of the corresponding measurement sounding phase in which the reported ISTA’s timestamps were measured; see 11.21.6.4.3 (TB Ranging measurement exchange) and 11.21.6.4.8 (Measurement exchange in Passive TB Ranging mode). (#**5252, #5020**)

The CFO field indicates the reporting ISTA's carrier frequency offset with respect to the RSTA, as a signed integer in two's-complements format in units of 0.01 ppm. (#**3830**)

The More & N Timestamp Measurement Reports field is defined as depicted in Figure 9-788edy (More & N Timestamp Measurement Reports field). (#**1510**)

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The More subfield is used to indicate that the ISTA has more time stamps ready to report but is not able to fit them in its allocated resources as given by the RSTA. (#**1510, #5021**)

***TGaz Editor: Change the text in Subclause 9.4.2.305 (RSTA Passive TB Ranging Measurement Report element) as follows:***

**9.4.2.305 RSTA Passive TB Ranging Measurement Report element (#2340)**

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The RSTA Passive TB Ranging Measurement Report element, defined in Figure 9-788ed2 (RSTA Passive TB Ranging Measurement Report element), is used to broadcast measurement results and associated parameters from an RSTA to STAs that want to use this information.

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| --- | --- | --- | --- | --- | --- | --- |
|  | ElementId | ElementLength | ElementIDExtension | Sounding Dialog Token Number | More & N Timestamp Measurement Reports | Timestamp Measurement Reports |
| Octets: | 1 | 1 | 1 | 1 | 1 | variable |

**Figure 9-788ed2—** **RSTA Passive TB Ranging Measurement Report element (#5253)**

The Element ID, Length and Element ID Extension fields are defined in 9.4.2.1 (General).

The value of the Sounding Dialog Token Number field is the value of the Sounding Dialog Token Number subfield in the Ranging NDP Announcement frame corresponding to the measurement sounding phase in which the reported RSTA timestamps were measured (see 11.21.6.4.3 (TB Ranging measurement exchange) and 11.21.6.4.8 (Measurement exchange in Passive TB Ranging mode)). (#**1103**, #**3143, #5252, #5253)**)

**11.21.6.4.8.4 Passive TB Ranging measurement reporting phase**

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The ISTA Passive TB Ranging Measurement Report frame contains an ISTA Passive TB Ranging 1 Measurement Report element, see 9.4.2.304 (ISTA Passive TB Ranging Measurement Report element), containing: (#**3804**)

* a Sounding Dialog Token Number identifying the measurement sounding phase in which the reported ISTA’s timestamps were measured;

* the CFO of the ISTA with respect to the RSTA;
* the TOD time stamp for the I2R NDP that the ISTA transmitted – labeled with the AID12/RSID12 of the ISTA;
* the TOA, timestamp for the R2I NDP that the ISTA received from the RSTA;
* optionally, the TOA timestamps for the I2R NDPs received from other ISTAs participating in the Passive TB Ranging Polling-Sounding-Reporting triplet identified by the Sounding Dialog Token Number – labeled with their respecive AID12/RSID12s. (#**3804**)

If phase shift TOA reporting has been negotiated, the ISTA Passive TB Ranging Measurement Report element also includes: (#**3804**)

* the PS-TOA timestamp of the R2I NDP that the ISTA received from the RSTA; and
* optionally, the PS-TOAs for the I2R NDPs received from other ISTAs participating in the Passive TB Ranging Polling-Sounding-Reporting triplet identified by the Sounding Dialog Token Number – labeled with their respecive AID12/RSID12s. (#**3804**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5026 | 90.00 | 9.4.2.306 | Section 9 cannot have normative text so modify the text '....which either indicates the LCI of the RSTA and may include the Z subelement Usage Rules/Policy subelement...' to | ....which either indicates the LCI of the RSTA and can include 11 the Z subelement Usage Rules/Policy subelement........which either indicates the LCI of the ISTA and can include 11 the Z subelement Usage Rules/Policy subelement.... | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |

***TGaz Editor: Change the text in Subclause 9.4.2.306 (Passive TB Ranging LCI Table element) as follows:***

**9.4.2.306 Passive TB Ranging LCI Table element**

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The RSTA LCI Report field is present if the RSTA has never transmitted it before or its content has changed, and it is periodically present otherwise. If present, it contains a Measurement Report element with Measurement Type field equal to LCI, see Table 9-118 (Measurement Type field definitions for measurement reports), which either indicates the LCI of the RSTA and can include the Z subelement Usage Rules/Policy subelement, Antenna Placement and Calibration subelement, or indicates an unknown LCI; see 11.21.6.7 (LCI and Location Civic retrieval using FTM procedure). (#**2302, #5026**)

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The ISTA LCI Report subfield is present if the RSTA has never transmitted it before or its content has changed and it is periodically present otherwise. If present, it contains a Measurement Report element with Measurement Type field equal to LCI (see Table 9-118 (Measurement Type field definitions for measurement reports)), which either indicates the LCI of the ISTA and can include the Z subelement Usage Rules/Policy subelement, Antenna Placement and Calibration subelement, or indicates an unknown LCI; see 11.21.6.7 (LCI and Location Civic retrieval using FTM procedure). (#**2302, #5026**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5032 | 118.30 | 11.21.6.1.3 | Delete 'for this purpose, with its associated different measurements' from end of the sentence as it doesn't seem necessary | As per comment | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5033 | 118.00 | 11.21.6.1.3 | Modify text 'The RSTA send the Primary and Secondary RSTA Broadcast Passive TB Ranging Measurement Report frames at the end of the measurementexchange' to | The RSTA sends the Primary and Secondary RSTA Broadcast Passive TB Ranging Measurement Report frames at the end of the measurement exchange' | Revised.This is a duplicate CID to CID 5367. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5367 | 118.34 | 11.21.6.1.3 | Missing space | Change "measurementexchange" to "measurement exchange" | Revised. This is a duplicate CID to CID 5033.Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5391 | 118.11 | 11.21.6.1.3 | What applies and does not apply here needs to be explicit. Examples might be used to illustrate how a device behaves in the wild but they are not appropriate when defining what needs to be implemented. | Explicitly define the rules for passive TB ranging. | Rejected.The rules for Passive TB Ranging are explicitly defined in the specifications text. This is just a note with some aiding information for the reader. |
| 5034 | 119.20 | 11.21.6.1.3 | Add ' during the availability windows' at the end of sentence '....the Passive TB Ranging exchanges that are occurring. | As per comment | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5035 | 119.22 | 11.21.6.1.3 | Move text starting line 22 of page 119 to line 22 of page 120 into a appendix as it provides informative text and not a spec text! | As per comment | Rejected.What is described in the referred text is an example operation of Passive TB Ranging and its use for enabling a PSTA to estimate its location without transmitting. In the overview subclauses for the EDCA and TB Ranging and non-TB Ranging, we also have examples of their operation so it is consistent to also have an example of the operation for the Passibe TB Ranging in its overview subclause. |

***TGaz Editor: Change the text in Subclause 11.21.6.1.3 (Passive TB Ranging overview) as follows:***

**11.21.6.1.3 Passive TB Ranging overview**

<Scroll to P118L30>

* The ISTAs does not use the Location Measurement Report frame for reporting of I2R LMR but instead uses the ISTA Passive TB Ranging Measurement Report frame. (#**5032**)
* The RSTA sends the Primary and Secondary RSTA Broadcast Passive TB Ranging Measurement Report frames at the end of the measurement exchange. (#**3544, #5033, #5367**)

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The purpose of the announcement of the availability window for the Passive TB Ranging is to enable PSTAs to listen to the Passive TB Ranging exchanges that are occurring during the availability windows. (#**1577**, #**5034**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5043 | 136.11 | 11.21.6.3.9 | Change IFTMR to IFTM | As per comment | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |

***TGaz Editor: Change the text in Subclause 11.21.6.3.9 (Passive TB Ranging measurement negotiation) as follows:***

**11.21.6.3.9 Passive TB Ranging measurement negotiation**

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To assign an ISTA Passive TB Ranging session, the RSTA shall respond with the Passive TB Ranging subfield in the Ranging Parameters field set to 1 in the corresponding IFTM frame. (#**5043**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5073 | 178.11 | 11.21.6.4.8.1 | Change 'sends' to 'shall transmit' |  | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5074 | 178.20 | 11.21.6.4.3.4 | Modify the text 'The Passive TB Ranging exchanges occur in an availability window used for passive location' to | The Passive TB Ranging exchanges shall only occur in an availability window assigned for passive location | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |

***TGaz Editor: Change the text in Subclause 11.21.6.4.8.1 (General) as follows:***

**11.21.6.4.8.1 General**

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In Passive TB Ranging, the RSTA shall transmit the Passive Sounding subvariant Ranging Trigger frame instead of the Sounding subvariant Ranging Trigger frame. Upon receiving of the Passive Sounding subvariant Ranging Trigger frame, the ISTA shall respond with an HE Ranging NDP instead of an HE TB Ranging NDP; see 11.21.6.4.8.3 (Passive TB Ranging measurement sounding phase) for further details. (#**3789**, #**3790**, #**5073**)

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The Passive TB Ranging exchanges shall only occur in an availability window assigned for Passive TB Ranging. (#**5074**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 5076 | 179.13 | 11.21.6.4.8.1 | Modify the text 'In Passive TB Ranging, the Trigger frame that the RSTA send is of variant Ranging and subvariant Passive TB Measurement Exchange. The Trigger frame here only allocates uplink resources to a single STA' to | In Passive TB Ranging, RSTA shall transmit Passive TB Ranging Subvariant Ranging Trigger frame to allocate uplink resources to a single STA | Revised. Agree in principle.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |
| 5242 | 179.13 | 11.21.6.4.8.3 | "subvariant Passive TB Measurement Exchange" to should be "subvariant Passive Sounding". | As per comment | Revised.Agree in principle but use the term Passive Sounding subvariant Trigger frame.TGaz editor, make the changes as shown below in document https://mentor.ieee.org/802.11/dcn/21/11-21-0928-01-00az-lb253-passive-tb-ranging-cr.docx. |

***TGaz Editor: Change the text in Subclause 11.21.6.4.8.3 (Passive TB Ranging measurement sounding phase) as follows:***

**11.21.6.4.8.3 Passive TB Ranging measurement sounding phase**

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The second phase of the Passive TB Ranging measurement sequence, after the Passive TB Ranging Polling phase, is called the Passive TB Ranging measurement sounding phase. The Passive TB Ranging measurement sounding phase may include of one or more Passive Sounding subvariant Ranging Trigger frame and HE Ranging NDP exchanges, a Ranging NDP Announcement frame, and an HE Ranging NDP transmission; see Figure 11-37v (Passive TB Ranging Polling, Measurement Sounding, and Measurement Reporting phases). (#**5075**)

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 In Passive TB Ranging, for each ISTA, the RSTA shall transmit a Passive Sounding subvariant Ranging Trigger frame, which includes a single User Info field. (#**5076, #5242**)

**References:**

**[1] Draft P802.11az\_D3.0**