IEEE P802.11  
Wireless LANs

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| Comment Resolution for D3.0 | | | | |
| Date: 14 August 2012 | | | | |
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|  |  |  |  |  |

Abstract

This document provides resolutions for CIDs: 6815, 6573, 6574, 6127, 6128, 6129, 6130, 6131, 6333, 6132, 6133, 6134, 6337, 6575, 6602, 6626, 6433, 6434

**Clause 22 Comment:**

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| 6815 | Matthew Fischer | 180.05 | 22 | Clarify definition of "u" at the beginning of clause 22. Based on 22.3.11.4 (Group ID), my understanding is that "u", the user index used throughout clause 22, should correspond to the "User Position in Group ID" field in the group ID management frame. Is this correct? The definition of "u" should be explicitly noted at the beginning of clause 22 instead of forcing the reader to go all the way to 22.3.11.4. And a consistent definition should be used throughout clause 22, including in Table 22-1. | As in comment | J | Reject. The variable “u” is user index and does not correspond to “user position in Group ID”. Since “u” is an internal indexing parameter to the PHY equations, it is not necessary to create a definition for it at the beginning of clause 22. |

**Clause 22.2.3 Comments:**

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| 6573 | Sigurd Schelstraete | 191.10 | 22.2.3 | Use consistent wording for different formats | Change "HT-greenfield FORMAT PPDU (when FORMAT is HT\_GF)" to "HT-greenfield PPDU (when FORMAT is HT\_GF)" | V | Revised. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6574 | Sigurd Schelstraete | 191.15 | 22.2.3 | Use consistent wording for different formats | Change "HT-greenfield FORMAT PPDU (when FORMAT is HT\_GF)" to "HT-greenfield PPDU (when FORMAT is HT\_GF)" | V | Revised. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6127 | Liwen Chu | 191.12 | 22.2.3 | Excluding TDLS is not right. | Change to "If the BSS operating channel width or TDLS operating channel is wider than 20 MHz, then the transmission shall use the primary 20 MHz channel." | V | Revised. Deleted BSS to generalize statement. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6128 | Liwen Chu | 191.17 | 22.2.3 | Excluding TDLS is not right. | Change to "If the BSS operating channel width or TDLS operating channel is wider than 40 MHz, then the transmission shall use the primary 40 MHz channel." | V | Revised. Deleted BSS to generalize statement. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6129 | Liwen Chu | 191.21 | 22.2.3 | Excluding TDLS is not right. | Change to "If the BSS operating channel width or TDLS operating channel is wider than 80 MHz, then the transmission shall use the primary 80 MHz channel." | V | Revised. Deleted BSS to generalize statement. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6130 | Liwen Chu | 191.33 | 22.2.3 | Excluding TDLS is not right. | Change to "If the BSS operating channel width or TDLS operating channel is wider than 40 MHz, then the transmission shall use the primary 40 MHz channel." | V | Revised. Deleted BSS to generalize statement. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6131 | Liwen Chu | 191.41 | 22.2.3 | Excluding TDLS is not right. | Change to "If the BSS operating channel width or TDLS operating channel is wider than 80 MHz, then the transmission shall use the primary 80 MHz channel." | V | Revised. Deleted BSS to generalize statement. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6333 | Yusuke Asai | 191.39 | 22.2.3 | The condition, "if the BSS operating channel width is wider than 80 MHz," does include the 80+80 MHz BSS; however, "channel width" of 80+80 MHz is not explicitly defined, which may make confusion. | Add the following note in table 22-2:  "In this table, "channel width" for 80+80 MHz non-contiguous channel is regarded as 160 MHz." | V | Revised. Change “wider than 80 MHz” to “160 MHz or 80+80 MHz”. See changes in 12/1008r1 under “Clause 22.2.3 Comments” heading. |
| 6132 | Liwen Chu | 191.43 | 22.2.3 | It seems to me that three 20MHz channels in frequency should be rotated +180 relative to the 20MHz channel that 20MHz lowerer. | Clarify it. | J | Reject. In Equation 22-12, tones with index greater than or equal to -64 have a gamma value of -1. This makes them rotated 180 degrees relative to the -128 to -65. This is equivalent to the higher three 20 MHz channels being rotated relative to the lower 20 MHz channel as stated. |
| 6133 | Liwen Chu | 191.49 | 22.2.3 | It seems to me that seven 20MHz channels in frequency should be rotated +180 relative to the 20MHz channel that 20MHz lowerer. | Clarify it. | J | Reject. In Equation 22-13, the tone indexes with -1 correspond to 180 degree rotation. The equation matches the 20 MHz channels indicated in Table 22-2. |
| 6134 | Liwen Chu | 191.56 | 22.2.3 | It seems to me that three 20MHz channels in frequency should be rotated +180 relative to the 20MHz channel that 20MHz lowerer. | Clarify it. | J | Reject. In Equation 22-12, tones with index greater than or equal to -64 have a gamma value of -1. This makes them rotated 180 degrees relative to the -128 to -65. This is equivalent to the higher three 20 MHz channels being rotated relative to the lower 20 MHz channel as stated. |

**TGac editor: modify TGac D3.0 Table 22-2 as follows:**

**Table 22-2— PPDU format as a function of CH\_BANDWIDTH parameter**

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| **FORMAT** | **BANDWIDTH** | **PPDU format** |
| VHT,  HT\_MF or  HT\_GF | CBW20 | The STA transmits an HT-mixed PPDU (when FORMAT is HT\_MF) or HT-greenfield  PPDU (when FORMAT is HT\_GF) or VHT PPDU (when FORMAT is VHT) of 20 MHz bandwidth. If the operating channel width is wider than 20 MHz, then the transmission shall use the primary 20 MHz channel. |
| VHT,  HT\_MF or  HT\_GF | CBW40 | The STA transmits an HT-mixed PPDU (when FORMAT is HT\_MF) or HT-greenfield PPDU (when FORMAT is HT\_GF) or VHT PPDU (when FORMAT is VHT) of 40 MHz bandwidth. If the operating channel width is wider than 40 MHz, then the transmission shall use the primary 40 MHz channel. |
| VHT | CBW80 | The STA transmits a VHT PPDU of 80 MHz bandwidth. If the operating channel width is 160 MHz or 80+80 MHz, then the transmission shall use the primary 80 MHz channel. |
| **…** |  |  |
| NON\_HT | CBW40 | The STA transmits a NON\_HT PPDU with NON\_HT\_MODULATION set to NON\_HT\_DUP\_OFDM using two adjacent 20 MHz channels as defined in 22.3.10.12 (Non-HT duplicate transmission). If the operating channel width is wider than 40 MHz, then the transmission shall use the primary 40 MHz channel. The one 20 MHz channel higher in frequency is rotated +90º relative to the 20 MHz channel lowest in frequency as defined in Equation (22-11). |
| NON\_HT | CBW80 | The STA transmits a NON\_HT PPDU with NON\_HT\_MODULATION set to NON\_HT\_DUP\_OFDM using four adjacent 20 MHz channels as defined in 22.3.10.12 (Non-HT duplicate transmission). If the operating channel width is 160 MHz or 80+80 MHz, then the transmission shall use the primary 80 MHz channel. The three 20 MHz channels higher in frequency are rotated +180º relative to the 20 MHz channel lowest in frequency as defined in Equation (22-12). |
| **…** |  |  |

**Clause 22.3.1 Comments:**

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| 6337 | Yusuke Asai | 195.08 | 22.3.1 | TGac Draft defines that a VHT MU PPDU carries "one or more" PSDUs. | Change "multiple PSDUs" to "one more PSDUs", or change "(in the SU case)" to "(in the SU or MU case)" | V | Revised. Change to “one or more”. See changes in 12/1008r1 under “Clause 22.3.1 Comments” heading. |
| 6575 | Sigurd Schelstraete | 195.11 | 22.3.1 | Add "detection" to list of functions of the preamble | Change "to aid in demodulation and delivery" to "to aid in detection, demodulation and delivery" | A | Accepted. See changes in 12/1008r1 under “Clause 22.3.1 Comments” heading. |

**TGac editor: modify TGac D3.0 P195L8 as follows:**

During transmission, a PSDU (in the SU case) or one or more PSDUs (in the MU case) are processed (i.e., scrambled and coded) and appended to the PLCP preamble to create the PPDU. At the receiver, the PLCP preamble

is processed to aid in detection, demodulation, and delivery of the PSDU.

**Clause 22.3.9.1Comments:**

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| 6602 | Sigurd Schelstraete | 238.16 | 22.3.9.1 | Clarify: cyclic shifts should be applied for preamble and data symbols of NON\_HT PPDU. | Add sentence "These shifts shall be applied to preamble and data fields" | V | Revised. See changes in 12/1008r1 under “Clause 22.3.9.1 Comments” heading. |

**TGac editor: modify TGac D3.0 P195L8 as follows:**

A VHT STA that transmits a NON\_HT PPDU shall apply the cyclic shifts defined in Table 22-10 (Cyclic shift values for L-STF, L-LTF, L-SIG and VHT-SIG-A fields of the PPDU) to preamble and data fields.

**Clause 22.4.4 Comments:**

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| 6626 | Sigurd Schelstraete | 291.42 | 22.4.4 | As a maximum value, aCCAMidTime should have a well-defined value | Change "<25" to "25" | A | Accepted. |

**Clause 22.5 Comments:**

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| 6433 | Mark RISON | 292.03 | 22.5 | Determining N\_ES seems to rely on an undocumented maximum block size of 2160 (derived from a maximum encoder throughput of 600 Mbps) | Document the block size of 2160 | R | Reject. There is no need to document the approach used to choose N\_ES. Implementers only require the actual values in the tables to build interoperable devices. |
| 6434 | Mark RISON | 292.03 | 22.5 | "N\_ES values were chosen to yield an integer number of punctured blocks per OFDM symbol" -- also need to say the number of blocks needs to be the same for all symbols, else some "not valid" combinations would be valid | Change to "to yield the same integer number of punctured blocks" | V | Revised. Given that MCS, Ndbps, Ncbps and Nes are all fixed, the number of puncture blocks will be fixed for OFDM symbols. However, we can clarify that this is “per BCC encoder”.  See changes in 12/1008r1 under “Clause 22.5 Comments” heading. |

**TGac editor: modify TGac D3.0 P292L3-4 as follows:**

N\_ES values were chosen to yield an integer number of punctured blocks for each BCC encoder per OFDM symbol.