IEEE P802.11
Wireless LANs

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| Draft text for CR CID 2327 |
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**CID 2327**

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| --- | --- |
| Commnet | Proposed resolution |
| 1. The Total Number of Sectors and Number of RX DMG Antennas fields have insufficient length for Grant/Grant Ack to negotiate SLS repetiions/ sectors between 2 EDMG STAs2. EDMG STAs may have number of RF chains different than Number of Antennas, but the EDMG capabilities in 9.4.2.250.3 only signals antenna number3. initial SLS between 2 STAs based on each other's capabilities such as number of RX antennas, may not be optimal for the EDMG STAs whcih can receive from multiple RF chains | RevisedComment 1 is addressed by defining in Grant/Grant Ack CT the MSBs of these 2 parameters as shown in the text belowComment 2 is addressed by defining a Number of Concurrent RF Chain capability in PHY Capability field to indicate the max number of antennas which can be activated concurrently, as in the text belowComment 3 can be addressed by using DMG capabilities for the initial SLS between 2 STAs without text changeAdditionally, a requirement is added to mandate Grant/Grant Ack exchange before a SLS if a control mode link is established |

9.4.2.250.4 PHY Capability field

*Change the Figure 33 as follows:*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 B9 | B10 B12 | B13 B15 |
|  | Phase Hopping Supported | Open Loop Precoding Supported | DCM SQPSK Supported | Short CW Punctured Supported | Short CW Superimposed Supported | Long CW Punctured Supported | Long CW Superimposed Supported | SC Maximum Number of SU-MIMO Spatial Streams Supported | OFDM Maximum Number of SU-MIMO Spatial Streams Supported | Number of Concurrent RF Chains |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |

1. —PHY Capability field format

*Add the following 2 paragraphs after paragraph 9*

The Number of Concurrent RF Chains subfield indicates the maximum number of concurrent transmit or receive chains of the STA. The valid range of the value for this subfield is from 0 to 7. The maximum number of concurrent transmit or receive chains of the STA equals to the value indicated in this field plus 1. The value of this field is less than or equal to the value of the Number of DMG Antennas field in the Antenna Polarization Capability field.9.4.2.253 EDMG Channel Measurement Feedback element

*Insert after the paragraph 5*

refers to the value indicated by the Number of Concurrent RF Chains subfield in the EDMG capabilities element of the receiver of the EDMG Channel Measurement Feedback element. refers to the value indicated by Number of Concurrent RF Chains subfield of the EDMG capabilities element of the transmitter of the EDMG Channel Measurement Feedback element.

**10.38.1 General**

*Insert the following paragraph at the end of the sub-clause*

If both initiator and responder are EDMG STAs, and have an established control mode link between them, and if the SLS procedure is not an unsolicited RSS, the initiator shall send a Grant frame to the responder, and the responder shall respond a Grant Ack frame to the initiator, to update the last negotiated Total Number of Sectors field and Number of RX DMG Antennas field with respect to the other STA, before the start of a SLS procure in the same CBAP or SP. For an unsolicited RSS, the last negotiated Number of RX DMG antennas field with respect to the initiator shall be set to 1.

*Change table 52 as follows*

**Table 52—Control trailer definition when CT\_TYPE is GRANT\_RTS\_CTS2self**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Number of bits** | **Start bit** | **Description** |
| Channel Aggregation | 1 | 0 | See Table 17 |
| BW | 8 | 1 | See Table 17 |
| Primary Channel Number | 3 | 9 | See Table 17 |
| SISO/MIMO | 1 | 12 | Set to 0 to indicate that the following transmission from this STA is performed in SISO. Set to 1 to indicate that the following transmission from this STA is performed in MIMO. |
| SU/MU MIMO | 1 | 13 | Set to 0 to indicate SU-MIMO, and set to 1 to indicate MU-MIMO. Reserved when the SISO/MIMO field is set to 0. |
| TX Sector Combination Index | 6 | 14 | Indicates the TX sector combination (as defined in 9.4.2.253) and the corresponding RX AWVs to be used in the following SU-MIMO transmission. Reserved if the SISO/MIMO field is set to 0 or the SU/MU MIMO field is set to 1. |
| EDMG Group ID | 8 | 20 | Indicates the EDMG Group ID of target MU group. Reserved if the SISO/MIMO field is set to 0 or the SU/MU MIMO field is set to 0. |
| MU-MIMO Transmission Configuration Type | 1 | 28 | Sets to 1 to indicate the MU-MIMO transmission configurations obtained from the MU-MIMO BF training of downlink type; and Sets to 0 to indicate the MU-MIMO transmission configurations obtained from MU-MIMO BF training of uplink type. Reserved if the SISO/MIMO field is set to 0 or the SU/MU MIMO field is set to 0. |
| MU-MIMO Transmission Configuration Index | 3 | 29 | Indicates the MU-MIMO transmission configuration (as defined in 9.4.2.x MIMO Selection Control element) to be used in the following MU-MIMO transmission. Reserved if the SISO/MIMO field is set to 0 or the SU/MU MIMO field is set to 0. |
| Total Number of Sectors MSB | 4 | 32 | The Total Number of Sectors MSB is prepended to the Total Number of Sectors subfield in the BF control field to form a single 11 bits value indicating the total number of sectors the initiator or the responder uses during the SLS. This field is reserved and set to 0 when the PPDU does not carry a Grant or Grant Ack frame with Beamforming Training field equal to 1. |
| Number of RX DMG Antennas MSB | 1 | 36 | The Number of RX DMG Antennas MSB is prepended to the Number of RX DMG Antennas subfield in the BF control value to form a single 3 bits value indicating the total number of repetitions of the TXSS the initiator or the responder uses during the SLS. This field is reserved and set to 0 when the PPDU does not carry a Grant or Grant Ack frame with Beamforming Training field equal to 1. |
| Reserved | 90 | 37 | Set to 0 by the transmitter and ignored by the receiver. |
| CTCS | 16 | 127 | Contains the CRC-16 computed over the content of the control trailer. This field is computed as defined in section 20.3.7 |

**Table 27 —TXVECTOR and RXVECTOR parameters**

*Add the following 2 rows to table 27*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NumSectorsMSB | FORMAT is NON\_EDMG | Indicates the value of the Total Number of Sectors MSB field in the control trailer of a Grant of Grant Ack frameThe parameter is valid only when the CT\_TYPE is GRANT\_RTS\_CTS2self  | Y | Y |
| NumAntMSB | FORMAT is NON\_EDMG | Indicates the value of the Number of RX DMG Antennas MSB field in the control trailer of a Grant of Grant Ack frameThe parameter is valid only when the CT\_TYPE is GRANT\_RTS\_CTS2self  | Y | Y |