IEEE P802.11
Wireless LANs

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| --- |
|  cc40-comments DMG comments resolution part one |
| Date: 2022-07-12 |
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|  |  |  |  |  |

Abstract

Resolution of CIDs 45, 107, 397, 339, 329, 223, and 372

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Subclause** | **page** | **Comment**  | **Proposed change** | **Resolution** |
| 45 | 9.6.7.50 | 58.57 | "DMG Sensing Measurement Setup Element" should be "Sensing Measurement Setup Element". Sensing Measurement Setup Element is missing in draft 0.1. | As in comment. | **Reject**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 107 | 9.6.21 | 62.26 | Why does an unprotected DMG Action frame have to be defined at all? It should be a DMG Action frame. There is no text in clause 11 to describe any unprotected DMG action frame behaviour. | In Table 9-540 (Page 62) remove the adjective "Protected" from each of the two initial sentences in the "Meanings" columns. Delete clause 9.6.21 | **Reject**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 397 | 9.4.2.325 | 44.26 | The field name 'Sensing Instance Number' may be misunderstood as indicating a number of sensing instances (instead of the index of a sensing instance in a specified burst) | Change 'Sensing Instance Number' to 'Sensing Instance Index' | **Revised**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 223 | 9.3.1.25.5 and 11.21.20.5.5a | 29.12 | The use of terminology is inconsistent. In Figure 9-110a, it says "Sensing Instance Number". In Subclause 11.21.20.5.5a, Line 9, when crossreferencing, it says "Sensing Instance ID subfield". | Change "Sensing Instance ID" on Page 88 to "Sensing Instance Number", or vice versa. | **Revised**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 339 | 9.4.2.1 | 31.48 | Table 9-128--Element IDs. Append 9.4.2.326 DMG Sensing Report element to the table. Reorder the table to:1. keep together the elements of the same frame.2. keep the order of the elements in the frame | Prepare submission to reorder the table | **Revised**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 329 | 9.3.3.9 | 30.34 | The same elements (Table 9-66--Probe Request frame body) shall be added to the Probe response frame, and Association request/response frames, and as optional to the DMG beacon | Append the elements to the format of the mentioned frames. | **Revised**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |
| 372 | 9.3.3 | 30.23 | We need to include Sensing capabilities in several MGMG frames (e.g., Beacon, Probe frames, Assoc. frames) which can identify that the STA is capable of some techniques in WLAN sensing | As in the comment. | **Revised**See in 11-22-0943-01-00bf CC40-comments DMG comments resolution part one |

**CID45**

"DMG Sensing Measurement Setup Element" should be "Sensing Measurement Setup Element". Sensing Measurement Setup Element is missing in draft 0.1.

**Proposed resolution -** Reject

**Discussion:**

The Sensing Measurement Parameters Element is present in the Sensing Measurement Setup Request and Response frames and contains the information used in the non-DMG measurement setup. The DMG Sensing Measurement Setup Element and the Sensing Measurement Parameters Element are different, and the first cannot become the second. Because the Sensing Measurement Parameters Element is used in the request and in the report frames, the name of the element is reasonable.

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**CID397, CID223**

* The field name 'Sensing Instance Number' may be misunderstood as indicating a number of sensing instances (instead of the index of a sensing instance in a specified burst)
* The use of terminology is inconsistent. In Figure 9-110a, it says "Sensing Instance Number". In Subclause 11.21.20.5.5a, Line 9, when crossreferencing, it says "Sensing Instance ID subfield".

**Discussion:**

The 'Sensing Instance Number' intends to keep the indication sequential as opposite to the ID used in other cases like MS ID. I am addressing the commenter's concern by changing the name to Sensing Instance SN (Sequence Number).

**TGbf Editor – Modify as indicated:**

**In all appearances of** ‘DMG sensing instance number’ **replace it with** 'Sensing Instance SN'

**In all appearances of** 'Sensing Instance Number' **replace it with** 'Sensing Instance SN'

**In 9.4.2.326 DMG Sensing Report element**

**Replace ‘**DMG Sensing Instance ID’ **with** ‘Sensing Instance SN’

In **11.21.20.5.5a Initiation**

**Replace ‘**Sensing Instance ID’ **with** ‘Sensing Instance SN’

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**CID107**

Why does an unprotected DMG Action frame have to be defined at all? It should be a DMG Action frame. There is no text in clause 11 to describe any unprotected DMG action frame behaviour.

**Proposed resolution -** Reject

**Discussion:**

The unprotected DMG Action frames belong to Class 1 frames, and in State 1 only Class 1 frames are allowed. See 11.3.2 (State transition diagram for nonmesh STAs) and 11.3.3 (Frame filtering based on STA) state. The reason for the separation is to transmit unencrypted frames out of the BSS and follow the protection agreement inside the BSS.

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**CID339**

Table 9-128--Element IDs. Append 9.4.2.326 DMG Sensing Report element to the table. Reorder the table to:
1. keep together the elements of the same frame.
2. keep the order of the elements in the frame

**Discussion:**

Presented "Table 9-128--Element IDs" contains two additional columns to illustrate the case. One column contains frame to which the element belongs, and the second relative position of the element in the frame. The rows in the table are in the order suggested by the comment.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Element**  | **Element ID** | **Element ID extension** | **Extensible**  | **Fragmentable** | **Belong to frame** | **Order of the element in the frame among new elements** |
| Sensing Measurement Parameters (see 9.4.2.317 (Sensing MeasurementParameters element)) | 255 | <ANA> | Yes | TBD | MS RQ/Response | 1 |
| Sensing Measurement Report (see 9.4.2.318 (Sensing Measurement Report element)) | 255 | <ANA> | Yes | Yes | Sensing report | 1 |
| DMG Sensing Short Capabilities (see 9.4.2.321 (DMG Sensing Short Capabilities element)) | 255 | <ANA> | Yes  | No | DMG Beacon/announce/probes | 1 |
| DMG Sensing Capabilities (see 9.4.2.319 (DMG Sensing Capabilities element)) | 255 | <ANA> | Yes  | Yes | DMG Beacon/announce/probes | 2 |
| DMG Sensing Beam Description (see 9.4.2.320 (DMG Sensing Beam Description element)) | 255 | <ANA> | Yes | Yes | DMG Beacon/announce/probes | 3 |
| DMG Beacon Sector Descriptors (see 9.4.2.329 (DMG Beacon SectorDescriptors element)) | 255 | <ANA> | Yes | Yes | Information Response frame  | 1 |
| DMG Passive Sensing Beacon Information (see 9.4.2.328 (DMG Passive Sensing Beacon Information element)) | 255 | <ANA> | Yes  | No |  Information Response frame | 2 |
| DMG Sensing Measurement Setup (see 9.4.2.322 (DMG Sensing Measurement Setup element)) | 255 | <ANA> | Yes  | Yes | DMG MS RQ/Response | 1 |
| DMG Sensing Image Range Axis LUT (see 9.4.2.323 (DMG Sensing Image Range Axis LUT element)) | 255 | <ANA> | Yes  | Yes | DMG MS Response | 2 |
| DMG Sensing Image Doppler Axis LUT (see 9.4.2.324 (DMG Sensing Image Doppler Axis LUT element)) | 255 | <ANA> | Yes  | Yes | DMG MS Response | 3 |
| DMG Sensing Report Control element (see 9.4.2.325 (DMG Sensing Report Control element)) | 255 | <ANA> | Yes  | No | DMG Sens Report | 1 |
| **DMG Sensing Report element (See (9.4.2.326 DMG Sensing Report element))** | 255 | <ANA> | **Yes** | **No** | **DMG Sens Report** | **2** |
| **BRP sensing element (See (9.4.2.327 BRP Sensing element))** | 255 | <ANA> | **Yes** | **Yes** | **BRP** | **1** |

**TGbf Editor – Modify Table 9-128--Element IDs as presented below:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element**  | **Element ID** | **Element ID extension** | **Extensible**  | **Fragmentable** |
| Sensing Measurement Parameters (see 9.4.2.317 (Sensing MeasurementParameters element)) | 255 | <ANA> | Yes | TBD |
| Sensing Measurement Report (see 9.4.2.318 (Sensing Measurement Report element)) | 255 | <ANA> | Yes | Yes |
| DMG Sensing Short Capabilities (see 9.4.2.321 (DMG Sensing Short Capabilities element)) | 255 | <ANA> | Yes  | No |
| DMG Sensing Capabilities (see 9.4.2.319 (DMG Sensing Capabilities element)) | 255 | <ANA> | Yes  | Yes |
| DMG Sensing Beam Description (see 9.4.2.320 (DMG Sensing Beam Description element)) | 255 | <ANA> | Yes | Yes |
| DMG Beacon Sector Descriptors (see 9.4.2.329 (DMG Beacon SectorDescriptors element)) | 255 | <ANA> | Yes | Yes |
| DMG Passive Sensing Beacon Information (see 9.4.2.328 (DMG Passive Sensing Beacon Information element)) | 255 | <ANA> | Yes  | No |
| DMG Sensing Measurement Setup (see 9.4.2.322 (DMG Sensing Measurement Setup element)) | 255 | <ANA> | Yes  | Yes |
| DMG Sensing Image Range Axis LUT (see 9.4.2.323 (DMG Sensing Image Range Axis LUT element)) | 255 | <ANA> | Yes  | Yes |
| DMG Sensing Image Doppler Axis LUT (see 9.4.2.324 (DMG Sensing Image Doppler Axis LUT element)) | 255 | <ANA> | Yes  | Yes |
| DMG Sensing Report Control element (see 9.4.2.325 (DMG Sensing Report Control element)) | 255 | <ANA> | Yes  | No |
| **DMG Sensing Report element (See (9.4.2.326 DMG Sensing Report element))** | 255 | <ANA> | **Yes** | **No** |
| **BRP sensing element (See (9.4.2.327 BRP Sensing element))** | 255 | <ANA> | **Yes** | **Yes** |

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**CID329 CID372**

We need to include Sensing capabilities in several MGMG frames (e.g., Beacon, Probe frames, Assoc. frames) which can identify that the STA is capable of some techniques in WLAN sensing

**Discussion:**

The already defined sensing capabilities shall be added to the following frames: DMG Beacon, Announce, Probe Request, Probe Response, Association Request, Association Response, Reassociation Request, and Reassociation Response.

**TGbf editor, modify Table 9-73—DMG Beacon frame body in D.01 as follows**

**Table 9-73—DMG Beacon frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

 **TGbf editor, modify Table 9-66—Probe Request frame body in D0.1 as follows**

**Table 9-66—Probe Request frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-67—Probe Response frame body the following**

**Table 9-67—Probe Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-62—Association Request frame body the following**

**Table 9-62—Association Request frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-63—Association Response frame body the following**

**Table 9-63—Association Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-64—Reassociation Request frame body the following**

**Table 9-64—Reassociation Request frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-65—Reassociation Response frame body the following**

**Table 9-65—Reassociation Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**TGbf editor, append to Table 9-570—Announce frame Action field format as follows**

**Table 9-570—Announce frame Action field format**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information**  | **Notes** |
| <ANA> | DMG Sensing Short Capabilities  | The element is defined in 9.4.2.321 (DMG Sensing Short Capabilities element) and is present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Capabilities  | The element is defined in 9.4.2.319 (DMG Sensing Capabilities element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |
| <ANA> | DMG Sensing Beam Description  | The element is defined in 9.4.2.320 (DMG Sensing Beam Description element) and is optionally present if dot11DMGSensingMsmtImplemented is true. Otherwise, the element is not present. |

**References:**