IEEE P802.11  
Wireless LANs

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| Comment Resolution for LB 178 (D1.0): resolutions for comments on 8.5.16.4 | | | | |
| Date: 15 September 2011 | | | | |
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Abstract

This document provides resolutions for CIDs 3478, 2731, 2732

## Comments

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| CID | Page | Line | Clause | Comment | Proposed Change | Resolution |
| 3478 | 64.32 | 32 | 8.5.16.4 | AP behavior using this frame should be described in a normative section. | Move statement to 10.25. Also, expand: why is broadcast restricted to AP? Broadcast should not be the only option, in some situations, unicast might be better, for example, AP that has a single client. | P – Text changed to give AP option of using broadcast or unicast. There is no restriction on a STA using broadcast, however, this is not explicitly called out. See text changes in 11/1217r0 |
| 2731 | 64.33 | 33 | 8.5.16.4 | The broadcast operation is the same as transmission to group or Broadcast address. | Please change broadcasts to transmits to broadcast address. | P – See changes in 11/1217r0 |
| 2732 | 64.33 | 33 | 8.5.16.4 | How AP ensures that the frame is broadcasted to all STAs? May some VHT Operating Mode Notification frames be transmitted to individual address? May AP transmit the VHT Operating Mode Notification frame several times? | Please clarify. | P – Test modified to indicate that AP has option of using broadcast or unicast. See changes in 11/1217r0 |

## Discussion

In the resolution presented below, text in 10.25.1 related to the VHT Operating Mode Notification frame is moved to its own section “VHT STA notification of operating mode changes”. Text in 8.5.16.4 that describes station behaviour is moved to this new section and modified to accommodate the comments above.

## Resolution

**8.5.16.4 VHT Operating Mode Notification frame format**

***Change the first paragraph as follows:***

The VHT Operating Mode Notification frame is used to notify STAs that the transmitting STA is changing its operating channel width, the maximum number of streams it can receive or both. See definition in 8.4.1.40 (VHT Operating Mode field).

**10.25.1 Basic VHT BSS functionality**

***Create a new section 10.25.<new> and move the text on the VHT Operating Mode Notification to this new section.***

**10.25.<new> VHT STA notification of operating mode changes**

The VHT Operating Mode Notification Action frame may be used by a VHT STA to notify another VHT STA that it is capable of receiving frames with a bandwidth up to and including the indicated Channel Width and with a NSS up to and including the indicated Rx Nss.

The VHT Operating Mode Notification Action frame may be used by both APs and non-AP STAs. An AP that makes use of the VHT Operating Mode Notification frame may use the broadcast RA to notify all STAs in the BSS of the change in its operating mode.

NOTE 1—To avoid possible frame loss, a VHT STA that sends an individually addressed VHT Operating Mode Notification frame to a second VHT STA indicating reduced operating channel bandwidth and/or reduced Rx Nss can continue with its current operating channel bandwidth and Rx Nss until it receives a frame addressed to itself from the second VHT STA in a PPDU with a bandwidth and Nss that are equal to or less than the channel bandwidth and Nss, respectively, indicated in the VHT Operating Mode Notification frame or a time period has elapsed that reasonably accommodates the time the second VHT STA needs to adapt to the new operating mode, whichever occurs first.

NOTE 2—It might take a long time for a STA to change its operating mode following the transmission of the VHT Operating Mode Notification frame and during that time the STA may not be able to receive frames resulting in frame loss. If a non-AP STA cannot tolerate frame loss during that period it can set the Frame Control Power Management subfield of the Operating Mode Notification frame to 1 to indicate that the STA has entered power save. When the non-AP STA has completed its operating mode change, it can send another frame (such as a QoS Null) with the Frame Control Power Management subfield set to 0 to indicate that the STA has exited power save.