IEEE P802.11
Wireless LANs

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| CR for CIDs in 35.7.2 Part I |
| Date: 2022-07-15 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Zinan Lin | InterDigital |  |  | zinan.lin@interdigital.com |
| Mahmoud Kamel | InterDigital |  |  |  |
| Xiaofei Wang | InterDigital |  |  |  |
| Alfred Asterjadhi | Qualcomm |  |  |  |
| Wook Bong Lee | Samsung |  |  |  |
| Yanjun Sun | Qualcomm |  |  |  |

Abstract

##### This submission present proposed resolutions for the following 28 CIDs:

##### 10814, ~~11660~~, 11661, 11662, 12008, 12539, 12561, 12686, 12687, 13950, 11276, ~~12553~~, 12554, 12558, 12559, 12560, 12562, 13951, 11277, 11664, 11665, 11666, 11667, 12542, 12555, 12557, 12563, 12564

##### The proposed changes are based on 802.11be/D2.0.

##### Revision history:

##### r0 – initial version

##### r1 – changes based on the comments from Alfred, Wook Bong and Yanjun

##### r2 – editorial change

##### r3 – highlight CIDs with green color based on Alfred’s review

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 10814 | 35.7.2 | 491.39 | To clarify it, the SU Beamformer subfield value should be indicated as 1. | Add " to 1 " at the end of the last sentence. | **Revised**: agree in principle with the comment. “to 1” is added. To make the explanation clearer, the location of the SU Beamformer subfield is added in the end of sentence.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 10814 |
| ~~11660~~ | ~~35.7.2~~ | ~~491.25~~ | ~~Can an non-AP EHT STA become a SU beamformer? Is mandatory that an EHT AP is a SU Beamformer? If it is not, please indicate that a non-AP EHT STA shall not set the SU Beamformer subfield to 1. An EHT AP shall set the SU Beamformer subfield to 1.~~ | ~~As comment~~ | **~~Revised~~**~~It is shown in the PICS that it is Optional to have SU beamformer capabilities if the supported maximum number of transmit spatial streams is less than 4; it is Mandatory to have SU beamformer capabilities if the supported maximum number of transmit spatial streams is greater than or equal to 4. Clarification has been added according to these descriptions.~~~~TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 11660~~ |
| 11661 | 35.7.2 | 491.38 | There is no need "," before "to 0" | A non-AP EHT STA shall set all three MU beamformer subfields, MU Beamformer (BWâ¤ 80 MHz), MU Beamformer (BW = 160 MHz), and MU Beamformer (BW = 320 MHz) subfields to 0. | **Accepted** |
| 11662 | 35.7.2 | 491.39 | It is not clear what the value should be set in the SU Beamformer subfield. | An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits. | **Revised**: agree in principle with the comment. It is a similar comment to 10814.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 11662 |
| 12008 | 35.7.2 | 491.39 | Add "to 1" at the end of the last sentence. | As in comment. | **Revised**: agree in principle with the comment. It is a similar comment to 10814.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 12008 |
| 12539 | 35.7.2 | 491.39 | "An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield." It is not clear what the MU Beamformer shall set the SU Beamformer subfield to. | Change the sentence to "An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield to 1" | **Revised**: agree in principle with the comment. It is a similar comment to 10814.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 12539 |
| 12561 | 35.7.2 | 491.50 | Numbering of the Notes is confusing and may be not needed as there is no reference to the note. | Remove the numbering of the note, change from 'NOTE 1" to "NOTE" | **Rejected**: In the same subclause, 35.7.2, there are 3 NOTEs. That is why the numbering is required. |
| 12686 | 35.7.2 | 491.25 | Please rephrase the following sentence so it will first indicate what is the value to be set in the subfield and only then describe the field/element/ frame where this subfield is located: "An SU beamformer is an EHT STA that sets the SU Beamformer subfield in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits to 1" | Please revise as follows: " "An SU beamformer is an EHT STA that sets the SU Beamformer subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits" | **Accepted** |
| 12687 | 35.7.2 | 491.28 | Please rephrase the following sentence so it will first indicate what is the value to be set in the subfield and only then describe the field/element/ frame where this subfield is located: "An SU beamformee is an EHT STA that sets the SU Beamformee subfield in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits to 1" | Please revise as follows: " An SU beamformee is an EHT STA that sets the SU Beamformee subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits" | **Accepted** |
| 13950 | 35.7.2 | 491.39 | An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield to 1. | Insert 'to 1' at the end of sentence. | **Revised**: agree in principle with the comment. It is a similar comment to 10814.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 13950 |
| 11276 | 35.7.2 | 492.20 | "puncture in not applied". This bullet uses "puncture", next bullet uses "preamble puncturing" | use consistent terminology | **Revised**: agree in principle with the comment. To further clarify where the puncturing is applied, additional wording is added.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 11276 |
| ~~12553~~ | ~~35.7.2~~ | ~~492.07~~ | ~~"... the bandwidth of the EHT NDP Announcement frame ..." This expression is not correct, a MAC frame has no bandwidth. This sentence should refer to the PPDU carrying the EHT NDP Announcement frame as already stated in D2.0P139L64.~~ | ~~Change the sentence " ... the bandwidth of the EHT NDP Announcement frame ..." to " ... the bandwidth of the PPDU carrying the EHT NDP Announcement frame ..."~~ | **~~Accepted~~** |
| 12554 | 35.7.2 | 492.08 | "... the bandwidth of the EHT NDP Announcement frame ..." This expression is not correct, a MAC frame has no bandwidth. This sentence should refer to the PPDU carrying the EHT NDP Announcement frame as already stated in D2.0P139L64. | Change the sentence " ... the bandwidth of the EHT NDP Announcement frame ..." to " ... the bandwidth of the PPDU carrying the EHT NDP Announcement frame ..." | **Accepted** |
| 12558 | 35.7.2 | 492.13 | Reference to the Partial BW Info subfield is not complete and not consistent with the reference in the previous paragraph (two occurrences) | " .. Partial BW Info subfield in the STA Info field identifying the EHT beamformee in the EHT NDP Announcement frame ..." | **Accepted** |
| 12559 | 35.7.2 | 492.17 | "spans part" missing article. | Change to "spans a part" | **Accepted** |
| 12560 | 35.7.2 | 492.22 | The language is not consistent with the use of the term "preamble puncturing". In this paragraph it is used as " when puncture ...", however, in the next paragraph it is used as " when preamble puncturing ..." | Keep the use of the term "preamble puncturing" consistent. Change "when puncture ..." to "when preamble puncturing ... " | **Revised**: agree in principle with the comment. It is a similar comment to 11276.TGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 12560 |
| 12562 | 35.7.2 | 492.49 | "partial BW" should be expanded to "partial bandwidth" I think this occurrence is confused with Partial BW as used in Partial BW Info subfield. | Change "partial BW" to "partial bandwidth" | **Accepted**  |
| 13951 | 35.7.2 | 492.09 | The bandwidth of the EHT NDP Announcement frame and the EHT sounding NDP shall be the same, which EHT NDPA and which EHT Sounding NDP? | Indicate the EHT Sounding NDP is the subsequent frame of EHT NDPA. | **Accepted** |
| 11277 | 35.7.2 | 495.51 | "an EHT NDP Announcement frame of bandwidth of 20 MHz and 40 MHz.". Add "respectively" at end of sentence. | See comment | **Revised**It is a similar comment to CID 11667. Per Table 35-3, in the EHT TB Sounding, a 40 MHz operating EHT beamformee may support SU feedback for the following combinations:1. 242-tone RU solicited with an EHT NDPA of bandwidth of 20 MHz;2. 242- tone RU and 484-tone RU solicited with an EHT NDPA of bandwidth of 40 MHzTGbe editor: please incorporate changes shown in 11-22/1190r3 under the tag 11277 |
| 11664 | 35.7.2 | 495.08 | "indicated" should be "indicates". The sentence is not clear: the maximum supported data rate is used in the EHT TB PPDU | An EHT beamformee indicates the maximum supported data rate used in the EHT TB PPDU carrying the EHT compressed beamforming/CQI report in the TB Sounding Feedback Rate Limit subfield ... | **Accepted** |
| 11665 | 35.7.2 | 495.20 | miss "to" before solicit | A 320MHz EHT beamformer shall not send a 320 MHz EHT NDP Announcement frame to solicit partial BW feedback from an EHT beamformee with 20 MHz operating channel width. | **Accepted** |
| 11666 | 35.7.2 | 495.23 | It is not clear to state that NDPA with larger than 40 MHz bandwidth shall not include an EHT beamformee with 40 MHz operating channel width | An EHT NDP Announcement frame of bandwidth larger than 40 MHz shall not solicit from an EHT beamformee with 40 MHz operating channel width. | **Accepted** |
| 11667 | 35.7.2 | 495.50 | The wording is not clear. | In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee may support SU feedback for the following combinations of RU size and NDP announcement bandwidth:- 242-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 20 MHz- 242-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 40 MHz- 484-tone RU solicited with an EHT NDP Annoucement frame of bandwidth of 40 MHz | **Accepted** |
| 12542 | 35.7.2 | 495.08 | "An EHT beamformee indicated the maximum ... " This sentence is confusing. I think what is meant is "An EHT beamformee indicates the maximum ... " | Change the sentence to "An EHT beamformee indicates the maximum ... " | **Accepted**It is a similar comment to 11664. |
| 12555 | 35.7.2 | 495.06 | "... the bandwidth of the EHT NDP Announcement frame ..." This expression is not correct, a MAC frame has no bandwidth. This sentence should refer to the PPDU carrying the EHT NDP Announcement frame as already stated in D2.0P139L64. | Change the sentence " ... the bandwidth of the EHT NDP Announcement frame ..." to " ... the bandwidth of the PPDU carrying the EHT NDP Announcement frame ..." | **Accepted** |
| 12557 | 35.7.2 | 495.06 | EHT beamformer cannot transmit a general "sounding NDP" it shall transmit "EHT sounding NDP" | EHT beamformer cannot transmit a general "sounding NDP" it shall transmit "EHT sounding NDP" | **Accepted** |
| 12563 | 35.7.2 | 495.05 | "partial BW" should be expanded to "partial bandwidth" | "partial BW" should be expanded to "partial bandwidth" | **Accepted** |
| 12564 | 35.7.2 | 495.21 | "partial BW" should be expanded to "partial bandwidth" | Change "partial BW" to "partial bandwidth" | **Accepted** |

***TGbe editor: please make the following change in subclause 35.7.2***

Page 491L25

(#12686) An SU beamformer is an EHT STA that sets the SU Beamformer subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits. Page491L33

An MU beamformer is an EHT AP that sets at least one of the following MU beamformer subfields(#4488): MU Beamformer (BW ≤ 80 MHz), MU Beamformer (BW = 160 MHz), and MU Beamformer (BW = 320 MHz) to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits. A non-AP EHT STA shall set all three MU beamformer subfields, MU Beamformer (BW ≤ 80 MHz), MU Beamformer (BW = 160 MHz), and (#11661) MU Beamformer (BW = 320 MHz) subfields to 0. (#10814) (#12008) (#12539) (#11662) (#13950) An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits.

Page491L28

(#12687) An SU beamformee is an EHT STA that sets the SU Beamformee subfield to 1 in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits. A non-AP EHT STA shall set the SU Beamformee subfield to 1. An EHT AP may set the SU Beamformee subfield to 1.

P492L05

The bandwidth (partial or full) of the feedback solicited by an EHT beamformer from an EHT beamformee depends on the Partial BW Info subfield in the STA Info field identifying the EHT beamformee in the EHT NDP Announcement frame, the bandwidth of the EHT NDP Announcement frame, and the operating bandwidth of the EHT beamformee. (#12554)The bandwidth of the PPDU carrying the EHT NDP Announcement frame and (#13951) the subsequent EHT sounding NDP shall be the same.

P492L11

(#12558) Full bandwidth SU, MU or CQI feedback refers to the feedback mode where the feedback RU or MRU size indicated in the Partial BW Info subfield in the STA Info field identifying the EHT beamformee in the EHT NDP Announcement frame spans all the available bandwidth within an EHT beamformee’s operating bandwidth. (#12559) Partial bandwidth SU, MU or CQI feedback refers to the feedback mode where the feedback RU or MRU size indicated in the Partial BW Info subfield of the EHT NDP Announcement frame spans a part of the available bandwidth within an EHT beamformee’s operating bandwidth.

* (#11276) (#12560) If the EHT beamformee’s operating bandwidth is larger than or equal to the bandwidth of the EHT sounding NDP, the available bandwidth is the entire PPDU bandwidth of the EHT sounding NDP when preamble puncturing is not applied on the PPDU and is the entire occupied PPDU bandwidth of the EHT sounding NDP when preamble puncturing is applied on the PPDU.
* (#11276) (#12560) If the EHT beamformee’s operating bandwidth is smaller than the bandwidth of the EHT sounding NDP, the available bandwidth is the beamformee’s entire operating bandwidth when preamble puncturing is not applied to any 20 MHz subchannel within the beamformee’s operating bandwidth and is the entire occupied bandwidth within the beamformee’s operating bandwidth when preamble puncturing is applied to any 20 MHz subchannel within the beamformee’s operating bandwidth.

P492L48

An EHT NDP Announcement frame shall not request partial (#12562)bandwidth feedback on a 242-tone RU outside of the beamformee’s operating channel width.

P495L05

(#12555) (#12557) (#12563) An EHT beamformer may solicit partial bandwidth feedback from one or more EHT beamformees with operating channel width smaller than the bandwidth of the PPDU carrying the EHT NDP Announcement frame and EHT sounding NDP.

P495L08

(#11664) (#11542)An EHT beamformee indicates the maximum supported data rate used in the EHT TB PPDU carrying the EHT compressed beamforming/CQI report in the TB Sounding Feedback Rate Limit subfield in the EHT PHY Capabilities Information field in the EHT Capabilities element sent by the EHT beamformee.

P495L20

(#11665) (#12564) A 320 MHz EHT beamformer shall not send a 320 MHz EHT NDP Announcement frame to solicit partial bandwith feedback from an EHT beamformee with 20 MHz operating channel width.

P495L24

(#11666) An EHT NDP Announcement frame of bandwidth larger than 40 MHz shall not solicit from an EHT beamformee with 40 MHz operating channel width.

P495L50

(#11277) (#11667) In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee may support SU feedback forthe following combinations of RU size and NDP announcement bandwidth:

* 242-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 20 MHz
* 242-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 40 MHz
* 484-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 40 MHz