IEEE P802.11  
Wireless LANs

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| Comment Resolution on CID 3108, 3574, 3754, 3756 | | | | |
| Date: 2011-11-04 | | | | |
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| 3108 | 9.15 | 77 | 45 | In section 9.15 STBC operation, rules are implicitly defined only for HT. Add the VHT case and specify that the capability is referred to HT or VHT PPDUs | modify text referred to VHT: "Only a STA that sets the Tx STBC subfield to 1 in the HT Capabilities element may transmit HT PPDUs with a TXVECTOR parameter STBC set to a nonzero value to a STA from which the most recently received value of the Rx STBC field of the HT Capabilities element is nonzero". Add "Only a VHT STA that sets the Tx STBC subfield to 1 in the VHT Capabilities element may transmit VHT PPDUs with a TXVECTOR parameter STBC set to a nonzero value to a STA from which the most recently received value of the Rx STBC field of the HT Capabilities element is nonzero" | MAC | AGREE IN PRINCIPLE. See the text change in doc 11/1471r0. |

**Proposed resolution:**

TGac Editor: Pls add the changes before clause 9.16 in page 125 of Draft 1.2 as following:

**9.15 STBC operation**

Only a STA that sets the Tx STBC subfield to 1 in the HT Capabilities element may transmit ~~frames~~HT PPDUs with a TXVECTOR parameter STBC set to a nonzero value to an HT STA from which the most recently received value of the Rx STBC field of the HT Capabilities element is nonzero. Only a VHT STA that sets the Tx STBC subfield to 1 in the VHT Capabilities element may transmit VHT PPDUs with a TXVECTOR parameter STBC set to a nonzero value to a VHT STA from which the most recently received value of the Rx STBC field of the VHT Capabilities element is nonzero.

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| 3574 | 8.2.4.1.8 | 21.08 | This whole para is poorly worded, ungrammatical and misuses terminology. | Replace Para with:  The More Data field is set to 1 in frames transmitted by VHT AP under the following conditions:  -- the destination STA is a VHT non-AP STA, and  -- when it has more frames to transmit to the destination STA, and  -- when the destination STA's VHT Capabilities Info field has the TXOP PS subfield equal to 1, and  -- the VHT AP allows VHT non-AP STAs to enter Doze state during the current TXOP. | MU | AGREE IN PRINCIPLE. Refer to the resolution in 11/1194r4 |

**Proposed resolution:** Agree in principle. Refer to the resolutions to CID 3696 and 2325 in doc 11/1194r4.

**Sounding**

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| 3754 | 9.30.5 | 90.00 | "A beamformer that transmits an NDPA frame with more than one STA Info field should transmit any Beamforming Report Poll frames needed to retrieve VHT Compressed Beamforming frame responses from the intended beamformees in the same TXOP that contained the NDPA frame". On the other hand, MFB has a different rule that (line 64-65, P88) "NOTE 1—If an MRQ is included in the last PPDU in a TXOP and there is not enough time for a response, the recipient can transmit the response MFB in a subsequent TXOP." Limit all the BF Report Polls in the same TXOP with NDPA is not so flexible as MFB. Further, retransmitting NDPA and NDP in the subsequent TXOP is redundant. | Add to the end of the subclause 9.30.5: "The BF Report Poll frame shall be allowed in the subsequent TXOP when the remaining TXOP duration is not sufficient for transmitting the VHT compressed beamforming frame(s)". Refer to submission 11-11-xxxx-xx-00ac-resolution-to-comments-xxx for more details. | AGREE IN PRINCIPLE. See the text change in doc 11/1471r0. |

**Discussion:**

*Here ‘should’ means that the beamformer can choose to transmit BF Report Poll to request the remaining channel information in subsequent TXOPs. This needs to be clarified by adding a sentence as shown below.*

**Proposed resolution:**

TGac Editor: Pls change the 4th paragraph on page 149 of D 1.2:

A beamformer that transmits an NDPA frame with more than one STA Info field should transmit any Beamforming Report Poll frames needed to retrieve VHT Compressed Beamforming frame responses from the intended beamformees in the same TXOP. If the duration of the TXOP that contained the NDPA frame is not of sufficient duration to accommodate the transmission of all of the feedback reports, the beamformer may poll for the remaining VHT Compressed Beamforming frames in subsequent TXOPs. Transmissions of NDPA, NDP, VHT Compressed Beamforming Report and Beamforming Report Poll frames are ~~that contained the NDPA frame,~~ subject to the rules in 9.19.2.4 (Multiple frame transmission in an EDCA TXOP). The VHT sounding protocol with more than one beamformee is shown in Figure 9-ac4.

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| 3756 | 9.30.5 | 32.52 | "All segments shall be sent in a single A-MPDU". Why limit all the segments in a single A-MPDU? Allow to send the segments in different frames is more flexible when the left time in current TXOP is not enough for transmission of the whole A-MPDU. | Change the sentence "All segments shall be sent in a single A-MPDU." to "All segments should be sent in a single A-MPDU if there is sufficient time to transmit in the remaining TxOP"." Further details can be found in submission 11-11-xxxx-xx-00ac-resolution-to-comments-xxx. | AGREE IN PRINCIPLE**.** See the text change in doc 11/1471r0. |

**Discussion:**

*The time duration of A-MPDU with channel information segments may be longer than 1 ms, that is, even for a smart BFmer it is also possible that the BF report exceeds the TXOP limit. Because it is the BFmer’s responsibility to ensure the left time is sufficient, the BFmer can consider how to use the remaining time when the BF report exceeds the TXOP limit. To deal with this scenario, the simple solution is for the BFmer to poll some segments in current TXOP and remaining segments in its next TXOP. Since polling the remaining segments is already allowed in current spec, BFer has the right to decide what and when to poll.*

*There is some contradiction between the word “possible” and the latter part of the sentenece: “Report Poll frame to poll all possible segments of the VHT Compressed Beamforming frame from the beamformee, by setting all the bits in the Segment Retransmission Bitmap field of the Beamforming Report Poll frame to 1”. In case that some segments are not possible to retrieve, the BFer cannot set all the bits of the bitmap to 1 in the BF report poll frame. Further, since how to set the bits in Segment Retransmission Bitmap filed has already been defined in current draft, the latter part of the sentence is redundant.*

**Proposed resolution:**

TGac Editor: Pls change line 40-59 on page 151 of D1.2 with the following:

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If a VHT Compressed Beamforming frame would result in an MMPDU that exceeds the beamformer’s maximum MPDU length capability, the VHT Compressed Beamforming Report field and MU Exclusive report field shall be split into up to 8 segments, with each segment sent in a different MPDU. Each of the segments except the last shall contain the maximum number of octets allowed by the beamformer’s maximum MPDU length capability. The last segment may be smaller. Each segment is identified by the value of the Remaining Segments subfield and the First Segment subfield in the VHT MIMO Control field as defined in 8.4.1.37 (VHT MIMO Control field). All requested segments shall be sent in a single A-MPDU.

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In its first attempt to retrieve a VHT Compressed Beamforming frame from a beamformee that is not the one indicated by the first STA Info field, a beamformer shall transmit a Beamforming Report Poll frame to poll all possible segments of the VHT Compressed Beamforming frame from the beamformee in the current TXOP~~, by setting all the bits in the Segment Retransmission Bitmap field of the Beamforming Report Poll frame to 1~~. If the transmission of VHT Compressed Beamforming frame would extend beyond the end of the TXOP, the beamformer may request a selective transmission of some segments in the current TXOP. The beamformer can request the remaining segments in its next TXOP.

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