IEEE P802.11
Wireless LANs

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| D2.0 Comment Resolution –Clause 22.3.8.1 |
| Date: March 9th 2011 |
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Abstract

This document provides resolutions for CID 4648, 4649, 5311, 5153, 4586 and 5154.

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 4648 | 202.35 | 22.3.8.1.4 | The table refeerece is incorrect. Should be 18.6 | Correct the reference. | AGREE.See 12/0334 |
| <Discussion>As pointed out, I corrected the error. **TGac editor: modify the D2.0 text from P202L33, as follows**In a VHT PPDU, the Rate field shall be set to represent 6 Mbps for the 20 MHz channel spacing column of Table 18-6 (Contents of the SIGNAL field). |
| 4649 | 202.35 | 22.3.8.1.4 | The text "In a non-HT duplicate PPDU..." is defining how the field should be used in non-HT PPDU. It is unclear why VHT section needs to define non-HT -duplicate PPDU. | Delete the sentence or define conditions when this needs to be considered. | DISAGREE.See 12/0334 |
| <Discussion>The L-STF, L-LTF and L-SIG can be transmitted either in a VHT PPDU format or a non\_HT duplicate format as part of preamble by VHT stations. As for the RATE value in the L-SIG, though it is set to 6Mbps for a VHT PPDU format (when the FORMAT in the TXVECTOR is VHT), it is determined by the L\_DATARATE in the TXVECTOR for a NON\_HT duplicated format as described in 18.3.4.2 (when the FORMAT in the TXVECTOR is NON\_HT and the NON\_HT\_MODULATION in the TXVECTOR is NON\_HT\_DUP\_OFDM). For your information, this kind of method to determine the RATE value based on the L\_DATARATE in the TXVECTOR has been long used for the L-SIG setting in the HT preamble as described in 20.3.9.3.5.Also refer to resolution to CID2457 in DCN 11/1042r0 during D1.0 comment resolution. **TGac editor: No change** |
| 5311 | 202.43 | 22.3.8.1.4 | The Ceil() operation in Equation (35) is unnecessary as TXTIME is defined in 22.4.3, equation (119) and is already in 4us unit. | Remove Ceil() operation in Equation (35). | DISAGREE.See 12/0334 |
| <Discussion>As described in 22.4.3 (TXTIME and PSDU\_LENGTH calculation), TXTIME can be calculated in unit of 4us symbol irrespective of the guard interval type applied. If a VHT data packet is transmitted with the short GI, that value is then coverted into unit of 4 us for calculation of TXTIME. Note that there is also need to fix some errors in Eq. (119) and Eq. (120) because *TSYM* in these equations can be misunderstood either as 4.0 us or 3.6 us depending on the guard interval type, keeping in mind the exact definition of all the timing-related parameters in Table 22.5 (all the relations among *TSYM, TSYMS* and *TSYML* are revised during D0.1 comment resolution in March 2011). For your more information, let me summarize how to derive all the length-related parameters in TX and RX as well. 1. For TX (based on clause 22.3.8.1.4 and clause 22.4.3)
* N\_SYM (in unit of 3.6 us or 4.0 us) => TXTIME (multiple of 4.0 us) => LENGTH (in L-SIG) => N\_SYM (in unit of 4.0us) => N\_SYM, max (when MU case) => PSDU\_LENGTH (for TX)
1. For RX (based on clause 22.3.21)
* L\_LENGTH (in L-SIG) => RXTIME (multiple of 4.0 us) => N\_SYM (in unit of 4.0 us) => N\_SYM (in unit of 4.0 us, some uncertainty solved if the original transmission is done with short GI for 10N+9 data symbols) => PSDH\_LENGTH (for RX)

As seen in the above, TXTIME seems to have a position of parant parameter to others. So, even though TXTIME can be calculated as multiples of 4us in normal cases, it may not do any harm to introduce the ceiling operator in Eq. (35) of clause 22.3.8.1.4, taking into consideraing the non-negligible effect of potential slight error in TXTIME, which nobody can guantee that there isn’t. **TGac editor: modify the D2.0 text from P271L41, as follows**Replace each *TSYM* in the following equation (119) and (120) with *TSYML*, respectively. (119) (120) |
| 5153 | 203.05 | 22.3.8.1.4 | Pilot insertion for L-SIG is not correctly referenced. | Make following changes:- delete "and shall have pilots inserted" on line 5- Insert new sentende before "The time domain waveform ...": "Pilots shall be inserted as described in 18.3.5.9" | AGREE.See 12/0334 |
| <Discussion>I corrected according to what the commented pointed out, which matches to the corresponding Eq. (36).  **TGac editor: modify the D2.0 text from P203L04, as follows**The L-SIG field shall be encoded, interleaved and mapped, following the steps described in 18.3.5.6 (Convolutional encoder), 18.3.5.7 (Data interleaving), and 18.3.5.8 (Subcarrier modulation mapping). The stream of 48 complex numbers generated by the steps described in 18.3.5.6 is denoted by *dk*, *k* = 0 ,…, 47. Pilots shall be inserted as described in 18.3.5.9. The time domain waveform of the L-SIG field shall be as given by Equation (36).  |
| 4586 | 203.20 | 22.3.8.1.4 | (also equation 111 - page 241 - line 31) The "Gamma subscript (k -" etc etc is outside the summa in equation 39 but inside in equation 36 (which makes sense, in any case, since we're summing over k) | Move the "Gamma subscript (k -" etc etc inside the summa k | AGREE IN PRINCIPLE. See 12/0334 |
| <Discussion>Eq. (36) for the L-SIG waveform in time-domain is right. But, Eq. (39) for the VHT-SIG-A waveform in time-domain needs to be fixed. It needs to move the Gamma function inside the summation over k in Eq. (39), which is a frequency shift adjustment for frequency repetitions for non-HT duplicate transmission. **TGac editor: modify the D2.0 text from P208L14, as follows**Move the Gamma function inside the summation over k (from -26 to +26). |
| 5154 | 203.55 | 22.3.8.1.3 | Specify BW that is used for rotation of the tones | Clarify the "BW" means the bandwidth specified in TXVECTOR parameter CH\_BANDWIDTH | AGREE IN PRINCIPLE.See 12/0334 |
| <Discussion>As pointed out, it may be helpful to add a table showing the relation between CH\_BANDWIDTH and Gamma function.  **TGac editor: modify the D2.0 text from P198L52, as follows**The function  is used to represent a rotation of the tones. BW in  is determined by the CH\_BANDWIDTH in the TXVECTOR as in Table 22-9.Table 22-9 --- CH\_BANDWIDTH and γk,BW,

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| CH\_BANDWIDTH  | γk,BW, |
| CBW20 | γk,20 |
| CBW40 | γk,40 |
| CBW80 | γk,80 |
| CBW80+80 | γk,80 |
| CBW160 | γk,160 |

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