IEEE P802.11
Wireless LANs

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| CID4680 resolution |
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Abstract

The submission provides text changes to IEEE 802.11 REVac D2.0 in order to resolve CID4680.

All changes are based on IEEE 802.11 REVac D2.0.

This submission resolves CID 4680

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| 4680 | Subclause 10.38.1 Basic VHT BSS functionality does not contain any information regarding MBSS operation. Some informative text should be included here. | Please include brief introduction of VHT MBSS here. |

Proposed Resolution:

Revise

Make changes referring to 12/673r1

***Editor instruction: In clause 10.38.1 Basic VHT BSS functionality, change the text as indicated by the Winword track changes in the text below:***

**10.38 VHT BSS operation**

**10.38.1 Basic VHT BSS functionality**

A VHT AP and a VHT mesh STA declares its channel width capability (80 MHz only or 80+80 MHz or 160 MHz) in the Supported

Channel Width Set subfield of the VHT Capabilities element as described in Table 8-183u.

A VHT STA shall not indicate support for 80+80 MHz unless it supports reception and transmission of 80+80

MHz PPDUs using all MCSs within the VHTBSSBasicMCSSet and all MCSs that are mandatory for the attached

PHY.

An VHT STA shall not indicate support for 160 MHz unless it supports reception and transmission of 160

MHz PPDUs using all MCSs within the VHTBSSBasicMCSSet and all MCSs that are mandatory for the attached

PHY.

A VHT STA shall set the Supported Channel Width Set in its HT Capabilities element to 1, indicating that

both 20 MHz operation and 40 MHz operation are supported.

A VHT STA sets the Rx MCS Bitmask of the Supported MCS Set field of its HT Capabilities element according

to the setting of the Rx MCS Map subfield of the VHT Supported MCS Set field of its VHT Capabilities

element as follows: for each subfield Max MCS For *n* SS, , of the Rx MCS Map field with

a value other than 3 (no support for that number of spatial streams), the STA shall indicate support for MCSs

8(*n*-1) to 8(*n*-1)+7 in the Rx MCS Bitmask, where *n* is the number of spatial streams.

A VHT AP and a VHT mesh STA shall set the STA Channel Width field in the HT Operation element and the Channel Width field

in the VHT Operation element to indicate the BSS operating channel width as shown in Table 10-19a.

A STA that has a value of true for dot11VHTOptionImplemented shall set

dot11HighThroughputOptionImplemented to true.

A VHT STA that is a member of a VHT BSS shall not transmit a 20 MHz VHT PPDU on a channel other

than the primary 20 MHz channel of the BSS, except for a 20 MHz VHT PPDU transmission on an offchannel

TDLS direct link.

A VHT STA that is a member of a VHT BSS with a 40 MHz, 80 MHz, 160 MHz or 80+80 MHz operating

channel width shall not transmit a 40 MHz VHT PPDU that does not use the primary 40 MHz channel of the

BSS, except for a 40 MHz VHT PPDU transmission on an off-channel TDLS direct link.

A VHT STA that is a member of a VHT BSS with an 80 MHz, 160 MHz or 80+80 MHz operating channel

width shall not transmit an 80 MHz VHT PPDU that does not use the primary 80 MHz channel of the BSS,

except for an 80 MHz VHT PPDU transmission on an off-channel TDLS direct link.

A VHT STA that is a member of 160 or 80+80 MHz BSS shall not transmit an 160 or 80+80 MHz VHT PPDU

that does not use the primary 80 MHz channel and the secondary 80 MHz channel of the BSS, except for an

160 or 80+80 MHz VHT PPDU transmission on an off-channel TDLS direct link.

A VHT STA shall not transmit to a VHT STA using a bandwidth that is not indicated as supported in the

Supported Channel Width Set subfield of the HT Capabilities element, VHT Capabilities element, or VHT

Operating Mode Notification frame most recently received from that VHT STA.

Except in the case of a TDLS off-channel direct-link (which is independently constrained by 10.22.6.3), a

STA shall not transmit a PPDU with a TXVECTOR parameter CH\_BANDWIDTH indicating a channel

bandwidth that is wider than the BSS operating channel width.

A VHT AP announces a switch of operating channel, operating bandwidth or both, by either

— using the Channel Switch Announcement Element, Channel Switch Announcement Frame or both,

following the procedure described in 10.9.8.2 (Selecting and advertising a new channel in an infrastructure

BSS)

— using the Extended Channel Switch Announcement Element, Extended Channel Switch Announcement

Frame or both, following the procedure described in 10.10 (Extended channel switching

(ECS))

and in addition following the procedures in this section.

A VHT mesh STA announces a switch attempt of operating channel, operating bandwidth or both, by either

— using the Channel Switch Announcement element, Channel Switch Announcement frame or both, following the procedure described in 10.9.8.4 (MBSS channel switching)

— using the Extended Channel Switch Announcement element, Extended Channel Switch Announcement frame or both, following the procedure described in 10.10 (Extended channel switching

(ECS)) and in addition following the procedures in this section.

The New Channel Number field in the Channel Switch Announcement Element, Extended Channel Switch

Announcement Element, Channel Switch Announcement Frame or Extended Channel Switch Announcement

Frame, identifies the primary 20 MHz channel after the switch. The value of the New Channel Number field

is set equal to dot11CurrentPrimaryChannel (see 22.3.14 (Channelization)) after the switch.

When announcing a switch to a 40 MHz operating bandwidth, either in conjunction with a channel switch or

alone, the Secondary Channel Offset Element shall be present in the same frame as the Channel Switch Announcement element.

NOTE—The indicated operating class within the Extended Channel Switch Announcement element or frame identifies

the bandwidth and the relative position of the primary 20 MHz and secondary 20 MHz channels, hence a Secondary

Channel Offset Element is not required when the Extended Channel Switch Announcement element only is used.

When announcing a switch to a 80 MHz, 80+80 MHz or 160 MHz operating bandwidth, either in conjunction

with a channel switch or alone, the Secondary Channel Offset Element and the Wide Bandwidth Channel

Switch Element shall be present in the same frame as the Channel Switch Announcement element or Extended

channel Switch Announcement element. When announcing a switch to a 80 MHz, 80+80 MHz or

160 MHz by using the Extended Channel Switch Announcement element, the value of the New Operating

Class field identifies the primary 40 MHz channel.

If the Secondary Channel Offset Element and Wide Bandwidth Channel Switch element are both not present

within the same frame where a Channel Switch Announcement Element is present, the operating bandwidth

after the switch is 20 MHz.

An Extended Channel Switch Announcement frame shall not be used to switch to an operating bandwidth

greater than 40 MHz.

When switching the BSS to a lower operating bandwidth, the AP may recalculate the TS bandwidth budget

and may delete one or more active TSs by invoking the MLME-DELTS.request primitive with a ReasonCode

value of SERVICE\_CHANGE\_PRECLUDES\_TS.

A VHT STA that is a member of an IBSS adopts the values indicated by the Secondary Channel Offset Element

and Wide Bandwidth Channel Switch element in received frames according to the rules in 10.1.5 (Adjusting

STA timers) and shall not transmit a value for the Wide Bandwidth Channel Switch Element and

Secondary Channel Offset Element that differs from the most recently adopted value.

The use of RIFS in a VHT BSS is not allowed. A VHT AP shall set the RIFS Mode field in the HT Operation

element to 0.

**10.38.2 Channel selection methods for a VHT BSS**

Before a STA starts a VHT BSS, theSTA shall perform a minimum of dot11VHTOBSSScanCount OBSS scan

operations to search for existing BSSs (see 10.38.3 (Scanning requirements for VHT STA)).

If an AP or a mesh STA starts a VHT BSS that occupies some or all channels of any existing BSSs, the AP or mesh STA may select a

primary channel of the new VHT BSS that is identical to the primary channel of any one of the exsting BSSs.

If the AP or mesh STA chooses to select a primary channel of a new VHT BSS with a 40 MHz, 80 MHz, 160 MHz or

80+80 MHz operating channel width from among the channels on which no beacons are detected during the

OBSS scans, the selected primary channel

— shall not be identical to the secondary 20 MHz channel of any existing BSSs with a 40 MHz,

80 MHz, 160 MHz or 80+80 MHz operating channel width, and

— should not be overlapped with the secondary 40 MHz channel of any existing BSSs with a 160 MHz

or 80+80 MHz operating channel width.

An AP and a mesh STA should not start a VHT BSS with a 20 MHz operating channel width on a channel that is the secondary

20 MHz channel of any existing BSSs with a 40 MHz, 80 MHz, 160 MHz or 80+80 MHz operating channel

width, or is overlapped with the secondary 40 MHz channel of any existing BSSs with a 160 MHz or

80+80 MHz operating channel width.

NOTE—An AP or a mesh STA operating a VHT BSS with a 40 MHz, 80 MHz, 160 MHz or 80+80 MHz operating channel width, on

detecting an OBSS whose primary channel is the AP's or the mesh STA’s secondary 20 MHz channel, can switch to 20 MHz BSS operation

and/or can move to a different channel set.

**References:**

IEEE 802.11 ac D2.0, January 2012