IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB240 Resolution of CID1295 | | | | |
| Date: 2019-09-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Solomon Trainin | Qualcomm |  |  | strainin@qti.qualcomm.com |
| Assaf Kasher | Qualcomm |  |  | akasher@qti.qualcomm.com |
| Alecsander Eitan | Qualcomm |  |  | eitana@qti.qualcomm.com |

Abstract

Resolution of CID2124, 1059

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1059 | 37.07 | 9.4.2.127 | Names mixup related to DMG Capabilities element. In some parts it is DMG in other DMG/EDMG. In Table 9.547a there is no DMG or EDMG in the names but in the following text explaining the fields the names are with DMG/EDMG. | Update the entier section 9.4.2.127 with consistent names | **Revise as in 11-19-1537** |
| 2124 | 48.08 | 11.22.6.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] " DMGz Ranging, it shall set the DMG Range Measurement field of the Extended Capabilities element to 1. Otherwise it shall set the Multi User Range Measurement field of the Extended Capabilities element to 0" -- wrong field | Change "Multi User Range Measurement field" to "DMG Range Measurement field". Ditto at line 15 for EDMG | **Revise as in 11-19-1537** |

Discussion:

The text in 9.4.2.127 refers to DMG/EDMG where in many cases DMG STA is OK because it also covers EDMG STAs. However, it may be better to use the terms PDMG/PEDMG STA, however these terms are defined only by a capability bits (DMG Ranging Measurement, EDMG Ranging Measurement), and no behaviour is realy dependent on this bits. We propose to remove these bits, and define PDMG and PEDMG by capability bits that actual control protocol behaviour.

***TGaz Editor: Modify the text in P58L3-4 (9.4.2.127.9) as follows:***

The DMG Direction Measurement Capabilities field advertises capabilities for performing direction measurement as part of PDMG or PEDMG exchanges

***TGaz Editor: Modify the text in P58L7-23 (9.4.2.127.9) as follows:***

A PDMG STA sets the AOA TX Capability subfield to 1 to indicate the ability to attach a TRN field to an FTM frame for the purpose of allowing the receiver of that frame to perform Angle of Arrival (AOA) estimation.

A PDMG STA sets the AOA RX Capability subfield to 1 to indicate the ability to estimate the AOA based on a TRN field attached to an FTM frame.

A PDMG STA sets the AOD TX Capability subfield to 1 to indicate the ability to attach a TRN field, possibly with different antenna settings to different TRN subfields, to an FTM frame, or the purpose of allowing the responder to estimate the Angle of Departure (AOD) of the packet.

A PDMG STA sets the AOD RX Capability subfield to 1 to indicate the ability to estimate the AOD based on a TRN field attached to a Fine Timing Measurement frame and send a report.

A PDMG STA sets the AOD Feedback Best TRN subfield to 1 to indicate the ability to send a best TRN subfield index, based on measurement on a TRN field sent by the receiver STA, for the purpose of AOD estimation.

A PDMG STA sets the AOD Channel Measurement Feedback subfield to 1 to indicate the ability to send a Channel Measurement Feedback element based on measurement on a TRN field sent by the peer RSTA, for the purpose of AOD estimation

***TGaz Editor: Modify the text in P60L8 as follows:***

For Secure PEDMG ranging, the Secure ToF Measurement subfield is set to 1 by an ISTA to request a

***TGaz Editor: Modify the text in P60L15 as follows:***

exchange. Otherwise the Secure ToF Measurement field is set to 0. In cases other than Secure PEDMG ranging, the Secure ToF Measurement subfield is reserved.

***TGaz Editor: in table 9-618 replace “EDMG Ranging Priority” with “PEDMG Ranging Priority”***

***TGaz Editor: Modify the text in P64L12 as follows:***

For EDCA based ranging where the value of the corresponding Format and Bandwidth subfield is in the range 31 through 41 (inclusive),, subfield of the Fine Timing Measurement Parameters field of the Fine Timing Measurement Parameters element in the initial Fine Timing Measurement Request frame contains the ISTA’s Ranging Priority request which indicates the time sensitivity of a ranging operation, and it is set according to Table 9-281c. In cases other than PEDMG ranging, PEDMG Ranging Priority subfield is reserved

***TGaz Editor: in P64L15-24 replace “EDMG Ranging” with “PEDMG Ranging” (including figure caption)***

***TGaz Editor: in P64L19-24 replace “EDMG Ranging” with “PEDMG Ranging”***

***TGaz Editor: In the cpation of table 9-281d replace “EDMG Ranging” with “PEDMG Ranging”***

***TGaz Editor: in P110L26-46, P105L1-2 change the text as follows:***

A PDMG STA, capabale of performing PDMG Ranging,: shall include a DMG Direction Measurement Capabilities field in the DMG Capabilities element and set one of the first 4 subfields (AOA TX Capability, AOA RX Capability, AOD TX Capability, AOD RX Capability) of this field to 1 Otherwise it shall set the Multi User Range Measurement field of the Extended Capabilities element to 0.

A PEDMG STA capable of EDMG Ranging, Shall set at least one of the following fields to 1:

* The First Path Training Supported field of the Beamformign Capability subelement of the EDMG capabilities element.
* The LOS Assesment TX or LOS Assesment RX subfield of the DMG Direction measurement Capabillites field of the DMG capabilities element
* The Secure ToF supported field of the Beamformign Capability subelement of the EDMG capabilities element.

It may also set the EDMG OFDM Range Measurement field of the Beamforming Capabilities subelement to 1 if it additionally supports OFDM ranging. A STA that additionally supports Direction Measurement shall include a DMG Direction Measurement Capabilities field in the DMG Capabilities element and set one of the first 4 subfields (AOA TX Capability, AOA RX Capability, AOD TX Capability, AOD RX Capability) of this field to 1.

***TGaz Editor: in P115L25 replace “EDMG Ranging” with “PEDMG Ranging”***

***TGaz Editor: in P105L29 change the text as follows:***

elements of neighboring DMG APs supporting location services. Per each DMG

***TGaz Editor: in P22L27 change the text as follows:***

DMG, security parameters can be negotiated to ensure that the measurement

***TGaz Editor: in table 9-402n (P97) replace “DMG/EDMG” “PDMG”***

**References:**

1. P802.11az/D1.5
2. IEEE P802.11ay/D5.0
3. IEEE P802.11-REVmd/D3.0