IEEE P802.11
Wireless LANs

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| CC40 CR for Topic Threshold – Part 4 |
| Date: 2023.1.3 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Mengshi Hu | Huawei Technologies | F3, Huawei Base, Bantian, Longgang, Shenzhen, Guangdong, China, 518129 |  | humengshi@huawei.com |
| Narengerile |  |  |  |
| Rui Du |  |  |  |

Abstract

This submission contains the proposed comment resolutions for the remaining 2 CIDs in the Topics “Threshold” shown in 22/0820 IEEE 802.11bf CC40 comments.

CIDs 287 and 483.

Revision Notes

|  |  |
| --- | --- |
| R0 | Initial version |

# CID 287

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Page.Line | Clause Number | Comment | Proposed Chang | Resolution |
| 71.36 | 11.21.18.6.5 | Need to add descriptions and detailed designs on Sensing Trigger frame A and B. | As in the comment. | REVISED.The Sensing Trigger frame A (Sensing Threshold Based Report Poll Trigger frame) has been reflected in D0.5. The design of Sensing frame B (Sensing CSI Variation Feedback frame) is provided in this resolution.***Instructions to the editor:*** **Please make the changes as shown under CID 287 in 11-22/0002r0.** |

***Instructions to the editor: please add one row to Table 9-447 Public Action field values in subclause 9.6.7.1 Public Action frames in D0.5 as shown below:***

**Table 9-447—Public Action field values**

|  |  |
| --- | --- |
| **ction field value**  | **Description** |
| **…** | **…** |
| <ANA> | Sensing CSI Variation Feedback |
| … | … |

***Instructions to the editor: please add the following in subclause 9.6.36 Protected Sensing frame details in D0.5 as shown below:***

**9.6.7.xx Sensing CSI Variation Feedback frame**

The Sensing CSI Variation Feedback frame is an Action No Ack of category Public transmitted to provide a CSI Variation Feedback value. The format of the Sensing Measurement Report frame Action field is defined in Figure 9-xx (Sensing CSI Variation Feedback frame Action field format).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Category | Public Action | Dialog Token | CSI Variation Information |
| Octets: | 1 | 1 | 1 | 2 |

**Figure 9-xx—Sensing CSI Variation Feedback frame Action field format**

The Category field is defined in 9.4.1.11 (Action field).

The Public Action field is defined in 9.6.7.1 (Public Action frames).

The Dialog Token field is defined in 9.4.1.12 (Dialog Token field). It is set to a nonzero value chosen by the STA sending the sensing measurement request to identify the request/report transaction.

CSI Variation Information field is formatted as shown in Figure 9-yy (CSI Variation Information field format).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Measurement Setup ID | Measurement Instance ID | CSI Variation Feedback  | Reserved |
| Bits | 3 | 6 | 4 | 3 |

**Figure 9-yy—CSI Variation Information field format**

The Measurement Setup ID in the CSI Variation Information field identifies the sensing measurement setup corresponding to the Sensing CSI Variation.

The Measurement Instance ID in the CSI Variation Information field identifies the sensing measurement instance corresponding to the Sensing CSI Variation.

The CSI Variation Feedback subfield value between 0 and 10 indicates a value reflecting the CSI variation value obtained at the sensing receiver. The CSI Variation Feedback subfield value equal to 15 indicates that the CSI variation feedback is invalid. The definition of CSI Variation Feedback subfield is shown in Table 9-zz.

Table 9-zz CSI Variation Feedback subfield Definition

|  |  |
| --- | --- |
| Value | Description |
| 0 | 0 <= CSI variation value < 0.1 |
| 1 | 0.1 <= CSI variation value < 0.2 |
| 2 | 0.2 <= CSI variation value < 0.3 |
| 3 | 0.3 <= CSI variation value < 0.4 |
| 4 | 0.4 <= CSI variation value < 0.5 |
| 5 | 0.5 <= CSI variation value < 0.6 |
| 6 | 0.6 <= CSI variation value < 0.7 |
| 7 | 0.7 <= CSI variation value < 0.8 |
| 8 | 0.8 <= CSI variation value < 0.9 |
| 9 | * 1. <= CSI variation value < 1.0
 |
| 10 | 1.0 = CSI variation value  |
| 11-14 | Reserved |
| 15 | Invalid Feedback |

***Instructions to the editor: please add one row to Table 9-623l—Protected Sensing Action field values in subclause 9.6.36 Protected Sensing frame details in D0.5 as shown below:***

**Table 9-623l—Protected Sensing Action field values**

|  |  |
| --- | --- |
| **ction field value**  | **Description** |
| **…** | **…** |
| <ANA> | Protected Sensing CSI Variation Feedback |
| … | … |

***Instructions to the editor: please add the following in subclause 9.6.36 Protected Sensing frame details in D0.5 as shown below:***

**9.6.36.xx Protect Sensing CSI Variation Feedback frame**

The Protected Sensing CSI Variation Feedback frame is an Action No Ack frame of category Protected Sensing transmitted to provide a CSI Variation Feedback value. The format of the frame after the Protected Sensing Action field is identical to the format of the Sensing Measurement Report Public Action frame (9.6.7.xx (Sensing CSI Variation Feedback frame format)).

# CID 483

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 70.52 | 11.21.18.6.5 | MLME for threshold-based reporting are missing | Add primitives for threshold-based reporting | REVISED.The MLME change is given under this CID.***Instructions to the editor:*** **Please make the changes as shown under CID 483 in 11-22/0002r0.** |

***Instructions to the editor: please add the following figure and descriptions to subclause 6.3.136.1 General in 6.3.136 WLAN sensing procedure in D0.5 as shown below (This figure should be put after 6-28a WLAN sensing procedure with a TB sensing measurement instance):***

The following set of MLME primitives supports the WLAN sensing procedure described in 11.55.1 (WLAN sensing procedure). Figure 6-28a (WLAN sensing procedure with a TB sensing measurement instance(#819, #828, #211, #371, #731, #822, #389, #824, #829)) depicts a TB sensing measurement procedure that consists of either NDPA sounding or TF sounding (see 11.55.1.5.2 (TB sensing measurement instance)). This figure also depicts a TB sensing measurement procedure that consists of both NDPA sounding and TF sounding, except that the reporting phase, if present, shall be the last phase of a TB sensing measurement instance (see 11.55.1.5.2.5 (Reporting phase))(#732, #821). Figure 6-28b (WLAN sensing procedure with a non-TB sensing measurement instance(#819, #828, #389, #825, #212, #371, #731, #35, #822, #826, #827, #828)) depicts a non-TB sensing measurement procedure that consists of NDPA sounding with SI2SR NDP or SR2SI NDP or both SI2SR NDP and SR2SI NDP (see 11.55.1.5.3 (Non-TB sensing measurement instance))(#822, #826, #827, #829, #389, #823). Figure 6-28x (WLAN sensing procedure with a threshold-based reporting phase in a TB sensing measurement instance) depicts a TB sensing measurement procedure with a threshold-based reporting phase (see 11.55.1.5.2.5 (Basic reporting phase)). These figures are examples of basic procedures and are not meant to be exhaustive of all possible uses of the protocol.

***…***



Figure 6-28x-WLAN sensing procedure with a threshold-based reporting phase in a TB sensing measurement instance

***Instructions to the editor: please add the following descriptions to subclause 6.3.136.x in D0.5 as shown below:***

## 6.3.136.x1 MLME-SENSTBCSIVFBRQ.request

**6.3.136.x1.1 Function**

This primitive requests the transmission of a Sensing CSI Variation Feedback frame.

**6.3.136.x1.2 Semantics of the service primitive**

The primitive parameters are as follows:

MLME-SENSTBCSIVFBRQ.request(

PeerSTAAddress,

CSIVariationFeedback

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name  | Type  | Valid range  | Description |
| PeerSTAAddress | MAC address | Any valid individual MAC address | Specifies the MAC address of the sensing initiator to which the Sensing CSI Variation Feedback frame is sent. |
| CSIVariationInformation | As defined in Figure 9-yy—CSI Variation Information field format. | As defined in Figure 9-yy—CSI Variation Information field format. | As defined in Figure 9-yy—CSI Variation Information field format. |

**6.3.136.x1.3 When generated**

This primitive is generated by the SME to request that a Sensing CSI Variation Feedback frame is sent to a peer STA to deliver a CSI variation feedback.

**6.3.136.x1.4 Effect of receipt**

On receipt of this primitive, the MLME constructs a Sensing CSI Variation Feedback frame and causes it to be transmitted when triggered by the Sensing Threshold-Based Report Poll Trigger frame.

## 6.3.136.x2 MLME-SENSTBCSIVBRQ.confirm

**6.3.136.x2.1 Function**

This primitive reports the results of a request to tranmsmit a Sensing CSI Variation Feedback frame.

**6.3.136.x2.2 Semantics of the service primitive**

The primitive parameters are as follows:

MLME-SENSTBCSIVFBRQ.confirm(

PeerSTAAddress,

MeasurementSetupID,

MeasurementInstanceID

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name  | Type  | Valid range  | Description |
| PeerSTAAddress | MAC address | Any valid individual MAC address | Specifies the MAC address of the sensing initiator to which the Sensing CSI Variation Feedback frame was sent. |
| MeasurementSetupID | Interger | As defined in Figure 9-yy—CSI Variation Information field format. | Identifies the sensing measurement setup corresponding to the Sensing CSI Variation |
| MeasurementInstanceID | Interger | As defined in Figure 9-yy—CSI Variation Information field format. | Identifies the sensing measurement instance corresponding to the Sensing CSI Variation |

**6.3.136.x2.3 When generated**

This primitive is generated by the MLME when the STA successfully transmits a Sensing CSI Variation Feedback frame.

**6.3.136.x2.4 Effect of receipt**

On receipt of this primitive, the SME may not need to send the MLME-SENSTBREPORTRQ.request to its MLME for the transmission of a Sensing Measurement Report frame.

## 6.3.136.x3 MLME-SENSTBCSIVFB.indication

**6.3.136.x3.1 Function**

This primitive indicates that a Sensing CSI Variation Feedback frame has been received.

**6.3.136.x3.2 Semantics of the service primitive**

The primitive parameters are as follows:

MLME-SENSTBCSIVFB.indication(

PeerSTAAddress,

CSIVariationFeedback

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name  | Type  | Valid range  | Description |
| PeerSTAAddress | MAC address | Any valid individual MAC address | Specifies the MAC address of the sensing responder from which the Sensing CSI Variation Feedback frame was received. |
| CSIVariationFeedback | As defined in Figure 9-yy—CSI Variation Information field format. | As defined in Figure 9-yy—CSI Variation Information field format. | Indicates the CSI variation feedback value as defined in 11.55.1.5.2.5.2 (Threshold-based reporting phase) |

**6.3.136.x3.3 When generated**

This primitive is generated by the MLME when a Sensing CSI Variation Feedback frame is received.

**6.3.136.x3.4 Effect of receipt**

On receipt of this primitive, the SME should operate according to the procedure in 11.55.1 (WLAN sensing procedure).

Discussion:

**The related figure (WLAN sensing procedure with a TB sensing measurement instance) in D0.5 is shown below:**



…, the arc that connects a primitive with a frame at MLME indicates that this primitive initiates the transmission of the connected frame and contains all the parameters needed to configure the frame, and the arc that connects frames at MLME indicates that the preceding frame initiates the transmission of the subsequent frame and contains all the parameters needed to configure the subsequent frame. (#484)

Discussion ends.

# SP

Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 287 and 483?

Y/N/A