IEEE P802.11
Wireless LANs

|  |
| --- |
| CC36 - CR for CIDs on 36.3.2.7 |
| Date: 2022-02-22 |
| Author: |
| Name | Affiliation | Address | Phone | Email |
| Yan Xin | Huawei Technologies | 303 Terry Fox Drive, Suite 400, Ottawa, Ontario K2K 3J1 |  | yan.xin@huawei.com |
| Shimi Shilo | Huawei Technologies |  |  | shimi.shilo@huawei.com |
| Ron Porat | Broadcom |  |  | ron.porat@broadcom.com |
| Edward Au | Huawei Technologies |  |  | edward.ks.au@huawei.com |
| Eunsung Park | LG Electronics |  |  | esung.park@lge.com |
| Bin Tian | Qualcomm |  |  | btian@qti.qualcomm.com |

This submission includes the resolutions for the following 17 comments:

4538, 4539, 4632, 4651, 4686, 4990, 5567, 6794, 6795, 6796, 7166, 7167, 7168, 7169, 7170, 7801, 8093

on Subsection 36.3.2.7 of P802.11be D1.0.

The baseline document is 802.11be D1.4.

##### Revision history:

##### R0 – initial version

R1 – the baseline doscument is updated to 802.11be D1.4.

R2 – revised based on the discussion in a TGbe PHY session and offline discussion. Update the list of co-authors.

**CID: 4538, 7801, 7166, 4686, 8093**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 4538 | 36.3.2.7 | 370 | 20 | Change "The supported channel width and the operating channel width of an 80 MHz operating non-AP EHT STA are described in " to "The indication of the supported channel width and the operation width of a non-AP STA are described in" since the 36.3.2.5 doesn't direclty discuss the 80Mhz operation STA | as in the comment. | REVISED.Agree with the commenter in principle with some additional changes taken into account from other comments.TGbe editor: Please revise the text in P517L9-12 in subclause 36.3.2.7 in 802.11be D1.4as in 22/0086r2. |
| 7801 | 36.3.2.7 | 370 | 20 | Ther is no description about the supported channel width and the operating channel width of an 80 MHz operating non-AP EHT STA in 36.3.2.5. The description in 36.3.2.5 is about ways indicating the supported and operting channel width. | Revise this sentence to ''Ways indicating the supported channel width and the operating channel width of an 80 MHz operating non-AP EHT STA are as described in 36.3.2.5 (20 MHz operating non-AP EHT STAs).' Same revision may be applied to L63 as well. | REVISEDAgree with the commentor in principle. Note to the commenter and TGbe editor: The corresponding text is revised as suggested in #4538. |
| 7166 | 36.3.2.7 | 370 | 19 | Change "The supported channel width and the operating channel width of an 80 MHz operating non-AP EHT STA are as described in 36.3.2.5" to "The definitions of supported channel width and operating channel width of an 80 MHz operating non-AP EHT STA are as described in 36.3.2.5" | See comment | REVISEDAgree with the commentor in principle. Note to the commenter and TGbe editor: The corresponding text is revised as suggested in #4538. |
| 4686 | 36.3.2.7 | 370 | 21 | The cited chapter no. may be wrong:"The supported channel width and the operating channel width of an 80 MHz operating non-AP EHT STA are as described in 36.3.2.5 (20 MHz operating non-AP EHT STAs" | As in comment | REVISEDIt is true that the text in 36.3.2.5 is mainly related to 20 MHz operating non-AP EHT STAs. However, 36.3.2.5 also describes how the Supported Channel Width and the Operating Channel Width are indicated.Note to the commenter and TGbe editor: The corresponding text is revised as suggested in #4538. |
| 8093 | 36.3.2.7 | 370 | 20 | it seems to refer the wrong subclaues. Find the proper referecne subclaues. | as in comment | REVISEDIt is true that the text in 36.3.2.5 is mainly related to 20 MHz operating non-AP EHT STAs. However, 36.3.2.5 also described how the Supported Channel Width and the Operating Channel Width are indicated.Note to the commenter and TGbe editor: The corresponding text is revised as suggested in #4538. |

**CID: 4539, 4990, 6794, 7167**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 4539 | 36.3.2.7 | 370 | 30 | "An EHT AP with an operating channel width greater than 80 MHz shall be able to allocate an RU ... on one 80 MHz channel within the BSS bandwidth in a 160 MHz or 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA depending on the AP's operating channel width.". AP can not assign RU/MRU in any 80MHz channel. Need to clarify that has to be "within the non-AP STA's operating 80MHz channel" | as in the comment. | REVISEDAgree with the commenter in principle. Revise the text with modification as “on one 80 MHz channel within 80 MHz, 160 MHz or 320 MHz EHT MU or EHT TB PPDU bandwidth (#4539)for an 80 MHz operating non-AP EHT STA”TGbe Editor: please revise the text as suggested in 11-22/0086r2 |
| 4990 | 36.3.2.7 | 370 | 24 | An 80 MHz operating non-AP EHT STA also supports 20 / 40 MHz transmission. Add this support. | See the comment. | REJECTEDThis has been covered in 36.3.2.7 P370L17-19 of D1.0 with the text described as “An 80 MHz operating non-AP EHT STA is a non-AP EHT STA whose current operating mode supports up to 80 MHz channel width.”  |
| 6794 | 36.3.2.7 | 370 | 24 | An 80 MHz operating non-AP STA should be able to participate in non-OFDMA 80 MHz PPDUs as well, not just 80 MHz OFDMA as mentioned in the current text. Further, it is expected that an 80 MHz operating non-AP STA shall be able to receive/transmit 80 MHz bandwidth PPDUs anyway, so it is better to limit the scope to 160 and 320 MHz bandwidth PPDUs in the description. | Suggested change:"An 80 MHz operating non-AP EHT STA shall also be able to participate in 80 MHz, 160 MHz, and 320 MHz EHT DL and UL OFDMA transmissions" | REVISEDAgree with the commentor in principle. Revise the text in the paragraph P517L13-20 in D1.4 by addressing 80 MHz EHT DL and UL non-OFDMA transmissions. TGbe Editor: please revise the text as suggested in 11-22/0086r2 |
| 7167 | 36.3.2.7 | 370 | 06 | "An EHT AP with an operating channel width greater than 80 MHz shall be able to allocate an RU (...) or MRU (...) on one 80 MHz channel within the BSS bandwidth in a 160 MHz or 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA depending on the AP's operating channel width..". Is this a requirement on the AP, or is a requirement for the 80 MHz-operating STA that it should be able to receive these RU/MRUs? Given that this is a section on 80MHz operating non-AP STAs, it may be the latter. If so, please formulate accordingly. | See comment | Note: The comment should be related to P370L25 rather than P370L06. REJECTEDThe first sentence in the paragraph P370L24-30 in 802.11be D1.0 discusses the requirements for 80 MHz operating non-AP STAs, i.e., “An 80 MHz operating non-AP EHT STA shall be able to participate in 80 MHz, 160 MHz, and 320 MHz EHT DL and UL OFDMA transmissions.”This second sentence follows to further discuss the requirements for EHT AP that shall be able to allocate RU or MRU on one 80 MHz channel within operating channel width for operation of an 80 MHz operating non-AP STA.  |

**CID: 6795, 4632, 7168**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 6795 | 36.3.2.7 | 370 | 32 | The current text seems to imply that SST operation depends on whether preamble puncturing happens on the non-primary channel, which is incorrect. The dependence is the other way around and results in restrictions on RU allocation, as highlighted in the next paragraph. Also "parks on.." is rather informal language for spec text. | Suggested change:"An 80 MHz operating non-AP EHT STA shall operate 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 may operate in 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)." | REVISEDAgree with the commenter in principle. Revise the text in the paragraph P517L21-26 in D1.4 by highlighting that the 80 MHz operating non-AP EHT STA may have SST operation when the considerations are met. The sentence including “parks” in D1.4 has been revised. The word “parks” has been removed in the revision.TGbe Editor: please revise the text as suggested in 11-22/0086r2 |
| 4632 | 36.3.2.7 | 370 | 35 | What is the definition of "park"? It is not defined in11ax or 11be. | Refer to a MIB variable or PHYCONFIG\_VECTOR parameter, which in turn might \*informatively\* refer to a specific field transmitted or received. | REVISEDAgree with the comment in principle.Note to the commenter: The sentence including “parks” in D1.4 has been revised. The word “parks” has been removed in the revision.TGbe Editor: The proposed resolution is the same as CID 6795. |
| 7168 | 36.3.2.7 | 370 | 35 | "parks on an 80 MHz channel". Imprecise language. Clearly define what is meant here (the word "parks" or "parking" are not found anywhere else in the document) | See comment | REVISEDAgree with the commenter in principle.Note to the commenter: The sentence including “parks” in D1.4 has been revised. The word “parks” has been removed in the revision.TGbe Editor: The proposed resolution is the same as CID 6795. |

**CID: 6796**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 6796 | 36.3.2.7 | 370 | 39 | The rule for allocating RU/MRU outside of the primary-80 to an 80 MHz operating non-AP STA under SST operation is not entirely accurate, since the restriction of "no preamble-puncturing on the nonprimary 80" applies only to EHT MU PPDU. Also, the current sentence is difficult to parse and can be written in a more reader-friendly format. | Suggested change:"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 that 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. An EHT AP shall not allocate an RU outside of the primary 80 MHz in a 160 MHz or 320 MHz EHT MU PPDU to an 80 MHz operating non-AP EHT STA that has set up SST operation on the nonprimary 80 MHz channel, if there is preamble-puncturing on the nonprimary 80 MHz channel. " | REVISEDAgree with the commenter in principle.The text is revised as discussed below. |

*Discussion:*

an EHT AP does not allocate an RU or MRU in the secondary 160 MHz channel of a 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA. An EHT AP does not allocate an RU or MRU in the secondary 80 MHz channel of 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 (#5567)by following the procedure in 26.8.7 (HE subchannel selective transmission) on the -secondary 80 MHz channel with the EHT AP or there is an (#7169)inactive 20 MHz subchannel within the secondary 80 MHz channel.

TGbe Editor: please revise the text in P517L27-31 in subclause 36.3.2.7 and P410L26-30 in subclause 35.5.1.2 in 802.11be D1.4 as suggested in 11-21/0086r2.

**CID: 5567, 7169**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 5567 | 36.3.2.7 | 370 | 42 | There is no discription about SST operation of EHT STA. Define EHT SST by referring 26.8.7 HE SST. | as a comment | REVISEDAgree with the commentor in principle.TGbe Editor: please revise the text by adding the reference 26.8.7 as suggested in 11-22/0086r1 |
| 7169 | 36.3.2.7 | 370 | 42 | "if there is a preamble puncturing in the non-AP EHT STA's operating 80 MHz channel.". "preamble puncturing" is not a property of the channel (channel doesn't have preamble). Refer to inactive subchannels instead? | See comment | REVISEDAgree with the commenter in principle.To revise “preamble puncturing” to “inactive 20 MHz subchannel” TGbe Editor: please revise the text as suggested in 11-22/0086r1 |

**CID: 7170**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 7170 | 36.3.2.7 | 370 | 45 | Lines 45-47 convey similar information to lines 53-55. | Clean up and consolidate | REJECTEDThe paragraph P370L45-47 (P517L33-34 in D1.4) describes the support of all RU and MRU sizes within the operating 80 MHz channel, while the paragraph P370L53-55 (P517L40-43 in D1.4) highlights the mandatory support of reception of the preamble and data in the allocated RU or MRU within its operating 80 MHz channel. |

**CID: 4651**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Line | Comment | Proposed Change | Proposed resolution |
| 4651 | 36.3.2.7 | 370 |  | In 36.3.2.7, replace vague terms by specific parameters in specific MIB variables and/or primitives accessible to the PHY: i.e.revisit, "current operating mode", "supported channel width", "BSS bandwidth", and "AP's operating channel width". Look to CHANNEL\_WIDTH in PHY CONFIG\_VECTOR, dot11FortyMHzOperationImplemented/dot11FortyMHzOperationActivate, dot11EightyMHzOperationImplemented/Activated, dot11VHTShortGIOptionIn160and80p80Implemented/Activated, dot11EHTSupportFor320MHzImplemented for the first two, but the last two may need further interface work (e.g. telling the PHY if it is an AP or not) | As in comment. Ditto section 36.3.2.8. | REVISEDAgree with the commenter in principle.TGbe editor: Please revise the text in subclause 36.3.2.7 in 802.11be D1.4as suggested in 22/0086r1. |

TGbe editor: Please revise the text in subclause 36.3.2.7 in 802.11be D1.4 as below.

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

An 80 MHz operating non-AP EHT STA is a non-AP EHT STA (#4651)capable of operating with an 80 MHz channel width or lower (see 36.1.1 (Introduction to the EHT PHY)).

(#4538)(#7801)(#7166)(#4685)(#8093)NOTE - The indication of the supported channel width (#4651)defined in the Supported Channel Width Set subfield in the HE Capabilities element and the Supported For 320MHz In 6 GHz subfield in the EHT Capabilities element and the operating channel width (#4651)identified by the CHANNEL\_WIDTH parameter contained in the PHYCONFIG\_VECTOR of a non-AP EHT STA are described in 36.3.2.5 (20 MHz operating non-AP EHT STAs(#1244)(#1254)).

(#3268)An 80 MHz operating non-AP EHT STA shall be able to participate in 80 MHz, 160 MHz, and 320 MHz EHT DL and UL OFDMA transmissions, (#6794)and in 80 MHz EHT DL and UL non-OFDMA transmissions. (#3165)An EHT AP with a(#4651)CHANNEL WIDTH parameter (#6794)equal to or greater than 80 MHz shall be able to allocate an RU (see 36.3.2.1 (Subcarriers and resource allocation in EHT PPDUs(#4636)) or MRU (see 36.3.2.2 (Subcarriers and resource allocation for multiple RUs)) within the 80 MHz operating bandwidth of the non-AP EHT STA in an 80 MHz, 160 MHz or 320 MHz EHT MU or EHT TB PPDU.

(#4633)NOTE 1—As defined in 35.11.3 (CENTER\_FREQUENCY\_SEGMENT(#4633)), an 80 MHz operating non-AP EHT STA operates in the primary 80 MHz channel (#6795)and might operate in the secondary 80 MHz channel (#7169) that does not include any inactive 20 MHz subchannel when the 80 MHz operating non-AP EHT STA sets dot11HESubchannelSelectiveTransmissionImplemented to true

(#4649)NOTE 2—As defined in 35.5.1.2 (RU allocation in an EHT MU PPDU(#1306)), (#6796)an EHT AP does not allocate an RU or MRU in the secondary 160 MHz channel of a 320 MHz EHT MU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA. An EHT AP does not allocate an RU or MRU in the secondary 80 MHz channel of 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 (#5567)by following the procedure in 26.8.7 (HE subchannel selective transmission) on the -secondary 80 MHz channel with the EHT AP or there is an (#7169)inactive 20 MHz subchannel within the secondary 80 MHz channel.

An 80 MHz operating non-AP EHT STA shall support all RU and MRU sizes within its operating 80 MHz channel when participating in (#6794)80 MHz EHT DL and UL non-OFDMA transmissions and 80 MHz,160 MHz or 320 MHz EHT DL and UL OFDMA transmissions.

An 80 MHz operating non-AP EHT STA shall be able to transmit the preamble and data in the allocated RU or MRU within its operating 80 MHz channel in an 80 MHz, 160 MHz or 320 MHz EHT TB PPDU.

(#3096)An 80 MHz operating non-AP EHT STA shall be able to support the reception of the preamble and data in the allocated RU or MRU within its operating 80 MHz channel in an 80 MHz, 160 MHz or 320 MHz EHT MU PPDU.

TGbe editor: Please revise the text in the paragragh P410L26-30 of subclause 35.5.1.2 in 802.11be D1.4 as below.

**35.5.1.2 RU allocation in an EHT MU PPDU(#1306)**

…

(#4649)(#6796)An EHT AP does not allocate an RU or MRU in the secondary 160 MHz channel of a 320 MHz EHT MU PPDU or EHT TB PPDU to an 80 MHz operating non-AP EHT STA. An EHT AP shall not allocate an RU or MRU in the secondary 80 MHz channel of 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 secondary 80 MHz channel with the EHT AP or there is an inactive 20 MHz subchannel within the secondary 80 MHz channel.