IEEE P802.11
Wireless LANs

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| Resolution to Comments : CID 1115, 1267, 1269, 1335, 1486, 2232 |
| Date: 2018-07-10 |
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Abstract

This document presents suggested resolutions related to CIDs 1115, 1267, 1269, 1335, 1486 and 2232 for P802.11ay\_D1.0.

***Modify the following definition into 10.3.1 as highlighted in red texts:***

* STA authentication and association

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| **CID** | **Clause Number (C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1115 | 9.3.4.2 | 40.06 | the field A-BFT in Secondary Channel cannot indicate the secondary since the unassociated station don't know what are the secondary's. | Indicate the upper/lower channels compared to the primary instead Secondary. | Accept |
| 1267 | 9.3.4.2 | 40.06 | change "on an adjacent secondary channel" to be "on a secondary channel". It is not clear which reference channel a secondary chennel is adjacent to. | as in comment | Reject |
| 2232 | 9.3.4.2 | 40.09 | The value of 3 should be reserved because secondary2 channel is not adjacent to the primary channel | change to 'The value of 3 is reserved' | Reject |

**Proposed resolution**:

***Discussion:***

In Sec. 9.3.4.2 of P802.11 D1.0 [1], **Beacon Interval Control field when the Next A-BFT subfield is nonzero** is defined in Figure 12 in which bits B46B47 in A-BFT in Secondary Channel are assigned to indicate a secondary channel A-BFT is allocated. To clarify the definition of the values of Secondary Channel subfield in Beacon Interval Control fiels when the Next A-BFT subfiled is nonzero for the indication of secondary channel usage in A-BFT, the corresponding text in D1.0 is modified as below.

***Proposed text changes***

*Editor: change the text as below, page 40, line 6 [1]*

The A-BFT in Secondary Channel subfield indicates that the A-BFT is allocated on an adjacent secondary channel, in addition to being allocated on the primary channel. If set to 0, the A-BFT is not allocated on any secondary channel. If set to 1, the A-BFT is also present on the secondary channel which is the lower secondary channel next to the primary channel and the secondary channel is defined in ANNEX E. If set to 2, the A-BFT is also present on the secondary channel which is the upper secondary channel next to the primary channel. If set to 3, the A-BFT is also present on either the upper secondary channel or the lower secondary channel next to the primary channel. This A-BFT in Secondary Channel subfield is reserved if the value of the Next A-BFT subfield is nonzero.

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| **CID** | **Clause Number (C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1269 | 10.38.5.2 | 153.11 | operations during the A-BFT allocated over a secondary channel are missing. | add operation during the A-BFT allocated over a secondary channel. | Accept |

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| **CID** | **Clause Number (C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1486 | 10.38.5.1 | 152.19 | What if two different STAs transmit at the same time, one on the primary, one on the secondary during the A-BFT? How the the AP/PCP supposed to deal with this case? It would seem to involve a lot of complexity to try to receive both packets simultaneously. | Add specific language to describe what the AP/PCP is requried to do while receiving SSW (or short SSW) packets from two different STAs, one on primary one on secondary. | Accept |

***Discussion:***

As defined in A-BFT in Secondary Channel subfiled in Sec. 9.3.4.2 [1], the A-BFT of an EDMG STA can be present on either the primary channel or a secondary channel. The proposed text below is to clarify the A-BFT operations when more than one channel is available.

***Proposed text changes***

*Editor: change the text in page 154, line 16-18 [1] as follows.*

Selecting a single 2.16 GHz channel where the A-BFT is present based on the value of the A-BFT in Secondary Channel subfield (9.3.4.2) in the last received DMG Beacon. An EDMG AP or PCP shall be capable to simultaneously detect the SSW frames transmitted by the respective EDMG STAs on the primary or an adjacent secondary channel. Any frame transmission between the initiatior and the responder during the A-BFT shall be performed using the selected channel; and

*Editor: Change the eighth paragraph of 10.38.5.2 in [2] as follows.*

For DMG AP or PCP and EDMG AP or PCP that received SSW frames transmitted from different EDMG STAs on the primary channel and an adjacent secondary channel, which carry the same Sector ID and the same DMG Antenna ID, the initiator shall initiate an SSW feedback procedure to a responder (10.38.2.4) at a time such that the beginning of the first symbol of the SSW-Feedback frame on the WM occurs at aSSFBDuration + MBIFS before the end of the SSW slot on the primary channel and an adjacent channel. For EDMG AP or PCP that received SSW frames transmitted from different EDMG STAs on the primary channel and an ajacent secondary channel, which carry different Sector IDs and/or different DMG Antenna IDs, the initiator shall initiate an SSW feedback procedure to a responder on the primary channel as for DMG AP or PCP above, and shall postpond to initiate an SSW feedback procedure to a responder on an adjacent secondary channel at a time such that the beginning of the first symbol of the SSW-Feedback frame on the WM occurs at aSSFBDuration + MBIFS before the end of the next available SSW slot. A responder that transmitted at least one SSW frame within an SSW slot shall be in quasi-omni receive mode for a period of aSSFBDuration ending MBIFS before the end of the

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| **CID** | **Clause Number (C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1335 | 10.38.5.4 | 156.03 | "transmitted in the DMG Beacon. An non-EDMG AP or PCP, or an EDMG AP or PCP having a single RF chain" - This does not cover the case where the AP or PCP may have more antennas than (multiple) RF chains | replace having "a single RF chain" with "having the same number of Antennas as RF chains" | Revise |

***Discussion:***

The paragraph from line 43 of page 155 to line 7 of page 156 in P802.11 D1.0 discusses the case that a non-EDMG AP or PCP, or an EDMG AP or PCP with one or multiple antennas has a single RF chain. This covers the case where the AP or PCP may have more antennas than single RF chain. The paragraph from page 155, line 43 to page 156, line 7 is revised as below.

The paragraph from line 8 of page 156 to line 16 of page 156 covers the case when an EDMG AP or PCP with multiple antennas uses multiple RF chains. Modified text is as below.

***Proposed text changes***

*Editor: change the text as below, paragraph from page 155, line 43 to page 156, line 7 [1]*

An AP or PCP shall have an A-BFT every *k* beacon intervals, where *k* is the value indicated by the N BIs A-BFT subfield in the Beacon Interval Control field. In an A-BFT, the non-EDMG AP or PCP, or an EDMG AP or PCP, with one or multiple antennas, which used one RF chain in the last BTI, shall receive in a quasi-omni antenna pattern using the DMG antenna indicated by the value of the DMG Antenna ID subfield within the SSW field transmitted in the DMG Beacon. In the case that a non-EDMG AP or PCP, or an EDMG AP or PCP having a single RF chain, with multiple DMG antennas has a regular schedule of receiving through each DMG antenna corresponding to the DMG antenna in which a DMG Beacon frame is transmitted through. The AP or PCP shall switch RX DMG antenna every *l* allocations, where *l* is the value of the N A-BFT in Ant subfield 6 within the Beacon Interval Control field.

*Editor: change the text as below, paragraph from page 156, line 8 to page 156, line 16 [1]*

In an A-BFT, an EDMG AP or PCP that used multiple RF chains, with the same number of antennas as RF chains within one DMG antenna group, in the last BTI shall receive in a quasi-omni antenna pattern through each DMG antenna indicated by the values of the DMG Antenna ID subfields within the Sector Sweep fields transmitted in one or multiple DMG Beacon frames during the last BTI. DMG Beacon frames transmitted from different DMG antennas have different values in their DMG Antenna ID subfields. In case that an EDMG AP or PCP having multiple RF chains and multiple DMG antenna groups has a regular schedule of receiving through each DMG antenna group corresponding to the DMG antennas in which a DMG Beacon frame is transmitted through. The EDMG AP or PCP with multiple RF chains shall switch RX DMG antenna group every *l* allocations, where *l* is the value of the N A-BFT in Ant subfield within the Beacon Interval Control field.

**SP**

Do you agree to adopt the comment resolutions to CID 1115, 1267, 1269, 1335, 1486 and 2232 as proposed in IEEE 802.11-18/1230r0?

**References**

1. Draft P802.11ay\_D1.0.
2. P802.11-2016.