IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | More MAC/PHY Layering Issues | | | | | | Date: 2021-12-17 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Brian Hart | Cisco Systems |  |  | [brianh@cisco.com](mailto:brianh@cisco.com) | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

This submission proposes resolutions for the following comments from comment collection on P802.11be D1.0:

4633, 4649, 4650

The baseline used in this document is D1.3.

NOTE – Set the Track Changes Viewing Option in the MS Word to “All Markup” to clearly see the proposed text edits.

**Revision History:**

R0: Initial version.

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| 4633 | 36.3.2.7 | 370.35 | How can a PHY follow a MAC procedure? | Define behavior connected to MIB variables and/or PHYCONFIG\_VECTOR parameters, which in turn might \*informatively\* refer to a clause on MAC behavior. | Revised.  See changes under CID 4633 in 21/xxxx<motionedRevision> which substantially align with the commenter’s goal. |

***Discussion***

The 802.11 architecture is well captured in the following two figures.

Diagram

Description automatically generated

Diagram, timeline

Description automatically generated

The benefits of the ISO Seven Layer Model is:

* One layer (or sublayer) can be swapped out for another layer (e.g., 802.11 for 802.3)
* Layering conforms to good software development practice
  + Each layer/sublayer can be thought of an object, with public/private constants, variables, and methods
  + Each method has a clear **and complete** interface
  + No method needs to “silently reach into another object’s private variables” to complete its task
* A “divide and conquer” approach is possible:
  + **During standardization, relatively independent teams can work in parallel on their own layer/sublayer**
  + During product development, relatively independent teams can work in parallel on their own layer/sublayer
  + These teams might even reside in different companies so that the complete product is composed of components from different companies

Similar issue in 36.3.2.5 (20 MHz operating non-AP EHT STAs) so fix both at the same time.

***Text changes under CID 4633***

***TGbe editor, please make the following changes as shown by Word track changes***

35.10 Rules for the PHY interface ofan EHT STA

35.10.2b CENTER\_FREQUENCY\_SEGMENT

(#4633)A 20 MHz operating non-AP EHT STA shall issue a PHY-CONFIG.request primitive with the CENTER\_FREQUENCY\_SEGMENT parameter in the PHYCONFIG\_VECTOR set to the center frequency of the primary 20 MHz channel except when the 20 MHz operating non-AP EHT STA sets dot11HESubchannelSelectiveTransmissionImplemented equal to true(#7165) in which case the 20 MHz operating non-AP EHT STA may issue a PHY-CONFIG.request primitive with the CENTER\_FREQUENCY\_SEGMENT parameter in the PHYCONFIG\_VECTOR set to the center frequency of any 20 MHz channel within the BSS bandwidth of (#5525)40 MHz, 80 MHz or 160 MHz by following the procedure in 26.8.7 (HE subchannel selective transmission). The 20 MHz operating non-AP EHT STA may also issue a PHY-CONFIG.request primitive with the CENTER\_FREQUENCY\_SEGMENT parameter in the PHYCONFIG\_VECTOR set to the center frequency of any 20 MHz channel within the primary 160 MHz when the BSS bandwidth is 320 MHz and the 20 MHz operating non-AP EHT STA is not a 20 MHz-only non-AP EHT STA by following the procedure in 26.8.7 (HE subchannel selective transmission).

(#4633)An 80 MHz operating non-AP EHT STA shall issue a PHY-CONFIG.request primitive with the CENTER\_FREQUENCY\_SEGMENT parameter in the PHYCONFIG\_VECTOR set to the center frequency of the primary 80 MHz channel except when the 80 MHz operating non-AP EHT STA sets dot11HESubchannelSelectiveTransmissionImplemented equal to true and parks on an 80 MHz channel without preamble puncturing. In this exceptional case, the 80 MHz operating non-AP EHT STA may issue a PHY-CONFIG.request primitive with the CENTER\_FREQUENCY\_SEGMENT parameter in the PHYCONFIG\_VECTOR set to the center frequency of any 80 MHz channel within the primary 160 MHz of the BSS bandwidth by following the procedure in 26.8.7 (HE subchannel selective transmission).

36.3.2.5 20 MHz operating non-AP EHT STAs(#1244)(#1254)

(#4633)NOTE – As defined in 35.10.2b (CENTER\_FREQUENCY\_SEGMENT), a 20 MHz operating non-AP EHT STA operates in the primary 20 MHz channel except when the 20 MHz operating non-AP EHT STA sets dot11HESubchannelSelectiveTransmissionImplemented equal to true(#7165) in which case the 20 MHz operating non-AP EHT STA might operate in any 20 MHz channel within the BSS bandwidth of (#5525)40 MHz, 80 MHz or 160 MHz. The 20 MHz operating non-AP EHT STA might also operate in any 20 MHz channel within the primary 160 MHz when the BSS bandwidth is 320 MHz and the 20 MHz operating non-AP EHT STA is not a 20 MHz-only non-AP EHT STA.

36.3.2.7 80 MHz operating non-AP EHT STAs(#1244)(#1254)

(#4633)NOTE – As defined in 35.10.2b (CENTER\_FREQUENCY\_SEGMENT), an 80 MHz operating non-AP EHT STA operates in the primary 80 MHz channel except when the 80 MHz operating non-AP EHT STA sets dot11HESubchannelSelectiveTransmissionImplemented equal to true and parks on an 80 MHz channel without preamble puncturing. In this exceptional case, the 80 MHz operating non-AP EHT STA might operate in any 80 MHz channel within the primary 160 MHz of the BSS bandwidth.

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| 4649 | 36.3.2.7 | 370.33 | While true, P370L39-44 is controlled by the MAC not the PHY | 1) Identify the equivalent text in a MAC section & if not already present then copy this text to there, then 2) convert the text here to a note and add a cross-ref to the MAC section in the note. | Revised.  NOTE that comment applies to P370L39.  See changes under CID 4649 in 21/xxxx<motionedRevision> which substantially align with the commenter’s goal. |

***Discussion***

See earlier discussion.

***Text changes under CID 4649***

***TGbe editor, please make the following changes as shown by Word track changes***

35.4.1.2 RU allocation in an EHT MU PPDU(#1306)

***TGbe editor: At the end of the section, insert:***

(#4649)An EHT AP shall not allocate an RU outside of the primary 80 MHz in a 160 MHz or 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA if the 80 MHz operating non-AP EHT STA has not set up SST operation on the nonprimary 80 MHz channel with the EHT AP or if there is a preamble puncturing in the non-AP EHT STA’s operating 80 MHz channel.

36.3.2.7 80 MHz operating non-AP EHT STAs(#1244)(#1254)

(#4649)NOTE – As defined in 35.4.1.2 (RU allocation in an EHT MU PPDU), an EHT AP does not allocate an RU outside of the primary 80 MHz in a 160 MHz or 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA if the 80 MHz operating non-AP EHT STA has not set up SST operation on the nonprimary 80 MHz channel with the EHT AP or if there is a preamble puncturing in the non-AP EHT STA’s operating 80 MHz channel.

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| 4650 | 36.3.2.8 | 371.05 | While true, P371L5-8 is controlled by the MAC not the PHY | 1) Identify the equivalent text in a MAC section & if not already present then copy this text to there, then 2) convert the text here to a note and add a cross-ref to the MAC section in the note. | Revised.  See changes under CID 4650 in in 21/xxxx<motionedRevision> which substantially align with the commenter’s goal. |

***Discussion***

See earlier discussion.

***Text changes under CID 4650***

***TGbe editor, please make the following changes as shown by Word track changes***

35.4.1.2 RU allocation in an EHT MU PPDU(#1306)

***TGbe editor: At the end of the section, after the CID 4659 insertion, further insert:***

(#4650)An EHT AP shall not allocate an RU or MRU on the secondary 160 MHz in a 320 MHz EHT MU or EHT TB PPDU to a 160 MHz operating non-AP EHT STA.

36.3.2.8 160 MHz operating non-AP EHT STAs(#1244)(#1254)

A 160 MHz operating non-AP EHT STA shall be able to participate in 160 MHz and 320 MHz EHT DL and UL OFDMA transmissions. (#3165)An EHT AP with an operating channel width greater than 160 MHz shall be able to allocate an RU or MRU on the primary 160 MHz channel within the BSS bandwidth in a 320 MHz EHT MU or EHT TB PPDU to a 160 MHz operating non-AP EHT STA.

(#4650)NOTE – As defined in 35.4.1.2 (RU allocation in an EHT MU PPDU, an EHT AP does not allocate an RU or MRU on the secondary 160 MHz in a 320 MHz EHT MU or EHT TB PPDU to a 160 MHz operating non-AP EHT STA.