IEEE P802.11
Wireless LANs

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| TGbd D4.0 Comment Resolution related to DMG STA communicating OCB |
| Date: 2022-5-13 |
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Abstract

This submission proposes resolution to the following CIDs related to DMG STA communicating OCB in Draft P802.11bd D4.0. The comments were received during Initial SA Ballot.

5 CIDs 5086 5087 5098 5099 5100

Revision history:

r0 Initial version (TBD for CID5098)

r1 Added proposed resolution for CID5098

r2 Modified the proposed resolution for CID5087 based on discussion in TGbd session

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 5086 | 50.46 | "In addition, " is not needed (and begs the question "in addition to what?") | Delete extraneous text. | **Revised****Discussion:**The intent of “In addition,” was to clarify all the subtypes a DMG STA shall not send. Clearer expression is proposed below:**Proposed change:**TGbd Editor: Please remove “In addition,” as suggested by the commenter. Then Insert “in addition to not sending Control frames of subtype PS-Poll and CF-End,” after “If the STA… is true,”. |

11.18 STAs communicating Data frames outside the context of a BSS

TGbd Editor: Please change item b) in subclause 11.18 of 11bd D4.0 as follows:

Change item b) in the first paragraph as follows:

1. **The STA may send Control frames, except those of subtype PS-Poll and CF-End. If the STA is a DMG STA for which dot11DMGOCBActivated is true, in addition to not sending Control frames of subtype PS-Poll and CF-End, the STA shall not send Control frames of subtype Poll, SPR, Grant, Grant Ack, Sector Ack, Block Ack Schedule, and TDD Beamforming.**

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 5087 | 48.0247.64 | Regarding: "When the STA receives one or more DMG Beacon frames with the OCB subfield equal to 1 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. " it is not clear how the "or" applies. The comma list implies "and" (and implied is not always good) so is the frame "during the DTI" applied if ANY of the and conditions fail or does it mean that "during the DTI" applies if DMG beacon frames are not present (which makes more sense to me). It would be clearer if broken up into two or more sentences. | Clarify the requirement so that a common implementation is more likely. | **Revised****Discussion:**The intent of the description is that the STA shall perform an SLS during the A-BFT or DTI. Since the STA is allowed to perform an SLS during the DTI even if A-BFT is present, “if present” should be removed.Additionally, there’s a typo in the 5th paragraph of the same subclause (DMGDISCOVER”E”Y) **Proposed change:**TGbd Editor: Please change “during the A-BFT following the DMG Beacon frames, if present, or during the DTI”to“during the A-BFT following the DMG Beacon frames or the DTI”in the 4th paragraph of 11.1.4.7,and replace “DMGDISCOVEREY” with “DMGDISCOVERY”in the 5th paragraph. |

11.1.4.7 DMG discovery outside the context of a BSS

TGbd Editor: Please change the 4th and 5th paragraph in subclause 11.1.4.7 as follows:

**When the STA receives one or more DMG Beacon frames with the OCB subfield equal to 1 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 or 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 that transmitted the DMG Beacon frame.**

**When the STA completes SLS with a peer STA that transmitted an SSW frame with the OCB subfield equal to 1 or a DMG Beacon frame with the OCB subfield equal to 1, and the address of the peer STA is not an address that is newly detected, the STA may issue an MLME-OCB-DMGDISCOVERY.indication with the PeerInfoSet parameter including the PeerInfo regarding the peer STA.**

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 5098 | 52.30 | Condition for issuing MLME-OCB-LINKSTATUS.indication primitive with BeamLinkStatus parameter set to EXPIRED is specified, but not specified for status ESTABLISHED or NOT\_ESTABLISHED that are defined in 6.3.130.6.2. | Add description to 11.27.1.1 and/or 6.3.130.6.2. The primitive with ESTABLISHED is issued when a beamformed link is established, as described in 11.27.1.1 of the baseline. NOT\_ESTABLISHED indicates other (likely, unexpected) case. | **Revised****Discussion:**A STA should issue the primitive with status ESTABLISHED to inform the higher layer of availability of the link with a peer STA. This should be specified in 11.27.1.1.(Editorial) In the title of subclause 11.27.1.1, “(11ay)” is in REVme but not in baseline. It should be removed.**Proposed change:**Add description to 11.27.1.1 that specifies the condition where a STA is required to generate an MLME-OCB-LINKSTATUS.indication primitive with status ESTABLISHED.TGbd Editor: Please incorporate the proposed change in <https://mentor.ieee.org/802.11/dcn/22/11-22-0764-03-00bd-tgbd-d4-0-cr-related-to-dmg-sta-communicating-ocb.docx> under CID5098. |
| 5099 | 25.17 | In description for BeamLinkStatus, "Indicates the status of beamformed link and the beam link maintenance timer as described in 11.27.1.1 (General(11ay))." - "status change of beam link maintenance timer" is unclear. "beamformed link" is sufficient. (CID4004 is related) | Remove "and the beam link maintenance timer" from the description. | **Revised****Discussion**The intent of this primitive is to notify of the status of the beamformed link. Thus agree with the proposed change. Additionally, propose to change the status enumerate of “EXPIRED” to “TIMER\_EXPIRED” since what to be expired is “timer,” not “beamformed link”.*Note: Right location in D4.0 for this comment should be P35L17 rather than 25.17.***Proposed change:**TGbd Editor: Please change “EXPIRED” to “TIMER\_EXPIRED” in Valid Range for BeamLinkStatus, and remove "and the beam link maintenance timer" from the description.*Note: CID4004 pointed out the same problem but was rejected in [3] due to procedural reason.* |
| 5100 | 34.64 | "This primitive indicates the status change of beamformed link and beam link maintenance timer with a peer STA" - status change of beam link maintenance timer is unclear. (CID4003 is related) | Change to "This primitive indicates the status change of beamformed link with a peer STA" (i.e. remove "and beam link maintenance timer ") | **Accepted****Discussion:**Agree that “status of beam link maintenance timer” is unclear. “beamformed link” is the term used in 11.27.1.1, and the modified statement “This primitive indicates the status change of beamformed link and beam link maintenance timer with a peer STA.” should be clear.*Note: CID4003 pointed out the same problem but was rejected in [3] due to procedural reason.* |

6.3.130.6 MLME-OCB-LINKSTATUS.indication

6.3.130.6.1 Function

TGbd Editor: Please change the 1st paragraph in subclause 6.3.130.6.1 as follows(CID #5100):

This primitive indicates the status change of beamformed link with a peer STA.

6.3.130.6.2 Semantics of the service primitive

TGbd Editor: Please change the table in subclause 6.3.130.6.2 as follows(CID #5099):

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| **Name** | **Type** | **Valid Range** | **Description** |
| PeerSTAAddress | MAC Address | Any valid individual MAC address | Specifies the MAC address of the peer STA for which the status of beamformed link is reported.  |
| BeamLinkStatus | Enumeration | ESTABLISHED, TIMER\_EXPIRED, NOT\_ESTABLISHED | Indicates the status of beamformed link as described in 11.27.1.1(General). |
| VendorSpecificInfo | A set of elements | As defined in 9.4.2.25 (Vendor Specific element) | Zero or more elements |

11.27.1 Beamformed link maintenance

11.27.1.1 General

TGbd Editor: Please insert the following paragraph with instruction at the beginning of subclause 11.27.1.1 of TGbd Draft (CID #5098):

***Insert the following paragraph with NOTE after 9th paragraph (The recipient DMG STA shall…):***

**When a DMG STA with dot11DMGOCBActivated equal to true establishes a beamformed link with a peer STA, the STA shall generate an MLME-OCB-LINKSTATUS.indication with BeamLinkStatus parameter set to ESTABLISHED or an MLME-OCB-DMGDISCOVERY.indication to inform the SME of the establishment of the beamformed link with the peer STA.**

**NOTE – When the beamformed link was established as a result of the discovery and the STA generated an MLME-OCB-DMGDISCOVERY.indication primitive as specified in 11.1.4.7, the STA might omit generation of an MLME-OCB-LINKSTATUS.indication.**

**References**

[1] Draft P802.11bd D4.0

[2] 11-22/0730r2 P802.11bd\_Initial\_SA\_Ballot\_comments

[3] 11-22/0561r2 TGbd LB261 comments