IEEE P802.11
Wireless LANs

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| CC40 CR for CIDs 52, 365, 449 and 33 |
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Abstract

This submission contains the proposed comment resolutions for the CIDs 52, 365, 449.

R0: initial document

R1: some CRs has been revised and CR for CID 33 is included.

## CID 365

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 365 | 84.25 | 11.21.20.3.2 | "The Transmit Beam Index axis represents the Beam Index used by the STA to transmit and receive the monostatic sensing PPDU and the Receive Beam Index axis will not be present. Each beam index in the TX Beam List is an index into the list of beams the sensing responder published in their Sensing Beam Descriptor elements for TX and RX." The Transmit/Receive Beam Index axis is not mentioned anywhere in the current text. | Provide the definition of the Monostatic and coordinated monostatic setup that provides rules on configuration of the relevant setup parameters and refers to the relevant capabilities. | REVISED.The “transmit/receive Index axis” is a typo and the word ‘axis’ should be removed. In addition, the relevant paragraph has been rephrased in Draft 0.4, and a relevant resolution has been provided.TGbf Editor make changes specified in 0980r1. |

***Instructions to the editor: please make the following changes to P123L584 in the subclause 11.55.3.4 DMG measurement setup in D0.4 as shown below:***

The sensing initiator shall set the beam list in the Tx Beam List subelement to the list of beams that are used by the transmitter during the measurement and the beam list in the Rx Beam List subelement to the lists of beams that are used by the receiver during the measurement(#333). Each beam index in the TX Beam List and RX Beam List is an index into the list of beams the sensing transmitter and sensing receiver published in their DMG Sensing Beam Description elements(#363) for transmit and receive, respectively. If the Sensing Type subfield within the DMG Sensing Measurement Setup element is set to coordinated monostatic, the RX Beam List subelement is not present(#869, #365).

## CID 449 and 52

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 449 | 84.20 | 11.21.20.3.2 | It is not clear what is the process to achieve what is done in this paragraph. This is a description of what a STA may do but how does it do it is not clear | submission will be provided | REVISED.TGbf Editor make changes specified in 0980r1. |
| 52 | 84.21 | 11.21.20.3.2 | How to determined the "sepcific directions". | In order to improve the quality of sensing results, AP can assign each STA to use the Tx/Rx sector/beam directions that do not interfere with each other for coordinated sensing. | REVISED.TGbf Editor make changes specified in 0980r1. |

**Discussion 1**

If a sensing initiator wants to initiate a parallel sounding coordinated monostatic sensing, the sensing initiator should try to assign different Transmit/Receive beams to different responders to avoid interference across multiple responders by setting the TX Beam List subelement in the DMG Sensing Measurement Setup element.

There are 2 cases about the coordinated monostatic sensing.

Case 1

If all the responders accept the beam list assigned by the sensing initiator, the sensing responders are able to perform parallel sounding (because they have non-interference beam lists). The sensing initiator could initiate a parallel sounding sensing instance by assigning same STA ID (STA ID = 1) in the DMG Sensing Request frame to all the sensing responders.

Case 2

If some of the responders cannot accept the beam lists assigned by the sensing initiator, they should reject the DMG sensing request or they may set the Status Code in the DMG Sensing Measurement Setup Response frame to PREFEREED\_MEASUREMENT\_SETUP\_PARAMETER\_SUGGESTED, and provide their suggested beam lists. The sensing initiator may use the beam lists suggested by sensing responders, because the sensing responders do not know the directions of interest for the sensing initiator. The sensing initiator may reassign beam lists to the sensing responders with the suggested beam lists taken into consideration by transmitting another DMG Sensing Measurement Setup Request frames.

**Discussion 2**

Motion 102 (already passed) is related to the DMG monostatic sensing and coordinated monostatic sensing.

Motion 102 is described as follows:

* TRN based sensing should be adopted as one of the operating modes in DMG monostatic sensing and coordinated monostatic sensing.
* TRN based sensing is an optional operating mode for DMG monostatic sensing and coordinated monostatic sensing.

Based on motion 102 and CIDs 449 and 52, an optional operating mode could be added, as an example, to describe the DMG coordinated monostatic sensing.

Discussion end

***Instructions to the editor: please add the following paragraphs after P123L65 in the subclause 11.55.3.4 DMG measurement setup in D0.4 as shown below:***

If the sounding phase in a coordinated monostatic sensing instance happens in parallel, the sensing initiator should assign different Transmit/Receive beams to different responders to avoid interference across multiple responders by setting the TX Beam List subelement in the DMG Sensing Measurement Setup element in the DMG Sensing Measurement Setup Request frame.

Any PPDU may be used for coordinated monostatic sensing and sensing with a TRN field in a PPDU, constructed according to the non-EDMG or EDMG PHY specifications, is an optional mode for the coordinated monostatic sensing. If the coordinated monostatic sensing is performed with TRN field, the negotiation of the TRN related parameters is TBD (motion 102).

***Instructions to the editor: please add the following paragraphs to P125L61 in the subclause 11.55.3.6.2 Coordinated monostatic DMG sensing instance in D0.4 as shown below:***

A coordinated monostatic DMG sensing instance is a DMG sensing instance of a DMG sensing procedure of sensing type coordinated monostatic.

A coordinated monostatic DMG sensing instance is initiated by a set of DMG Sensing Requests answered by DMG sensing responses. It is then followed by a set of monostatic PPDUs transmitted and received by the sensing responders. The measurement covers the number of transmit/receive AWV indicated by the Number TX Beams Per Instance field within the DMG Sensing Scheduling subelement of the DMG Sensing Measurement Setup element (see 9.4.2.322 (DMG Sensing Measurement Setup element)). The sensing initiator shall determine the parameters of the monostatic PPDUs transmitted by the sensing responders in a way which is compatible with the sensing responders’ capabilities and covers all the desired transmit/receive beams indicated in TX Beam List subelement (see 9.4.2.322.1 (TX Beam List subelement)). The first beam used by the sensing responders to transmit and receive monostatic PPDUs in a sensing instance, is indicated by the First Beam Index field. The sensing responders will cycle through the Num TX Beams Per Instance beams to transmit and receive the monostatic PPDUs. If the Repeat Per Instance field of the DMG Sensing Scheduling subelement ($N\_{RI}$) is greater than 1, the sensing responder will repeat the Num TX beams Per Instance Beams in DMG sensing instances, $N\_{RI}$ times. All the monostatic PPDUs transmitted and received by the sensing responders shall be separated by SBIFS. If a report is configured in the DMG sensing instance, sensing responders shall report no longer than SIFS after their last monostatic PPDU or after the polling by sensing initiator. The report may be based on Channel Measurement Feedback elements or DMG Sensing Report elements. The presence and type of the report is indicated by the DMG Sensing Report Control field of the DMG Sensing Report Control element (#52, #449).

The sensing initiator can initiate the parallel sounding instance by setting the Parallel Sounding subfield of TDD Beamforming information field in DMG Sensing Request to 1 for all the sensing responders. If the sounding phase in a coordinated monostatic DMG sensing instance happens in parallel, each sensing responder starts to transmit its monostatic PPDU(s) in SIFS time after (Num of STAs in Instance - STA ID) sets of DMG Sensing Request/Response (#52, #449).

***Instructions to the editor: please modify the Figure 9-110a TDD Beamforming Information field format in Page 41 and relevant paragraph in P42L9 in the subclause 9.3.1.25.5 DMG Sensing Request as shown below:***



Figure 9-110a—TDD Beamforming Information field format(#649, #109, #417, #52, #449)

The Num of PPDUs in Instance field indicates the number of DMG Multistatic Sensing PPDUs present in the DMG sensing instance. The Num of PPDUs in Instance subfield is reserved when the sensing type is set to coordinated monostatic (#52, #449).

The 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, and BW subfields contain the values of the corresponding header fields in the EDMG Multistatic Sensing PPDU(#417).

The Parallel Sounding subfield indicates if the sounding phase in coordinated monostatic sensing happens in parallel, and it is reserved for other cases (#52, #449).

## CID 33

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 33 | 80.17 |  | clarification comment | Since the sounding is in parallel (Fig. 11.41m), the sequence of reporting between STA A and STA B is communicated by the AP? If so, please mention this in the text. | REVISED.TGbf Editor make changes specified in 0980r1. |

***Instructions to the editor: please make the following changes to P121L2 in the subclause 11.55.3.1 Overview inD0.4 as shown below:***

…. In the immediately following reporting phase, both sensing responders report results assigned with DMG Measurement Setup ID(#217) equal to 1, Measurement Burst ID(#424, #426) equal to 1, and Sensing Instance SN(#397, #223) equal to 1 to the sensing initiator(#229). The reporting sequence of STA A and STA B is indicated by the sensing initiator (#33).