IEEE P802.11
Wireless LANs

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| Miscellaneous LB189 PHY Comments  |
| Date: 2012-11-05 |
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Abstract

This document proposes resolutions to miscellaneous LB189 CIDs assigned to the author.

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| 389 | 23.3.8.1.1 | T | 241.62 | "The correction factor for transmissions over 6 MHz and 7 MHz channels is 7.5.The correction factor for transmissions over 8 MHz channels is 5.625." should be "The multiplicative correction factor .." | As in Comment. |
| 535 | 23.3.8.1.1 | T | 241.62 | "The correction factor for transmissions over 6 MHz and 7 MHz channels is 7.5.The correction factor for transmissions over 8 MHz channels is 5.625." should be "The multiplicative correction factor .." | As in Comment. |

**Resolution**: Revise

**Discussion**: Agree with the commentor that “correction factor”is not the right terminology. On the othe other hand, “multiplicative factor” also seems inappropriate as this factor is sometimes used in some instances to multiply (e.g. timing parameters) and in other instances to divide (e.g. frequency parameters). Therefore we propose to use an anternative terminology, “normalization factor”.

**Change**: ***Note to editor***: Change all occurrence of “correction factor” to “normalization factor”. There are two instances in clause 23.3.8.1.1 and one instance in 23.3.8.2.2.

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| 392 | 23.3.9.2 | T | 243.57 | "Transmission of HT PPDU with any number of antennas is not supported in Clause 23." Maybe this should be a stronger normative statement. | As in Comment. |
| 538 | 23.3.9.2 | T | 243.57 | "Transmission of HT PPDU with any number of antennas is not supported in Clause 23." Maybe this should be a stronger normative statement. | As in Comment. |

**Resolution**: Reject

**Discussion**: It will be obvious to the reader that HT waveforms are not supported in TVWS.

**Change**: none

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| 401 | 23.3.19.5.4 | T | 255.46 | "A TVHT\_W non-HT duplicate or TVHT PPDU detected in the secondary TVHT\_W channel at or above a threshold (-80.75 dBm for 6 MHz, -80.75 dBm for 7 MHz and -79.5 dBm for 8 MHz) with >90% probability within a period aCCAMidTime (see 23.4.4 (PHY characteristics))." Numbers should be -77.75dBm and -76.6dBm for 6/7MHz and 8 MHz, respectively. Also revise numbers in the 4 paragraphs that follow, they seem not to be all consistent. | As in Comment. |
| 547 | 23.3.19.5.4 | T | 255.46 | "A TVHT\_W non-HT duplicate or TVHT PPDU detected in the secondary TVHT\_W channel at or above a threshold (-80.75 dBm for 6 MHz, -80.75 dBm for 7 MHz and -79.5 dBm for 8 MHz) with >90% probability within a period aCCAMidTime (see 23.4.4 (PHY characteristics))." Numbers should be -77.75dBm and -76.6dBm for 6/7MHz and 8 MHz, respectively. Also revise numbers in the 4 paragraphs that follow, they seem not to be all consistent. | As in Comment. |

**Resolution**: Reject

**Discussion**: CCA rules are consistent with 11ac requirements.

**Change**: none

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| 405 | 23.3.6 | T | 237.01 | 7MHz regulatory domains re-use the 6MHz PHY is a 15% bandwidth waste. Since 8MHz channel is just a sampling clock change of 6MHz, 7MHz can be implemented the similar way | Add 7MHz smpling clock change. |

**Resolution**: Reject

**Discussion**: This issue has been discussed in detail in 11af previously. The complexity and associated cost of an additional (7MHz) PHY waveform outweighs its benefits, especially given that 7MHz is applicable only to a few regulatory regions.

**Change**: none

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| 598 | 23.3.7 | G | 238.33 | In TVWS operation, the channel role could be changed at any time. What happen if the primary channel is changed? | As the channel role could be changed at any time due to the dynamic nature of TVWS, the role change mechanism is desirable. Expression of f\_{PW,idx} (eqn.(23-1)) needed to be re-considered. |
| 599 | 23.3.7 | T | 238.33 | The channel conditions on multi-TVWS-channel could be widely varied. The selection of primary channel could be determined by the multiple factors in TVWS operation, e.g, SNR values of multiple aggregated channels. Fixed relation between the center frequency and the primary channel does not give the flexibility of choosing the most suitable primary channel in TVWS operations. | Due to the unpredicted feature of interference levels, the channel role could be changed at any time. Then the relation between the center frequency and the primary channel is not fixed in TVWS operation. Expression of f\_{PW,idx} (eqn.(23-1)) needed to be re-considered. |

**Resolution**: Reject

**Discussion**: Equation 23-3 does not imply that the relationship between primary segment center frequency and the primary channel center frequency is fixed.

**Change**: none.

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| 745 | 23.3.7 | T | 239.06 | If equation (23-3) has N\_P2W as 1, do we not have two values for f\_P2W.idx? | Clarify |

**Resolution**: Reject

**Discussion**: TVHT\_MODE\_4N uses two non-contiguous frequency sections whereby each frequency section is comprised of two contiguous frequency segments (TVHT\_2W). Due to this restriction, *fP2W,idx* has a unique value, for a given value of *fc,idx0*.

**Change**: No change

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| 764 | 23.3.8.2.2 | T | 242.54 | Simply downclocking the CSD value from current 11ac spec may not be optimum for sub-1GHz transmissions. If downclocking is optimal, provide CSD simulation results to show solid reasoning for this decision. | Either use schemes similar to those used in 802.11ah or provide CSD simulation results to show that the downclocked CSD value is the optimal choice for 802.11af. |

**Resolution**: Reject

**Discussion**: Disagree with commentor’s assertion that 11ac CSD values cannot be used directily. CSD values, normalized as specified in the 11af Darft 2.0, will have the same impact as in 11ac. Thus we believe no additional justification is required for the using normalized 11ac CSD values.

**Change**: None.

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| ~~791~~ | ~~23.3.6~~ | ~~T~~ | ~~237.47~~ | ~~In current draft, TVWT\_MODE\_2C should be implemented by larger than 256FFT or two basebands, however VHT 80MHz can be implemented by 256FFT. This may bring significant difference in supporting TVWT\_MODE\_2C in mobile device. Since one single channel for TVWS is much smaller than 20MHz, throughput provided by one single TV channel will be lower than single channel. It will be better to proivde an easy way to support at least two contiguous channel.~~ | ~~See comment.~~ |

**~~Resolution~~**~~:~~

**~~Discussion~~**~~:~~

**~~Change~~**~~:~~

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| ~~792~~ | ~~23.3.4.2~~ | ~~T~~ | ~~234.01~~ | ~~In current draft, TVWT\_MODE\_1 uses down-clock factor of 7.5 (in case of 6 MHz and 7 MHz) channel. Due to this fact, the length of preamble is much larger than that of 20 MHz. Consider a method to reduce preamble length. E.g. one of the way to reduce this preamble is reducing the size of L-STF.~~ | ~~See comment.~~ |

**~~Resolution~~**~~:~~

**~~Discussion~~**~~:~~

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| 794 | 23.3.6 | T | 237.01 | NSR is defined twice and differently in table 23-3 and table 23-4. | Change NSR in Table 23-4 to another parameter, e.g. NTT as proposed in 11-12/809r5. |

**Resolution**: Accept.

**Discussion**: Agree that N\_SR is being used to represent two different parameters.

**Change**: *Note to Editor*: Change “N\_SR” to “N\_TT” in Table 23-4, page 237 line 43.

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| 803 | 23.3.6 | T | 237.32 | Table 23-4: It appears that tone locations of Mode\_2C, Mode\_2N, Mode\_4C, Mode\_4N are changed from that of 11ac. The changes appears to accomodate the inclusion of Mode\_2N. Is the Mode\_2N so important to justify such changes ? | Please justify the changes. |

**Resolution**: Reject

**Discussion**: 11ac only supports contiguous and non-contiguous concatenation of 80MHz channels. On the other hand, 11af uses 11ac 40MHz waveform as the baseline i.e. TVHT\_MODE\_1 waveform is derived by downclocking the 11ac (VHT) 40 MHz waveform. Tone map of VHT 40 MHz is identical to TVHT\_MODE\_1. Nevertheless in all TVHT waveforms, the tone map within each frequency segment is identical to the VHT 40 MHz tone map. Since concatenated TVHT waveforms (Mode\_2C, Mode\_2N, Mode\_4C, Mode\_4N) do not have equivalent 11ac waveforms, the comment is not valid.

**Change**: No change required.

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| 854 | 23.3.19.5.4 | T | 255.58 | There seems tot be a typo in the values for 16MHz as this number should be greater than the value for 14 MHz. | The "-66.5 dBm" should be replaced by "-63.5 dBm" at the 5th line from the bottom. |

**Resolution**: Accept.

**Discussion**: This seems to be a typo.

**Change**: As per comment.