IEEE P802.11
Wireless LANs

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| LB272 CR for DMG CID 2088 2219 |
| Date: 2023-06-xx |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Narengerile | Huawei | Shenzhen, China |  | narengerile@huawei.com |
| Stephen McCann |  |  |  |
| Rui Du |  |  |  |
| Mengshi Hu |  |  |  |
| Zhuqing Tang |  |  |  |
| Yiyan Zhang |  |  |  |

**Abstract**

This document proposes comment resolutions for CIDs 2088 and 2219.

R0: initial version on June 13, 2023.

# CID 2088

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** | **Proposed resolution** |
| 2088 | 9.6.21.8 | 155.60 | In DMG sensing, how USID is assigned has not been stated clearly. DMG Sensing Measurement Setup Request frame shall contain an USID field. The behavior of USTA in DMG sensing is not stated clearly. | As in comment. | REVISED.Please incorporate the modifications specified in 23/1084r0 (<https://mentor.ieee.org/802.11/dcn/23/11-23-1084-00-00bf-lb272-cr-for-dmg-cid-2088-2219.docx>) for CID 2088. |

**Discussions for CID 2088:**

I can see the point raised by the commenter. For sub-7, we have explicit text about the unassociated case for sensing. For DMG, the viability of the unassociated case seems not to be very clear. Based on some brief offline discussions, it is agreed that the unassociated case is excluded from DMG sensing. The main reason is that, the transmission in 60 GHz bands is directional. Full beam training is needed for the PCP/AP STA and the non-PCP/non-AP STA to communicate. The overhead caused by association is almost negligible compared with beam training. So, there is no need to avoid it. And, including the unassociated case will no doubt bring a lot of complexity to the spec.

Given the latest draft D1.1,

* For DMG sensing procedure, we have the following texts in 11.55.3.3 DMG sensing session setup exchange:



This is clear enough that the DMG STA and the DMG PCP/AP that participate in DMG sensing shall be associated.

* For DMG SBP procedure, we do not have any text mentioning the association status between the SBP initiator (non-PCP/non-AP DMG STA) and the SBP responder (DMG PCP/AP STA). To maintain consistency with the DMG sensing procedure, it is better that we specify that the SBP initiator and the SBP responder shall complete the association between the SBP setup. Therefore, the following modifications are proposed.

**Modifications for CID 2088:**

***To TGbf editor: Please add the following text after P179L37 in 11bf spec D1.1.***

The non-AP or non-PCP DMG STA that acts as an SBP initiator shall complete the association with the PCP/AP that acts as an SBP responder before the DMG SBP setup exchange. (#2088)

# CID 2219

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| **CID** | **Page** | **Comment** | **Proposed change** | **Proposed resolution** |
| 2219 | 0.00 | DMG transmission is directional. Before sending back the SBP report to SBP initiator, AP as SBP responder needs to make sure that the beam alignment between SBP initiator and SBP responder is still valid. | The commenter will provide a contribution. | REVISED.Please incorporate the modifications specified in 23/1084r0 (<https://mentor.ieee.org/802.11/dcn/23/11-23-1084-00-00bf-lb272-cr-for-dmg-cid-2088-2219.docx>) for CID 2219. |

**Discussions for CID 2219:**

* For sub-7 GHz, the spec has specified that the SBP initiator shall be polled if it is not associated with the AP, ensuring that the SBP initiator is available to receive the SBP reports.
* For DMG, we have ruled out the unassociated case. So, we could assume that the SBP initiator is available during the time indicated in the DMG Sensing Scheduling subelement provided in the DMG SBP Request frame.

A big difference between sub-7 GHz and DMG is that, DMG transmission is directional. This means that if the beam alignment is out of date, the SBP initiator may not be able to receive the SBP report. A possible solution is that, similar as sub-7 GHz, the DMG SBP responder can check the accessibility of the DMG SBP initiator prior to the DMG sensing instance or burst. The main purposes are to check

1. Whether the SBP initiator is still reachable, in case the SBP initiator/responder moves outside the valid range or changes the orientation of the antennas when the DMG instance or burst is scheduled to be performed; and
2. If the response from the DMG SBP initiator indicates a very poor link quality, the AP/PCP can initiate a beam training process to refine the beam alignment.

The proposed solution is to reuse DMG Sensing Request/Response frame. An exemplary demonstration is given as:

* DMG sensing instance



* DMG Sensing burst



The following modifications are proposed.

**Modifications for CID 2219:**

***To TGbf Editor: Please add the following text after P182L18 in D1.1.***

In the DMG sensing procedure initiated by the SBP responder, the SBP responder should send a DMG Sensing Request frame to the SBP initiator at the beginning of each DMG sensing instance or burst. The values of the DMG Measurement Session ID field, the Measurement Burst ID field, the Sensing Instance SN field and the Sensing Type field within this DMG Sensing Request frame shall be set to the values of the corresponding fields in the subsequent DMG Sensing Request frame that is sent to the first receiving sensing responder in this DMG sensing instance or burst. The values of the following fields in this DMG Sensing Request frame shall be set to reserved values (#2219):

* STA ID
* First Beam Index
* Num of STAs in Instance
* Num of PPDUs in Instance
* EDMG TRN Length
* RX TRN-Units per Each TX TRN-Unit
* EDMG TRN-Unit P
* EDMG TRN-Unit M
* EDMG TRN-Unit N
* TRN Subfield Sequence Length
* BW
* Sense Multiple Golays
* Sense Golay Index
* Monostatic Sounding Mode
* Num of TX Beams in Instances
* Num of Repeat in Instance
* Updated TX Beam List

Upon reception of such a DMG Sensing Request frame, the SBP initiator shall respond within a SIFS with a DMG Sensing Response frame that does not contain a TDD Beamforming Information field. The SBP responder shall initiate a DMG sensing instance or burst with scheduled sensing responders no later than a SIFS after receiving the DMG Sensing Response frame from the SBP initiator. (#2219)

If the SBP responder does not receive a DMG Sensing Response from the SBP initiator within a SIFS after sending the DMG Sensing Request frame, the SBP responder should not proceed with the DMG sensing instance or burst. The SBP responder may send another DMG Sensing Request frame to the SBP initiator in the next channel access allowed for transmission. (#2219)

The SBP responder may perform DMG beamforming training with the SBP initiator before initiating a DMG sensing instance or burst with scheduled sensing responders. (#2219)

SP:

Do you agree to include the resolutions provided for CID 2088 and 2219 in the latest 11bf Draft?

Y/N/A