IEEE P802.11
Wireless LANs

|  |
| --- |
| Proposed resolution to BRP PHY-related CIDs III |
| Date: 2018-03-05 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Claudio da Silva | Intel |  |  | claudio.da.silva@intel.com |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes resolutions to BRP PHY-related CIDs. The text used as reference is D1.0.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2103 | 30.9.2.1 | 383.07 | Unclear how to set the PHY bits for BRP-RX, BRP-TX, BRP-RX/TX | Description is incomplete and should contain references to 10.38.7. The text should be something similar to: "A value of 0 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 0 or 1 in the EDMG Beam Tracking Request field, and a value of 0 in the RX TRN-Units per Each TX TRN-Unit field indicate an EDMG BRP-RX packet. A value of 1 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 1 in the EDMG Beam Tracking Request field, and a value of 0 in the RX TRN-Units per Each TX TRN-Unit field indicate an EDMG BRP-TX packet. A value of 1 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 1 in the EDMG Beam Tracking Request field, and a value greater than 0 in the RX TRN-Units per Each TX TRN-Unit field indicate an EDMG BRP-RX/TX packet." |

**Proposed resolution**: Revised

**Discussion:** The EDMG Beam Tracking Request field is only set to 1 when the BRP frame is used for beam tracking (as opposed to for all BRP procedures).

**Modifications:** In page 383, delete the second paragraph of 30.9.2.1 (General)

*~~An EDMG PPDU with the Beam Tracking Request field in the L-Header equal to 0, the Packet Type field in the L-Header equal to 0, the EDMG Beam Tracking Request field in the EDMG-Header-A equal to 1, and the EDMG TRN Length field in the EDMG-Header-A greater than 0 shall not include a TRN field.~~*

Replace lines 19-23 of page 384,

*~~A value of 0 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 0 in the EDMG Beam Tracking Request field, and a value of 0 in the RX TRN-Units per Each TX TRN-Unit field indicate an EDMG BRP-RX packet. A value of 1 in the Packet Type field and a value of 0 in the RX TRN-Units per Each TX TRN-Unit field indicate an EDMG BRP-TX packet. A value greater than 0 in the RX TRN-Units per Each TX TRN-Unit field indicates an EDMG BRP-RX/TX packet~~.*

with the following

*A value of 0 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 0 in the EDMG Beam Tracking Request field, a value of 0 in the RX TRN-Units per Each TX TRN-Unit field, and a value greater than 0 in the EDMG TRN Length field indicate an EDMG BRP-RX packet.*

*A value of 1 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value of 0 in the RX TRN-Units per Each TX TRN-Unit field, and a value greater than 0 in the EDMG TRN Length field indicate an EDMG BRP-TX packet.*

*A value of 1 in the Packet Type field, a value of 0 in the Beam Tracking Request field, a value greater than 0 in the RX TRN-Units per Each TX TRN-Unit field, and a value greater than 0 in the EDMG TRN Length field indicate an EDMG BRP-RX/TX packet.*

Add the following text at the end of 30.9.2.2.1 (General) in page 383:

*An EDMG PPDU shall not include a TRN field:*

* *If the EDMG TRN Length field is equal to 0; or*
* *If the EDMG TRN Length field is greater than 0, the Beam Tracking Request field is equal to 0, the EDMG Beam Tracking Request field is equal to 1, the Packet Type field is equal to 0, and the RX TRN-Units per Each TX TRN-Unit field is equal to 0. As defined in 10.38.7, this configuration corresponds to a request for receive beam tracking.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1878 | 30.9.2.2.5 | 385.35 | Values of \_P and \_M for EDMG BRP-RX packet | The text defines that in EDMG BRP-RX packet each TRN-Unit shall have 10 TRN subfields, however it doesn't specifies the value of M, P and N. Since this is a EDMG BRP-RX packet, the receiver may use the TRN fields and subfields at his own algorithm. It would be better if the P values should be defined as 0 and the M value as 9 (equal to 10 subfields).Will provide a detailed submission about the solution. |
| 1985 | 30.9.2.2.5 | 385.35 | Values of \_P and \_M for EDMG BRP-RX packet | The text defines that in EDMG BRP-RX packet each TRN-Unit shall have 10 TRN subfields, however it doesn't specifies the value of M, P and N. Since this is a EDMG BRP-RX packet, the receiver may use the TRN fields and subfields at his own algorithm. It would be better if the P values should be defined as 0 and the M value as 9 (equal to 10 subfields).Will provide a detailed submission about the solution. |

**Proposed resolution**: Revised

**Discussion:**  This point was clarified in the resolution of CIDs 1578 and 2104 in 18/0146r0 with the inclusion of a figure of the TRN field of EDMG BRP-RX packets. Also, as seen in Tables 36 (EDMG-Header-A field structure and definition for a SU PPDU), 38 (EDMG-Header-A field structure and definition for a MU PPDU), and 34 (EDMG-Header-A1 subfield definition), the draft spec defines that P, M and N are reserved for EDMG BRP-RX packets.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1837 | 30.9.2.2.5 | 385.43 | The text calls out how the AWV is used in the transmission of the P repetitions of the TRN subfield shall be selected in an implementation dependent manner. This is a mandatory requirement. Need to clarify "implementation dependent manner" | Clarify as commented. |

**Proposed resolution**: Revised

**Modifications:** Modify lines 18-19 of page 187 as follows:

*TRN-Unit ~~shall be~~ is selected in an implementation dependent manner and should be the same for all TRN-Units.*

Modify lines 13-14 of page 385 as follows:

*TRN-Unit ~~shall be~~ is selected in an implementation dependent manner and should be the same for all TRN-Units.*

Modify lines 42-43 of page 385 as follows:

*used in the transmission of the P repetitions of the TRN subfield ~~shall be~~ is selected in an implementation dependent manner.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1359 | 10.38.9.4 | 182.81 | "A DMG STA supports antenna pattern reciprocity if the value of the DMG Antenna Reciprocity field in the STA's DMG Capabilities element is one" - This is incorrect - the relevant field is "antenna pattern reciprocity" | Replace "DMG Antenna Reciprocity" with "Antenna Pattern Reciprocity" |

**Proposed resolution**: Revised

**Discussion:** Correct line number is 181.19.

**Modifications:** Modify lines 19-20 of page 181 as follows:

*A DMG STA supports antenna pattern reciprocity if the value of the ~~DMG Antenna Reciprocity~~ Antenna Pattern Reciprocity field in the STA’s DMG Capabilities element is one.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1397 | 30.4.1 | 269.01 | Fact that all the fields of an EDMG control mode PPDU except for the TRN field shall be transmitted using the non-EDMG duplicate format must be extended to include the 2.16 + 2.16 and 4.32 + 4.32 cases. | Add 2.16 + 2.16 GHz and 4.32 + 4.32 GHz to the first sentence of the paragraph in lines 1-5 of page 269. |

**Proposed resolution**: Revised

**Discussion:** This point was clarified in 18/0307r3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2330 | 30.3.3.3.2.3 | 248.01 | RX TRN-Units per Each TX TRN-Unit: 'Otherwise the value of this field plus one indicates the number of consecutive TRN-Units'. Not sure plus one is needed | remove plus one |

**Proposed resolution**: Revised

**Modifications:** Modify the description of the field “RX TRN-Units per Each TX TRN-Unit” in Table 36 as follows:

*Corresponds to TXVECTOR parameter RX\_TRN\_PER\_TX\_TRN. This field is reserved if the value of the EDMG TRN Length field is 0. Otherwise, the value of this field ~~plus one~~ indicates the number of consecutive TRN-Units in the TRN field for which the transmitter remains with the same transmit AWV (see 30.9.2.2.5).*

Modify line 3 of page 387 as follows:

*C is the value of the RX TRN-Units per Each TX TRN-Unit field in the EDMG-Header-A ~~plus one~~*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1328 | 383.33 | 30.9.2.2.2 | "If beam refinement is performed on a 4.32 GHz, 6.48 GHz, 8.64 GHz, 2.16 + 2.16 GHz or 4.32 + 4.32 GHz channel, the TRN field in EDMG BRP packets sent as part of the beam refinement shall be transmitted over the entire signal bandwidth of the channel". This text is a bit foggy. Needs to be defined what does it mean using the entire bandwidth. | as in comment |

**Proposed resolution:** Revised

**Discussion:** The TRN field bandwidth for bonded and aggregated channels is defined in 30.9.2.2.6 (TRN subfield definition for EDMG SC PPDUs and EDMG control mode PPDUs) as

*Ncb represents the integer number of contiguous 2.16 GHz channels over which the TRN subfield is transmitted. For a 2.16 GHz, 4.32 GHz, 6.48 GHz, or 8.64 GHz PPDU transmission, 1 ≤ NCB ≤ 4. For a 2.16+2.16 GHz PPDU transmission, Ncb = 1 for each channel. For a 4.32+4.32 GHz PPDU transmission, Ncb = 2 for each channel.*

The modification proposed below follows the same approach used in the definition above.

**Modifications:** Replace lines 33-35 of page 383,

*If beam refinement is performed on a 4.32 GHz, 6.48 GHz, 8.64 GHz, 2.16 + 2.16 GHz or 4.32 + 4.32 GHz channel, the TRN field in EDMG BRP packets sent as part of the beam refinement shall be transmitted over the entire signal bandwidth of the channel.*

with the following

*If beam refinement is performed on a 4.32 GHz, 6.48 GHz, or 8.64 GHz channel, the TRN field in EDMG BRP packets sent as part of beam refinement shall occupy 2, 3, or 4 contiguous 2.16 GHz channels, respectively. If beam refinement is performed on a 2.16 + 2.16 GHz or 4.32 + 4.32 GHz channel, the TRN field in EDMG BRP packets sent as part of beam refinement shall occupy one or two contiguous 2.16 GHz channels, respectively, for each of the two aggregated channels.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1574 | 30.3.3.3.2.3 | 250.00 | DMG TRN field is used for single antenna and single channel case as DMG. | Adding some description about DMG TRN field to forbid multiple transmit antenna case and mulitple channel case |
| 1575 | 30.3.3.3.2.2 | 206.00 | DMG TRN field is used for single antenna and single channel case as DMG. | Adding some description about DMG TRN field to forbid multiple transmit antenna and mulitple channel case |

**Proposed resolution**: Accepted

**Discussion**: The use of the DMG TRN field for multiple channel transmissions is restricted in lines 41-45 of page 159.

**Modifications:** Add the following sentence to the value of the DMG\_TRN parameter in Table 27:

*The parameter is valid only when NUM\_TX\_CHAINS is equal to 1.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2052 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_LEN, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET, TRN-R-PACKET or TRN-R/T-PACKET" |

**Proposed resolution**: Revised

**Modifications:** Modify Condition of the parameter EDMG\_PACKET\_TYPE in Table 27 as follows:

*FORMAT is EDMG, EDMG\_TRN\_LEN > 0*

Modify Condition of the parameter EDMG\_PACKET\_TYPE in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET, TRN-R-PACKET or TRN-R/T-PACKET*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2053 | 30.2.2 | 223.01 | For Parameter = RX\_TRN\_PER\_TX\_TRN, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-R/T-PACKET, EDMG\_TRN\_LEN > 0" |

**Proposed resolution**: Revised

**Modifications:** Modify Condition of the parameter RX\_TRN\_PER\_TX\_TRN in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-R/T-PACKET*

Delete last paragraph in the Value of the parameter RX\_TRN\_PER\_TX\_TRN in Table 27:

*~~The parameter is valid only when the EDMG\_PACKET\_TYPE is TRN-R/T-PACKET and EDMG\_TRN\_LEN is greater than 0.~~*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2054 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_P, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET or TRN-R/T-PACKET" |
| 2055 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_P, the parameter is reserved if EDMG\_TRN\_LEN is 0, not TRN\_LEN | Replace "The parameter is reserved if TRN\_LEN is 0" with "The parameter is reserved if EDMG\_TRN\_LEN is 0" |

**Proposed resolution**: Revised

**Modifications:** Modify Condition of the parameter EDMG\_TRN\_P in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET or TRN-R/T-PACKET*

Delete last paragraph in the Value of the parameter EDMG\_TRN\_P in Table 27:

*~~The parameter is reserved if TRN-LEN is 0. The parameter is reserved if EDMG\_PACKET\_TYPE is TRN-R-PACKET.~~*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2056 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_M, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET or TRN-R/T-PACKET" |
| 2057 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_M, the parameter is reserved if EDMG\_TRN\_LEN is 0, not TRN\_LEN | Replace "The parameter is reserved if TRN\_LEN is 0" with "The parameter is reserved if EDMG\_TRN\_LEN is 0" |

**Proposed resolution**: Revised

**Modifications:** Modify Condition of the parameter EDMG\_TRN\_M in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET or TRN-R/T-PACKET*

Delete last paragraph in the Value of the parameter EDMG\_TRN\_M in Table 27:

*~~The parameter is reserved if TRN-LEN is 0. The parameter is reserved if EDMG\_PACKET\_TYPE is TRN-R-PACKET.~~*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2058 | 30.2.2 | 223.01 | For Parameter = EDMG\_TRN\_N, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET, EDMG\_TRN\_LEN > 0" |

**Proposed resolution**: Revised

**Modifications:** Modify Condition of the parameter EDMG\_TRN\_N in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET*

Delete last paragraph in the Value of the parameter EDMG\_TRN\_N in Table 27:

*~~The parameter is valid only when the EDMG\_PACKET\_TYPE is TRN-T-PACKET and EDMG\_TRN\_LEN is greater than 0.~~*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2059 | 30.2.2 | 223.01 | For Parameter = TRN\_RX\_PATTERN, condition is incomplete | Replace Condition with "FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET, EDMG\_TRN\_LEN > 0" |

**Proposed resolution**: Accepted

**Modifications:** Modify Condition of the parameter TRN\_RX\_PATTERN in Table 27 as follows:

*FORMAT is EDMG, EDMG\_PACKET\_TYPE is TRN-T-PACKET or TRN-R/T-PACKET*

Delete last paragraph in the Value of the parameter TRN\_RX\_PATTERN in Table 27:

*~~The parameter is valid only when the PACKET-TYPE is TRN-T-PACKET and EDMG\_TRN\_LEN is greater than 0.~~*

**SP/M:** Do you accept the resolutions given in 18/0395r0 to the following CIDs: 2103, 1878, 1985, 1837, 1359, 1397, 2330, 1328, 1574, 1575, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059?