#### IEEE P802.11 Wireless LANs

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| --- | --- | --- | --- | --- |
| Passive Location Ranging LCI Reporting | | | | |
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|  |  |  |  |  |

**Abstract**

This submission addresses the Passive Location Ranging LCI reporting.

The proposed changes are relative to TGaz Draft 0.6 and TGmd Draft 2.0.

***TGaz Editor: Edit Section ‘9.4.2.288 Passive Location LCI Table element as shown below:***

**9.4.2.288 Passive Location LCI Table element**

The Passive Location LCI Table Report element, defined in Figure 9-ggg, is used by an RSTA to broadcast LCI data for the ISTAs participating in its Passive Location Ranging exchanges.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element Id | Element Length | Element ID Extension | Passive Location LCI Table Number | RSTA LCI Report (Optional) | RSTA Location Civic Report (Optional) | Number of ISTA LCI Report Entries | ISTA LCI Reports Entries |
|  | Octets: | 1 | 1 | 1 | Variable | Variable | 1 | Variable |

Figure Figure 34 -- 9-ggg - Passive Location LCI Table Report Element

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

The RSTA LCI Report field is optionally present. 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 may include the Z and Usage

Rules/Policy subelement or indicates an unknown LCI (see 11.22.6.7 (LCI and Location Civic retrieval

using FTM procedure)).

The RSTA Location Civic Report field is optionally present. If present, it contains a Measurement Report element

with Measurement Type field equal to Location Civic (see Table 9-118 (Measurement Type field definitions

for measurement reports)), which either indicates the Civic address of the ISTA or an unknown

Civic address (see 11.22.6.7 (LCI and Location Civic retrieval using FTM procedure)).

The ISTA LCI Report Entries field contains ‘Number of ISTA LCI Report Entries’ ISTA LCI Report Entry fields defined as in Figure 9-hhh.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ISTA RID | ISTA MAC ADDRESS | ISTA LCI Report (Optional) | ISTA Location Civic Report (Optional) |
| octets: | 2 | 6 | variable | variable |

Figure 9-hhh – ISTA LCI Report Entry field

The ISTA RID subfield contains the ranging ID of the ISTA reported on.

The ISTA MAC ADDRESS subfield contains the MAC address of the ISTA reported on.

The ISTA LCI is Report field is optionally present. 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 may include the Z and Usage

Rules/Policy subelement or indicates an unknown LCI (see 11.22.6.7 (LCI and Location Civic retrieval

using FTM procedure)).

The ISTA Location Civic Report field is optionally present. If present, it contains a Measurement Report element

with Measurement Type field equal to Location Civic (see Table 9-118 (Measurement Type field definitions

for measurement reports)), which either indicates the Civic address of the ISTA or an unknown

Civic address (see 11.22.6.7 (LCI and Location Civic retrieval using FTM procedure)).

When a Measurement Type equal to ‘Relative Compact LCI’ is used in the ISTA LCI reporting, the reference location to which the ISTA’s relative location is reported is the location reported for the RSTA in the Passive Location LCI Table Report within which it is contained.

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

***TGaz Editor: Insert instructions to edit Table 9—134 (Subelement for IDs for LCI Report) as shown below:***

*Edit Table 9-134 (Subelement IDs for LCI report) as shown below:*

|  |  |  |
| --- | --- | --- |
| * Subelement IDs for LCI Report | | |
| Subelement ID | Name | Extensible |
| 0 | LCI |  |
| 1 | Azimuth Report | Yes |
| 2 | Originator Requesting STA MAC Address |  |
| 3 | Target MAC Address |  |
| 4 | Z | Subelements |
| 5 | Relative Location Error | Yes |
| 6 | Usage Rules/Policy | Yes |
| 7 | Co-Located BSSID List | Yes |
| 8 | Relative Compact LCI |  |
| ~~8~~9–220 | Reserved |  |
| 221 | Vendor Specific |  |
| 222–255 | Reserved |  |

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

***TGaz Editor: Insert instructions to insert the text in Section 9.4.2.21.10 after the definition of the LCI field as shown below:***

*Insert the text in Section 9.4.2.21.10 after the definition of the LCI field as shown below:*

…

The definitions of fields within the LCI field are as specified in Section 2.2 of IETF RFC 6225 (July 2011)

or as defined herein. This structure and information fields are based on the LCI format described in IETF RFC 6225.

The Relative Compact LCI field is formatted as shown in Figure 9-239b (Relative Compact LCI Field)

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B15 | B16 B31 | B32 B47 |
|  | Relative Latitude | Relative Longitude | Relative Altitude |
| Bits: | 16 | 16 | 16 |

**Figure 9-239b - Relative Compact LCI Field**

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 specified reference location, in units of 1.8e-07 deg. (Corresponds to approximately two cm.)

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 specified reference location, in units of 1.8e-07 deg. (Corresponds to approximately two cm.)

The Relative Altitude subfield contains a signed integer in two’s complement format indicating the elevation offset of the reported location on in relation to the specified reference location, in units of 2 cm.

NOTE—This example shows how to encode the coordinates of the Sydney Opera House using the encoding defined in

IETF RFC 6225. The building is a polygon with the following (latitude, longitude) coordinates:

…

**In Section 9.6.7.32 Fine Timing Measurement Request frame format**

***TGaz Editor: Edit instructions to insert the text in Section 9.6.7.32 (Fine Timing Measurement Request frame format) as shown below:***

*Add a new columns to Figure 9-876 (Fine Timing Measurement Request Action field format) as shown below:*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Ranging Parameters (optional) | LCI Report (Optional) | Location Civic Report (Optional) |
| Octets | variable | variable | variable |

**Figure 9-809 Fine Timing Measurement Request Action field format**

**In Section 9.4.2.279 Ranging Parameters**

***TGaz Editor: Edit the text in Section 9.4.2.279 (Ranging Parameters) as shown below:***

…

The Passive Location Ranging field is set to 1 by the Initiator to request Passive Location Ranging operation, otherwise it is set to 0. When the Initiator sets the Passive Location Ranging field to 1 it shall include an unsolicited LCI Report in the Fine Timing Measurement Request frame.

The Passive Location Ranging field is set to 1 by the Responder to grant Passive Location Ranging operation, otherwise it is set to 0.

…