IEEE P802.11
Wireless LANs

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| --- |
| Secure ToF supported field |
| Date: 2018-11-04 |
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Abstract

This document addresses the issue of a capability bit for the Secure ToF measurement in DMG/EDMG

STA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 239 | 31.00 | 11 | 9.4.2.166 | Huh? There are three reserved bits available | Don't add an Extension field. Make the two Secure ToF bits be B48/49 |
| 240 | 32.00 | 1 | 9.4.2.166 | "The Secure ToF Measurement field is set to 1 to enable a secure ToF measurement exchange between an ISTA and an RSTA. Otherwise the Secure ToF Measurement field is set to 0. " -- specify that it is not set to 1 unless both ISTA and RSTA have set Secure ToF Supported field to 1 | As it says in the comment |

Proposed Resolution: **Revised**

**Discussion:**

Currently The secure ToF measurement is sent in the same field as the secure ToF Measurement. This way there is no capability exchange before the actuall request to perform the measurement, rendering the Secure ToF Supported bit not very useful. It is better to move this bit to the EMDG Extended Capability Element and then the Secure ToF Measurement be negotiated based on capabilities.

***TGaz Editor: Add the following capability bit to the Beamforming Capability Subelemennt (Figure 44 —Beamforming Capability subelement format in 9.4.2.250.2 Beamforming Capability subelement in TGay):***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B15 | B16 B19 | B20 | B21 | B22 B23 | B24 | B25 | B26 B31 |
|  | First Path Training Supported | Dual Polarization TRN Capability | Hybrid Beamforming and MU-MIMO Supported | Hybrid Beamforming and MU-MIMO Supported | Largest Ng Supported | Dynamic Grouping Supported | Secure ToF Supported | Reserved |
| bits: | 1 | 4 | 1 | 1 | 2 | 1 | 1 | 6 |

***TGaz Editor: Add the following as the lasts paragraph of 9.4.2.250.2 Beamforming Capability subelement in TGay:***

A STA sets the Secure ToF Supported field to 1 if it supports Secure Time of Flight (ToF) Measurement exchange as defined in 11.22.6.4.8 (Secure EDMG Measurement Exchange Protocol).

***TGaz Editor: modify the text in P27L2-P28L16 as follows:***

***802.11 Editor: Update the Table 9-272 Format And Bandwidth field as follows: (REVmd 1.0, P1261, L60)***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B1 | B2 B6 |  B7 | B8 B11 | B12 B15 | B16 B23 | B24 B39 |  B40 |
|  | Status Indication | Value | Secure Tof Measurement | Number of Bursts Exponent | Burst Duration | Min Delta FTM | Partial TSF Timer | Partial TSF Timer No Preference |
| **Bits:** | 2 | 5 | 1 | 4 | 4 | 8 | 16  | 1 |
|  | B41 | B42 | B43 B47 |  B48 B49 | B50 B55 | B56 B71 |  |
|  | ASAP Capable | ASAP | FTMs per Burst | Reserved | Format and Bandwidth | Burst Period |  |
| **Bits:** | 1 | 1 | 5 | 2 | 6 | 16 |  |

Figure 9-606 -- Fine Timing Measurement Parameters field format

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| --- | --- | --- | --- |
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***Add the following paragraph to the end of 9.4.2.166 Fine Timing Measurement Parameters element (11md in D1.0)***

The Secure ToF Measurement field is set to 1 by an ISTA to request a secure ToF measurement exchange between an ISTA and an RSTA (see 11.22.6.3.3). The Secure ToF Measurement field is set to 1 by an RSTA to acknowledge a securet ToF Measurement exchange. Otherwise the Secure ToF Measurement field is set to 0.

***TGaz Editor: Modify subclause 11.22.6.3.3 P47L24- as follows:***

##### 11.22.6.3.3 EDMG Secure ToF Measurement Setup

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A STA that supports secure ToF measurement as described in 11.22.6.4.8 (Secure EDMG Measurement Exchange Protocol), shall set the Secure ToF Supported field in the EDMG capabilities element to 1. A STA shall not set the Secure ToF Supported field to 1 if it has not also set the First Path Training Supported field to 1.

An ISTA may request a Secure ToF measurement by setting the Secure ToF Measurement subfield in the Measurement Parameters field in the initial Fine Timing Measurement Request frame. An ISTA shall not set to Secure Tof Measurement subfield in a request to an RSTA if the RSTA has not set the Secure ToF Supported field in the EDMG Capabilities field to 1. An RSTA that support Secure ToF measurement shall acknowledge a request for Secure ToF measurement by setting the Secure ToF Measurement subfield in the Measurement Parameters field in the initial Fine Timing Measurement frame.