IEEE P802.11
Wireless LANs

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| BW usage in Beamforming Report |
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Abstract

This document provides resolution for the comments listed below

Comments are from: 11-11-0276-00-00ac-tgac-d0-1-comments.xls

Comments refer to: Draft P802.11ac\_D0.1.pdf

Changes in the text refer to: Draft P802.11ac\_D0.1.pdf

**Comments**

**Comments regarding BW of response frames**

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| 1540 | 9.21.5 | 57 | 1 | TR | During the sounding procedures, BW indications for measurement and transmission are clear. For example, what is the PPDU BW of the VHT Compressed Beamforming Report when there are NDPA decoding failur in some secondary channels? What is the BW of Sounding Poll when beamformer have received VHT Compressed Beamforming Report of only partial channel? etc. | Clarify BWs of NDPA, NDP, VHT Compressed Beamforming, and Sounding Poll frames. | Agree. Text is addedNote that BW of NDPA and poll frames are already regulated by the rules in 9.9.1.4. | MU |
| 1423 | 9.21.5 | 57 | 1 | TR | Cluase 9.21.5 VHT sounding protocol needs some more clarification on the transmission of NDPA, NDP, and VHT compressed beamforming; that is, non-HT duplicate form, Reporting management under interference in secondary channels, etc. | Define clear behavior. | Disagree. Don’t see the necessity to define non-HT duplicate form and reporting management under interference in secondary channel.  | MU |
| 1466 | 9.21.5 | 57 | 42 | TR | bandwidth of poll frames is not clear, and bandwidth of responses to the poll frame is also not clear | clarify | same as 1540 | MU |
| 1080 | 9.21.5 | 57 | 1 | TR | In VHT sounding protocol, the specification is unclear on the relations of BWs of the frames; NDPA, NDP, VHT Compressed Beamforming, and Sounding Poll frames.(a) What is the expected behavior of a STA when it does not have a valid channel information (e.g., due to interference) on some part of the BW for which channel information is requested by the beamforer? May the STA supposed to compute VHT Compressed Beamforming Report only using valid BW?(b) In the above case that a STA transmit may report VHT Compressed Beamforming Report on reduced BW than requested, what is the transmit BW of VHT Compressed Beamforming frame PPDU?(c) When the beamformer receives VHT Compressed Beamforming Report for only partial BW of requested BW, the beamformer needs to determine whether the BW of Sounding Poll frame to be the original value which is the same with that of NDPA/NDP or be the reduced BW as in the VHT Compressed Beamforming Report.(d) What is the expected behavior of a STA when the BW of the Sounding Poll frame is not equal to NDPA/NDP? Should a STA consider it to be detection error due to interference or to be beamformer's decision to reduce it?(e) When a STA is requested VHT Compressed Beamforming Report for only a partial BW of NDPA/NDP and the WM is idle for full BW of NDPA/NDP, may a STA transmit VHT Compressed Beamforming frame through NDPA/NDP BW to shorten the transmission time? | Clarify VHT sounding protocol. Some rules for specifiy BWs of NDPA, NDP, VHT Compressed Beamforming, and Sounding Poll frames are required. | same as 1540  | MU |

**Discussion**

The proposal is to set

* + the BW of the Compressed Beamforming report (indicated in the BW subfield of the MIMO control field) to the same bandwidth of the NDP
		- Beamformer is in control of the BW of the channel represented in the beamforming report; this avoids that beamformee returns channel estimation on a portion of the sounded BW.
	+ the transmit bandwidth of the Compressed Beamforming frame (in TXVECTOR) to a value equal or smaller than the bandwidth of the requesting frame (wither NDP or Beamforming Poll)
		- this leaves a degree of freedom to the responder in the selection of the response BW.

**Editing Instructions**

**9.21.5 VHT sounding protocol**

**Modify the paragraph at P73L47**

A beamformee that receives an NDPA frame from a beamformer with which it is associated or with which it

has an established DLS or TDLS session and that contains the beamformee's AID in the AID subfield of the

first (or only) STA Info field, shall transmit its VHT Compressed Beamforming frame a SIFS after the NDP

frame that follows the NDPA frame(Ed).(#952) The CH\_BANDWIDTH parameter in the TXVECTOR of the VHT Compressed Beamforming frame shall be set to indicate a bandwidth not wider than that indicated in the CH\_BANDWIDTH parameter in the RXVECTOR of the received NDP frame

**Modify the paragraph at P73L54**

A beamformee that receives an NDPA from a beamformer with which it is associated or with which it has an

established DLS or TDLS session and that contains the beamformee’s AID in the AID subfield of a STA Info

field that is not the first STA Info field shall transmit its VHT Compressed Beamforming frame after receiving

a Beamforming Report Poll with RA matching its MAC address and TA matching the MAC address of the beamformer. If the CH\_BANDWIDTH\_IN\_NON\_HT parameter in the RXVECTOR of the received Beamforming Report Poll frame is valid, the CH\_BANDWIDTH parameter in the TXVECTOR of the VHT Compressed Beamforming frame shall be set to indicate a bandwidth not wider than that indicated by the CH\_BANDWIDTH\_IN\_NON\_HT parameter in the RXVECTOR of the Beamforming Report Poll frame; otherwise, the CH\_BANDWIDTH parameter in the TXVECTOR of the VHT Compressed Beamforming frame shall be set to indicate a bandwidth not wider than that indicated by the CH\_BANDWIDTH parameter in the RXVECTOR of the Beamforming Report Poll frame.

**Modify the paragraph at P74L10** A beamformee shall send a VHT Compressed Beamforming frame with the VHT MIMO Control Feedback

Type field set to the same value as the Feedback Type field in the corresponding STA Info field in the NDPA

frame. If the Feedback Type field is set to MU, the STA shall send a feedback with the Nc field value in the

VHT MIMO Control field equal to the Nc field value in the corresponding STA Info field in the NDPA provided

the Nc requested is not larger than the number of currently active receive antennas. If the Feedback

Type is set to SU, the Nc field value in the VHT MIMO Control field is determined by the beamformee.(#785)A beamformee shall set the value of the Channel Width subfield in the VHT MIMO Control field of a VHT Compressed Beamforming frame to the same value as the CH\_BANDWIDTH parameter in the RXVECTOR of the corresponding NDP frame.