IEEE P802.11
Wireless LANs

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| D0.1 Comment Resolution,  |
| Date: 2011-05-06 |
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##### Changes are based on text from 11ac D0.3. Changes indicated by a mixture of Word track-changes and instructions.

PHY CIDs addressed: **238, 875, 896, 852, 1116, 1572, 1104, 1617, 1218, 1433**

***PHY***

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| 238 | Hart, Brian | 3.1 | 2 | 13 | TR | "MU-MIMO transmitted" yet MU-MIMO is defined as a technique, which cannot be TXed | MU-MIMO => "MU-MIMO technique where the PPDU is" (if we are defining a technique) or => "MU-MIMO PPDU" (if we are defining a transmission) |

**Proposed resolution: Accept**

Discussion:

1. In the text, the term DL MU-MIMO is used in “DL MU-MIMO transmission” or “DL MU-MIMO PPDU”.
2. Downlink MU-MIMO (DL MU-MIMO) should be defined as a technique.
3. Please refer to 11-11-0576-04 for relavant discussion.

***Change:***

**3.1 Definitions**

***Change the second paragraph as follows:***

**downlink MU-MIMO (DL MU-MIMO):** An MU-MIMO technique where the PPDU is transmitted by an AP to multiple receiving non-AP STAs.

##### PHY

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| 875 | Pillai, Krishna | 22.3.4.7 | 84 | 42 | ER | Did not find the definition of the term [P]u is else where | Does it mean first column of P for each user? Define P[u] in the appropriate section. |

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| 896 | Pulikkoonattu, Rethna | 22.3.4.7 | 84 | 42 | ER | Multiply with 1st Column of [P]u:Have pilots inserted and 1st column of P matrix calculation is applied. The total number of data and pilot subcarriers is the same as the data PSDU. | Is "[P]u" referreing to the matrix "P" for the user "u"? In this case, we need to define it and point to this location. |

**Proposed resolution: Agree**

**Discussion**: According to 22.3.9.2.6 VHT-SIG-B definition, the pilots are inserted after encoded bits are mapped to a BPSK constellation and the VHT-SIG-B constellation points are mapped to NSTS space-time streams by the first column of the PVHTLTF matrix as defined in clause 22.3.9.2.5 (VHT-LTF definition).

***Change:***

##### 11ac editor to change 22.3.4.7 (P104L15) as per highlighted text below.

g) Pilot Insertion and ~~Multiply with 1st Column of [P]u~~PVHTLTF matrix mapping: ~~Have~~Insert pilots ~~inserted~~ following the steps described in 22.3.11.9 and apply the mapping of the1st column of PVHTLTF matrix ~~calculation~~ as described in 22.3.9.2.6 ~~is applied~~. The total number of data and pilot subcarriers is the same as the D~~d~~ata field~~PSDU~~.

##### PHY

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| 852 | Perahia, Eldad | 22.3.9.2.3 | 102 | 26-32 | ER | This is not very clear. Maybe more details could be added to clarify why this is needed  |

**Proposed resolution: Agree**

**Discussion**:

In 22.3.11.4.2 LDPC coding, the description about B3 of VHT-SIG-A2 is provided as follow:

“In addition, if NSYM computed in Equation (19-41) in step (d) of 19.3.11.7.5 (LDPC PPDU encoding

process) is greater than NSYM,init, then B3 of VHT-SIG-A2 should be set to 1. Otherwise, B3 of VHTSIG-

A2 shall be set to 0.”

In 22.3.11.4.3 LDPC coding, the description about B3 of VHT-SIG-A2 is provided as follow:

“In addition, if NSYM computed in Equation (22-52) is greater than NSYM\_max\_init computed in Equation (22-

51), then B3 of VHT-SIG-A2 should be set to 1. Otherwise, B3 of VHT-SIG-A2 should be set to 0.”

***Change:***

##### 11ac editor to change 22.3.9.2.3 (P119L19~L23) as per highlighted text below.

B3: set to 1 if in the LDPC PPDU encoding process, ~~(or~~ at least one LPDC user’s PPDU encoding process~~)~~ results in an

extra OFDM symbol (or symbols) as described in ~~22.3.4(Overview of the PPDU encoding process)~~22.3.11.4.2 and 22.3.11.4.2. Set to 0 otherwise.

##### PHY

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| 1116 | Shi, Wei | 22.5 | 156 - 169 | All the no | ER | Definition of DR cannot be found in the context | Please define DR. |

**Proposed resolution: Agree**

**Discussion**:

Note that in the expression mod(NCBPS/NES),DR), DR means the denominator of the code rate R. The coded bit per symbol for each encoded should be divisible by the DR.

***Change:***

##### 11ac editor to change the statement in Tables 22.25, 22-26, 22-28, 22-29, 22-31, 22-32, 22-43, 22-46, 22-47, 22-48, 22-51, 22-52, 22-53, 22-54, 22-55, 22-56 in 22.5 as per highlighted text below.

due to mod(NCBPS/NES, DR) not being equal to 0~~.~~, where DR is the denominator of the code rate R.

##### PHY

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| 1572 | Zhao, Hui | 22.3.11.10.1 | 131 | 48 | ER | "Refer to the examples of listed in Section20.3.11.10.1 for examples of that could be used for SU packets". Actually,when Ntx>4 for "spatial expansion",the examples listed in Section 20.3.11.10.1 is not practical,so we need to state more clearly . | When Ntx <=4, refer to the examples of listed in Section20.3.11.10.1 for examples of that could be used for SU packets. When Ntx>=5, the spatial expansion may be performed by duplicating some of the streams to form the streams with each stream being scaled by the normalization factor sqrt(Nsts)/sqrt(Ntx) , or by set the Ntx-Nsts streams as zero. Note that implementations are not restricted to the spatial mapping matrix examples listed in Section 20.3.11.10.1. |

**Proposed resolution: Disagree**

**Discussion**:

There exist many other alternatives; implementation is not restricted to the spatial mapping matrices shown in 20.3.11.10.1. Note that suggested remedy is only applicable for spatial expansion matrix.

***Change:***

none

Straw Poll: Do you agree to comment resolution presented in 0631r3