IEEE P802.11
Wireless LANs

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| CC36 CR for 14 CIDs in Clause 35.5.2 |
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Abstract

This submission proposes the resolution for CID 4488, 5453, 5803, 5853, 7068, 7069, 7070, 7071, 7674, 7919, 7920, 7922, 7925, and 8363. The baseline for this comment resolution document is 802.11be Draft 1.3.

**Revisions:**

Rev 0: first draft of the document.

Rev 1: add comment to the resolution of CID 2068; wording modification

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed change** | **Resolution** |
| 4488 | Arik Klein | 35.5.2 | 289.01 | Rephrase the following sentence for better understanding: "An MU beamformer is an EHT AP that sets at least one of the following MU beamformer subfields, MU Beamformer (BW ≤ 80 MHz), MU Beamformer (BW = 160 MHz), and MU Beamformer (BW = 320 MHz) subfields in the EHT PHY Capabilities Information field in the EHT Capabilities element it transmits to 1." | Revise the sentence as follows:"An MU beamformer is an EHT AP that sets at least one of the following MU beamformer subfields: 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 of the EHT Capabilities element it transmits to 1." | Revised:Agree in principle with comments. There are two “to 1”. Then the change will be An MU beamformer is an EHT AP that sets at least one of the following MU beamformer subfields: 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 of the EHT Capabilities element it transmits.TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 4488 |
| 5453 | Jian Yu | 35.5.2 | 292.03 | Add a table to summarize M/O of EHT sounding protocol, regarding TB, non-TB, SU/MU/CQI etc. | as in comment | Rejected:Assuming that “M/O” in the comment means Mandatory/Optional, whether a feature is mandatory or optional should be indicated in the PICS in the Annex B. Hence, the requested table should not be placed in this subclause. |
| 5803 | Lei Huang | 35.5.2 | 290.32 | It is better to change "The Feedback Type And Ng and Codebook Size subfield indicates SU" to "The Feedback Type And Ng and Codebook Size subfield in the STA Info field indicates SU" | as in the comment | Revised: Agree in principle with comments. Since “Feedback Type And Ng” and “Codebook Size” are two subfields, the verb after these two subfields should be plural.TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 5803 |
| 5853 | Lei Wang | 35.5 | 288.15 | Section 35.5 and its subsection 35.5.2 have exactly the same section name, which should be avoided. | Suggest changing the title of Section 35.5 as follows:35.5 EHT sounding protocol | Revised: Agree in principle with the comment. It is the same comment as CID 8363. Please refer to CID 8363. TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 5853, 8363 |
| 7068 | Sigurd Schelstraete | 35.5.2 | 288.57 | "An SU beamformer is an EHT STA that ...". Should the definition of SU Beamformer refer to the capability bit or to the MIB varaiable? | Clarify | Rejected:In the baseline spec, beamformer and beamformee definitions did not refer to MIB variables. Hence, there is no sufficient reason to switch to MIB variables for 11be. It has been defined in specs that 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. |
| 7069 | Sigurd Schelstraete | 35.5.2 | 289.33 | Improve wording: Change "a large RU or MRU that is defined for each signal bandwidth in 36.3.2" to "a large RU or MRU as defined in 36.3.2" | See comment | Revised: Agree in principle with the comment. Table 9-42c in 802.11be D1.3 depicts the setting for BW, Partial BW Info subfield in the EHT NDP Announcement frame. Please see the resolution for CID 7920 in this document. |
| 7070 | Sigurd Schelstraete | 35.5.2 | 291.38 | There are only four references to "40 MHz operating" devices in the draft and no definition. Is it really the intention to have 40 MHz operating devices for 11be? | Remove references to "40 MHz operating" from the draft. | Rejected:It is indicated in Table 9-42c (802.11be D1.3) that there is an operating channel width of the EHT beamformee with 40MHz. |
| 7071 | Sigurd Schelstraete | 35.5.2 | 291.48 | If 40 MHz operating device is defined, shouldn't it be possible to solicit it with NDP of BW 40, 80, 160 and 320 MHz (compare with other operating BW ...) | Change "sounding NDP of 40 MHz bandwidth" to "sounding NDP of bandwidth of 40 MHz, 80 MHz, 160 MHz, and 320 MHz" | Rejected:It is indicated in P403L1 of 802.11beD1.3 that In an EHT non-TB sounding sequence, a 40 MHz operating EHT beamformee shall support SU feedback for 484-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 40 MHz. In an EHT TB sounding sequence, a 40 MHz operating EHT beamformee may support SU feedback for 242-tone and 484-tone RU solicited with an EHT NDP Announcement frame of bandwidth of 20 MHz and 40 MHz. |
| 7674 | Xiangxin Gu | 35.5.2 | 289.21 | "the Feedback Type And Ng and Codebook subfields" should be "the Feedback Type And Ng and Codebook Size subfields" | As the comment | Accepted:TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 7674 |
| 7919 | Youhan Kim | 35.5.2 | 289.29 | According to the text being added by https://mentor.ieee.org/802.11/dcn/21/11-21-0886-03-00be-proposed-changes-to-sounding-fb.docx,full bandwidth feedback is also a function of the operating BW of the beamformee.Also, the BW of the NDP is used in the new text instead of NDPA. | Change"EHT NDP Announcement frame and the bandwidth of the EHT NDP Announcement frame."to"EHT NDP Announcement frame, the bandwidth of the EHT NDP, and the operating bandwidth of the EHT beamformee." | Revised:It is shown in 802.11D1.3 P399L40 that the bandwidth of the EHT NDP Announcement frame and the EHT NDP frame shall be same. Therefore, the bandwidth of the EHT NDP Announcement frame is kept as original.TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 7919 |
| 7920 | Youhan Kim | 35.5.2 | 289.33 | "An EHT NDP Announcement frame shall only request partial BW feedback on a large RU or MRU that isdefined for each signal bandwidth in 36.3.2 (Subcarrier and resource allocation)."This sentence is hard to understand.Note that we now have Table 9-28e which clearly spells out the valid partial BW feedback 'patterns'. | Change"An EHT NDP Announcement frame shall only request partial BW feedback on a large RU or MRU that is defined for each signal bandwidth in 36.3.2 (Subcarrier and resource allocation)."to"An EHT beamformer shall not set the Partial BW Info subfield in an EHT NDP Announcement frame to a value not listed in Table 9-28e." | Revised: Agree in principle with the comment. Table 9-28e in 802.11be D1.0 is updated to Table 9-42c in 802.11be D1.3.TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 7920 |
| 7922 | Youhan Kim | 35.5.2 | 290.12 | "Feedback Type AND Ng" and "Codebook Size" are two separate subfields. | Change"Codebook Size subfield"to"Codebook Size subfields"at P290L12/16/20/24/29/32. | Revised: Agree in principle with comments. To be consistent with the writing style of the title of Table 9-29a (Feedback Type And Ng subfield and Codebook Size subfield encoding for HE TB sounding), the change is made to “The Feedback Type And Ng subfield and Codebook Size subfield”TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 7922 |
| 7925 | Youhan Kim | 35.5.2 | 291.08 | In Table 9-322ar, the name for "Number of Sounding Dimensions" has "()" around the bandwidth numbers. | Change "Number of Sounding Dimensions <= 80 MHz" to "Number of Sounding Dimensions (<= 80 MHz)" at P291L8/20.Change "Number of Sounding Dimensions = 160 MHz" to "Number of Sounding Dimensions (= 160 MHz)" at P291L12/24.Change "Number of Sounding Dimensions = 320 MHz" to "Number of Sounding Dimensions (= 320 MHz)" at P291L15/27. | Revised:It was solved in 802.11be D1.3. There is no further action required. |
| 8363 | Zinan Lin | 35.5.2 | 288.54 | Title of 35.5 is EHT sounding protocol and title of 35.5.2 is EHT sounding protocol. They are the same. | 35.5.2 Parameter settings for EHT sounding protocol | Revised: Agree in principle with comments. Change the title of 35.5 to EHT sounding operation.TGbe editor: please incorporate changes shown in 11-21/1942r1 under the tag 5853, 8363 |

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P398L27). Please globally check the title of subclause 35.5 when 35.5 is cross-referenced.***

**35.5 EHT sounding operation (#5853, #8363)**

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P399L12).***

An MU beamformer is an EHT AP that sets at least one of the following MU beamformer subfields: MU Beamformer (BW ≤ 80 MHz), MU Beamformer (BW = 160 MHz), and MU Beamformer (BW = 320 MHz) to 1 (#4488) 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 MU Beamformer (BW = 320 MHz) subfields, to 0. An MU beamformer is also an SU beamformer and shall set the SU Beamformer subfield.

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P399L31)***

The type of feedback (SU, MU, or CQI) solicited by an EHT beamformer from an EHT beamformee is indicated in the Feedback Type And Ng and Codebook Size subfields in the STA Info field (#7674) identifying the EHT beamformee in the EHT NDP Announcement frame as defined in Table 9-29a (Feedback Type And Ng subfield and Codebook Size subfield encoding for HE TB sounding) and Table 9-29b (Feedback Type And Ng subfield and Codebook Size subfield encoding for HE non-TB sounding).

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P399L38)***

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 (#7919).

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P400L7)***

An EHT beamformer shall set the Partial BW Info subfield in an EHT NDP Announcement frame to a value that is listed in Table 9-42c (#7920).

***TGbe Editor: Please modify Clause 35.5.2 EHT sounding protocol as follows (802.11be Draft 1.3 P400L56)***

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field indicate SU and Ng = 16, and the Ng = 16 SU Feedback subfield in the EHT PHY Capabilities Information field is 0

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field indicate MU and Ng = 16, and the Ng = 16 MU Feedback subfield in the EHT PHY Capabilities Information field is 0

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field indicate SU, the Codebook Size subfield indicates codebook resolution ($∅, Φ$) = {4, 2}, and the Codebook Size ($∅, Φ$) = {4, 2} SU Feedback subfield in the EHT PHY Capabilities Information field is 0

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field indicate MU, the Codebook Size subfield in the STA Info field indicates codebook resolution ($∅, Φ$) = {4, 2}, and the Codebook Size ($∅, Φ$) = {4, 2} MU Feedback subfield in the EHT PHY Capabilities Information field is 0

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field indicate CQI and the Triggered CQI Beamforming Feedback subfield in the EHT PHY Capabilities Information field is 0

—The Feedback Type And Ng subfield and Codebook Size subfield (#7922) in the STA Info field (#5803) indicate SU and the Triggered SU Beamforming Feedback subfield in the EHT PHY Capabilities Information field is 0