IEEE P802.11
Wireless LANs

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| LB188 Clause 8.4.2 Comment Resolutions |
| Date: 2012-07-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Yongho Seok | LG Electronics | LG R&D Complex 533, Hogye-1dong, Dongan-Gu, Anyang-Shi, Kyungki-Do, 431-749, Korea | +82-31-450-1947 | yongho.seok@lge.com |
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Abstract

This document proposes resolutions for the following 19 CIDs: 6173, 6257, 6258, 6259, 6540, 6541, 6542, 6260, 6261, 6543, 6006, 6262, 6544, 6741, 6545, 6546, 6512, 6853 and 6536.

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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. | Reject |

**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 | Reject |

**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 |  |

**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 |  |

**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. |  |

**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. |  |

**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 |  |

**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 |  |

**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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| 6261 | Brian Hart | 8.4.2.164 | 85 | conveys the max | conveys the local max |  |

**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." |  |

**Discussion:**

The length of VHT Transmit Power Envelope element is variable.

**Proposed Resolution:**

Accepted.

Aadd 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" |  |

**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 ..." |  |

**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." |  |

**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. |  |

**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." |  |

**Discussion:**

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

**Proposed resolution:**

Accepted.

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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." |  |

**Discussion:**

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

**Proposed resolution:**

Accepted.

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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 |  |
| 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. |  |

**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 16Clause 16 -> Clause 17Clause 17 -> Clause 18Clause 18 -> Clause 19Clause 19 -> Clause 20 |  |

**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.