IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed resolution of CIDs 4212, 4232, 4286 | | | | |
| Date: 2019-11-03 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Mohamed Abouelseoud | Sony |  |  | Mohamed.Abouelseoud (at) sony (dot) com |
| Kazuyuki Sakoda | Sony |  |  | Kazuyuki.Sakoda (at) sony (dot) com |
|  |  |  |  |  |

Abstract

This submission proposes resolutions to CIDs 4212, 4232, 4286 related to Multi-band.

The CID is in reference to Comment database on Draft IEEE 802.11ay/D3.0.

# Comment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **PP.LL** | **Comment** | **Proposed Change** | **Suggested Resolution** |
| 4212 | 24.08 | Legacy DMG (Non-EDMG) STAs do not support discovery assistance or TDD channel access as these features are not defined in 802.11-2016. These features should not be added to the legacy features. | Delete the additions: "discovery assistance, TDD channel access"  If desired add a note stating that non-EDMG STAs can benefit from these new features. | Reject |

# Discussion:

Discovery assistance, TDD channel access are defined as features that can be enabled or disabled for DMG STAs. For legacy DMG (non-EDMG) STAs, these features are by default disabled. The Allocation field in the Extended Schedule element has a bit (B12) that indicates that the allocation is TDD SP or not (TDD Applicable SP). In legacy DMG STAs this bit is reserved and hence the feature is not supported. For discovery assistance, the Multi-band Control field in the Multi-band element contains a subfield (B5) that indicates whether the STA supports multi-band discovery assistance or not (Discovery Assistance Enabled). In legacy DMG STAs this bit is reserved and hence the feature is not supported. It has been agreed on by 802.11ay members that these features can be supported by a DMG (non-EDMG) or an EDMG STA.

# Comment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **PP.LL** | **Comment** | **Proposed Change** | **Suggested Resolution** |
| 4232 | 364.39 | There is an Editor Note in subclause 11.32.6.2 ""values captured from the fields in the Multi-band element" is ambiguous. Which fields? Need to specify." This needs to be fixed before going to the sponsor ballot | Specify exact fields to be captured. | Revise;  adopt changes described below |

# Discussion:

# The MLME-SCAN.request parameters are captured from the Multi-band element received from the STA offering the discovery assistance. The BSSID and ChannelList parameters are set according to the BSSID, Band ID, Operating Class and Channel Number fields in the Multi-band element.

# Proposed changes:

**11.31.6.2 Discovery assistance action determination and on-demand sector sweeping**

***To TGay Editor: update the 5th paragraph as follows:***

The SME shall issue an MLME-SCAN.request to its New Band MLME, set the BSSID and ChannelList parameters according to the BSSID, Band ID, Operating Class and Channel Number fields captured from the Multi-band element and set MinChannelTime to the Discovery Assistance Window Length field in the received DMG Discovery Assistance element.

# Comment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **PP.LL** | **Comment** | **Proposed Change** | **Suggested Resolution** |
| 4286 | 25.13 | The MLMEs within a multi-band capable device don't send MAC frames to each other. In general, any communication between MLMEs within the same device is handled by the multi-band management entity, using implementation dependent (outside the scope of 802.11) communication. Further, the MLMEs are likely not in the same band, so exchange of a MAC frame OTA is not possible. | Describe the multi-band discovery assistance processing as a function of the Multi-band Management entity, using an out-of-scope mechanism. The FST Setup Request/Response frames are not exchanged between MLMEs within the same device, they are exchanged between the separate devices' MLMEs, as shown in Figure 160. | Revise;  adopt changes described below |

# Discussion:

The commenter is correct about his statement that MLMEs within a multi-band capable device don't send MAC frames to each other. The text can be might be interpreted as if the MLMEs of the same device are sending messages to each other OTA. The MLMEs of the same device are exchanging messages through the device SME. The SME of a multi-band capable device contains the multi-band management entity so refereeing to the device SME to handle the exchange of messages between the MLMEs of the same device implies that the multi-band management entity is involved. Also, the various multi-band defined protocol in the published 802.11 standard are refereeing to the SME to handle the exchange of the MLMEs frames within the same device ( the FST and OCT for example) .The text proposed below is modified to avoid confusion.

**Proposed changes:**

**4.9 Reference model**

**4.9.4 Reference model for multi-band operation**

*Insert the following paragraph after the 7th paragraph*

By using the discovery assistance feature described in 11.32.6, the SME of a multi-band capable device can trigger one of its MLME to start the discovery assistance procedure at its operating band upon reception of a multi-band discovery assistance request by an MLME of the same multi-band capable device. The multi-band discovery assistance request is an FST Setup Request frame including the DMG Discovery Assistance element. The SME of a multi-band capable device can trigger one of its MLME to start scanning at its operating band upon reception of a multi-band discovery assistance response by an MLME of the same multi-band capable device. The multi-band discovery assistance response is an FST Setup Response frame including the DMG Discovery Assistance element. This enables multi-band capable devices to trigger the discovery assistance and scanning procedure on one band upon receiving the DMG Discovery Assistance element on another band. The multi-band discovery assistance procedure can be used to expedite the scanning procedure of a multi-band capable device that includes a DMG STA (see 11.32.1).