IEEE P802.11  
Wireless LANs

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| LB188 Clause 8.4.2 Comment Resolutions | | | | |
| Date: 2012-09-17 | | | | |
| Author(s): | | | | |
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Abstract

This document proposes resolutions for the following 37 CIDs: 6173, 6257, 6258, 6259, 6540, 6541, 6542, 6260, 6261, 6543, 6006, 6262, 6544, 6741, 6545, 6546, 6512, 6853, 6536, 6249, 6250, 6252, 6254, 6255, 6202, 6171, 6090, 6172, 6673, 6674, 6738, 6493, 6537, 6538, 6539, 6461 and 6511.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6173 | Youhan Kim | 8.4.2.161 | 81.56 | Clarify that an AP may change the Channel Width within the VHT Operation element w/o sending an Operation Mode Notification or performing a channel switch. | As in comment. | Rejected |

**Discussion:**

Clause 10.39 is specifying the VHT BSS Operation. In order to change the channel width through the Beacon frame, the Beacon frame shall include either the channel switch announcement element or the extended channel switch announcement element.

But, the reference time of the change of the channel width is the next TBTTs. After indicating of the change of the channel width in the previous Beacon frame, AP just transmits VHT Operation element having a changed channel width without including both the channel switch announcement element and the extended channel switch announcement element, at the expected switch time.

Also, after changing of the channel width, it is not necessary to include Operation Mode Notification element. Because the value of the channel width field in the Operating Mode Notification element is set to the value of the channel width field in the VHT Operation element.

The comment is related with DFS procedure and the procedure of the change of the channel width is clarified in the related clause (10.39).

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6257 | Brian Hart | 8.4.2.161 | 82.54 | There are extra recommendations that a reader might not see without a reference | Add a Note pointing indicating that there are additional recommendations on the usage of the VHT Basic MCS Set as described in 9.7.11.3 | Rejected |

**Discussion:**

Clause 8 does not include the normative behavior. Also, the commenter’s recommended reference is for the rate selection of VHT PPDU. It is not related with the VHT Basic MCS Set selection.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6258 | Brian Hart | 8.4.2.162 | 83.30 | But Number of Sounding Dimensions refers to NSTS not NSS .. what if max(NSTS) > max(NSS)? Need to add a note clarifying that this is a dangerous abuse of terms potentially leading to an erroneous result. Or try to fix it - e.g. but not using Number of Sounding Dimensions | As in comment | Rejected |

**Discussion:**

Because Max (N\_sts) is always greater than Max (N\_ss), the numerator for indicating the spartial stream untilization has the positive value. This is a correct equation and terminology.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6259 | Brian Hart | 8.4.2.162 | 84.31 | VHT Operation element has one value for 20 and 40 MHz, so can't talk about "indicating a ch width of 20 or 40 .. in the VHT Operation element" | Need to additionally talk about the HT operation element, or refer to Table 10-19 | Revised |

**Discussion:**

The comment is correct. The channel width field of the VHT Operation element has one value for 20MHz or 40MHz. It is necessary to mention the channel width of HT Operation element.

**Proposed Resolution:**

Revised.

In P84 L31, replace “VHT Operation element” with “HT Operation element” as the following,

From

“If the AP indicates a channel width of 20 MHz in the Channel Width field in the VHT Operation element, then the 40 MHz Utilization field is reserved.”

To

“If the AP indicates a channel width of 20 MHz in the Channel Width field in the HT Operation element, then the 40 MHz Utilization field is reserved.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6540 | Sigurd Schelstraete | 8.4.2.162 | 83 | What is meant with "40 MHz operating BSS Channel Width". Should this be primary 40 MHz channel or should the 40 MHz Utilization field value only be reported for a 40 MHz BSS? | Clarify. | Revised |

**Discussion:**

The comment is correct. 40 MHz operating BSS Channel Width means the primary 40 MHz channel.

**Proposed Resolution:**

Revised.

In P83 L49, replace “40 MHz operating BSS Channel Width” with “primary 40 MHz channel” as the following,

From

“The VHT 40 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the 40 MHz operating BSS Channel Width was busy. This percentage is computed using the formula,”

To

“The VHT 40 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the primary 40 MHz channel was busy. This percentage is computed using the formula,”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6542 | Sigurd Schelstraete | 8.4.2.162 | 83 | What is meant with "80 MHz operating BSS Channel Width". Should this be primary 80 MHz channel or should the 80 MHz Utilization field value only be reported for a 80 MHz BSS? | Clarify. | Revised |

**Discussion:**

The comment is correct. 80 MHz operating BSS Channel Width means the primary 80 MHz channel.

**Proposed Resolution:**

Revised.

In P83 L57, replace “80 MHz operating BSS Channel Width” with “primary 80 MHz channel” as the following,

From

“The 80 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the 80 MHz operating BSS Channel Width was busy. This percentage is computed using the formula”

To

“The 80 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the primary 80 MHz channel was busy. This percentage is computed using the formula”

Also, in P83 L63, replace “the 160 MHz or 80+80 MHz operating BSS Channel Width was” with “the primary 80 MHz channel and the secondary 80 MHz channel were” as the following,

From

“The 160 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the 160 MHz or 80+80 MHz operating BSS Channel Width was busy.”

To

“The 160 MHz Utilization field is defined as the percentage of time, linearly scaled with 255 representing 100%, that the primary 80 MHz channel and secondary 80 MHz channel were busy.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6541 | Sigurd Schelstraete | 8.4.2.162 | 83 | Does T\_VHT40,busy only include VHT PPDUs or possibly also HT PPDUs transmitted in the BSS? | If the latter, rename T\_VHT40,busy to T\_40,busy | Rejected |

**Discussion:**

T\_VHT40,busy is defined to be the number of microseconds during which the AP was transmitting a 40MHz PPDU to a VHT STA. It does not include the HT PPDU.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6260 | Brian Hart | 8.4.2.163 | 84 | Wide Bandwidht Ch Switch is also present in Extended Ch Sw Announcement frames | Add | Revised |

**Discussion:**

Commenter is correct. Wide Bandwidth Channel Switch element is also included in Extended Cahnnel Switch Annoucement frame.

**Proposed Resolution:**

Revised.

In P83 L38, add Extended Channel Switch Announcement frame as the following,

From

“The Wide Bandwidth Channel Switch element is included in Channel Switch Announcement frames, as described in 8.5.2.6 (Channel Switch Announcement frame format), and TDLS Channel Switch Request frames, as described in 8.5.13.7 (TDLS Channel Switch Request frame format).”

To

“The Wide Bandwidth Channel Switch element is included in Channel Switch Announcement frames, as described in 8.5.2.6 (Channel Switch Announcement frame format), Extended Channel Switch Announcement frames, as described in 8.5.8.7 (Extended Channel Switch Announcement frame format), and TDLS Channel Switch Request frames, as described in 8.5.13.7 (TDLS Channel Switch Request frame format).”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6261 | Brian Hart | 8.4.2.164 | 85 | conveys the max | conveys the local max | Accepted |

**Discussion:**

Commenter is correct. Local maximum transmit power is included in VHT Transmit Power Envelope element.

**Proposed Resolution:**

Accepted.

In P85 L4, replace “the maximum” with “the local maximum”.

From

“The VHT Transmit Power Envelope element conveys the maximum transmit power for various transmission bandwidths.”

To

“The VHT Transmit Power Envelope element conveys the local maximum transmit power for various transmission bandwidths.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6543 | Sigurd Schelstraete | 8.4.2.164 | 85 | Description of elements typically include value of the Length field. That appears to be missing here. | Add:   "The Length of the element is variable, as the number of Local Maximum Transmit Power fields can be between 1 and 4." | Accepted |

**Discussion:**

The length of VHT Transmit Power Envelope element is variable.

**Proposed Resolution:**

Accepted.

Add the following sentence in P85 L21.

"The Length of the element is variable, as the number of Local Maximum Transmit Power fields can be between 1 and 4."

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6006 | Kazuyuki Sakoda | 8.4.2.165 | 86 | Channel Switch Wrapper can be used by mesh STAs as well. | Replace "The New Country subelement is present when an AP performs" with "The New Country subelement is present when an AP or a mesh STA performs" | Revised |

**Discussion:**

Comment is correct. The channel switch wrapper can be used in BSS, IBSS and MBSS. Because it is described in 10.39.1, it is better to avoid the redundant word. Replace “when an AP performs extended channel switching” with “when performing extended channel switching”.

And, the normative behavior of the channel switch wrapper is descrived in 10.39.1.

**Proposed resolution:**

Revised.

In P86 L52, replace “when an AP performs extended channel switching” with “when performing extended channel switching” as the following.

From

“The New Country subelement is present when an AP performs extended channel switching to a new Country”

To

“The New Country subelement is present when performing extended channel switching to a new Country”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6262 | Brian Hart | 8.4.2.165 | 87 | The Wide BW Ch Sw subelement may not be present | Add condition, i.e.: "If present, the Wide BW Ch Sw subelement indicates ..." | Accepted |

**Discussion:**

The comment is correct. The Wide Bandwidth Channel Switch subelement is optional.

**Proposed resolution:**

Accepted.

In P87 L4, add the condition as the following

From

“The Wide Bandwidth Channel Switch subelement indicates the BSS operating bandwidth after channel switching (see 10.39.1 (Basic VHT BSS functionality)).”

To

“If present, the Wide Bandwidth Channel Switch subelement indicates the BSS operating bandwidth after channel switching (see 10.39.1 (Basic VHT BSS functionality)).”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6544 | Sigurd Schelstraete | 8.4.2.165 | 86 | Description of elements typically include value of the Length field. That appears to be missing here. | Add:   "The Length of the element is variable, as the number of fields following the length field can be between 1 and 3." | Revised |

**Discussion:**

The length of the Control Switch Wrapper element is variable.

**Proposed resolution:**

Revised.

Add the following sentence in P86 L51.

"The Length of the element is variable, as the number of fields following the length field can be between 1 and 3."

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6741 | David Hunter | 8.4.2.165 | 86 | What is the unexplained "Zero or one" above some of the field blocks? This is a non-standard format whose contents need to be expressed in some other way -- such as normative text that expresses these are optional fields. | Delete these words and add a statement that these three fields are optional. | Accepted |

**Discussion:**

Zero or One subelement has the same meaning with an optional subelement.

**Proposed resolution:**

Accepted.

Delete “Zere or one” and “zere or more” from Figure 8-401cb. Add “Optional” at each field of Figure 8-401cb as the following.

“New Country Subelement (Optional)”

“Wide Bandwidth Channel Switch subelement (Optional)”

“New VHT Transmit Power Envelope subelement (Optional)”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6545 | Sigurd Schelstraete | 8.4.2.166 | 87 | Element ID and Length field description missing | Add:  "The Element ID field is set in accordance with Table 8-54.  The Length field is set to 2." | Accepted |

**Discussion:**

The comment is correct. Element ID and Length field description should be described.

**Proposed resolution:**

Accepted.

Add the following in P87 L32.

"The Element ID field is set in accordance with Table 8-54.

The Length field is set to 2."

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6546 | Sigurd Schelstraete | 8.4.2.168 | 88 | Element ID and Length field description missing | Add:  "The Element ID field is set in accordance with Table 8-54.  The Length field is set to 1." | Accepted |

**Discussion:**

The comment is correct. Element ID and Length field description should be described.

**Proposed resolution:**

Accepted.

Add the following in P88 L30

"The Element ID field is set in accordance with Table 8-54.

The Length field is set to 1."

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6512 | Yongho Seok | 8.4.2.71.5 |  | As an additional diagnostic information element for 11ac, add TXOP Power Save in Table 8-147. | As per comment | Accepted |
| 6853 | Jae Seung Lee | 8.4.2.71.5 | 644 | Power Save Mode subelement in the Diagnostic Information subelement includes Power Save Mode field. The Power Save Mode definition is in Table 8-147 : Power Save Mode definition (IEEE 802.11 REVmb 2012), but TXOP Power Save is not included in the table | Add TXOP Power Save in the Table 8-147. | Accepted |

**Discussion:**

The comment is correct. For the consistency of the IEEE 802.11 standard, add TXOP Power as an additional diagnostic information element for 11ac,Save in Table 8-147.

**Proposed resolution:**

Accepted.

Add TXOP Power Save in the Table 8-147.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6536 | Sigurd Schelstraete | 8.4.2.29 | 73 | Clause numbers in Table 8-105 are wrong | Change:  Clause 15 -> Clause 16  Clause 16 -> Clause 17  Clause 17 -> Clause 18  Clause 18 -> Clause 19  Clause 19 -> Clause 20 | Accepted |

**Discussion:**

In IEEE 802.11-2012, clause numbers have been updated as indicated by the commenter.

**Proposed resolution:**

Accepted.

Change Clause numbers in Table 8-105 as per proposed changes.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6249 | Brian Hart | 8.4.2.10 | 70.36 | Operating Triplets for 80,160,80+80 are optional if they contain no real information as indicated in 9.18.5 | Add a note here indicating this and also pointing to 9.18.5 | Revised |

**Discussion:**

As indicated in 9.18.5, VHT STA may omit from the Country element any operating triplets for 80MHz, 160MH and 80+80MHz.

So, as proposed by the commenter, it is useful for indicating that any operating triplets for 80MHz, 160MH and 80+80MHz are optional.

**Proposed Resolution:**

Revised.

Add the following note at P70 L38.

“NOTE- Any operating triplets for 80MHz, 80MHz, 160MH and 80+80MHz can be omitted from Country element (See 9.18.5 (Operation with operating classes and the VHT Transmit Power Envelope element)).”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6202 | Brian Hart | 8.4.2.10 | 71.06 | For 5 GHz, e.g. given an 80 MHz channel spanning 36,40,44,48, is Number of Channels 4 or 13? | Clarify that it is 4 | Revised |
| 6171 | Youhan Kim | 8.4.2.10 | 69.35 | Suppose we want to advertise four 20 MHz channels in the 5GHz, namely channels 36, 40, 44 and 48. I suppose then we should set First Channel Number = 36 and Number of Channels = 4 in the Subband Triplet field. However, there is no language in the standard preventing a STA from interpreting this as channels 36, 37, 38 and 39. | Clarify the interpretation of the Subband Triplet field further. | Revised |

**Discussion:**

In the Number of Channels field, the channels belong to the channel set defined in Annex E.

For avoiding a mis-interpretation of the subband triplet field, it is useful to add the following note.

“NOTE- Channels defined in Annex E are considered as the valid channels of the Number of Channels field.”

**Proposed Resolution:**

Revised.

Add the following note at P71 L7.

“NOTE- Channels defined in Annex E are considered as the valid channels of the Number of Channels field.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6172 | Youhan Kim | 8.4.2.10 | 70.59 | For 80, 160, 80+80 MHz operating classes, Annex E does not have 'Channel Set' defined (which is where the channel number is coming from I presume). Rather, Annex E uses center frequency index. But Country element is still refering to the First Channel 'Number'. Thus, we need to clarify that for 80, 160, 80+80 MHz, this refers to the center frequency index. | Clarify that the channel number refers to the center frequency index in case of 80, 160 and 80+80 MHz operating classes. | Rejected |

**Discussion:**

For 80MHz, 160MHz and 80+80MHz operating classes, Annex E defines only the center frequency index for each channel.

If the subband triplets are used for 80MHz, 160MHz and 80+80MHz operating classes, it is needed to clarify the meaning of the channel number in the subband triplets.

However, for 80MHz, 160MHz and 80+80MHz operating classes, the VHT transmit power element is used for TPC instead of subband triplets. Please see P74 L36-L41 (IEEE 802.11ac Draft 3.1)

Because the subband triplets are not used for 80MHz, 160MHz and 80+80MHz operating classes, it is not necessary to clarify it.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6673 | Simone Merlin | 8.4.2.10 | 70.01 | wht is P(m)? | add a definition | Revised |

**Discussion:**

Regarding the number of triplets, the equation of Q is missing the definions of P(m) and M. So, please add the following definition.

“, where *M* is the total number of Operating/Subband Sequences contained in Country element and *P(m)* is the number of Subband Triplet fields making up *mth* Subband Triple Sequence.”

**Proposed Resolution:**

Revised.

Add the following sentence at the end of P70 L1.

“, where *M* is the total number of Operating/Subband Sequences contained in Country element and *P(m)* is the number of Subband Triplet fields making up *mth* Subband Triple Sequence.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6738 | David Hunter | 8.4.2.10 | 69.27 | The sentence stating the minimum length of the Country element is lost. | Either undelete that sentence and insert "Country" before "element" in it, or state that fact elsewhere. | Accepted |

**Discussion:**

It is necessary to undelete the sentence about the minimum length of the Country IE. But, it was already reflected in IEEE 802.11ac Draft 3.1.

**Proposed Resolution:**

Accepted.

No change is needed. Because it was already reflected in IEEE 802.11ac Draft 3.1

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6250 | Brian Hart | 8.4.2.160.2 | 79.31 | What is value when sent in other frames? Reserved? Or not sent in other frames? | e.g. delete reference to frames that include this, or specify behavior in other frames. 2x in this table cell | Accepted |

**Discussion:**

VHT TXOP PS bit field has two different interpretations depending on the type of the transmitter.

The encoding of VHT TXOP PS bit field should be different for AP and STA. But, it is not necessary to include the referene to frames.

**Proposed Resolution:**

Accepted.

No change is needed. Because it was already reflected in IEEE 802.11ac Draft 3.1

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6252 | Brian Hart | 8.4.2.160.2 | 79.17 | We have a bunch of VHT/MU/HT/SU/SU-only BFer/BFee definitions, but all too often we don't use them, creatig potential ambiguity when 11ac is inserted into 802.11. | Replace BFer by SU BFer (=SU or MU BFer)/VHT BFer as appropriate, here and elsewhere in the draft that BFer appears in unmodified form. Ditto BFee => VHT BFee/SU BFee | Revise |

**Discussion:**

It is not esay to select the correct terminology for beamformer and beamformee. Because a bunch of VHT/MU/HT/SU/SU-only BFer/BFee are defined. For making a consistency, it is encouraged to submit comments throughout all draft. And, those comments are totally editorial.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6255 | Brian Hart | 8.4.2.160.3 | 81.29 | Rounding should be defined in clause 8, not elsewhere | Moving any rounding language to clause 8. Ditto for P81L43 | Rejected |

**Discussion:**

Commenter confused the clause number of the comment. The corresponding sentence is written in clause 8.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6254 | Brian Hart | 8.4.2.160.3 | 81.27 | Not the whole story, so misleading | Append "with exceptions indicated by Rx Highest Supported Data Rate" Diito for Tx MCS Map | Revised |
| 6493 | Mark RISON | 8.4.2.160 | 81.49 | An MCS indicated as supported in the MCS map might also not be valid due to a HSDR constraint | Mention HSDR in the NOTE | Revised |
| 6674 | Simone Merlin | 8.4.2.160.3 | 81.50 | suggest to add a note to say that supported MCSs may be further limited based on the HT spported MCSs | add a note referrnig to the section where the limitations implied by the un-supported HT rates are decribed. | Revised |

**Discussion:**

An MCS indicated as supported in the MCS map has additional exception condition as mentioned by the commenter. For clarifying the supported MCS set, revised the NOTE as the following.

NOTE—An MCS indicated as supported in the MCS Map fields for a particular number of spatial streams might not be valid at all bandwidths (see 22.5 (Parameters for VHT MCSs)) and and might be limited by the declaration of Tx and Rx Highest Supported Data Rates.

**Proposed Resolution:**

Revised.

Revise NOTE in P81 L49 by adding the following in the end of the line.

“and might be limited by the declaration of Tx and Rx Highest Supported Data Rates.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6537 | Sigurd Schelstraete | 8.4.2.160.2 | 79.06 | The name of the subfield "Compressed steering number of beamformer antennas supported" is a very bad description of the content of the field | Rename field to "Beamformee maximum number of space-time streams for NDP or MU PPDU reception" | Rejected |

**Discussion:**

Even though the name of the subfield “Compressed steering number of beamformer antennas supported” is not well-understandable terminology, it is the more better than the proposed change by the commenter. Also, because 11n is also using the same terminology, I recommend keeping the current terminology for a consistency.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6538 | Sigurd Schelstraete | 8.4.2.160.2 | 79.06 | Update description of "Encoding" for the subfield "Compressed steering number of beamformer antennas supported" | Replace current text with:  "If SU beamformee capable, set to maximum number of space-time streams the STA can receive in a VHT NDP minus one.  Otherwise reserved.  NOTE: If the STA is also MU beamformee capable, it is assumed that the maximum value of N\_STS,total in a received MU PPDU is the same as the maximum number of space-time streams it can receive in a VHT NDP." | Revised |

**Discussion:**

Encoding of Compressed Steering Number of Beamformer Antennas Supported Subfield is defined as the following.

“If SU beamformee capable, set to the maximum number of supported beamformer antennas minus 1. Otherwise reserved.”

But, the maximum number of supported beamformer antennas is not so obvious.

Because the description of this subfiled already shows the encoding way, the proposed resolution is to revise the encoding description as the following

“If SU beamformee capable, set to maximum number of space-time streams that the STA can receive in a VHT NDP minus one. Otherwise reserved.”

**Proposed Resolution:**

Revised.

Replace the encoding of Compressed Steering Number of Beamformer Antennas Supported Subfield in P79 L6 as the following.

From

“If SU beamformee capable, set to the maximum number of supported beamformer antennas minus 1. Otherwise reserved.”

To

“If SU beamformee capable, set to maximum number of space-time streams that the STA can receive in a VHT NDP minus one. Otherwise reserved.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6539 | Sigurd Schelstraete | 8.4.2.160.3 | 80.48 | "for both reception and transmission" is confusing. It makes it sound as if the same set of MCSs is supported for both directions. | Replace "... that a STA supports for both reception and transmission." with "... that a STA supports for reception and the combinations that it support for transmission." | Accepted |

**Discussion:**

It seems that the following sentence may have some ambiguity as mentioned by commenter.

“The VHT Supported MCS Set field is used to convey the combinations of MCSs and spatial streams that a STA supports for both reception and transmission.”

The proposed change may remove such ambiguity. The following is the revised sentence.

“The VHT Supported MCS Set field is used to convey the combinations of MCSs and spatial streams ~~that a STA supports for both reception and transmission.~~ that a STA supports for reception and the combinations that it support for transmission.”

**Proposed Resolution:**

Accepted.

Repalce P80 L48 as the following.

From

“The VHT Supported MCS Set field is used to convey the combinations of MCSs and spatial streams that a STA supports for both reception and transmission.”

To

“The VHT Supported MCS Set field is used to convey the combinations of MCSs and spatial streams that a STA supports for reception and the combinations that it supports for transmission.”

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6090 | Liwen Chu | 8.4.2.160.2 | 71.44 | There is no antenna pattern definition. It is unclear what it means. | Add the definition or description of antenna pattern. | Rejected |

**Discussion:**

The antenna pattern is a very well-known terminology. I believe there is no need to define the antenna pattern. Also, in other amendments (e.g., 802.11ad), the antenna pattern is frequently used without defining it.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6461 | Mark RISON |  | 81.28 | Defining the highest supported data rate as the highest supported data rate for long GI unnecessarily costs 10% throughput for devices supporting short GI | Define the highest supported data rate as the highest supported data rate. Add a field to indicate the highest supported number of BCC encoders | Rejected |

**Discussion:**

From the HSDR Constraint specified in sub-clause 9.7.11.1, the supported rate is valid when the data rate for long GI of the MCS map is less than or equal to the rate represented by the Rx Highest Supported Long GI Data Rate subfield.

Because both values are compared based on Long GI, there is no issue.

**Proposed Resolution:**

Rejected.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 6511 | Yongho Seok | 8.4.2.23.9 | 72.18 | For the performance management of 11ac network, please make additional STA Counter Group for MU-MIMO receptation statistics. | As per comment | Rejected |

**Discussion:**

The comment is withdrawed by the commenter.

**Proposed Resolution:**

Rejected.