IEEE P802.11  
Wireless LANs

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| Resolution to CID 6183 and 6208 | | |
| Date: 2020-April-21 | | |
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Abstract

This submission proposes resolution to CID 6183 and 6208

The resolutions are in reference to Draft IEEE P802.11ay Draft5.0 &

11-20-0157-01-00ay-sa-ballot-comment-resolution-cids-6113-6114-6110-6111-6112.docx

|  |  |  |  |
| --- | --- | --- | --- |
| CID | Clause | Comment | Proposed change |
| 6183 | 20.9.1 | The text "For a STA that does not support TDD SPs" is not adequate. Just the fact that an STA supprts or not TDD SPs is not the issue. The requirement is for the actual operation mode. An STA may have many elements and RF modules and use them per mode. | Suggest to replace with "For a STA operation in non- TDD SPs"... |

**Existing text:**

**20.9.1 Beamforming concept**

DMG STAs use a quasi-omni antenna pattern. For a STA that does not support TDD SPs (see 10.39.6.2.2), the antenna gain of the main beam of a quasi-omni antenna pattern should be at most 15 dB lower than the antenna gain in the main beam for a directional pattern, unless the STA is an EDMG STA that supports beamforming for asymmetric links (see 10.42.10.3), in which case this difference in antenna gain may be greater than 15 dB.

**Discussion:**

The 802.11ay allows any STA to support TDD mode and operate in a non TDD mode. Furthermore, an STA may change its antenna array based on operation mode or other parameters.  
Hence, the fact that an STA supports TDD mode should not be the reson for a specific quasi-omni antenna gain.

**Proposed resolution:** **Revised.**

***TGay Editor: Edit the text in 20.9.1 P395L18-22:***

DMG STAs use a quasi-omni antenna pattern. For a STA that is not operating in a TDD SP (see 10.39.6.2.2), the antenna gain of the main beam of a quasi-omni antenna pattern should be at most 15 dB lower than the antenna gain in the main beam for a directional pattern, unless the STA is an EDMG STA that supports beamforming for asymmetric links (see 10.42.10.3), in which case this difference in antenna gain may be greater than 15 dB.

|  |  |  |  |
| --- | --- | --- | --- |
| CID | Clause | Comment | Proposed change |
| 6208 | 9.4.2.142.6 | In cluase 28, a LDPC CW is stream parsed to multiple sptial streams, It is not clear LDPC Statistics could have different values for different spatial streams. | Revise the field definition |

**Discussion:**

As seen in “Figure 28-15 – Transmitter block diagram for the EDMG modulated fields of an SU PPDU

transmission” and described in 28.5.9.4.3, step e (page 516), the commenter is correct. There is always just one LDPC encoder and decoder.

**Proposed resolution:** **Revised.**

***TGay Editor: Edit the second half of Figure 9-583 P128L9:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Rate Adaptation Control/Extended TPC | RX Chain Statistics | PPDU Statistics | LDPC Statistics | SC/OFDM Statistics | Extended TPC |
| Octets: | 5 | 0 or NRX | 0 or 3xNSTS | 0 or 8 | 0 or 4xNSTS | 0 or 2xNSTS |

***TGay Editor: Edit Figure 9-583d P131L17-18 to be (remove second half):***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Average Iterations | Max Iterations | Nonzero Syndromes | Number of LDPC Codewords |
| Octets: | 1 | 1 | 1 | 3 |

The Average Iterations subfield within the Rate Adaptation Control/Extended TPC field, indicates the average number of iterations used by the LDPC decoder on PSDUs received within a report interval intended for the STA, and where all PSDUs are transmitted using an MCS other than MCS 0 or EDMG MCS 0. One iteration includes processing of all rows. The value of the subfield is found by computing the arithmetic mean of number of iterations across all LDPC codewords in each PSDU, and across all PSDUs in the measurement set, and encoding as an 8 bit unsigned integer with 0 to 255 representing 0.0 to +25.5 iterations in 0.1 steps.

The Max Iteration subfield within the Rate Adaptation Control/Extended TPC field, indicates the maximum number of iterations used by the LDPC decoder on PSDUs received with an MCS different than MCS 0 or EDMG MCS 0. One iteration includes processing of all rows. The value of the subfield is the maximum number of iterations across all LDPC codewords in each PSDU, and across all PSDUs in the measurement set, encoded as an 8 bit unsigned integer with 0 to 255 representing 0.0 to +25.5 iterations in 0.1 steps.

The Nonzero Syndromes subfield within the Rate Adaptation Control/Extended TPC field, indicates the number of LDPC codewords with nonzero syndrome, summed across all PSDUs received within a report interval intended for the STA, and where the PSDUs are transmitted using an MCS other than MCS 0 or EDMG MCS 0.

The Number of LDPC Codewords subfield within the Rate Adaptation Control/Extended TPC field, indicates the number of processed LDPC codewords using an MCS different than MCS 0 and included in the Average Iterations, Max Iterations and Nonzero Syndromes subfield statistics. The value is saturated to 224 – 1 if it overflows.

Note that 4 instances of This statistic is reset when the reset condition defined below in this subclause is met. Have been removed – CID 6112, motion passed: IEEE802.11-20/0239r6 Motion #643. (Reference: 11-20-0157-01-00ay-sa-ballot-comment-resolution-cids-6113-6114-6110-6111-6112.docx)