IEEE P802.11  
Wireless LANs

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| SB0 Miscellaneous CIDs | | | | |
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Abstract

This document proposes resolutions for the following SB0 CIDs: 10113, 10112, 10061, 10053, 10060 and 10238

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10113 | Inoue, Yasuhiko | 3.2 | 5.40 | The definitions of 80+80 MHz mask PPDU and 80+80 MHz PPDU are exactly same. The definition of 80+80 MHz mask PPDU is no longer needed for TGac Draft. | The changes are as follows: (P5L40) Delete the definition of 80+80 mask PPDU. (P124L40) Change "before transmitting a 40, 80, 160 or 80+80 MHz mask PPDU" to "before transmitting a 40, 80 or 160 MHz mask PPDU or an 80+80 MHz PPDU". (P158L11) Change "Transmit a 160 MHz or 80+80 MHz mask PPDU" to "Transmit a 160 MHz mask PPDU or an 80+80 MHz PPDU" (P310L28) Change "For an 80+80 MHz mask PPDU of non-HT duplicate or VHT format," to "For an 80+80 MHz PPDU of non-HT duplicate of VHT format," (P311L40) Change the title of the Figure 22-31 to "Example transmit spectral mask for an 80+80 MHz PPDU" |

**Proposed resolution:**

Reject

**Discussion:**

It is correct that under their current definitions, 80+80 MHz mask PPDU and 80+80 MHz PPDU are the same.

However, for other bandwidths, there is a clear distinction between the notion of an “x MHz mask PPDU” and an “x MHz PPDU”. Essentially, an “x MHz mask PPDU” can be used to send PPDUs with bandwidths equal to or lower than x. For 80+80 MHz, sending PPDUs with lower bandwidths was explicitly disallowed as a result of earlier comment resolutions.

The fact remains that these are different concepts, for which the distinction may still serve a purpose in future revisions. Imagine for the sake of argument that 802.11 would at some point include an 80+80+80 MHz mask PPDU. It would probably be allowed to send an 80+80 MHz PPDU with such a mask. In such a case it would again be important to be able to distinguish between an “80+80 MHz mask PPDU” and a “80+80 MHz PPDU”.

Furthermore, removing either “80+80 MHz mask PPDU” or “80+80 MHz PPDU” from the draft would require replacing both terms with a single term. Looking at the way these terms are currently used in the draft shows that it may be difficult to achieve this is a consistent way.

Example 1: occurrence of 80+80 MHz PPDU mask in Figure 22-31



Should we replace “80+80 MHz mask PPDU” with “80+80 MHz PPDU” while all other PSD mask definitions explicitly use “x MHz mask PPDU”? This will be confusing and may strike people as an indeliberate error.

Example 2: occurrence of 80+80 MHz PPDU in section 10.22.6.4.2.



Should we replace “80+80 MHz PPDU” with “80+80 MHz mask PPDU”, while all other bandwidths explicitly use “x MHz PPDU”?

Example 2: occurrence of 80+80 MHz PPDU in Table 22-6.



Should we replace “80+80 MHz PPDU” with “80+80 MHz mask PPDU”, while all other bandwidths explicitly use “x MHz PPDU”?

These examples show that simply removing either “80+80 MHz PPDU” or “80+80 MHz mask PPDU” leads to inconsistencies with the wording used for other bandwidths and does not help the clarity of the standard.

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10112 | Inoue, Yasuhiko | 3.2 | 3.14 | Clause 16 defines DSSS PHY and Clause 17 defines HR/DSSS PHY, and they are not related to the 20 MHz PPDU described here. | Remove Clause 16 and Clause 17 from the text. |

**Proposed resolution:**

Reject

**Discussion:**

Clause 16 and Clause 17 PPDUs are considered as 20 MHz PPDUs in the underlying baseline (see definition section of 802.11-2012). It’s not clear how adding 802.11ac to the baseline would modify the status of these clauses as 20 MHz PPDUs.

If warranted, discussion on whether this is a proper assignment for Clause 16 and 17 seems more appropriate in Rev-mc than in ballot resolution of 802.11ac.

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10061 | Schelstraete, Sigurd | 3.2 | 5.19 | 160 MHz mask PPDUs can only be transmitted by VHT-STAs. However, some of the formats listed might be sent by non-VHT STAs. | Replace "A PPDU that is transmitted" by "A PPDU that is transmitted by a VHT STA". |

**Proposed resolution:**

Revise

**Editor’s instructions:**

Modify the definition as follows:

**160 MHz mask physical layer protocol data unit (PPDU):** A PPDU that is transmitted using the 160 MHz transmit spectral mask defined in Clause 22 and that is one of the following:

1) A 160 MHz VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW160)

2) A 160 MHz non-HT duplicate PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW160)

3) A 20 MHz non-HT, HT or VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW20) transmitted by a VHT STA

4) A 40 MHz non-HT duplicate, HT or VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW40) transmitted by a VHT STA

5) An 80 MHz non-HT duplicate or VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW80)

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10053 | Mccann, Stephen | 3.2 | 3.21 | The definition of "40 MHz mask physical layer" with all its options doesn't appear to be a clear concise definition anymore. It's almost normative text. | Move the options into a new normative sub-clause that fully defines what a "40 MHz mask physical layer" is and then place a forward reference to that sub-clause in the definition. |

**Proposed resolution:**

Reject

**Discussion:**

The definition is lengthy, but complete. The purpose of the definition section is to allow readers to get a full description of concepts and terms encountered in the text in a single place. Spreading this over multiple sections with cross-references between them is not recommended.

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10060 | Schelstraete, Sigurd | 3.2 | 5.01 | 80 MHz mask PPDUs can only be transmitted by VHT-STAs. However, some of the formats listed might be sent by non-VHT STAs. | Replace "A PPDU that is transmitted" by "A PPDU that is transmitted by a VHT STA". This would make it consistent with the e.g. 40 MHz mask, bullets 3, 7 and 9. |

**Proposed resolution:**

Revise

**Editor’s instructions:**

Modify the definition as follows:

80 MHz mask physical layer protocol data unit (PPDU): A PPDU that is transmitted using the 80 MHz transmit spectral mask defined in Clause 22 and that is one of the following:

1) An 80 MHz VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW80)

2) An 80 MHz non-HT duplicate PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW80)

3) A 20 MHz non-HT, HT or VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW20) transmitted by a VHT STA

4) A 40 MHz non-HT duplicate, HT or VHT PPDU (TXVECTOR parameter CH\_BANDWIDTH set to CBW40) transmitted by a VHT STA

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 10238 | Hunter, David | 3.2 | 6.06 | What is a "steering matrix"? Need to define new words (such as "beamformee") in terms that are already known. | If "steering matrix" is used without "beamforming" in the draft, then define "steering matrix" in 3.2. Otherwise define "beamforming steering matrix" in 3.2. |

**Proposed resolution:**

Revise

**Discussion:**

The term “beamforming steering matrix” is used in multiple places in the definition section and in subsequent sections. Some form of definition doesn’t appear until Clause 20. In section 20.3.11.11.2 of the 802.11-2012 baseline, we find the following text under a list of examples of spatial mapping matrices:

*Beamforming steering matrix: Qk is any matrix that improves the reception in the receiver based on some knowledge of the channel between the transmitter and the receiver. (…)*

Given the fact that the term “beamforming steering matrix” is used with some regularity in a variety of sections (3.1, 8.4.1.50, 9.7.5.6, 9.29, 20.3.11.11, 20.3.12, 22), adding a definition may be helpful.

**Proposed resolution:**

Add the following definition of beamforming steering matrix to the definition section:

**Beamforming Steering Matrix**: A matrix that describes the mapping of spatial streams to transmit antennas and for which the values have been determined using knowledge of the channel between transmitter and receiver with the goal of improving reception at the receiver. A Beamforming steering matrix may be used by Clause 20 or Clause 22-compliant devices.