IEEE P802.11
Wireless LANs

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| D0.1 PHY comment resolution |
| Date: 2010-07-11 |
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Abstract

This document proposes resoltions to comments on Draft 0.1 of TGad classified as PHY commnets.

**PHY related Comments**

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| 3 | 319 | 23 | Last two sequences of STF is -b128 and -a128, which is the same as the last two sequences of CES. It is better to differentiate. | For Control PHY use Channel Estimation field of OFDM Packets. |

Proposed Resolution: **Reject**

Discussion: The gain in changing to the OFDM channel estimation is not clear.

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| 405 | 336 | Table 78 | Is the support for transmission/reception of Additional PPDU mandatory or optional? Also, when there is an additional PPDU, does the 2ms constraint on PPDU time (aMMWavePPDUMaxTime) only limit the duration of each PPDU individually, or the duration of the whole aggregation of PPDU+additional PPDUs? | Provide more details on the "Additional PPDU" feature. |

Proposed Resolution: **Counter**

***TGad Editor: in figure 30, insert a new field named*** *“*A-PPDU supported*”* ***with a size of 1 bit, replacing the first reserved bit, and define it as:*** *“*The A-PPDU supported field is set to one to indicate that the STA supports A-PPDU aggregation as described in 9.7f. Otherwise, it is set to zero.*”*

***TGad Editor: insert a new subclause 9.7f:***

An mSTA is aggregate PPDU (A-PPDU) capable if the A-PPDU supported field within the mSTA’s mmWave Capability element is set to one. Otherwise, the mSTA is A-PPDU incapable.

An mSTAs shall only employ PPDU aggregation with a peer STA if the peer STA is A-PPDU capable.

An A-PPDU is a sequence of two or more PPDUs transmitted without IFS, preamble and separation in between PPDU transmissions. All PPDUs within an A-PPDU shall have the Additional PPDU field within the PLCP header set to one, except for the last PPDU in the A-PPDU which shall have this field set to zero. The value of fields within the PLCP header of a PPDU belonging to an A-PPDU may differ from other PPDUs in the same A-PPDU, including the MCS field.

A PPDU within an A-PPDU shall be comprised of only A-MPDUs. All A-MPDUs within an A-PPDU shall have the same values for the TA and RA fields. All A-MPDUs within an A-PPDU shall have the same value for the Ack Policy subfield within the QoS Control field. If a BlockAckReq frame is present within an A-PPDU, it shall be transmitted in the last A-MPDU of the A-PPDU.

The transmission duration of an A-PPDU shall be no greater than aMMWavePPDUMaxTime.

An A-PPDU capable mSTA that receives an A-PPDU shall only respond with an acknowledgement frame, if appropriate, after it receives the last PPDU in the A-PPDU. The last PPDU in an A-PPDU has the Additional PPDU field in the PLCP header set to zero.

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| 406 | 338 | 14-15 | Repeating should happen before multiplication by -1.  | Also clearly state that, after adding guard symbols, this will form the second SC block, which is appended to the first SC block. |

Proposed Resolution: **counter**

**TGad Editor, Change P338L14 as follows:**

The same resulting NCBPB symbols are multiplied by -1 and then prepended with NGI guard symbols as described in subclause 21.6.3.2.4. The resulting sequence is then appended after the sequence created in step (5.

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| 407 | 341 | 2 | The expression for π/2-QPSK does not have a unit power. | Divide the expression by sqrt(2). |

Proposed Resolution: **Accept**

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| 408 | 342 | 22 | EVM equation should have a + instead of - between the squared I/Q error contributions | change - to + |

Proposed Resolution:**Accept**

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| 412 | 346 | 6 | It seems that interleaving is done only for MCS 25. Why don't MCS 26 and 27 need interleaving? | Clarify |

Proposed Resoluiton: **Reject**

Discussion: MCS25 uses interleaving because two concatenated codes are being used.

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| 414 | 349 | 29 | Why do we need AGC fields in addition to training fields? Is it mandatory to transmit/use the AGC field? A device may choose to use the training field for setting AGC as well. | Clarify |

Proposed Resolution: **Reject**

Discussion: The AGC fields are used when the receiving device wants to have a single AGC setting for receiving all the TRN-R/T fields. This may be necessary since the beamforming may require phase comparisons between measurements on different TRN-T/R sub-fields. This may be hard if AGC changes happen between receptions. It is the choice of the receiving device whether to change it or not.

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| 416 | 350 | 12 | What is the purpose of having the training subfields as bundles of 4? Should the 4 fields/subfields T1-T4 be transmitted using the same AWV, or can they be transmitted using 4 different AWV? | Clarify |

Proposed Resolution: **Reject**

Discussion: The purpose of grouping the fields in groups of 4 was to save bits in the fields defining them. They can be transmitted by either the same AWV or different AWV, which is up to the transmitting STA choice.

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| 417 | 350 | 17-26 | The measured channel corresponds to different Tx/Rx AWV; so the set of strong taps can be very different from each subfield to another. Therefore, the tap selected during CE subfields may not be very useful during training subfields. | Need to justify this clause. Also, clarify if doing the measurements this way is mandatory. Since this is an implementation issue, it is beyond the scope of the spec. |

Propsoed Resolution: **Counter**

Discussion: the set of taps needs to be the same since these are relative measurements (see P350L26)

This cannot implementation dependant since this is measured by one device and sent as feedback to another one.

***TGad Editor: Change P350L26 as follows:***

amplitude and phase of this tap in the *k’th* repetition compared to this tap in first TRN-T subfield.

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| 56 | 351 | 2 | What is the purpose of specifying (k=1,2,...7) in this formula ? | remove (k=1,2,...7) |

Proposed Resolution: **Accept**

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| 418 | 316-318 |   | Is there a formula or a pattern for obtaining the parity-check matrices of higher rate LDPC codes from the rate 1/2 matrix (Table 69)? There seems to be a pattern, but it is not fully clear. | Explain the relation of different LDPC parity-check matrices, and how they all can be obtained (via simple matrix operations) from a master code matrix. If there is no such relationship between code matrices, it will be very useful to modify the matrices in order to obtain such a relationship. |

Proposed Resolution: **Reject**

Discussion: Interpretation of the LDPC matrices (or efficient impelementation of the decoder) is beyond the scop of the draft.

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| 346 | 320, 324, 33 | 11, 18 19 | The scrambler Initialization is not nibble or byte align. Scrambling start from 6th bit, and 8th bit for Control PHY and SC/OFDM Header respectively. Hardware implmentation of scrambler is more complex if parallel architecture is used.  | Padded with Reserved bits to byte aligned. Example,Control PHY header => Move the Reserved bits field of 3 bits to the front to make up 4 reserved bits before the 4 bits Scrambler Initialization. SC/OFDM header => Remove 1 bit from the Reserved field and move to the front before the 7 bits Scrambler Initialization. |

Proposed Resolution: **Reject**

Discussion: The gain in byte/nibble alignment is negligible.