IEEE P802.11
Wireless LANs

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| Comment Resolution on CID 16768  |
| Date: 2018-09-06 |
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Abstract:

This document contains comment resolution on the following CID for 28.4.3 and the proposed specification changes are in draft 3.2:

16768

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| 16768 | 353.35 | 27.11.3 | BEAM\_CHANGE = 0 could be problematic if beamforming is applied to the legacy preamble. Beamforming may cause sudden phase jumps in the channel estimate. For this reason, HT, VHT and HE beamformed transmissions come with a "smoothing" or "beamformed" indication in the preamble, so the receiver can adjust. This is not possible if BF is applied from the start of the packet. Since the receiver can not know whether BF is applied or not, it may have no choice but to disable channel smoothing. This would be quite ironic since it would result in a reduction of channel estimate quality, which BEAM\_CHANGE is supposed to help with. | Add a bit to the HE Capabilities to allow the receiver to indicate that it is (or is not) willing to accept packets with BEAM\_CHANGE=0 for which beamforming is applied. | Revised.11ax editor, please see the discussion for instructions of CID 16768 in doc IEEE 802.11-18/2023r2.. |

**Discussions for CID 16768:**

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Supporting BEAM\_CHANGE or not at receiver does not affect the reception. Any STA can support BEAM\_CHNAGE = 0 and BEAM\_CHNAGE = 1 case without any efforts. Smoothing or not is a receiver’s decision. Receivers should check if the channel can be smoothed or not. Even for beamformed HE frames, the channel needs to be smoothable if 1x HE-LTF and 2x HE-LTF are used.

Knowing the Beamformed from HE-SIGA does not help the preamble reception. So adding the capability bit is not necessary.

However, adding an informative note about the setting of BEAM\_CHANGE may helps the understanding.The note is added to the Table 28-1—TXVECTOR and RXVECTOR parameters.

***TGax Editor: Please add the following note (changed texts are in red) in the line 41-49, page 416 of D3.2***:

Integer:

Set to 0 to indicate(#15429) that the spatial mapping of the ~~pre-HE-STF portion of the PPDU~~ pre-HE modulated fields the same as first symbol of HE-LTF ~~on each tone~~. Set to 1 to indicate(#15430) that the spatial mapping of ~~pre-HE-STF portion of the PPDU~~ pre-HE modulated fields is different from the first symbol of HE-LTF.

NOTE: When BEAM\_CHANGE=0 and BEAMFORMED=1, this may result in beamforming of the pre-HE modulated fields.