IEEE P802.11
Wireless LANs

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| Some LB 249 Passive TB Ranging CR |
| Date: 2020-09-15 |
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Abstract

This document proposes resolutions to TGaz LB249 comments, for the most related to Passive TB Ranging. The changed described here are in relation to [1].

The 8 TGaz LB249 CIDs addressed in this document are CIDs:

3102, 3020, 3830, 3336, 3045, 3143, 3857, and 3337.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3103 | 49.00 | 9.3.3.2 | Table 9-34 has two entrees for optionally including Passive TB Ranging Availability window on Row 4 and Row 6. If we don't need both, remove one. | As per comment | Revised. Agree in principle with the commenter.TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion:** The row pertaining the the element ‘Passive TB Ranging Availability Window’ element should be removed as we don’t have such an element. That information is carried in the RSTA Availability Window element.

***TGaz editor: Modify the Table 9-34 (Beacon frame body) in*** *9.3.3.2* ***(Beacon frame format) starting on P50L18 as:***

**Table 9-34—Beacon frame body (#3103)**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| 1  | Timestamp |  |
| …  | …  | … |
|  |  |  |
| Last  | Vendor Specific  | One or more vendor-specific elements are optionally present.These elements follow all other elements. |

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3020 | 55.30 | 9.4.2.21.10 | Text describes that the values are relative to "specified reference location", but there is no reference where this "specified reference location" is defined. Please add the reference. | Add the reference. | Revised. TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion:** The Relative Compact LCI field is only used in the Passive TB Ranging LCI Table Report element (see 9.4.2.304 (Passive TB Ranging LCI Table element) that contains an RSTA LCI report field. The reported location of the RSTA serves as the reference location for the reporting of the Relative Latitude, Longitude, and Altitude subfields in the Relative Compact LCI field. Add text to this effect.

***TGaz Editor: Change the text in Subclause 9.4.2.21.10 (LCI report (Location configuration information report)) as follows:***

**9.4.2.21.10 LCI report (Location configuration information report)**

… <Scroll to P56L2>

The Relative Compact LCI field is only used in the Passive TB Ranging LCI Table Report element (see 9.4.2.304 (Passive TB Ranging LCI Table element) that contains an RSTA LCI report field. The reported location of the RSTA serves as the reference location for the reporting of the Relative Latitude, Longitude, and Altitude subfields in the Relative Compact LCI field. **(#3020)**

The Relative Latitude subfield contains a signed integer in two’s complement format indicating the latitude offset of the reported location in relation to the RSTA reference location, in units of 1.8e-07 deg. (Corresponds to approximately two cm at the equator.) (#**1789, #3020**)

The Relative Longitude subfield contains a signed integer in two’s complement format indicating the longitude offset of the reported location in relation to the RSTA reference location, in units of 1.8e-07 deg. (Corresponds to approximately two cm at the equator.) (#**1790, #3020**)

The Relative Altitude subfield contains a signed integer in two’s complement format indicating the elevation offset of the reported location in relation to the RSTA reference location, in units of 2 cm. **(#3020)**

***TGaz Editor: Change the text in Subclause 9.4.2.21.10 (LCI report (Location configuration information report)) as follows:***

**9.4.2.304 Passive TB Ranging LCI Table element**

… <Scroll to P91L8>

An ISTA LCI Report Entry includes at least one of ISTA LCI Report or ISTA Location Civic 8 Report.

NOTE – To shorten the LCI reporting, the ‘Relative Compact LCI’ Measurement Type can be used in the ISTA’s LCI reporting. In this case ISTA’s location is reported in relation to the location reported for the RSTA in the Passive TB Ranging LCI Table Report within which the ISTA’s LCI report is contained. See Subclause 9.4.2.21 (LCI report (Location configuration information report). **(#3020)**

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3830 | 84.30 | 9.4.2.302 | "The CFO element indicates the reporting ISTAs carrier frequency offset with respect to the RSTA. The CFO element is a 2 octet long signed integer in two's-complements format indicating the CFO in units of 0.01 ppm. " is duplication and misnaming | Change to "The CFO field indicates the reporting ISTA's carrier frequency offset with respect to the RSTA, as signed integer in two's-complements format and in units of 0.01 ppm." | Revised. Agree in principle with the commenter.TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion**: The suggested change flows better. Propose to change along the suggested lines.

***TGaz Editor: Change the text in Subclause 9.4.2.302 (ISTA Passive TB Ranging Measurement Report element) starting on P86L23 as follows:***

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

…

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)**

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3336 | 84.32 | 9.4.2.302 | Missing definition for "ppm". | Define the meaning of "ppm" or replace "0.01 ppm" with "1 / 10 ^ -8" | Rejected. The unit 'ppm' is a widely accepted term. There are already 40 references to ppm in 802.11REVmd. It is also listed with an explanation in the Merriam-Webster's dictionary. |

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3045 | 85.19 | 9.4.2.302 | Use of "AID12/RSID12" is NEW! In the spec, as far as I know, we don't use names with number of bits embedded in the name. Any real reason to start having such? | Remove the number of bits (12) from the name or use a different name. This might appear in more places | Revised. TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion for CID 3045:** We are using this term in many places in the draft. The number 12 comes from the fact that the AID12/RSID12 subfield carries either the LSBs of the AID for an associated ISTA or the LSBs of the RSID for an unassociated ISTA. However, as we have not formally defined this term is is so far it is only a field name and as such needs to be fully described in the associated text. We propose to add text to that effect.

***TGaz Editor: Change the text in Subclause 9.4.2.302 (ISTA Passive TB Ranging Measurement Report element) starting on P88L29 as follows:***

…

The AID12/RSID12 subfield contains the 12 LSBs of the AID, for an associated ISTA, or the 12 LSBs of the RSID, for an unassociated ISTA, of the STA that transmitted the NDP in question. When the STA that transmitted the NDP is the RSTA the value zero is reported in the AID12/RSID12 subfield. (#**1518, #3045**)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3143 | 87.14 | 9.4.2.303 | "Ranging NDP Announcement frame of the corresponding to the measurement sounding phase" - language is not clear what does "of the corresponding to" mean? | replace by "Ranging NDP Announcement frame corresponding to the measurement sounding phase" | Revised. Agree in principle with the commenter.TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion:** The suggested change flows better. Propose to change along the suggested lines.

***TGaz Editor: Change the text in Subclause 9.4.2.303 (RSTA Passive TB Ranging Measurement Report element) starting on P89L8 as follows:***

**9.4.2.303 RSTA Passive TB Ranging Measurement Report element**

…

The value of the Dialog Token field is the value of the Sounding Dialog Token field in the Ranging NDP Announcement framecorresponding to the measurement sounding phase in which the reported RSTA timestamps were measured (see 11.22.6.4.3 (TB ranging measurement exchange) and 11.22.6.4.8 (Measurement exchange in Passive TB Ranging mode)). **(#1103, #3143)**

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed change** | **Proposed resolution** |
| 3857 | 96.19 | 9.6.7.48 | "The Invalid Measurement field contains an invalid indication for the TOA field." is confusing | Change to "The Invalid Measurement field indicates whether the TOA field contains a valid value." | Revised. Agree in principle with the commenter.TGaz editor, make the changes as shown below in document 11/20-1020. |
| 3337 | 97.1 | 9.6.7.48 | What is "1.073 741 824 ms"? Numbers are not grouped for fractions. | Delete spaces from "1.073 741 824 ms". | Revised. Agree in principle with the commenter.TGaz editor, make the changes as shown below in document 11/20-1020. |

**Discussion for CID 3857:** The proposed change flows better. Propose to change to something along those lines.

**Discussion for CID 3337:** Yes, we need to remove the spaces in the number.

***TGaz Editor: Change the text in Subclause 9.6.7.48 (Location Measurement Report frame format) as follows:***

**9.6.7.48 Location Measurement Report frame format**

… <scroll to P96L25>

**Figure 9-981a—Location Measurement Report Action field (#1856) format**

… <scroll to P98L16>

The Invalid Measurement field indicates whether the TOA field contains a valid value. It is set to 1 to indicate that the TOA value is invalid and the value 0 in this field indicates that the TOA value is valid. **(#3857)**

… <scroll to P91L21>

A value of 0 for the Max TOD Error Exponent or the Max TOA Error Exponent field indicates that the upper bound on the error in the corresponding TOD or TOA value is unknown. A value of 31 indicates that the upper bound on the error is greater than or equal to 1.073741824 ms. **(#3337)**

***TGaz Editor: Change the text in Subclause 9.6.7.49 (ISTA Passive TB Ranging Measurement Report frame format) as follows:***

**9.6.7.49 ISTA Passive TB Ranging Measurement Report frame format**

…

**Figure 9-981d—ISTA Passive TB Ranging Measurement Report Action field format**

**References:**

**[1] Draft P802.11az\_D2.3**