IEEE P802.11  
Wireless LANs

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| 802.11 TGac WG Letter Ballot LB187  Proposed resolutions to comments on Clause 10.38.4 | | | | |
| Date: 2012-05-11 | | | | |
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Abstract

This submission contains proposed comment resolutions to comments received during WG letter ballot 187.

The comments assigned to the author in Clause 10.38.4 are: 4465 and 4677

# Comments

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| 4465 | Brain Hart | 10.38.4 | 143.34 | "may discard without setting NAV ... does not include the primary channel" Need to define where this discarding happens. Since the PHY-SAP does not allow for off-channel packets being sent to the MAC, therefore I assume the discarding happens at the PHY layer. Then this should be turned into a note | Convert to a note: "Note: the PHY may discard PPDUs that do not overlap the primary 20, and so the MAC does not update its NAV ... " | **Revised.**  Make changes as shown in 11-12/0413r4 |

**Discussion:**

The 802.11ac D2.0 text states:

“A STA may discard without setting its NAV a 20/40/80 MHz PPDU received on any channel that is not or does not include the primary channel.”

The cited statement covers frames that lie completely within the operating sub-band of the PHY, so they are not “off-channel” but, for example, not on the primary channel. E.g. a 20 MHz reception that lies at say, the 2nd 20 MHz sub band within an 80 MHz operating sub-band.

It might be useful to get some indication of the arrival of such frames at the MAC, for the purpose of, for example, determining the relative level of occupancy of a secondary channel to assist in making a decision to change channels or reduce operating bandwidth.

Note that the existing language also leaves as a possible, optional mode of behaviour, the choice for the MAC to actually use DUR field information received from such a frame. Not certain if that is a good idea, but it is there and the suggested change would eliminate that choice and that has to be considered before eliminating it.

Now we have the situation that the PHY can receive an on-primary packet where NAV has to be set, and an off-primary packet where NAV does not have to be set, and the PHY has no way to tell the MAC which is which – so the MAC can’t do its job. That’s broken.

Two choices: a) PHY doesn’t send up off-primary packets; b) we add a new RXVECTOR parameter indicating on/off-primary-ness, and use this to refine when NAV is set/not set.

Based on discussion in March meeting, commenter’s suggested that:

•Insert note in PHY that expectation is that PHY will only receive packets that overlap primary 20 MHz channel.

•Delete cited language from MAC

**TCac editor: Remove the text on page 143 line 34 of D2.0 :**

**~~A STA may discard without setting its NAV a 20/40/80 MHz PPDU received on any channel that is not or does not include the primary channel.~~**

**Insert the following text on page 263 line 24 of D2.0:**

**The PHY shall not issue a PHY-RXSTART.indication primitive in response to a PPDU that does not overlap the primary 20MHz channel.**

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| 4677 | Kaiying Lv | 10.38.4 | 143.39 | This paragraph states that STA may discard a frame without setting its NAV, but not defines the STA's action after discarding the frame. When the medium is indicated as idle following the end of reception of the discarded frame, the STA whose NAV has not been updated shall use EIFS or EIFS+AIFS[AC]-DIFS to provide enough time for another STA to acknowledge the frame discarded by this STA,  before this STA commences transmission. | add a note here such as"Note--if a STA discards without setting its NAV a frame carried in a) or b) as described above, it shall use EIFS or EIFS+AIFS[AC]-DIFS before transmission,when it determines that the medium is idle following the end of reception of the frame that has been discarded." | **Revised** |

**Discussion:**

The 802.11ac D2.0 text states:

“A STA may discard without setting its NAV a frame carried in a) an SU VHT PPDU with Group ID and Partial AID fields that indicate that the STA cannot be a recipient of the frame according to 9.17a (Group ID and Partial AID in VHT PPDUs) or b) an MU VHT PPDU containing a Group ID field for which either the STA is not a member or the STA is a member but the number of space time streams assigned to the user position of the STA for that group is zero.”

Since the STA without setting or updating its NAV may commence transmission whenever its NAV value count down to zero, it may not provide enough time for the intended recipient to acknowledge the frame which is discarded by this STA. So it is necessary to define the STA's action after discarding the frame.

Further discussions:

Subclause “9.3.2.3.7 EIFS” already defines the conditions for EIFS clearly: “A DCF shall use EIFS before transmission, when it determines that the medium is idle following reception of a frame for which the PHY-RXEND.indication primitive contained an error or a frame for which the MAC FCS value was not correct. Similarly, a STA’s EDCA mechanism under HCF shall use the EIFS-DIFS+ AIFS[AC] interval. ”

It seems not necessary to add any further clarification on EIFS for the GID/PAID filtering case.

It is only necessary to make sure that, for the GID/PAID filtering case, the PHY-RXEND.indication primitive contained an error or an indication. So we add a sentence in the PLCP receiving procedure to make sure of that, if supporting the GID/PAID filtering case.

**Proposed resolution:**

Please modify the text on page 263 line 52 of D2.0 as below:

A PHY entity that receives a PPDU with valid L-SIG and VHT-SIG-A fields proceeds as follows.

If the received Group ID and Partial AID fields in VHT-SIG-A indicate that the STA is not an intended recipient, the PHY may choose not to decode the remainder of the PPDU. If the remainder of the PPDU is not decoded, the PHY entity shall issue a PHY-RXEND.indication(UnsolicitedDiscard) primitive.

If the received Group ID in VHT-SIG-A has a value indicating an SU PPDU (see 9.17a (Group ID and Partial AID in VHT PPDUs)), the PHY entity may choose not to decode VHT-SIG-B. If VHT-SIG-B is not decoded, ~~subsequent to an indication of a valid VHT-SIG-A CRC,~~ the PHY entity shall issue a PHY-RXSTART.indication(RXVECTOR) primitive ~~shall be issued~~. The RXVECTOR associated with this primitive includes the parameters specified in Table 22-1 (TXVECTOR and RXVECTOR parameters).

If Group ID in VHT-SIG-A has a value indicating an MU PPDU (see 9.17a (Group ID and Partial AID inVHT PPDUs)), the PHY entity shall decode VHT-SIG-B. If the VHT-SIG-B indicates an unsupported mode, the PHYentity shall issue the error condition PHY-RXEND.indication(UnsupportedRate) primitive.