IEEE P802.11
Wireless LANs

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| LB234 Comment Resolution |
| Date: 2018-10-16 |
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Abstract

This document proposes resolution to some CIDs in LB234.

Resolutions are based D2.1

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| 3200 | 62.00 | 8.3.5 | Missing a method in the PHY-config vector to define which RX chains are active and which DMG antennas are connected to each RX chain | Add the mapping between RX chains and DMG antennas to the PHY-Config vector |

Proposed Resolution: **Reject**

**Discussion**

The PHY-CONIFG interface contains the ANT-CONFIG parameter which is general enough to carry antenna selection (to RX chains)

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| 3550 | 106.00 | 9.4.2.250 | there is no normative behavior associated with the Maximum PHY Rate. It has no implication on behavior. | As commented |

Proposed Resolution: **Revise**

**Discussion**:

We propose to modify the text in the multi-rate support clause to fix this issue.

***TGay Editor: Modify the text in P182L12-16 (11.6.7.4 in D2.1) as follows:***

An individually addressed Data or Management frame transmitted to an EDMG STA shall be sent using a combination of MCSs, number of spatial streams and bandwidth supported by the receiver STA, as reported in the maximum receive MCS subfields and Maximum PHY rate field in the Supported MCS Set subfield of the DMG STA Capability Information field and in the Extended SC MCS Capabilities field of the DMG capabilities element, and in the EDMG Capabilities element carried in Management frames transmitted by the receiver STA.

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| 3524 | 117.00 | 9.4.2.253 | Discussion of normative behavior of first path and dual polarization training is found here. Should be elsewhere in the text. | Move to 9.4.2.253 EDMG Channel Measurement Feedback element |

Proposed Resolution: **Reject**

**Discussion**

The text in question describes the content of the channel measurement field according to the type of the frame that solicited the feedback. This is similar to saying that the number of measurements is equal to the number of TRN fields in the frame over which the measurement was performed (already part of the baseline). We therefore think that the text is (marginaly) not normative behavior. As it descrbies the content of the field, it is better placed near the field description, rather than the protocol description.

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| 3554 | 125.00 | 9.4.2.257 | " beamformed link maintenance timer" is not well defined. The time in which the initiator set the timer is not clear (time when BF was established or when link was observed as lost?" the time synchronization mechanism between the initiator and responder is not clear as well | Please clarify the synchronization mechanism between the initiator and responder |

Proposed Resolution: **Revised**

**Discussion**

The time in which the timer is set is well defined in 11.27.1.1 (Actually in RevMD D1.6 it is in 11.28.1.1)

It may be good to add a refence to that clause.

***TGay Editor: Modify the text in P124L24-27 as follows:***

When sent by the initiator of the partial sector level sweep exchange, the Time to Switch to Complete Sector Sweep field is the time, in units of one millisecond, after the expiration of the beamformed link maintenance timer (see 11.27.1.1) that the initiator of the exchange proposes to switch to a complete sector level sweep. This field is reserved when sent by the responder of this exchange.

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| 3553 | 158.00 | 9.5.1 | EDMG station might have upto 8 antennas. It is not aligned with the DMG Antenna ID field within SSW field format when transmitted in a DMG Beacon frame that contains only two bits | consider to increase the Antenna ID field in the SSW frame to 3 bits |

Proposed Resolution: **Revised**

***TGay Editor: Modify figure 105 (SSW field format when transmitted in a DMG Beacon frame) as follows:***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 B9 | B10 B15 | B16 B17 | B18 | B19 B21 | B22 | B23 |
|  | Direction | CDOWN | Sector ID | DMG Antenna ID | Quasi-omni TX | PCP/AP Coverage Parameter | RX Unassociated Short SSW | DMG Antenna ID MSB |
| Bits: | 1 | 9 | 6 | 2 | 1 | 3 | 1 | 1 |

***TGay Editor: Add the following at P157L23 (end of 9.5.1)***

The DMG Antenna ID MSB field is prepended to the DMG Antenna ID field to create a single 3 bit field.

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| 3559 | 158.00 | 9.5.1 | Field name "selected DMG antenna" in the decryption does not match the name in the figure | change the field name |

Proposed Resolution: **Accept**

***TGay Editor: modify the text in P158L15 as follows:***

The interpretation of theDMG Antenna Select subfield depends on the value of the EDMG Extension Flag subfield.

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| 3450 | 242.00 | 10.43.6.4.1 | The equation should also take into account of number of tx chains of the TRN | suggest the equation time the number of tx chains |

Proposed Resolution: **Revised**

***TGay Editor: Modify the text in P243L25-27 as follows:***

 where , , and are the values of the EDMG\_TRN\_LEN, EDMG\_TRN\_M, EDMG\_TRN\_N and NUM\_TX\_CHAINS parameters, respectively, in the RXVECTOR of the kth EDMG BRP packet of the TXSS

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| 3452 | 242.00 | 10.43.6.4.1 | the N-TRN-SB equation should align with p242 L1 | as in comment |

Proposed Resolution: **Revised**

***TGay Editor: Modify the text in P244L17-21 as follows:***

* The Number of Measurements subfield of the FBCK-TYPE field is at least the minimum of {16, }, where , where , , and are the values of the EDMG\_TRN\_LEN, EDMG\_TRN\_M, EDMG\_TRN\_N and NUM\_TX\_CHAINS parameters, respectively, in the RXVECTOR of the received BRP-TX PPDUs and is the total number of BRP-TX packets received in the TXSS.

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| 3457 | 288.00 | 10.43.9.6 | An EDMG STA that is first path beamforming capable and that receives a BRP frame with the First Path Training subfield equal to 1 shall set the First Path Training subfield to 1 in the frame that it sends in response to the reception of the BRP frame.'Based on this requirement, how does responder request initiator also do a First Path training, if this bit is always set to 1? | Suggest to change this subfield only to represent a request |

Proposed Resolution: **Revised**

**Discussion**

As defined in the paragraph below the quoted text, First Path BF training is a full BRP transaction in which all TX and RX training look for the first path. As long as the transaction continues, the responder has to perform all the training on first path. In order for the responder to request first path training, it has to start a new transaction. We propose to make it clear that the initiator cannot start first path BF unless it is the beginning of the BF transaction.

***TGay Editor: Modify the text inP289L27-31 (10.43.9.6) as follows:***

An EDMG STA requests first path beamforming training by initiating a BRP transaction with a BRP frame containing a training request that has the First Path Training subfield set to 1. An EDMG STA that is first path beamforming capable and that receives a BRP frame with the First Path Training subfield equal to 1 shall set the First Path Training subfield to 1 in the frame that it sends in response to the reception of the BRP frame.

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| 3191 | 375.00 | 4 | 29.3.3.3.2.2 | "For 2.16+2.16 GHz PPDU transmission, the first NTX/2 transmit chains shall be used for transmission on the primary channel and the second NTX/2 transmit chains shall be used for transmission on the secondary channel. For 4.32+4.32 GHz PPDU transmission, the first NTX/2 transmit chains shall be used for transmission on the primary and secondary channels and the second NTX/2 transmit chains shall be used for transmission on the secondary1 and secondary2 channels."The Second and Third sentences are behavioral and should not be part of header fields description. They should be removed | Remove these two sentences (move to 29.4.7.3.3) |

Proposed Resolution: **Accept**

**Discussion**

This text has several issues.

1. “shall” language is being used in a non-behavioral clause.
2. It is not transmit chains that are allocated to different channels in aggregation. In fact channel aggregation can be used even if the device has a single transmit chain.
3. The number of transmit chains is not really relevant to the PHY header (almost, it appears for the case of TRN fields).

Therefore this text should be removed.

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| 3204 | 376.00 | 1 | 29.3.3.3.2.3 | Reserved fields values are not always defined | Add a paragraph before or after table 53 saying that all fields, when reserved are set to 0 and ignored by receiver |

Proposed Resolution: **Revised**

***TGay Editor: Add the following text after table 54:***

Reserved bits in table 53 and table 54 are set to 0 by the transmitter and shall be ignored by the receiver.

***TGay Editor: in table 56 column 4 line 3, modify the following text:***

A Differential EDMG-MCSi subfield is reserved and set to 0 if spatial stream *i* is not defined, it shall be ignored by the receiver.

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| 3203 | 377.00 | 1 | 29.3.3.3.2.3 | Primary Channel: "Contains the 3 LSBs of the primary channel number of the BSS minus one." Order of operations is not clear, is the masking to 3 bits done after removing 1(likely) or before. | Since the values (before subctraction) is 1-8, it is enough |

Proposed Resolution: **Revised**

***TGay Editor: Modify the primary channel line, value column of table 53 as follows:***

Corresponds to the TXVECTOR parameter PRIMARY\_CHANNEL. Contains the primary 2.16GHz channel number of the BSS minus one.

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| 3205 | 386.00 | 29.3.4 | there is a confusion in what are the units of thes MIB variables/PLME interfaces. If it is frequency, values cannot be 1-11. If these are indices, these are indices of what? | Add a pointer to figure 159 next to "values are 1-11" in at least one line in the table |

Proposed Resolution: **Accept**

***TGay Editor: Modify the 3rd line, 2nd column of table 61 (Fields that specify a channel used by an EDMG STA) as follows:***

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| For a 2.16 GHz, 4.32 GHz, 6.48 GHz, and 8.64 GHz channel, denotes the channel center frequency. For a 2.16+2.16 GHz channel, denotes the center frequency of the primary channel. For a 4.32+4.32 GHz channel, denotes the center frequency of the 4.32 GHz channel containing the primary 2.16 GHz channel. Value range is 1 – 11 (See Figure 162 —Channelization used by EDMG STAs).  |

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| 3206 | 403.00 | 29.3.8 | It is not specified for how long the signal has to be above the MCS1+20dB for CCA indication busy to be activated | Add a sentence at the of the paragraph saying that the signal should exceed the CCA level for at least aDMGCCAEDDetectTime where aDMGCCAEDDetectTime will be defined as 4usec |

Proposed Resolution: **Accept**

***TGay Editor: Modify P407L5-7 as follows:***

CCA.indication(BUSY) shall be maintained for the duration of the PPDU. The receiver shall issue the PHY-CCA.indication(BUSY) for any signal 20 dB above the minimum sensitivity for a 2.16 GHz PPDU using SC MCS 1 for at least aDMGCCAEDDetectTime.

***TGay Editor: Modify P407L513-15 as follows:***

the PHY-CCA.indication(BUSY,primary/secondary/secondary1/secondary2) for any signal 20 dB above the minimum sensitivity for a 2.16 GHz PPDU using SC MCS 1 at any of the channels (primary/secondary/secondary1/secondary2) the receiver is open to receive in for at least aDMGCCAEDDetectTime.

***TGay Editor: Add the following as a last line to table 153 —EDMG PHY characteristics:***

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| aDMGCCAEDDetectTime | 4 usec |

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| 3207 | 403.00 | 29.3.9.2 | RCPI cannot be measurd on both L-STF , L-CEF and EDMG-STF and EDMG-CEF because due to different spatial mapping matrices (beam forming) the power can change signficantly between the legacy part and the new part | Repalce "This parameter shall be measured by the PHY over the preamble of a received PPDU, that is, L-STF or L-CEF, or both, and, if present, EDMG-STF or EDMG-CEF, or both." With "This parameter shall be measured by the PHY over the preabmeld of a received PPDU, that is L-STF or CEF, or if present EDMG-STF or EDMG-CEF." |

Proposed Resolution: **Accept**

***TGay Editor: Modify P407L26-27 as follows:***

measured by the PHY over the preamble of a received PPDU, that is, L-STF or L-CEF, or both, or if present, EDMG-STF or EDMG-CEF. The measurement shall be done over the same bandwidth as

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| 3383 | 403.00 | 29.3.8 | It seems that "combination" in "any combination of 4.32 GHz, 6.48 GHz,.." is not necessary and should be removed. | as per comment |

Proposed Resolution: **Accept**

***TGay Editor: Modify P403L8 as follows:***

For a receiver open to 4.32 GHz, 6.48 GHz, 8.64 GHz, 2.16+2.16 GHz, or 4.32+4.32

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| 3727 | 403.00 | 29.3.8 | Don't we need some CCA rules (PD) for channel bonding and channel aggregation | Add some CCA rules (PD) for channel bonding and channel aggregation |

Proposed Resolution: **Reject**

**Discussion**

The text in the second paragraph of 29.3.8 clearly discusses the CCA rules for power detection in channel bonding and channel aggregation (CCA is busy for any signal 20dB above sensitivity in any 2.16 that is not the primary channel).

**SP**

Do you agree to accept the resolution of CIDs 3200, 3550, 3524, 3554, 3553, 3559, 3450, 3452, 3457, 3191, 3204, 3203, 3204, 3206, 3207, 3383, 3727 as specified in 11-18-1770-00-00ay-LB234-Comment-Resolution-I into the spec draft?

**References:**

**[1] Draft P802.11ay\_D2.1**