IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | CR MSCS and CID4158 | | | | | | Date: 2020-02-24 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Matthew Fischer | Broadcom |  |  | [Matthew.fischer@broadcom.com](mailto:Matthew.fischer@broadcom.com) | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

Proposed language to address TGmd D3.0 SA1 CIDs 4159, 4160 on MSCS and CID 4158.

Changes are referenced to TGmd D3.1.

**REVISION NOTES:**

**R0**:

initial

**END OF REVISION NOTES**

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGmd Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGmd Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGmd Editor: Editing instructions preceded by “TGmd Editor” are instructions to the TGmd editor to modify existing material in the TGmd draft. As a result of adopting the changes, the TGmd editor will execute the instructions rather than copy them to the TGmd Draft.***

**CIDs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution (Proposed)** |
| 4158 | Fischer, Matthew | 10.6.13.3 | 1799.00 | The formula "2x(VHT-MCS + 1) + 8x(NSS - 1)" is not correct. | Change to "2xVHT-MCS -1 + 8x(NSS - 1)" | Revise - TGmd editor to make changes as shown in 11-20/0516r0 that are marked with CID 4158 which generally agree with the commenter’s suggestion. |
| 4159 | Fischer, Matthew | 11.26.3 | 2451.00 | The MSCS could be optimized for fast Initial link setup and fast BSS transitions. At the moment the MSCS requires separate request and response frames which makes MSCS setup slow and adds signaling overheads. | Please include th MSCS setup signaling to the (Re) association request and response frames. | Revise - TGmd editor to make changes as shown in 11-20/0516r0 that are marked with CID 4159 which generally agree with the commenter’s suggestion. |
| 4160 | Fischer, Matthew | 11.26.3 | 2451.00 | The MSCS could have optional capability to maintain the DL frames UP mappiong tuples for the whole ESS. For instance, if a STA transition BSS from AP1 to AP2, the AP2 could use the learned DL UP settings from the AP1. This would eliminate the delay for the new AP to learn the UP settings from the UL frames transmitted by the STA. | Please define an optional ESS capability that allows the same MCSC DL frames UP mapping tuples to be used within the ESS. | Reject – the commenter has not provided enough information for the TG to make changes that would satisfy the comment. |
|  |  |  |  |  |  |  |

**Discussion:**

**Proposed Changes to TGmd D3.1:**

**CID 4158**

***TGmd editor: within TGmd D3.1, in 10.6.13.3 Additional rate selection constraints for VHT PPDUs, change the text as shown:***

**10.6.13.3 Additional rate selection constraints for VHT PPDUs**

If the channel width of the PPDU is equal to CBW80, CBW160, or CBW80+80, then the STA should not use a <VHT-MCS, NSS> tuple if the VHT-MCS is equal to 0 or 1 and both the HTMCS values 2xVHT-MCS + 8x(NSS – 1) and 2xVHT-MCS – 1 + 8x(NSS – 1) are marked as unsupported in the Rx MCS bitmask of the HT Capabilities element of the receiver STA.

**CID 4159, 4160**

***TGmd editor: within TGmd D3.1, insert a new row as shown into the frame format table for each of the following frames:***

**9.3.3.5 Association Request frame format**

**Table 9-36—Association Request frame body**

**9.3.3.6 Association Response frame format**

**Table 9-37—Association Response frame body**

**9.3.3.7 Reassociation Request frame format**

**Table 9-38—Reassociation Request frame body**

**9.3.3.8 Reassociation Response frame format**

**Table 9-39—Reassociation Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| <ANA> | MSCS Descriptor | The MSCS Descriptor element is optionally present if dot11MSCSActivated is true; otherwise not present. |

***TGmd editor: within TGmd D3.1, insert the following new subclause and editing instructions and text:***

**9.4.2.121 SCS Descriptor element**

***Change Table 9-247 (Optional subelement IDs for SCS Descriptor element) as shown:***

**Table 9-247—Optional subelement IDs for SCS Descriptor element**

|  |  |  |
| --- | --- | --- |
| **Sublement ID** | **Name** | **Extensible** |
| 0 | Robust Action | No |
| 1 | Dialog Token | No |
| 2 | SCS Status List | No |
| 3-220 | Reserved |  |
| 221 | Vendor specific | Vendor defined |
| 222–255 | Reserved |  |

***Insert the following text immediately after Table 9-247 (Optional subelement IDs for SCS Descriptor element):***

The Robust Action subelement data field is identical to the Robust Action field that is defined in 9.6.18.1 (General).

The Dialog Token subelement data field is identical to the Dialog Token field that is defined in 9.4.1.12 (Dialog Token field).

The SCS Status List subelement data field is identical to the SCS Status List field that is defined in 9.6.18.3 (SCS Response frame format).

***TGmd editor: within TGmd D3.1, change the heading of subclause 9.6.18.6 MCSC Request frame format, as shown:***

**9.6.18.6 MSCS Request frame format**

***TGmd editor: within TGmd D3.1, change the heading of subclause 9.6.18.7 MCSC Response frame format, as shown:***

**9.6.18.7 MSCS Response frame format**

***TGmd editor: within TGmd D3.1, in 11.26.3MSCS procedures, change the text as shown:***

**11.26.3 MSCS procedures**

A non-AP STA that supports MSCS may request use of MSCS, or request to update parameters of the currently active MSCS, by sending an MSCS Request or (Re)Association Request frame that includes an MSCS Descriptor element with the Request Type field set to “Add” or “Change”, respectively. The MSCS Descriptor List field in the MSCS Descriptor element identifies how MSDUs are classified into streams and indicates parameters that determine the priority to assign to the classified MSDUs.

Upon receipt of an MSCS Request frame from an associated non-AP STA or from a non-AP STA requesting (re)association, the AP shall respond with a corresponding MSCS Response frame or a (Re)association Response frame containing an MSCS Descriptor element, respectively. A value of “SUCCESS” shall be set in the Status field in the MSCS Response frame or MSCS Descriptor element of the (Re)association Response frame, respectively, when the AP accepts the MSCS request. A value of “REQUEST\_DECLINED”, “REQUESTED\_TCLAS\_NOT\_SUPPORTED”, or “INSUFFICIENT\_TCLAS\_PROCESSING\_RESOURCES” shall be set in the Status field in the MSCS Response frame or MSCS Descriptor element of the (Re)association Response frame, respectively, when the AP denies the MSCS request; an MSCS Descriptor element is optionally present in the MSCS Response frame for this case. If an MSCS Descriptor element is present in the response, the Request Type field is set to “Change” and the element indicates a suggested set of parameters that could be accepted by the AP in response to a subsequent request by the non-AP STA. The AP shall decline an MSCS request with the Request Type field set to “Add” or “Change” if a TCLAS Mask element is not present.

A non-AP STA may request the termination of a currently active MSCS by sending an MSCS Request frame with the Request Type field set to “Remove” in the MSCS Descriptor element. Upon reception of a request to terminate the active MSCS, the AP shall cease to apply the corresponding classifiers and processing related to the active MSCS and delete the maintained list of variables *UP{tuple}*. The AP shall send an MSCS Response frame to confirm the termination of the MSCS, by including a value of “TCLAS\_PROCESSING\_TERMINATED” in the Status field of an MSCS Response frame and the dialog token in the MSCS Response frame set to the value from the MSCS Request frame that requested termination; an MSCS Descriptor element is not present in the response.

The AP may send an unsolicited MSCS Response frame at any time to cancel an active MSCS, by including a value of “TCLAS\_PROCESSING\_TERMINATED”, “TCLAS\_PROCESSING\_TERMINATED\_INSUFFICIENT\_QOS”, “TCLAS\_PROCESSING\_TERMINATED\_POLICY\_CONFLICT” or “TCLAS\_RESOURCES\_EXHAUSTED” in the Status field of an MSCS Response frame and the dialog token in the MSCS Response frame set to 0. The MSCS Descriptor element is optionally present; if present the Request Type field is set to “Change” and the element indicates a suggested set of parameters that could be accepted by the AP in response to a subsequent request by the recipient non-AP STA.

**End of proposed changes.**