IEEE P802.11
Wireless LANs

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| Proposed Resolutions to Comments on Clauses 9.15 and 9.16 |
| Date: 2012-03-06 |
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Abstract

This document proposes resolutions to TGac Letter Ballot 187 CIDs 4394, 4395, 4396, 4497, 4826, 4827, 4998, 5085, 5264

The comments are copied from IEEE 12/0223r2.

## Section 9.15

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| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 4394 | 108 | 10 | 9.15 | Seem to need extra language to prevent sending 4x2 STBC to a receiver that only declared support for 2x1 STBC | Add | REVISED, added extra text in line with the comment – see 12/0300r0. |

**Resolution**

*Editor, please add below red updates to the corresponding paragraph in Section 9.15:*

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. The number of spatial streams of such a VHT PPDU shall not exceed the supported number of spatial streams of the receiving VHT STA as indicated by the Rx STBC field of its VHT Capabilities element.

## Section 9.16

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| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 4395 | 108 | 53 | 9.16 | These bullets seem screwed up. The preamble starts with CH\_BW=80, so the 3 subbullets at P108L55/P108L59/P109L1 cannot be triggered - delete | As in comment | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0. |
| 4396 | 109 | 30 | 9.16 | Missing dot11ShortGIOptionIn160And80p80Activated as per previous bullet | Add | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 4497 | 109 | 4 | 9.16 | "1 dot11ShortGIOptionIn160and80p80Activated is present" | "1 and dot11ShortGIOptionIn160and80p80Activated is present" | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 4826 | 108 |  | 9.16 | If CH\_BANDWIDTH is set to CBW80, it cannot be set to CBW20 or CBW40 or CBW160 or CBW80+80 | Change the last two main bullets to "- The RA of the frame corresponds to a STA for which the Short GI for 80 MHz subfield of the most recently received VHT Capabilities element contained a value of 1.- dot11ShortGIOptionIn80Activated is present and is true." | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 4827 | 109 | 28 | 9.16 | What Short GI subfield? | Change "The RAs of all the MPDUs in the MU PPDU all correspond to STAs for which the Short GI for 80 MHz or Short GI for 160 and 80+80 MHz subfield, as appropriate, of the most recently received VHT Capabilities element contained a value of 1." | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 4998 | 109 | 28 | 9.16 | Missing plurial in the following paragraph: "The RAs of the MPDUs in the MU PPDU corresponds to STAs for which the Short GI subfield of the most recently received VHT Capabilities element contained a value of 1." | Change to: "The RAs of the MPDUs in the MU PPDU corresponds to STAs for which the Short GI subfields of the most recently received VHT Capabilities elements all contained a value of 1." | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 5085 | 108 | 46 | 9.16 | Conditions for use of shortGI with CH\_BANDWIDTH set to CBW80 are inconsistent | This paragraph talks about sending a frame with TXVECTOR parameter CH\_BANDWIDTH set to CBW80.In the last bullet, it then lists the conditions:- if CH\_BANDWIDTH is set to CBW20 ...- if CH\_BANDWIDTH is set to CBW40 ...It would seem this contradicts the assumption that the frame is sent with CH\_BANDWIDTH set to CBW80. | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |
| 5264 | 108.46 | 46 | 9.16 | The sentence initially refers to 80MHz but then includes conditions for all BWs; In the same section there are additional paragraphs that address other BWs; the paragraph starting at P109L21 is obsolete and should be replaced by the previou ones. | this section need cleanup | REVISED, The suggested changes for MU PPDUs in 11/0596r7 were accidentally added to the SU CBW80 case. This is corrected. – see 12/0300r0 |

**Discussion**

The changes in Section 9.16 came from a resolution for CID 2038 of 11ac Letter Ballot 178, which again refers to 11/0596r7. The suggested changes for MU PPDUs in 11/0596r7 are accidentally added to the SU CBW80 case. This needs to be corrected. The proposal is to follow the approved text of 11/0596r7. Hence, the proposed resolution is as follows.

**Resolution**

*Editor, please apply below red changes to the corresponding paragraphs in Section 9.16:*

A STA may transmit a frame with TXVECTOR parameters CH\_BANDWIDTH set to CBW80 and

GI\_TYPE set to SHORT\_GI only if all of the following conditions are met:

— The STA is a VHT STA.

— The TXVECTOR parameter FORMAT is equal to VHT.

~~— The RAs of the all of the MPDUs contained in the MU PPDU transmission corresponds to STAs for which the following conditions are satisfied:~~

~~—If CH\_BANDWIDTH is set to CBW20, the Short GI for 20 MHz subfields of the most recently received HT Capabilities element contained a value of 1 and dot11ShortGIOptionInTwentyActivated is present and is true.~~

~~—If CH\_BANDWIDTH is set to CBW40, the Short GI for 40 MHz subfields of the most recently received HT Capabilities element contained a value of 1 and dot11ShortGIOptionInFortyActivated is present and is true.~~

~~—If CH\_BANDWIDTH is set to CBW80, the Short GI for 80 MHz subfields of the most recently received VHT Capabilities element contained a value of 1 and dot11ShortGIOptionIn80Activated is present and is true.~~

~~—If CH\_BANDWIDTH is set to CBW160 or CBW80+80, the Short GI for 160 MHz and~~

~~80+80 MHz subfields of the most recently received VHT Capabilities element contained a value of 1 dot11ShortGIOptionIn160and80p80Activated is present and is true.~~

— The RA of the frame corresponds to a STA for which the Short GI for 80 MHz subfield of the most recently received VHT Capabilities element contained a value of 1.

— dot11ShortGIOptionIn80Activated is present and is true.

A STA may transmit a frame with TXVECTOR parameters CH\_BANDWIDTH set to CBW160 or

CBW80+80 and GI\_TYPE set to SHORT\_GI only if all of the following conditions are met:

— The STA is a VHT STA.

— The TXVECTOR parameter FORMAT is equal to VHT.

— The RA of the frame corresponds to a STA for which the Short GI for 160 and 80+80 MHz subfield of the most recently received VHT Capabilities element contained a value of 1.

— dot11ShortGIOptionIn160and80p80Activated is present and is true.

A STA may transmit a frame with TXVECTOR parameters FORMAT set to VHT and NUM\_USERS set to greater than 1 and GI\_TYPE set to SHORT\_GI only if all of the following conditions are met:

— The STA is a VHT STA.

— The TXVECTOR parameter FORMAT is equal to VHT.

— The RAs of all the MPDUs contained in the MU PPDU correspond~~s~~ to STAs for which the ~~Short GI subfield of the most recently received VHT Capabilities element contained a value of 1.~~following conditions are satisfied:

—If TXVECTOR parameter CH\_BANDWIDTH is set to CBW20, the Short GI for 20 MHz subfields of the most recently received HT Capabilities element contained a value of 1 and dot11ShortGIOptionInTwentyActivated is present and is true.

—If TXVECTOR parameter CH\_BANDWIDTH is set to CBW40, the Short GI for 40 MHz subfields of the most recently received HT Capabilities element contained a value of 1 and dot11ShortGIOptionInFortyActivated is present and is true.

—If TXVECTOR parameter CH\_BANDWIDTH is set to CBW80, the Short GI for 80 MHz subfields of the most recently received VHT Capabilities element contained a value of 1 and dot11ShortGIOptionIn80Activated is present and is true.

—If TXVECTOR parameter CH\_BANDWIDTH is set to CBW160 or CBW80+80, the Short GI for 160 MHz and 80+80 MHz subfields of the most recently received VHT Capabilities element contained a value of 1 dot11ShortGIOptionIn160and80p80Activated is present and is true.