IEEE P802.11  
Wireless LANs

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| Revised resolution of CID5061 | | | | |
| Date: 2019-09-02 | | | | |
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Revised resolution of the CID5061

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| --- | --- | --- | --- | --- | --- | --- |
| 5061 | 211.00 | 17 | 9.6.31 | Having reviewed the resolutions to previous comments CIDs 4474-4475, agree that the 4 new MIMO BF action frames can be added under the Unprotetced DMG category so that they can be used as Class 1 frames. However, the creation for the Protected Dual of Unprotetced DMG category is still not warranteed, because there is already a robust DMG category. The 8 new protected frames added under the the Protected Dual of Unprotetced DMG category can be added under the DMG category to achieve the same result. The baseline standard uses S1G vs. Unprotected S1G, and WNM vs. Unprotected WNM. As the use of PMF becomes more and more popular, if 11ay can stick to DMG vs. Unprotected DMG (instead of having 3 categories), implementation can be made consistent across the board and less interoperability issues should be expected as a result. | Delete 9.6.31 and the action category of Protected Dual of Unprotected DMG from the draft. Add the 8 new protected DMG action frames defined in Table 38 to Table 9-456 (DMG Action field values), and add 8 new subclauses under 9.6.19 (DMG Action frame details) to describe each of the 8 new protected DMG action frames. An example text for these subclauses can be as follows: "9.6.19.<x> Protected <XXXX> frame format The Protected <XXXX> frame is an Action frame of category DMG and is defined to allow robust STA-STA communication of the same information that is conveyed in the <XXXX> frame that is not robust (see 9.6.21.1 (Unprotected DMG Action field)). The Action field of the Protected <XXXX> frame has the same format as the Action field of the unprotected <XXXX> frame (see 9.6.21.<y> (XXXX frame format)), except that the Order 2 item is the DMG Action field, which is defined in 9.6.19.1 (DMG Action field), instead of the Unprotected DMG Action field."  And on P206L4, in Table 9-484, remove the Reserved rows and insert the 4 new unprotected DMG action frames beginning from value 2, instead of value 4. On P120L16, in Figure 9-547, rename the "Protected DMG Dual Support subfield" to "Protected DMG Operations Support subfield". On P121L3, change the sentence to read: "The Protected DMG Operations Support subfield is set to 1 to indicate that the STA supports the protected DMG action frames as described in 12.6.19.<xx> to 12.6.19.<yy>. Otherwise, it is set to 0." On P395, remove the text inserted under 12.6.20. Insert a new subcluase under clause 11, entitled "Protected DMG Operations" with the following text:" "When performing the DMG operations described in 11.28 (DMG beamformed link and BSS maintenance) to 11.31 (Spatial sharing and interference mitigation for DMG STAs), 11.37 (DMG beamforming), and 11.53 (TDD channel access operation), if management frame protection is negotiated and both STAs set the Protected DMG Operations Support field in the RSNXE that they transmit to 1, the STAs shall -- use Protected Announce, Protected BRP, Protected Link Measurement Request, Protected Link Measurement Report, Protected MIMO BF Setup, Protected MIMO BF Poll, Protected MIMO BF Feedback, and Protected MIMO BF Selection frames, instead of Announce, BRP, Link Measurement Request, Link Measurement Report, MIMO BF Setup, MIMO BF Poll, MIMO BF Feedback, and MIMO BF Selection frames, respectively, -- discard any unprotected Announce, BRP, Link Measurement Request, Link Measurement Report, MIMO BF Setup, MIMO BF Poll, MIMO BF Feedback, or MIMO BF Selection frames received from the peer STA, with which management frame protection is negotiated. STAs that exchange Protected Announce, Protected BRP, Protected Link Measurement Request, Protected Link Measurement Report, Protected MIMO BF Setup, Protected MIMO BF Poll, Protected MIMO BF Feedback, or Protected MIMO BF Selection frame shall follow the rules defined in 12.6.19 (Protection of robust Management frames). When management frame protection is not negotiated or the Protected DMG Operations Support field in the RSNXE transmitted by either STA is set to 0, the STAs shall not use any of the Protected Announce, Protected BRP, Protected Link Measurement Request, Protected Link Measurement Report, Protected MIMO BF Setup, Protected MIMO BF Poll, Protected MIMO BF Feedback, and Protected MIMO BF Selection frames." | **Revised** |

Discussion:

The previous resolution (rejection) of the CID is reconsidered due to further investigation of the baseline spec IEEE P802.11-REVmd. As defined in the IEEE P802.11-REVmd/D2.4, August 2019, the On-channel Tunnel Request frame belongs to two categories FST and Public and has different values of the action field depending on the category. The value is 45 in the Public category and 5 in the FST category. Thus, no reason to introduce the new Protected Dual of Unprotected DMG Action category.

The revised version of the CID5061 resolution:

* Removes the Protected Dual of Unprotected DMG Action category
* Adds the Action frame to the DMG category to provide protection of the frame
* Keeps the BRP and MIMO beamforming frames in the Unprotected DMG category

**9.6.31 Protected Dual of Unprotected DMG Action**

***P211L17 – P211L24***

***TGay editor remove the entire subclause***

***TGay editor modify as follows***

**9.4.1.11 Action field**

***Remove the text on P111L13-P111L15***

**9.6.19 DMG Action frame details**

**9.6.19.1 DMG Action field**

***TGay editor modify as follows (*IEEE P802.11-REVmd/D2.4, August 2019)**

**P1629**

***Append to the Table 9-456—DMG Action field values***

|  |  |
| --- | --- |
| 23 | Protected Announce |

**P1643**

***Append subclause***

**9.6.19.23 Protected Announce frame format**

The Protected Announce frame allows robust STA-STA communications of the same information that is conveyed in the unrobust Announce frame (9.6.21.2 Announce frame format)).

The format of the robust Protected Announce and nonrobust Announce frame is the same and defined in

9.6.21.2 Announce frame format). The Category field value differentiates whether the frame is robust or not.

**9.6.21.1 Unprotected DMG Action field**

***TGay editor modify as follows***

***P206***

**In the Table 9-484 remove the rows signed as reserved and renumerate the Unprotected DMG Action field value 4>2, 5>3, 6>4, and 7>5**

**9.6.21.2 Announce frame format**

***TGay editor modify as follows, implement in the presented order***

P207

***Replace***

“The Protected Dual of Unprotected DMG Action field is defined in 9.6.31” by “The DMG Action field is defined in 9.6.19.1”

***Reject “***Protected Dual of Unprotected”

**9.6.21.3 BRP frame format**

**9.6.21.4 MIMO BF Setup frame format**

**9.6.21.5 MIMO BF Poll frame format**

**9.6.21.6 MIMO BF Feedback frame format**

**9.6.21.7 MIMO BF Selection frame format**

***TGay editor modify as follows***

P209-211

***In the Table 9-486****,* ***Table 33, Table 34, Table 35, and Table 36 reject***

“ | Protected Dual of Unprotected DMG Action”

***In all appearances reject***

“and is sent when the MIMO BF Selection frame is transmitted unprotected.

The Protected Dual of Unprotected DMG Action field is defined in 9.6.31 and is sent when the MIMO BF Selection frame is transmitted protected.”

**11.25.1.2 Default QMF policy**

***TGay editor modify as follows***

***Remove the text on*** P376L4- P376L7

***Modify in the Table 11-17—Default QMF policy***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Unprotected DMG | 1101 | 20 | 0 – 5 | AC\_VO |

***Insert row in the Table 11-17—Default QMF policy***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DMG | 1101 | 16 | 0–22 | AC\_BE |
| DMG | 1101 | 16 | 23 | AC\_VO |

**11.53.4 Scheduling for data traffic**

***TGay editor modify as follows in the proposed order:***

P394L18 – P395L21

***In all apearances in the text replace “*equal to Protected Dual of Unprotected DMG Action” by “equal to DMG Action”**

***In the figures 174, 175, and 176 remove “of Protected Dual of Unprotected DMG Action category”***

**References:**

1. IEEE P802.11-REVmd/D2.4, August 2019
2. IEEE P802.11ay/D4.1, August 2019