IEEE P802.11
Wireless LANs

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| TGbd D2.0 Comment Resolution for clause 9 and 31 related to DMG MAC |
| Date: 2021-9-10 |
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Abstract

This submission proposes resolution of comments for clause 9 and 31 related to DMG MAC on TGbd Draft 2.0

4 CIDs 2000, 2148, 2150, 2151

Revision history:

r0 initial

r1 Fixed typo in the proposed text for 31.3. Capitalized “T” in Figure 9-848.

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 2000 | 31.3.1 | 59.23 | "When a DMG STA for which dot11OCBActivated is true receives a DMG Beacon frame with a DMG OCBelement, the STA may perform beamforming training as described in 10.42.5 (Beamforming in A-BFT)."The use of the IE as the indication for immediate response is problematic. In general, the IE's are processed by SW or FW that may introduce substantial delay. The indication should be provided in one of the mandatory fields of the DMG beacon to be applicable for the lower MAC. Propose to define the OCB indication in one of the mandatory fields of the DMG discovery beacon. | Use reserved bit or unused combination of bits to indicate OCB | **Revised**TGbd Editor: Incorporate the change in <https://mentor.ieee.org/802.11/dcn/21/11-21-1480-01-00bd-d2-0-cr-clause-9-and-31-related-to-dmg-mac.docx> for CID 2000. |

**Discussion**

**A DMG Beacon frame with the Discovery Mode field set to 1, which is supposed to be used during DMG Discovery OCB, has:**

 **1 reserved bit in the DMG Parameters field that is mandatory field, and**

 **16 reserved bit in the Clustering Control field that optionally exists.**

**We propose to keep the last bit in the mandatory field for future major extention of 60 GHz standard, and use the one reserved bit in the Clustering Control field instad. The field is optional, but there’s no concern on the decoding delay, defferent from use of optional ELEMENT.**

**Proposed changes to D2.0**

9.3.4.2 DMG Beacon

*TGbd Editor: Please add the following figure and text with instruction after Table 9-45 in 11bd Draft:*

*Change Figure 9-79 (Clustering Control field format if the Discovey Mode field is 1) as follows(#2000):*

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B47 | B48 | ~~B48~~B49 B63 |
|  | A-BFT Responder Address | OCB | Reserved |
| Bits: | 48 | 1 | ~~16~~15 |

**Figure 9-79 – Clustering Control field format if the Discovery Mode is 1**

*Change the last paragraph of subclause 9.3.4.2 as follows:*

**The A-BFT Responder Address subfield contains the MAC address of the STA that is allowed to transmit during the A-BFT, if present, that follows the BTI. If all bits of the A-BFT Responder Address subfield is set to 1 and the OCB subfield is set to 1, any STA is allowed to transmit during the A-BFT, if present(#2000).**

*Add the following paragraph after the last paragraph of subclause 9.3.4.2(#2000):*

**The OCB subfield is set to 1 to indicate the support of communication outside the context of a BSS by the STA transmitting the DMG Beacon frame.**

11.1.4.8 DMG Discovery outside the context of a BSS

*TGbd Editor: Please change the 2nd paragraph in subclause 11.1.4.8 as follows:*

**Upon receipt of the MLME-DMG-OCB-START.request primitive, a DMG STA will continuously discover new peer STAs. If the Discovery Beacon parameter is set to true, the STA shall start transmitting DMG Beacon frames with the Discovery Mode field set to 1, the OCB subfield in the Clustering Control field set to 1, and(#2000) the Beacon Interval field set to a random value as described in 11.1.3.4 (DMG beacon generation before establishment of a BSS) ~~and with the DMG OCB element included~~. If the Discovery Beacon parameter is set to false, the DMG STA shall not transmit DMG Beacon frames.**

*TGbd Editor: Please change the 4th and 5th paragraphs in subclause 11.1.4.8 as follows:*

**When the STA receives one or more DMG Beacon frames ~~including a DMG OCB element~~with the OCB subfield set to 1(#2000) from a peer STA, and the address of the peer STA is an address that is newly discovered, the STA shall perform an SLS with the OCB subfield set to 1 in transmitted SSW frames during the A-BFT following the DMG Beacon frames if present, or during the DTI. If the SLS is completed, the STA shall issue an MLME-OCB-DMGDISCOVERY.indication with the PeerInfoSet parameter including the PeerInfo for the peer STA transmitted the DMG Beacon frame.**

**When the STA completes SLS with a peer STA which transmitted an SSW frame with the OCB subfield set to 1 or a DMG Beacon frame ~~including a DMG OCB element~~with the OCB subfield set to 1(#2000), and the address of the peer STA is not an address that is newly detected, the STA may issue an MLME-OCB-DMGDISCOVEREY.indication with the PeerInfoSet parameter including the PeerInfo regarding the peer STA.**

31.3 Operation in the 60 GHz band

31.3 DMG Beamforming outside the context of a BSS

*TGbd Editor: Please change the 1st to 3rd paragraphs in subclause 31.3 as follows:*

**A DMG STA for which dot11OCBActivated is true may transmit DMG Beacon frames as described in 10.42.4 (Beamforming in BTI) outside the context of a BSS. The DMG STA shall set the Discovery Mode field to 1 and ~~include a DMG OCB element~~the OCB subfield in the Clustering Control field set to 1(#2000) in each of the DMG Beacon frames when the STA performs beamforming training with the DMG Beacon frame outside of the context of a BSS. The STA may set all the bits in the A-BFT Responder Address subfield to 1 in a DMG Beacon frame to allow any STAs to transmit SSW or Short SSW frames during A-BFT that follows the BTI in which the DMG Beacon frame is transmitted, or set the A-BFT Responder Address subfield to an individual address to indicate the STA that is allowed to transmit durnig the A-BFT. An OCB element is optionally present in a DMG Beacon frame to indicate the STA transmitting the DMG Beacon frame supports optional features used during communication outside the context of a BSS(#2000).**

**When a DMG STA for which dot11OCBActivated is true receives a DMG Beacon frame with ~~a DMG OCB element~~the OCB subfield set to 1(#2000), the STA may perform beamforming training as described in 10.42.5 (Beamforming in A-BFT). When the DMG STA transmits SSW frames during the A-BFT after a BTI in which the STA received a DMG Beacon frame with ~~a DMG OCB element~~the OCB subfield set to 1(#2000), the STA shall set the OCB subfield to 1 in the SSW frames transmitted during the A-BFT.**

**If a responder DMG STA that receives a DMG Beacon frame with ~~a DMG OCB element~~the OCB subfield set to 1(#2000) has successfully completed an SLS or a BRP with the initiator STA that transmitted the DMG Beacon frame recently, the responder STA should not transmit SSW frames during the A-BFT following the BTI to avoid collisions during the A-BFT.**

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 2148 | 9.3.4.2 | 35.49 | Table 9-45 specifies a value "65" for "DMG OCB". According to 11ay D7.0 page 103, the last value is "63" for "Time Advertisement". Hence, replace "65" with "64" | as in comment | **Accepted** |

**Discussion**

**None.**

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 2150 | 9.5.3 | 37.43 | Since 11ay D7.0 changes Figure 9-848, 11bd D2.0 should change the modified figure. Hence, insert the "OCB" 1 bit field after the "Unsolicited RSS enabled" 1 bit field and remove the Reserved field. | as in comment | **Revised**TGbd Editor: Incorporate the change in <https://mentor.ieee.org/802.11/dcn/21/11-21-1480-01-00bd-d2-0-cr-clause-9-and-31-related-to-dmg-mac.docx> for CID 2150. |

**Discussion**

**The commenter is right, 11ay has added Unsolicited RSS Enabled field at B22 that was reserved in 11ad to Figure 9-848. We prefer to keep OCB subfield at B17 as in 11bd D2.0, rather than inserting after the Unsolicited RSS Enabled subfield, to use the same bit (B17) as the format when not transmitted as part of an ISS.**

**Proposed changes to D2.0**

*TGbd Editor: Please modify Figure 9-848 as follows:*

9.5.3 Sector Sweep Feedback field

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B8 | B9 B10 | B11 B15 | B16 | B17 | B~~17~~18 B21 | B22 | B23 |
|  | Total Sectors in ISS | Number of RX DMG Antennas | Reserved | Poll Required | OCB  | Reserved | Unsolicited RSS Enabled(#2150) | Reserved |
| Bits: | 9 | 2 | 5 | 1 | 1 | ~~5~~4 | 1 | 1 |

**Figure 9-848 – SSW Feedback field format when transmitted as part of an ISS**

|  |  |  |  |  |  |
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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 2151 | 9.5.3 | 37.51 | 11ay D7.0 introduced "Figure 9-849--SSW Feedback field format when not transmitted as part of an ISS and the EDMG Extension Flag subfield is 1", which has the same title as "Figure 9-848a" in 11bd D2.0. Hence, the editorial note and the Figure caption of "Figure 9-848a" in 11bd D2.0 should be changed to "Figure 9-949a". | as in comment | **Revised**TGbd Editor: Incorporate the change in <https://mentor.ieee.org/802.11/dcn/21/11-21-1480-01-00bd-d2-0-cr-clause-9-and-31-related-to-dmg-mac.docx> for CID 2151. |

**Discussion**

The figure concering in 11bd D2.0 is, actually, not a new figure, but existing in 11ay as Figure 9-849a.

**Proposed changes to D2.0**

*TGbd Editor: In 11bd draft, please change “Figure 9-848a” to “Figure 9-849a”in the instruction and Figure caption. Also, please remove underline in the caption of Figure 9-849a (was 9-848a) as folows:*

*Change Figure 9-849a (SSW Feedback field format when not transmitted as part of an ISS and the*

*EDMG Extension Flag subfield is 0)(11ay) as follows:*

**Figure 9-849a—SSW Feedback field format when not transmitted as part of an ISS and the**

**EDMG Extension Flag subfield is 0**

**References**

[1] Draft P802.11bd D2.0

[2] IEEE802.11-2020

[3] IEEE802.11ay-2021