IEEE P802.11
Wireless LANs

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| SA Ballot Comment Resolution on CID 6160, 6209, 6212 |
| Date: 2020-02-05 |
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Abstract

This submission proposes resolution of the following comments on 11ay D5.0 submitted as part of the initial SA ballot.

- 3 CID: 6160, 6209, 6212

***CIDs regarding MIMO BF:***

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| --- | --- | --- | --- | --- |
| **CID** | **Page.Line Number** | **Comment** | **Proposed Change** | **Resolution** |
| 6160 | 299.38 | The paragraph discribes the 3 subphases in Figure 10-94b. It states "Each subphase shall be separated by an MBIFS". The MBIFS is missing in Figure 10-94b. | Add MBIFS in Figure 10-94b to illustrate where the MBIFS aligns between the suphases. | Revised-The statement "Each subphase shall be separated by an MBIFS" is true for the MIMO phase of SU-MIMO beamforming performed outside a TDD SP, but is wrong for the MIMO phase performed within a TDD SP. Therefore, it is proposed to remove this statement. |
| 6209 | 164.1 | For MU-MIMO BF traning, it is not clear the NTX in this table is referring to the 'Number of TX Antennas' each STA specified in the MIMO BF feedback, which could be different for different STAs, or the 'Number of concurrent RF chains' in the AP's PHY Capabilities.Furthermore, for MU MIMO BF training there is no MIMO BF feedback indicating number of TX antennas | Specify NTX corresponds to the 'Number of concurrent RF chains' in the AP's PHY Capabilities | Revised-Agreed with the commenter that NTX is not clearly defined in the MIMO Selection Control element. In oder for MIMO Selection Control element to be self-containable, it is proposed to insert a new field “Number of TX Antennas” into this element. This field describes the NTX used in each MU-MIMO transmission configuration. |
| 6212 | 307.11 | "The EDMG group ID corresponding to the MU group shall be indicated in the EDMG Group ID field"Is the EDMG group ID in the MIMO Selection Control element the one newly assigned in the EDMG group ID set element, or the group ID used in setup?If it is the newly assigned one, then there could be potentially multiple MIMO selection Control elements in one MIMO BF selection frame.If a STA is assigned a new group ID in MIMO BF selection frame, does it mean the STA no longer has the membership of an old group ID? | Clarifiy the EDMG Group ID and Group User mask in the MIMO selection control element corresponds to to the newly assigned group ID in the EDMG Group ID Set element later in the frame.In Table 9-487e, specify one or more MIMO Selection Control element | Revised-Basically the EDMG group ID in the MIMO Selection Control element is the group ID used in MU-MIMO BF setup. After MU-MIMO beamforming training is completed, the EDMG Group ID Set element may be used to update the MU group corresponding to the EDMG group ID in the MIMO Selection Control element and/or other MU groups. It is proposed to further clarify MU-MIMO BF selection procedure.  |

**Proposed changes to D5.0:**

**TGay editor: change the paragragh (P299L37) as follows (CID 6160):**

The reciprocal MIMO phase is shown in Figure 10-94b and consists of three subphases: an SU-MIMO BF setup subphase, an initiator SMBT subphase and an SU-MIMO BF feedback subphase.

**TGay editor: change the table 9-321u (P164L1) as follows (CID 6209):**

**Table 9-321u – MIMO Selection Control element format**

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|  |  |  |
| --- | --- | --- |
| **Field** | **Size (bits)** | **Meaning** |
| Element ID | 8 |  |
| Length | 8 |  |
| … |  |  |
| MU-MIMO Transmission Configuration Type | 1 | This field is set to 0 to indicate the MU-MIMO transmission configurations obtained from the nonreciprocal MU-MIMO BF training. This field is set to 1 to indicate the MU-MIMO transmission configurations obtained from the reciprocal MU-MIMO BF training. |
| Number of TX Antennas | 3 | Indicates the NTX used in each MU-MIMO transmission configuration. |
| … |  |  |

**TGay editor: change the table 9-487e (P209L1) as follows (CID 6212):**

**Table 9-487e – MIMO BF Selection frame Action field format**

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|  |  |
| --- | --- |
| **Order** | **Information** |
| 1  | Category  |
| 2  | Unprotected DMG Action  |
| 3  | Dialog Token  |
| 4  | MIMO Selection Control element  |
| 5 | EDMG Group ID Set element (optional) |

**TGay editor: insert the following paragraph after P307L10 as follows (CID 6212):**

The EDMG group ID corresponding to the MU group, which is the same as that is used in the MU-MIMO BF setup subphase, shall be indicated in the EDMG Group ID field and the number of MU-MIMO transmission configurations, *Nconf*, shall be indicated in the Number of MU-MIMO Transmission Configurations field.

**TGay editor: insert the following paragraph after P307L25 as follows (CID 6212):**

Each MIMO BF Selection frame may include an EDMG Group ID Set element to update the MU group corresponding to the EDMG group ID indicated in the EDMG Group ID field of the MIMO Selection Control element and/or other MU groups.

**TGay editor: add the following paragraph after P152L35 as follows (CID 6212):**

The EDMG Group ID Set element is transmitted in DMG Beacon frames, Announce frames or MIMO BF Selection frames.