IEEE P802.11
Wireless LANs

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| Resolutions for Extended NSS comments |
| Date: May 17, 2016 |
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Abstract

This submission proposed resolutions for several CIDs related to Extended NSS.

The CIDs were received on TGmc SB1 on draft 5.0.

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| **Identifiers** | **Comment** | **Proposed change** |
| 7658RISON, Mark4.3.1379.32 | What about dot11VHTExtendedNSSBWCapable? | Add a line "--- "dot11TVHTExtendedNSSBWCapable" replaces "dot11VHTExtendedNSSBWCapable". |

**Proposed resolution**

Revised. Dot11TVHTExtendedNSSBWSignaling is not actually used in the normative definition and is deleted per CID 7698. Therefore, dot11TVHTExtendedNSSBWSignaling can be replaced with dot11TVHTExtendedNSSBWCapable.

At 79.32, replace "dot11TVHTExtendedNSSBWSignaling" with "dot11TVHTExtendedNSSBWCapable" and "dot11VHTExtendedNSSBWSignaling" with "dot11VHTExtendedNSSBWCapable".

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| **Identifiers** | **Comment** | **Proposed change** |
| 7672RISON, Mark9.4.1.53715.42 | "If the Rx NSS Type subfield is 1, the value of this field, combined with other information described in 9.4.2.158.3 (Supported VHT-MCS and NSS Set field), indicates the maximum number of spatial streams that the STA can receive as a beamformee in an SU PPDU" -- I see nothing in there that deals with BF | Delete ", combined with other information described in 9.4.2.158.3 (Supported VHT-MCS and NSS Set field), " |

**Proposed resolution**

Accepted. Type 0 NSS support affects both regular and beamformed PPDUs, while Type 1 allows to reduce beamformed NSS support separately. Since it is not expected that this will be done much in practice, it would be fine to have extended NSS support to be defined only in relation to Type 0 NSS support.

(715.42 is Table 9-73)

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| **Identifiers** | **Comment** | **Proposed change** |
| 7674RISON, Mark9.4.1.53715.29 | It says "The use of these fields is described in 10.7.12.1 (Rx Supported VHT-MCS andNSS Set), 10.7.12.2 (Tx Supported VHT-MCS and NSS Set), and 10.40.8(Extended NSS BW Support Signaling). For a VHT STA, see Table 9-74(Setting of the Channel Width subfield and Dynamic Extended NSS BWsubfield at a VHT STA transmitting the Operating Mode field). " but the new Rx NSS text has no references to Clauses 9 or 10, but does have a reference to elsewhere in Clause 8. This seems inconsistent | Either refer to Clauses 8 and 9/10 everywhere or nowhere |

**Proposed resolution**

Revised. Implement changes in document 11-16/554r4, which deletes the cited references.

(715.29 is Table 9-73)

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| **Identifiers** | **Comment** | **Proposed change** |
| 7675RISON, Mark9.4.1.53715.31 | "For a VHT STA, see Table 9-74(Setting of the Channel Width subfield and Dynamic Extended NSS BWsubfield at a VHT STA transmitting the Operating Mode field). " -- but this dynamic NSS stuff is only supported by VHT STAs anyway. And this sentence is too far from the start of the cell | Just add T9-74 to the list of things in the previous sentence |

**Proposed resolution**

Revised. Implement changes in document 11-16/554r4, which cleans up table 9-73.

(715.31 is Table 9-73)

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| **Identifiers** | **Comment** | **Proposed change** |
| 7691RISON, Mark10.7.12.11328.16 | It says "except that if thevalue of dot11VHTExtendedNSSBWCapable of the second STA is false, the supported bandwidthvalues and NSS values of each <VHT-MCS, NSS> tuple are updated according to Table 10-8(Interpretation of the Supported Channel Width Set and Extended NSS BW Support subfield of theVHT Capabilities Information field and the Channel Width field of the Operating Mode field at areceiving STA with a value of false for dot11VHTExtendedNSSBWCapable) and" -- but if extended NSS capable is false, then you don't need to update anything | Change to "except that". Ditto next bullet |

**Proposed resolution**

Revised. Make changes proposed in 11-16/554r4, which effectively implements what the commenter proposed.

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| **Identifiers** | **Comment** | **Proposed change** |
| 7694RISON, Mark10.7.12.21330.44 | It says "except that if thevalue of dot11VHTExtendedNSSBWCapable of the second STA is false, the supported bandwidthvalues and NSS values of each <VHT-MCS, NSS> tuple are updated according to Table 10-8(Interpretation of the Supported Channel Width Set and Extended NSS BW Support subfield of theVHT Capabilities Information field and the Channel Width field of the Operating Mode field at areceiving STA with a value of false for dot11VHTExtendedNSSBWCapable) and" -- but if extended NSS capable is false, then you don't need to update anything | Change to "except that". Ditto next bullet |

**Proposed resolution**

Revised. Make changes proposed in 11-16/554r4, which effectively implements what the commenter proposed.

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| **Identifiers** | **Comment** | **Proposed change** |
| 7698RISON, MarkC.32919.00 | Both dot11VHTExtendedNSSBWSignaling and dot11VHTExtendedNSSBWCapable claim to indicate "that the IEEE Std 802.11 VHT Extended NSS BW Support Signaling option is implemented" | Make one be "Implemented" and the other "Enabled" |

**Proposed resolution**

Revised. Dot11VHTExtendedNSSBWSignaling is not actually used, so it can be deleted from the MIB.

At 2881.58 delete the dot11VHTExtendedNSSBWSignaling entry.

At 2919.20-51 delete the dot11VHTExtendedNSSBWSignaling entry.

At 2919.64 renumber 165 to 164.

At 2919.62 add "dot11VHTExtendedNSSBWSignaling might be true when dot11VHTOptionImplemented is true."

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| **Identifiers** | **Comment** | **Proposed change** |
| 769110.7.12.11328.16 | It says "except that if the value of dot11VHTExtendedNSSBWCapable of the second STA is false, the supported bandwidth values and NSS values of each tuple are updated according to Table 10-8 (Interpretation of the Supported Channel Width Set and Extended NSS BW Support subfield of theVHT Capabilities Information field and the Channel Width field of the Operating Mode field at areceiving STA with a value of false for dot11VHTExtendedNSSBWCapable) and" -- but if extended NSS capable is false, then you don't need to update anything | Change to "except that". Ditto next bullet |

**Proposed Resolution:**

Revised. Make changes proposed in 11-16/554r4, which effectively implements what the commenter proposed.

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| **Identifiers** | **Comment** | **Proposed change** |
| 769410.7.12.21330.44 | It says "except that if thevalue of dot11VHTExtendedNSSBWCapable of the second STA is false, the supported bandwidth values and NSS values of each tuple are updated according to Table 10-8 (Interpretation of the Supported Channel Width Set and Extended NSS BW Support subfield of theVHT Capabilities Information field and the Channel Width field of the Operating Mode field at areceiving STA with a value of false for dot11VHTExtendedNSSBWCapable) and" -- but if extended NSS capable is false, then you don't need to update anything | Change to "except that". Ditto next bullet |

**Proposed Resolution:**

Revised. Make changes in proposed 11-16/554r4, which effectively implements what the commenter proposed.

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| **Identifiers** | **Comment** | **Proposed change** |
| 7187716.059.4.1.53 | Does the Extended NSS BW Support stuff apply to HT PPDUs too? | Add a table NOTE to say it only applies to VHT PPDUs |

**Proposed resolution**

Revised. HT PPDUs can utilize 2x NSS support at 20 and 40 MHz channel widths. Implement changes proposed in 11-16/554r4, where a NOTE is added to clarify this.

(716.05 is Table 9-74)

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| **Identifiers** | **Comment** | **Proposed change** |
| 76651056.379.4.2.158.3 | "the Extended NSS BW Support bits" -- what bits?  Of what? | Change to "the Extended NSS BW Support subfield in the <something>".  Also change "bits" to "subfield" at 1053.42, 717.23 and 1056.39, and for the last two also add the missing "Support" before that |

**Proposed resolution**

Revised. Make changes proposed in 11-16/554r4, which effectively implements what the commenter proposed.

(717.23 is in Table 9-47) - done

(1053.42 is in Table 9-246) - done

(1056.37 is in Table 9-247) - done

(1056.39 is in Table 9-247) - done

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| **Identifiers** | **Comment** | **Proposed change** |
| 76711050.299.4.2.158 | How does the new extended NSS BW support stuff interact with STBC?  ?  E.g. what happens if Max VHT NSS for some MCSes ends up being less than implied by Rx STBC? | Add "subject to any extended NSS BW support constraint" to the rightmost cell |

**Proposed resolution**

Revised. Add "Subject to any extended NSS BW support constraint." as the last item in the Encoding cell of the Rx STBC entry in Table 9-245 (Subfields of the VHT Capabilities Information field) - at 1050.38.

(1050.29 is Table 9-245)

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| **Identifiers** | **Comment** | **Proposed change** |
| 76791049.479.4.2.158.2 | "Together with the Extended NSS BW Support subfield and Supported VHT-MCS and NSS Set field," -- not if it's a TVHT STA | Add "(for non-TVHT STAs)" |

**Proposed resolution**

Revised. Implement changes in 11-16/554r4, which makes the requested change.

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| **Identifiers** | **Comment** | **Proposed change** |
| 76801049.509.4.2.158.2 | It says "indicates the channel widths" | Change to " indicates the channel widths and maximum NSS values per width" |

**Proposed resolution**

Accepted. At 1049.50 change "indicates the channel widths" to "indicates the channel widths and maximum NSS values per width".

(1049.50 is Table 9-245)

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| **Identifiers** | **Comment** | **Proposed change** |
| 7682716.379.4.1.53 | If Max VHT NSS is 5, is this combination allowed?  If so, does it mean 8? | Add a "NOTE 5---Twice Max NSS is equal to equal to double Max VHT NSS, limited to 8." at the end of the table |

**Proposed resolution**

Revised. Implement changes in 11-16/554r4, which makes the requested change.

(716.37 is Table 9-74)

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| **Identifiers** | **Comment** | **Proposed change** |
| 76831053.249.4.2.158.2 | If Max VHT NSS is 5, is this combination allowed?  If so, does it mean 8? | Add a "NOTE 5---Twice Max NSS is equal to equal to double Max VHT NSS, limited to 8." at the end of the table |

**Proposed resolution**

Revised. Implement changes in 11-16/554r4, which makes the requested change.

(1053.24 is Table 9-246)

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| **Identifiers** | **Comment** | **Proposed change** |
| 76841332.1710.7.12.2 | If Max VHT NSS is 5, is this combination allowed?  If so, does it mean 8? | Add a "NOTE 5---Twice Max NSS is equal to equal to double Max VHT NSS, limited to 8." at the end of the table |

**Proposed resolution**

Revised. Implement changes in 11-16/554r4, which deletes this table.

(1331.17 is Table 10-9)