IEEE P802.11
Wireless LANs

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| TGbd D3.0 Comment Resolution related to DMG STA communicating OCB |
| Date: 2022-1-17 |
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Abstract

This submission proposes resolution to the following CIDs related to DMG STA communicating OCB in Draft P802.11bd D3.0. The comments were received during LB259.

11 CIDs 3014 3044 3048 3062 3071 3076 3080 3081 3082 3083 3084

Revision history:

r0 Initial version

r1 Added proposed resolution for CID 3062.
Changed the proposed resolution for CID 3082.
Replaced “in which” with “for which” in the proposed change for 3044, 3071.

r2 Updated proposed text change in CID 3083 based on feedback received during TGbd session.

r3 Updated the hyperlink to this document.

Subclause 4.3.17 (2 CIDs)

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 3044 | 19.12 | Although it is doubtful that such implementation exists, it is not ruled out in 802.11-2020 to implement a DMG STA with dot11OCBActivated set to true. Defining new restrictions to such STAs might be regarded as backward compatibility issue on standardization. | - Define a new MIB attribute "dot11DMGOCBActivated" and add to Dot11DMGSTAConfigEntry.- Replace dot11OCBActivated with dot11DMGOCBActivated, at P20L60, P38L47(in Table 9-45), P41L42, P47L14, P47L21, P47L35, P47L46, P61L15, P65L25, P65L38, P65L52, P65L57.- In subclause 4.3.17 P19L11, replace "A STA with dot11OCBActivated equal to true may operate as a DMG STA with MAC and MLME functions ..." with "A STA with dot11OCBActivated equal to true may operate as a DMG STA. A DMG STA with dot11DMGOCBActivated equal to true provides MAC and MLME functions..." | **Revised**Agreed in principle. **Proposed change:*** Replace dot11OCBActivated with dot11DMGOCBActivated at P20L60, P38L47(in Table 9-45), P41L42, P47L14, P47L21, P47L35, P47L46, P61L15, P65L25, P65L38, P65L52, P65L57.
* Replace “if(If) the STA is a DMG STA,” with “if(If) the STA is a DMG STA for which dot11DMGOCBActivated is true,” P50L46, P50L53.
* In addition to above, incorporate the change for subclauses 4.3.17 and C.3 in <https://mentor.ieee.org/802.11/dcn/22/11-22-0091-03-00bd-d3-0-comment-resolution-related-to-dmg-sta-communicating-ocb.docx> under CID3044.
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| 3071 | 19.15 | A DMG STA operating OCB is not restricted to the case where it operates with the MAC and MLME functions defined in 31.3. Therefore, this type of STA (one that does operate with the MAC and MLME functions 31.3) be in referred to as a DMG STA communicating OCB is confusing because there are other DMG STA that don not operate with the MAC and MLME functions of 31.3 that could be considered a DMG STA communicating OCB. | Replace: "This kind of STA is referred to as a DMG STA communication outside the context of a BSS (OCB).With: "A DMG STA communicating OCB may be this kind of STA." | **Revised**Agreed in principle. The term “A DMG STA communicating OCB” should not be used for representing a DMG STA with 11bd features.**Proposed change:*** Remove "This kind of STA is referred to as a DMG STA communication outside the context of a BSS (OCB).” at P19L15 of D3.0.
* Replace “DMG STA communicating OCB” with “DMG STA for which dot11DMGOCBActivated is true” at P19L38 (4.3.17a), P43L41(10.3.6) and P51L62(11.27.1.1).
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TGbd Editor: Change subclause 4.3.17 as follows:

* STA transmission of Data frames outside the context of a BSS(#2062, #2065, #3044, #3071)

Insert the following paragraph after the fourth paragraph (“Communication of Data frames ...”):

A STA with dot11OCBActivated equal to true may operate as a DMG STA. A DMG STA with dot11DMGOCBActivated equal to true supports the MAC and MLME functions defined in 31.3 (Operation in the 60 GHz band) in addition to the MAC functions defined in Clause 10 (MAC sublayer functional description) and the MLME functions defined in Clause 11 (MLME) for DMG or EDMG STAs.

A STA whose MIB does not include the dot11DMGOCBActivated attribute operates as if the attribute is false.

C.3 MIB Detail

TGbd Editor: Insert the following after “dot11 Phy NGV TABLE” section in 11bd Draft (i.e. after the definition of dot11NGVDYN20MAllowed in Draft D3.0):

Change the Dot11DMGSTAConfigEntry SEQUENCE list in the “dot11DMGSTAConfigEntry TABLE” in C.3 as follows:

Dot11DMGSTAConfigEntry ::=

 SEQUENCE {

 ...,

 dot11DMGOCBActivated TruthValue

 }

Insert the following MIB variable definition after the definition of dot11DMGSTATxActivityReportActivated:

dot11DMGOCBActivated OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This is a control variable.

 It is written by the SME or an external management entity.

 Changes take effect at the next occurrence of an MLME-START.request or MLME-DMG-OCB-START.request primitive.

 This attribute, when true, indicates that the STA supports communication outside the context of a BSS. This STA also has dot11OCBActivated equal to true."

 DEFVAL { false }

 ::= { dot11DMGSTAConfigEntry 17 }

Change the following object definition in the “dot11Groups – units of compliance” section in C.3:

dot11DMGComplianceGroup OBJECT-GROUP

 OBJECTS {

 ...,

 dot11DMGOCBActivated

 }

 STATUS current

 DESCRIPTION

 "Attributes that configure the DMG Group for IEEE Std 802.11."

 ::= { dot11Groups 64 }

Subclause 4.3.17a (3 CIDs)

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 3048 | 19.39 | "clause E.1" should be "subclause E.1" or "E.1". | Please correct as in the comment. | **Revised****Discussion:**“E.1” looks popular in REVme.**Proposed change:**Delete “clause” from “clause E.1” at P19.39 in Draft D3.0. |
| 3076 | 19.39 | What is clause E.1? | Insert the correct clause reference. | **Revised**The issue is addressed in CID 3048 and 3079.Resolution for CID3048 (22/0091) proposes to replace “clause E.1” with “E.1”, and resolution for CID3079 (22/0015r1) proposes to replace “E.1” with “E.1 (Country information and operating classes)” with cross-reference link.**TGbd Editor:** No further action is required for CID3076. |
| 3062 | 19.38 | Please add or clarify the purpose of this"co-located" sentence. As IS, it's an open statement that conveys no connection between the said NGV STA and the said DMG STA. | Please add the objective of this sentence or delete it. | **Revised****Discussion**In D3.0, an example procedure to perform DMG discovery OCB using assist of higher layer information exchange is shown in 11.1.4.7. This information exchange is, although not limited, performed over 5.9 GHz band by co-located NGV STAs in most expected scenario. Propose to add this explanation into 4.3.17a.**TGbd Editor:** Please incorprate the change for 4.3.17a in<https://mentor.ieee.org/802.11/dcn/22/11-22-0091-03-00bd-d3-0-comment-resolution-related-to-dmg-sta-communicating-ocb.docx> under CID3062. |

**An NGV STA may be co-located with a DMG STA communicating OCB in the 60 GHz frequency band (57**

**GHz to 71 GHz) as defined in E.1 (Country information and operating classes) (#2062, #2065, #2054, #2220, #3048, #3076). The NGV STA may assist the DMG STA in performing DMG discovery OCB by communicating with a peer NGV STA to exchange the higher layer information that contains information of a peer DMG STA with which the peer NGV STA is co-located. The information is provided from/to a DMG STA through the MLME SAP interface. The protocol to exchange this higher layer information is outside the scope of this standard(#3062).**

Subclause 4.3.22 (2 CIDs)

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| 3080 | 4.3.22 | 21.02 | OCB is defined in the first paragraph in the OCB clause, so there is no need to spell in a following clause. Simply used OCB. | Replace" "outside the context of a BSS"With: "OCB" | **Accepted** |
| 3081 | *4.3.23* | 21.16 | OCB is defined in the first paragraph in the OCB clause, so there is no need to spell in a following clause. Simply used OCB. Replace it in both occurrences. | Replace" "outside the context of a BSS"With: "OCB"at both occurrences in this sentence. | **Accepted****Discussion**The proposed changes are acceptable. “OCB” is applied for similar case in the proposed resolution for CID 3086 in 22/0016r2.Note: This is in subclause 4.3.22. |

Subclause 10.3.6 (2 CIDs)

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| 3082 | 10.3.6 | 43.43 | The statement "with a peer STA" implies there is only one peer STA, I don't think this is the intent. An DMG STA communicating OCB may be communicating with more than on peer. | Replace "a peer STA"With: "peer STAs" | **Accetpted** |
| 3083 | 10.3.6 | 43.44 | Grammar - transmission is singular and directions is plural, these should align. Also, if the criteria for transmission "in an antenna configuration" is that a beam link is maintained, wouldn't it be simpler to simply state that if no beam link is maintained the STA may omit transmission? | Replace: "the directions where presence of any peer STA is not anticipated"With: "any direction where the presence of a peer STA is not anticipated"or "any antenna configuration where a beam link is not maintained." | **Revised**Agreed with the commenter.Replace: "omit transmission in the directions where presence of any peer STA is not anticipated"With: "omit transmissions that use an antenna configuration over which a beam link is not maintained." |

Subclause 10.23.2.9 (1 CIDs)

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 3084 | 10.23.2.9 | 44.65 | The dot11OCBActivated is true requirement that TXOP limits are set to 0, applies to more than just non-NGV STA, it applies to any STA transmitting OCB that is not an NGV STA. Therefore the requirement in the base line should not be changed and an exception should be added for NGV STAs. | Delete the proposed change and return to base line text with the following addition: "When dot11OCBActivated is true, TXOP limits shall be 0 for each AC, unless the STA is an NGV STA supporting Clause 31.This change will also require a change to clause 10.2.3.2: change: "... the EDCA parameters are the corresponding default values or are as set by the SME in dot11EDCATable (except for TXOP limits for a non-NGV STA, which shall be set to 0 for each AC as specified in 10.23.2.9 (TXOP limits).to: "... the EDCA parameters are the corresponding default values or are as set by the SME in dot11EDCATable (except when the TXOP limits are set to 0 for each AC as specified in 10.23.2.9 (TXOP limits)." | **Revised****Discussion:**Agree that the term “non-NGV STA” should not be used for rephrasing of the baseline spec.Propose to use MIB variable to specify the condition rather than “STA supporting clause 31” for 10.23.2.9, and keep “except for TXOP limits” in 10.23.2.9 and add “when the TXOP limits are ...” after that to keep the baseline intent clearly.***TGbd Editor:***Incorporate the change for subclauses 10.23.2.9 and 10.2.3.2 in <https://mentor.ieee.org/802.11/dcn/22/11-22-0091-03-00bd-d3-0-comment-resolution-related-to-dmg-sta-communicating-ocb.docx> under CID3084. |

**Option 1 for 10.23.2.9:**
When dot11OCBActivated is true, dot11NGVActivated is false and dot11DMGOCBActivated is false, TXOP limits shall be 0 for each AC.

**Option 2 for 10.23.2.9:**When dot11OCBActivated is true, TXOP limits shall be 0 for each AC unless the STA is an NGV STA or DMG STA for which dot11DMGOCBActivated is true.

**Option 3 for 10.23.2.9:**~~When dot11OCBActivated is true~~For a STA communicating OCB that is not an NGV STA or DMG STA for which dot11DMGOCBActivated is true, TXOP limits shall be 0 for each AC.

Proposed change:

***TGbd Editor: Please replace 10.23.2.9 in D3.0 with the following:***

* TXOP limits(#2056, #2057, #2073, #3084)

Change the 4th paragraph as follows:

When dot11OCBActivated is true, dot11NGVActivated is false and dot11DMGOCBActivated is false, TXOP limits shall be 0 for each AC.

***TGbd Editor: Please replace 10.2.3.2 in D3.0 with the following:***

* HCF contention based channel access (EDCA)

Change the 2nd paragraph as follows:

For each AC an enhanced variant of the DCF, called an enhanced distributed channel access function (EDCAF), contends for TXOPs using a set of EDCA parameters. When communicating Data frames outside the context of a BSS (dot11OCBActivated is true), the EDCA parameters are the corresponding default values or are as set by the SME in dot11EDCATable (except for TXOP limits when the TXOP limits are~~, which shall be~~ set to 0 for each AC as specified in 10.23.2.9 (TXOP limits(#2056, #2057, #2073))).(#2056, #2057, #2073, #3084) For a non-AP STA communicating within a non-mesh QoS BSS, the EDCA parameters used are from the EDCA Parameter Set element or (for a non-AP STA prior to associating with an AP of an infrastructure BSS, a mesh STA, or a STA that operates OCB) from the default values for the parameters. The parameters used by the EDCAF to control its operation are defined by dot11QAPEDCATable at the AP and by dot11EDCATable at the non-AP STA.

Subclause 31.3.1 (1 CID)

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| 3014 | 31.3.1 | 65.27 | "The DMG STA shall set the Discovery Mode field to 1 and the OCB subfield in the Clustering Control field set to 1" is grammatically incorrect. | Replace with "The DMG STA shall set the Discovery Mode field to 1 and set the OCB subfield in the Clustering Control field to 1" | **Revised**Proposed Change:Replace "The DMG STA shall set the Discovery Mode field to 1 and the OCB subfield in the Clustering Control field set to 1" with “The DMG STA shall set the Discovery Mode field and OCB subfield in the Clustering Control field to 1.” |

**References**

[1] Draft P802.11bd D3.0