IEEE P802.11
Wireless LANs

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| LB281 comment resolutions for Exchange part 1  |
| Date: 2024.01.xx |
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Abstract

This submission contains the proposed comment resolutions for the CIDs 4087, 4088, 4136, 4209, 4210, 4200, 4096, 4097, 4171, 4172, 4199, 4207, 4208, 4289, 4098, 4202 and 4264.

R0: initial document

# CID 4087, 4088, 4136, 4209 and 4210

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 4087 | 32.16 | 9.3.1.19.5 | Since the 11bf uses now the EHT Ranging NDP instead of the EHT Sounding NDP, the two paragraphs on P32L16-28 and P32L31-41 can be merged to one paragraph | Please replace P32L16-41 with the following:When used in a TB sensing measurement exchange (see 11.55.1.5.2 (TB sensing measurement exchange) and Figure 9-75m (STA Info field format in a Sensing NDP Announcement frame if the AID11 subfield is less than 2008 and if the frame is sent in a TB sensing measurement exchange)),-- the SI2SR NSTS and SI2SR Rep fields are used to indicate the -LTF configuration (see 27.3.19.1 (HE Ranging NDP) or 36.3.4.1 (EHT Ranging NDP)) of the SI2SR NDP that follows, and-- the SI2SR Rep field is set to the number of LTF repetitions of the corresponding HE/EHT Ranging NDP minus 1 (see 27.3.19.1 (HE Ranging NDP) or 36.3.4.1 (EHT Ranging NDP)). If the SI2SR Rep is equal to 0, then there is no LTF repetition in the SI2SR NDP. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4088 | 32.48 | 9.3.1.19.5 | Since the 11bf uses now the EHT Ranging NDP instead of the EHT Sounding NDP, the paragraph on P32L48-65 can be extended to 320 MHz | Please replace P32L48-65 with the following:When used in a non-TB sensing measurement exchange (see 11.55.1.5.3 (Non-TB sensing measurement exchange) and Figure 9-75l (STA Info field format in a Sensing NDP Announcement frame if the AID11 subfield is less than 2008 and if the frame is sent in a non-TB sensing measurement exchange)),-- the SI2SR NSTS and SI2SR Rep fields are used to indicate the LTF configuration (see 27.3.19.1 (HE Ranging NDP) or 36.3.4.1 (EHT Ranging NDP)) of the SI2SR NDP that follows,-- the SR2SI NSTS and SR2SI Rep fields indicate the LTF configuration of the SR2SI NDP sent in response by the AP (i.e., sensing responder), and-- the SR2SI Rep and SI2SR Rep fields are set to the number of LTF repetitions of the corresponding HE/EHT Ranging NDP minus 1 (see 27.3.19.1 (HE Ranging NDP) or 36.3.4.1 (EHT Ranging NDP)). If the SI2SR Rep and SR2SI Rep are equal to 0, then there is no LTF repetition in the SI2SR NDP and SR2SI NDP that follows, respectively. | Resivsed.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4136 | 32.16 | 9.3.1.19.5 | Paragraphs in P32 L16-29 and P32 L31-41 and similarly P32 L48-65 should be modified to combine 160MHz and 320 MHz cases into one case as now the spec allows NDPA to be sent in non-TB as well with LTF-Rep while also referencing EHT-LTF and EHT Ranging NDP | As per comment | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4209 | 32.37 | 9.3.1.19.5 Sensing NDP Announcement frame format | Corresponding descriptions of EHT Ranging NDP should be incoporated. | As in comment. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4210 | 32.54 | 9.3.1.19.5 Sensing NDP Announcement frame format | Corresponding descriptions of EHT Ranging NDP should be incoporated. | As in comment. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |

***Instructions to the editor: please make the following changes to paragraphs from P32L16 to P32L41 in the subclause 9.3.1.19.5 Sensing NDP Announcement frame format in D3.0 as shown below:***

When used in a TB sensing measurement exchange (see 11.55.1.5.2 (TB sensing measurement exchange) and Figure 9-75m (STA Info field format in a Sensing NDP Announcement frame if the AID11 subfield is less than 2008 and if the frame is sent in a TB sensing measurement exchange)),

— if the bandwidth of the PPDU carrying the NDP Announcement frame is less than or equal to 160 MHz, the SI2SR NSTS and SI2SR Rep fields are used to indicate the HE-LTF configuration (see 27.3.19.1 (HE Ranging NDP)) of the SI2SR NDP that follows, and the SI2SR Rep field is set to the number of HE-LTF repetitions of the corresponding HE Ranging NDP minus 1 (see 27.3.19.1 (HE Ranging NDP)). If the SI2SR Rep is equal to 0, then there is no HE-LTF repetition in the SI2SR NDP.

— if the bandwidth of the PPDU carrying the NDP Announcement frame is equal to 320 MHz, the SI2SR NSTS field and SI2SR Rep fields are used to indicate the EHT-LF configuretaion (see 36.3.4.1 (EHT Ranging NDP)) of the SI2SR NDP that follows, and the SI2SR Rep field is set the number of EHT-LTF Repetitions of the corresponding EHT Ranging NDP minus 1 (36.3.4.1 (EHT Ranging NDP)). If the SI2SR Rep is equal to 0, then there is no EHT-LTF repetitions in the SI2SR NDP.

***Instructions to the editor: please make the following changes to paragraphs from P32L48 to P32L65 in the subclause 9.3.1.19.5 Sensing NDP Announcement frame format in D3.0 as shown below:***

When used in a non-TB sensing measurement exchange (see 11.55.1.5.3 (Non-TB sensing measurement exchange) and Figure 9-75l (STA Info field format in a Sensing NDP Announcement frame if the AID11 subfield is less than 2008 and if the frame is sent in a non-TB sensing measurement exchange)),

— if the bandwidth of the PPDU carrying the NDP Announcement frame is less than or equal to 160 MHz, the SI2SR NSTS and SI2SR Rep fields are used to indicate the HE-LTF configuration (see 27.3.19.1 (HE Ranging NDP)) of the SI2SR NDP that follows, the SR2SI NSTS and SR2SI Rep fields indicate the HE-LTF configuration of the SR2SI NDP sent in response by the AP (i.e., sensing responder), and the SR2SI Rep and SI2SR Rep fields are set to the number of HE-LTF repetitions of the corresponding HE Ranging NDP minus 1 (see 27.3.19.1 (HE Ranging NDP)). If the SI2SR Rep and SR2SI Rep are equal to 0, then there is no HE-LTF repetition in the SI2SR NDP and SR2SI NDP that follows, respectively.

— if the bandwidth of the PPDU carrying the NDP Announcement frame is equal to 320 MHz, the SI2SR NSTS and SI2SR Rep fields are used to indicate the EHT-LTF configuration (see 36.3.4.1 (EHT Ranging NDP)) of the SI2SR NDP that follows, the SR2SI NSTS and SR2SI Rep fields indicate the EHT-LTF configuration of the SR2SI NDP sent in response by the AP (i.e., sensing responder), and the SR2SI Rep and SI2SR Rep fields are set to the number of EHT-LTF repetitions of the corresponding EHT Ranging NDP minus 1 (see 36.3.4.1 (EHT Ranging NDP)). If the SI2SR Rep and SR2SI Rep are equal to 0, then there is no EHT-LTF repetition in the SI2SR NDP and SR2SI NDP that follows, respectively.

# CID 4200

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 4200 | 52.62 | 9.4.1.73.2.1 General | The 'EHT Sounding NDP' shall be modified to 'EHT Ranging NDP and EHT TB Ranging NDP'. | As in comment. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |

***Instructions to the editor: please make the following changes to the paragraph from P52L59 to P52L63 in the subclause 9.4.1.73.2.1 General in D3.0 as shown below:***

NOTE—Transmission constraints imposed on the Q matrix for the HE Ranging NDP (see section (27.3.19.1 (HE Ranging NDP)) and HE TB Ranging NDP (see section 27.3.19.2 (HE TB Ranging NDP)) result in a one-to-one mapping of transmit antenna to space-time stream. Transmission constraints imposed on the Q matrix for the EHT Ranging NDP (see section 36.3.4.1 (EHT Ranging NDP)) and EHT TB Ranging NDP (see section 36.3.4.2 (EHT TB Ranging NDP)) result in a one-to-one mapping of transmit antenna to space-time steam.

# CID 4096

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 4096 | 151.25 | 11.55.1.5.2.3 | Since the 11bf uses now the EHT Ranging NDP instead of the EHT Sounding NDP, the sentence on P151L25-29 can be extended to include 320 MHz EHT-LTFs. | Please replace the sentence on P141L25-29 with the following:The combination of the values of the SI2SR NSTS and the SI2SR Rep shall not lead to a total number of LTFs transmitted as part of the HE/EHT Ranging NDP transmission that exceeds the total number of LTFs the corresponding STA is capable of receiving, as signaled in the Sensing Capabilities element. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |

***Instructions to the editor: please make the following changes to the paragraph from P51L23 to P151L29 in the subclause 11.55.1.5.2.3 NDPA sounding phase in D3.0 as shown below:***

In the Sensing NDP Announcement frame, the AP shall set the values of the SI2SR NSTS field and the SI2SR Rep field within the STA Info fields corresponding to each of the STAs addressed by that frame to be less than or equal to aSensingSRRXSTS and aSensingSRRXRep, respectively. The combination of the values of the SI2SR NSTS and the SI2SR Rep shall not lead to a total number of HE-LTFs/EHT-LTFs transmitted as part of the HE Ranging NDP/EHT Ranging NDP transmission that exceeds the total number of HE-LTFs/EHT-LTFs the corresponding STA is capable of receiving, as signaled in the Sensing Capabilities element.

# CID 4097, 4171, 4172, 4199, 4207, 4208 and 4289

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 4097 | 159.09 | 11.55.1.5.3.2 | Since the 11bf uses now the EHT Ranging NDP instead of the EHT Sounding NDP, the sentence and the NOTE on P159L9-14 can be extended to include 320 MHz EHT-LTFs. | Please remove the NOTE and change the sentence on P159L9-10 as follows:The format of both SI2SR NDP and SR2SI NDP shall be an HE/EHT Ranging NDP (see 27.3.19.1 (HE Ranging NDP) or 36.3.4.1 (EHT Ranging NDP)). | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4171 | 11.55.1.5.3.2 | 159.09 | Change the text "The format of both SI2SR NDP and SR2SI NDP shall be an HE Ranging NDP (see 27.3.19.1 (HE Ranging NDP))." to | The format of both SI2SR NDP and SR2SI NDP shall be an HE Ranging NDP (see 27.3.19.1 (HE Ranging NDP)) or an EHT Ranging NDP (see 36.3.4.1 (EHT Ranging NDP). | Accepted. |
| 4172 | 11.55.1.5.3.2 | 159.14 | Delete NOTE--..... | As per commentnon-TB 320MHz is supported now | Accepted |
| 4199 | 11.55.1.5.3.2 Measurement sounding phase | 159.14 | Since EHT Ranging NDP and EHT TB Ranging NDP are adopted in 11bf, the NOTE should be deleted. | As in comment. | Accepted |
| 4207 | 11.55.1.5.3.2 Measurement sounding phase | 159.09 | EHT Ranging NDP could be uesd in Non-TB measurement, this sentence should be fixed. | As in comment. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4208 | 11.55.1.5.3.2 Measurement sounding phase | 159.14 | The NOTE should be deleted. | As in comment. | Accepted |
| 4289 | 11.55.1.5.3.2 | 159.09 | The normative text for the non-TB measurement exchange does not describe using the EHT Ranging NDP when the bandwidth is greater than 160 MHz. Further, there is a NOTE indicating 320 MHz operation is not supported. | Remove the note on line 14. Add similar text as in section 11.55.1.5.2.3 page 151, line 1-14 which selects the HE Ranging NDP when the bandwidth is less than or equal to 160 MHz, but selects the EHT Ranging NDP when the bandwidth is equal to 320 MHz. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |

***Instructions to the editor: please make the following changes to the paragraph from P159L9 to P159L14 in the subclause 11.55.1.5.3.2 Measurement sounding phase in D3.0 as shown below:***

The format of both SI2SR NDP and SR2SI NDP shall be an HE Ranging NDP (see 27.3.19.1 (HE Ranging NDP)) or an EHT Ranging NDP (see 36.3.4.1 (EHT Ranging NDP)).

# CID 4098, 4202 and 4264

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| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 4098 | 212.24 | 36.2.2 | Since the 11bf uses now the EHT Ranging NDP instead of the EHT Sounding NDP, change EHT sounding NDP to EHT Ranging NDP. | As in comment | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4202 | 212.24 | 36.2.2 TXVECTOR and RXVECTOR parameters | The 'EHT Sounding NDP' shall be modified to 'EHT Ranging NDP and EHT TB Ranging NDP'. | As in comment. | Revised.TGbf Editor make changes specified in 24/0137r0.(https://mentor.ieee.org/802.11/dcn/24/11-24-0137-00-00bf-lb281-comment-resolutions-for-exchange-part-1.docx) |
| 4264 | 212.25 | 36.2.2 | EHT Ranging NDP and EHT TB Ranging NDP should be used instead of EHT Sounding NDP. | Replace "EHT Sounding NDP" by "EHT Ranging NDP or EHT TB Ranging NDP" | Accepted. |

***Instructions to the editor: please make the following changes to the paragraph from P212L23 to P212L32 in the subclause 36.2.2 TXVECTOR and RXVECTOR parameters in D3.0 as shown below:***

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| **Parameter** | **Condition** | **Value** | **TXVECTOR** | **RXVECTOR** |
| CSI\_ESTIMATE | FORMAT is EHT\_MU, PSDU\_LENGTH is 0, and CH\_BANDWIDTH is either CBW320-1 or CBW320-2 | Contains an array of CSI values based on the channel measured during the training symbols of the received EHT Ranging NDP or EHT TB Ranging NDP (see 9.4.1.73.2 (CSI encoding and decoding)). The number of complex elements is $N\_{RX}×N\_{TX}×N\_{SC}$, where $N\_{RX}$ is the number of receive chains, $N\_{TX}$ is the number of transmit chains, and $N\_{SC}$ is the total number of subcarriers (see Table 9-127l (Number of subcarriers as a function of bandwidth, puncturing, and Ng)). | N | Y |
| Otherwise | Not Present. | N | N |

# SP

Do you support resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 4087, 4088, 4136, 4209, 4210, 4200, 4096, 4097, 4171, 4172, 4199, 4207, 4208, 4289, 4098, 4202 and 4264 in 11-24/0137r0?

Y/N/A