IEEE P802.11
Wireless LANs

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| LB187- More PICS Related Comments |
| Date: 2012-05-01 |
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Abstract

This submission includes proposed resolutions to CIDs, 4743, 4868, 4869, 4867, 4130, 4849, 4848, 4852, 4850, 4855, 4862, 4851, 4858, 4860, 4861, 4863, 4866, 4865, 4189, 5459, 5461, 5466, and 5467.

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| 4743 |  | B.4.23.2 |  | CBW is not an integer but an enumeration | Change "CBW = 20 MHz, 40 MHz, and 80 MHz" to "CBW20, CBW40 and CBW80", "CBW = 160 MHz" to "CBW160" and "CBW = 80+80 MHz" to "CBW80+80" |  |

Proposed Resolution: Accepted

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| 4868 |  | B.4.23.2 |  | Features such as STBC are missing | Add missing features such as STBC, 8/11k MPDUs, +HTC-VHT, etc. (see VHT Capabilities) |  |

Proposed Resolution: Revised

STBC entry was added to the PICS table as a resolution to CID 5395 in 11-12/0475r4. A-MPDU related features are driven from HT A-MPDU. Transmission of A-MPDU was made mandatory for TGac as in 11-12/0475r4.

The use of the VHT variant of the HT control is mainly for link adaptation. Adding a PICS entry for link adaptation is appropriate.

Proposed changes:

For STBC and A-MPDU: see proposed changes in 11-12/0475r4

For link adaptation, add the following table entries to VHTM table;

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| VHTMx(11n)(#4000) | Link Adaptation |  |  |  |
| VHTMx.1 | The use of VHT variant of HT Control field for link adaptation | 8.2.4.6.3 (VHT Variant) | CFac:O | Yes  No  N/A  |

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| 4869 |  | B.4.23.2 |  | Why isn't short GI per-CBW-ified? | Put VHTP8.4 under VHTP8.1-8.3 (thrice for VHTP8.1); also put linkage between HT Short GI for 20 MHz support and VHT Short GI for 20 MHz support, and ditto for 40 MHz |

Proposed Resolutions: Rejected.

Short GI is an optional VHT feature independent of the channel bandwidth. There is no need to link it to particular CBW.

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| 4867 |  | B.4.23.2 |  | If you support MCS0-9 then you also support MCS0-8, and if you support MCS0-8 then you also support MCS0-7 | For VHTP8.z.x regarding MCS0-7, except VHTP8.1.1, have a VHTP8.z.x+1:MFor VHTP8.z.y regarding MCS0-8, have a VHTP8.z.y+1:M |

Proposed Resolution: Revised.

The dependency of MCS 0-8 on MCS 0-7 and the dependency of MCS 0-9 on MCS 0-8 were recognized as part of the resolution to CID 4131.

Proposed changes: see proposed changes o CID 4131 in 11-12/0475r4

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| 4130 | 300.51 | B.4 |  | "CFac" is an example of a "private numbering space".The editors have agreed that drafts sent to sponsor ballot should not use private numbering spaces. | Before going to sponsor ballot, determine what is the correct number for CFac and do a global replace CFac -> CF<some-integer>. |

Proposed Resolution: Accepted

Proposed Resolution: Instruct the TGac editor to request a number from 802.11 ANA authority.

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| 4849 | 300.51 | B.4.3 |  | Cfac does not have a predicate | Remove the "N/A" option. Also a problem for other elements |

Proposed Resolution: Accepted

Proposed Changes: See proposed changes for CID 4125 in 11-12/0475r4.

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| 4848 | 300.51 | B.4.3 |  | CFac is used in predicates | Add an asterisk. Also a problem for other elements |

Proposed Resolution: Accepted

Proposed Changes: See proposed changes for CID 4125 in 11-12/0475r4.

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| 4852 | 301.00 | B.4.14 |  | CFac already implies CF16 | Delete the explicit CFac:M. Also for HTM3.1-3.4 and HTM4.1-4.4 and HTM5.1-5.3 and HTM9 and HTM11 |

Proposed Resolution: Accepted

Proposed Changes: See proposed changes for CID 4127 in 11-12/0475r4.

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| 4850 | 301.00 | B.4.4.1 |  | NDPA and BFRP are necessary for BF | Make FT27/28 have VHTM4.1:M and make FR27/28 have VHTM4.2:M |

Proposed Resolution: Accepted

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| 4855 | 303.00 | B.4.19.2 |  | What change is being made? | Highlight the modification |

Proposed Resolution: Revised

There are no changes. The intention was to indicate support for STBC. However support for VHT STBC is now explicitly indicated as in the resolution of CID 5359 in 11-12/0475r4.

Proposed Resolution: see proposed resolution to CID 5359, 11-12/0475r4.

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| 4862 | 305.00 | B.4.23.1 |  | MU requires SU but is not required by SU | Make VHTM4.1 and 4.2 also have VHTM4.3:M and VHTM4.4:M respectively |

Proposed Resolution: Revised

Proposed Changes: see proposed changes to CID 4128, 11-12/0475r4.

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| 4851 | 305.22 | B.4.23.1 |  | VTM4.2 is missing a letter | Add an H |

Proposed Resolution: Accepted.

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| 4858 | 305.37 | B.4.23.1 |  | NDP is required by both BFees and BFers | Change the and to an OR |

Proposed Resolution: Revised

Proposed changes: see proposed changes to CID 4128, 11-12/0475r4.

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| 4860 | 305.50 | B.4.23.1 |  | BFee requires BFee | Change VHTM5.1 to VHTM4.3 |

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| 4861 | 305.54 | B.4.23.1 |  | BFee requires BFee | Change VHTM5.1 to VHTM4.4 |

Context:

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| VHTM5 | VHT Sounding Protocol |  |  |  |
| VHTM5.1 | VHT sounding protocol as SU beamformer | 9.31.5 (VHT sounding protocol) | VHTM4.1: M | Yes  No  N/A  |
| VHTM5.2 | VHT sounding protocol as SU beamformee | 9.31.5 (VHT sounding protocol) | VHTM4.1: M | Yes  No  N/A  |
| VHTM5.3 | VHT sounding protocol as MU beamformer | 9.31.5 (VHT sounding protocol) | VHTM5.1: M | Yes  No  N/A  |
| VHTM5.4 | VHT sounding protocol as MU beamformee | 9.31.5 (VHT sounding protocol) | VHTM5.1: M | Yes  No  N/A  |

Proposed Resolution: Revised

The commenter is correct in his observation and proposed resolution. In addition there is a need to change VHTM4.1 in VHTM5.2 to VHTM4.2.

Proposed Chnages

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| --- | --- | --- | --- | --- |
| VHTM5 | VHT Sounding Protocol |  |  |  |
| VHTM5.1 | VHT sounding protocol as SU beamformer | 9.31.5 (VHT sounding protocol) | VHTM4.1: M | Yes  No  N/A  |
| VHTM5.2 | VHT sounding protocol as SU beamformee | 9.31.5 (VHT sounding protocol) | VHTM4.2: M | Yes  No  N/A  |
| VHTM5.3 | VHT sounding protocol as MU beamformer | 9.31.5 (VHT sounding protocol) | VHTM4.3: M | Yes  No  N/A  |
| VHTM5.4 | VHT sounding protocol as MU beamformee | 9.31.5 (VHT sounding protocol) | VHTM4.4: M | Yes  No  N/A  |

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| 4863 | 306.00 | B.4.23.1 |  | Group ID stuff is underspecified | Add a PHY feature for DL MU-MIMO and make it optional. Replace the VHTM9.1 status with VHTPx AND CF2.1. Replace the VHTM9.2 status with VHTPx AND CF1 |

Proposed Resolution: Revised

Group ID issues are discussed in the context of CID 4129 and further specification is added

Proposed Changes: see proposed changes to CID 4129, 11-12/0475r4.

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| 4866 | 307.00 | B.4.23.2 |  | Operation according to Clause 20 is also required | Add to list in "Protocol capability" cell for VHTP1.1. Do the corresponding OFDM/ERP capabilities need a CFac:M too? |

Context:

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| --- | --- | --- | --- | --- |
| VHTP1.1 | Operation according to Clause 17 (Orthogonal frequency division multiplexing (OFDM) PHY specification) and/or Clause 19 (High Throughput)  | 22.1.4 (PPDU formats) | CFac:M | Yes  No  N/A  |

Proposed Resolution: Revised

Proposed Changes:

Fix Cluse numbers to match those in 802.11-2012

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| --- | --- | --- | --- | --- |
| VHTP1.1 | Operation according to Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) and/or Clause 20(High Throughput)  | 22.1.4 (PPDU formats) | CFac:M | Yes  No  N/A  |

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| 4865 | 307.00 | B.4.23.1 |  | "independent STA" is not a defined term | Replace with "independent station" (twice) |

Context:

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| VHTM15 | Quiet Channel element |  |  |  |
| VHTM5.1 | Quiet Channel element sent by AP or mesh STA | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | (CF1 OR CF21) AND CF10 AND CFac:O | Yes  No  N/A  |
| VHTM5.2 | Quiet Channel element sent by an independent STA | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | CF2 AND CF10 AND CFac:O | Yes  No  N/A  |
| VHTM5.3 | Quiet Channel element received by an independent STA or mesh STA | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | (CF2 OR CF21) AND CF10 AND CFac:M | Yes  No  N/A  |

Proposed Resolution: revised

CID 4188 was discussed in 11-12/0475r4 and changes were approved. The changes proposed below are in addition to these changes.

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| VHTM15.1 | Transmission of Quiet Channel element by an AP or mesh station in Beacon and Probe Response frames. | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | (CF1 OR CF21) AND CF10 AND CFac AND VHTP3.4:O | Yes  No  N/A  |
| VHTM15.2 | Transmission of Quiet Channel element by an independent station or mesh station in Beacon and Probe Response frames. | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | (CF2 OR CF21) AND CF10 AND CFac AND VHTP3.4:O | Yes  No  N/A  |
| VHTM15.3 | Reception of Quiet Channel element by an independent station or mesh station in Beacon and Probe Response frames | 8.3.3.2 (Beacon frame format), 8.3.3.10 (Probe Response frame format), 8.4.2.167 (Quiet Channel element), 10.9.3 (Quieting channels for testing) | (CF2 OR CF21) AND CF10 AND CFac:M | Yes  No  N/A  |

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| 4189 | 308.16 | B.4.23.1 |  | Suggest changing capability description to match other reception requirements by starting it with "Reception of..." | Change to "Reception of Quiet Channel element by an independent STA or mesh STA" |

Context: as in previous CID

Proposed resolution: Accepted.

Changes has already been made in the context of CID 4188 resolution- see 11-12/0475r4.

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| 5459 | 303.55 | B4.19.2 |  | Erroneous reference number. (19.3.11.9.2 -> 20.3.11.9.2) | As in comment. |

Context:

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| Item | Protocol capability | References | Status | Support |
| \*HTP2.11 | Space-time block coding (STBC) | 19.3.11.9.2 (Space-time block coding (STBC))  | CF16:O | Yes  No  N/A  |

Proposed Resolution: Revised

An STBC entry was added to the PICS table as the resolution to CID 5395 in doc 11-12/0475r4.

Proposed Changes: see proposed changes to CID 5395, 11-12/0475r4.

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| 5461 | 305.36 | B.4.23.1 |  | Erroneous Item number. (VHTM4.3 -> VHTM4.5) | As in comment. |

Proposed Resolution: Accept

Proposed Changes: see proposed changes to CID 4128, 11-12/0475r4.

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| 5466 | 307.32 | B.4.23.1 |  | Erroneous Item number. (VHTM5.1 -> VHTM15.1) Ditto the following two Items (VHTM5.2 and VHTM5.3 in p.308) | As in comment. |

Proposed Resolution: Accepted.

Proposed Changes: see proposed changes to CID 4188, 11-12/0475r4.

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| --- | --- | --- | --- | --- | --- |
| 5467 | 308.41 | B.4.23.2 |  | Erroneous Clause numbers. (Clause 17 -> Clause 18, Clause 19 -> Clause 20.) | As in comment. |

Proposed Resolution: Accept

Proposed Changes: Proposed Changes: see proposed changes to CID 4866 in this doc, 11-12/0521r1.

**References:**