IEEE P802.11
Wireless LANs

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| CC50 CR for 12 Remaining PHY CIDs  |
| Date: 2025.07.14 |
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Abstract

This submission contains the proposed comment resolutions of CIDs in 25/0296 IEEE 802.11bn CC50 comments on D0.1.

Here are the related subclauses of the 12 CIDs:

**38.3.15.9.3** Common field for OFDMA transmission (from 38.3.15.9 UHR-SIG)

**- 941**

**38.3.15.9.5** Common field for Co-BF transmission (from 38.3.15.9 UHR-SIG)

**- 35, 440, 1955.**

**38.3.15.9.6** User Specific field (from 38.3.15.9 UHR-SIG)

**- 330, 1207**

**38.3.15.9.7** Encoding and modulation (from 38.3.15.9 UHR-SIG)

**- 47, 334, 335**

**38.3.17** Packet extension

**- 2349, 2351**

**9.4.2.aa2.1** General (from 9.4.2.aa2 UHR Capabilities element)

**- 2035**

In addition, **Motion 414** is reflected:

* UHR STA shall set the Spatial Reuse subfield to

‘PSR\_AND\_NON\_SRG\_OBSS\_PD\_PROHIBITED’ in the Co-SR and Co-BF transmission.

Resolved CIDs: **35, 47, 330, 334, 335, 440, 941, 1955, 2349, 2351, 2305, 941.**

Revision Notes

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| --- | --- |
| R0 | Initial revision |

# 1 CID (941) related to Spatial Reuse

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 941 | 161.51 | 38.3.15.9 | Disallow legacy SR (at least) for Co-BF and Co-SR. | Set Spatial Reuse subfield to "PSR\_AND\_NON\_SRG\_OBSS\_PD\_PROHIBITED" in UHR-SIG field (at least) for Co-BF and Co-SR transmission. | REVISED.The Spatial Reuse subfield is updated according to Motion 414.***Instructions to the editor:*** **Please make the changes as shown under CID 941 in 11-25/1136r0.** |

***Instructions to the editor: please make the following changes to Page 273 in the subclause 38.3.15.9.4 (Common field for non-OFDMA transmission) in 802.11bn D0.3 as shown below:***

**Table 38-29—Common field for a UHR SU transmission, DL SU Co-SR transmission, DL non-OFDMA MU-MIMO transmission, and DL non-OFDMA Co-BF transmission**

|  |  |  |  |
| --- | --- | --- | --- |
| Bit | Subfield | Number of bits | Description |
| B0–B3 | Spatial Reuse | 4 | Indicates whether or not spatial reuse modes are allowed during the transmission of this PPDU. Set to a value from Table 27-23 (Spatial Reuse field encoding for an HE SU PPDU, HE ER PPDU, and HE MU PPDU). Note that Table 27-23 (Spatial Reuse field encoding for an HE SU PPDU, HE ER PPDU, and HE MU PPDU) also applies to UHR MU PPDU. See 37.2 (UHR Spatial reuse operation). (#2289)(#1350)(#1637).The Spatial Reuse subfield is set to ‘PSR\_AND\_NON\_SRG\_OBSS\_PD\_PROHIBITED’ in the DL SU Co-SR transmission and DL non-OFDMA Co-BF transmission. (#941) |

# 3 CIDs (35, 440, 1955) related to deleting Co-BF subclause in U-SIG

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 35 | 171.43 | 38.3.15.9.5 | Remove the subclause of "Common field for Co-BF transmission". The CoBF transmission is one of the non-OFDMA transmissions and reuse the same common field for non-OFDMA. | Refer to the comment. | ACCEPTED. |
| 440 | 171.43 | 38.3.15.9.5 | I think Co-BF will have same common field as non-OFDMA MU.What is expected to be covered in 38.3.15.9.35? | can merge with section 38.3.15.9.4 | REVISED. The subclause "Common field for Co-BF transmission"has been removed in D0.3.No change is needed. |
| 1955 | 171.45 | 38.3.15.9.5 | When describing fields related to "Common field for Co-BF transmission", we may need to clarify that those fields are present for the STAs from both APs to interpret and decode the following preamble/data. | As the comment | REVISED.The subclause "Common field for Co-BF transmission"has been removed in D0.3.No change is needed. |

# 2 CIDs (330, 1207) related to User Specific field

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 330 | 176.15 | 38.3.15.9.6 | 2xLDPC bit is there to avoid situations where the 2x CW may have worse performance. This is more likely to happen for smaller numbers of CWs. Switching of 2xLDPC should no be allowed for larger payloads. Consider limiting the cases where the 2xLDPC bit can be used to swith off 2x CW. | See comment | REJECTED.More details should be provided for how to limit the cases. Now the suggestion is not clear.  |
| 1207 | 177.53 | 38.3.11 | In table 38-29, in the Spatial Configuration" field, the wording is not consistent with similar text in the spec | Change 1: "If STA-ID matches" to "If STA-ID matches" to "if the value of STA-ID subfield match the user's STA-ID" Change 2: "If STA-ID does not match" to "if the value of STA-ID subfield does not match the user's STA-ID" | REVISED.Agree with the commenter that the wording coud be improved.***Instructions to the editor:*** **Please make the changes as shown under CID 1207 in 11-25/1136r0.** |

***Instructions to the editor: please make the following changes to Page 281 in the subclause 38.3.15.9.5 (User Specific field) in 802.11bn D0.3 as shown below:***

Table 38-34—User field format for an MU-MIMO allocation or Co-BF allocation(#1639)(#1956)

|  |  |  |  |
| --- | --- | --- | --- |
| Bit | Subfield | Number of bits | Description |
| ***…*** | ***…*** | ***…*** | ***…*** |
| B11–B15  | MCS  | 5  | Indicates the following modulation and coding scheme:Set to n for UHR-MCS n, where n = 0, 1,...,13, 17, 19, 20 and 23(#3502)(#332)(#377)(#1094)(#1170)(#2296) If the value of STA-ID subfield matches the user’s STA-ID, other values are Validate. If the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard |
| B16–B19 | Spatial Configuration | 4 | Indicates the number of spatial streams for a user in an MU-MIMO allocation (see Table 27-31 (Spatial Configuration subfield encoding)).The Spatial Configuration field in the User field of the UHR-SIG field in PPDUs for Co-BF transmission reuses the same design as in UHR DL MU-MIMO(#45).If the value of STA-ID subfield matches the user's STA-ID, the values that are reserved or do not exist in Table 27-31 (Spatial Configuration subfield encoding)) are Validate. If the value of STA-ID subfield does not match the user's STA-ID, all values are Disregard. (#1207)If the UL/DL Field in U-SIG is set to 0 and the PPDU Type And Compression Mode Field in U-SIG is set to 2 and the Co-BF/Co-SR Indication Field in U-SIG is set to 0:• If the Number of Non-OFDMA Users Field inUHR-SIG is set to 1, the values 3 and 5-7 areValidate• If the Number of Non-OFDMA Users Field inUHR-SIG is set to 2, the values 2-7 are Validate• If the Number of Non-OFDMA Users Field inUHR-SIG is set to 3, the values 1-7 are Validate |

# 3 CIDs (47, 334, 335) related to encoding and modulation

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| --- | --- | --- | --- | --- | --- |
| 47 | 178.51 | 38.3.15.9.7 | This sentence/paragraph is according to a passed motion. However, it is not needed in the spec. There is no change in UHR. Suggest to remove the paragraph. | Refer to the comment. | REVISED.This sentence is related to a passed motion. Need to reflect it and should not delete it. However, the wording is updated.***Instructions to the editor:*** **Please make the changes as shown under CID 335 in 11-25/1136r0.** |
| 334 | 178.51 | 38.3.15.9.7 | "non-beamformed (omni)". Don't use the term omni. It is not otherwise used in the standard and not accurate. Many antennas are not omnidirectinal, even without beamforming. | Delete "(omni)" | ACCEPTED. |
| 335 | 178.48 | 38.3.15.9.7 | Section 38.3.15.9.7 needs more content or appropriate references to 11be. | See comment | REJETCED.Will add the related paragraphs in the next comment collection round. |

***Instructions to the editor: please make the following changes to Page 283 in the subclause 38.3.15.9.6 (Encoding and modulation) in 802.11bn D0.3 as shown below:***

**38.3.15.9.6 Encoding and modulation**

The UHR-SIG of a PPDU for the DL non-OFDMA Co-BF transmission shall be transmitted in a non-beamformed manner. (#47) (#334)

# 2 CIDs (2349, 2351) related to the LDPC in Packet Extension

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2349 | 204.18 | 38.3.17 | 3888 length LDPC codeword requires longer processing time than 1944 length codeword, then it is natural to have a longer PE duration when transmitting 3888 length LDPC CW. Nominal PE value is 20us is allowed for large RU and high QAM MCS transmissions. 3888 length LDPC codeword may requires longer PE when it is used for large BW and high QAM MCS. Propose to have a fixed PE length 20us after the last OFDM symbol. To minimize the hardware changes, propose to fix pre-FEC padding factor to 4. To simplify implementation in case LDPC extra segment is needed, propose to always set initial pre-FEC padding factor a\_init to 3, and always set LDPC extra segment to 1 to achieve a\_factor = 4. | As in comment | REVISED.Agree that the 3888 length LDPC codeword may need a longer processing time. However, similar to the 320 MHz BW and 4K QAM, a 20 us nominal packet paddng value is enough to resolve this. There is no need to further design the fixed pre-Fec padding factor and the LDPC extra symbol segment to enable a 20 us PE field.***Instructions to the editor:*****Please make the changes as shown under CID 2351 in 11-25/1136r0.** |
| 2351 | 204.18 | 38.3.17 | 3888 length LDPC codeword requires longer processing time than 1944 length codeword, then it is natural to have a longer PE duration when transmitting 3888 length LDPC CW. Nominal PE value is 20us is allowed for large RU and high QAM MCS transmissions. 3888 length LDPC codeword may requires longer PE when it is used for large BW and high QAM MCS. Propose to have a fixed PE length 20us after the last OFDM symbol. Propose to fix pre-FEC padding factor to 4. In case LDPC extra segment is needed, propose to always set initial pre-FEC padding factor a\_init to 3, and always set LDPC extra segment to 1 to achieve a\_factor = 4. | As in comment | REJECTED/REVISED.***Instructions to the Editor:*** **The resolutions for CIDs 2349 and 2351 are the same.** **See CID 2349 in 11-25/1136r0.** |

***Instructions to the editor: please make the following changes to Page 281 in the subclause 38.3.15.9.6 (Encoding and modulation) in 802.11bn D0.3 as shown below:***

**38.3.17 Packet extension**

A PE field of duration 0 µs, 4 µs, 8 µs, 12 µs, 16 µs, or 20 µs is present in a UHR PPDU. A PE field of duration 20 µs is only allowed in the following cases:(#69, #1191)

— a UHR MU PPDU with at least one participating STA being modulated with 4096-QAM,

— a 320 MHz UHR MU PPDU if the size of one of the allocated RU or MRU is greater than 2×996,

— a UHR MU PPDU with at least one participating STA with the LDPC codeword length equal to 3888, (#2349) (#2351)

— a UHR MU PPDU with the Co-BF or Co-SR transmission,

— a UHR TB PPDU.

…

For a UHR MU PPDU with the Co-BF or Co-SR transmission, the nominal packet padding value shall be equal to 20 µs, and the pre-FEC padding factor α shall be equal to 4. This leads to a fixed value equal to 20 µs.

For a UHR MU PPDU with at least one participating STA with the LDPC codeword length equal to 3888, the nominal packet padding value shall be equal to 20 µs. (#2349) (#2351)

…

# 1 CID (2035) related to Supported NSS and MCS set field

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| --- | --- | --- | --- | --- | --- |
| 2035 | 60.15 | 9.4.2.aa2.1 | Add details for the supported NSS and MCS set | As in comment. Should consider the impact of new MCS and UEQM, etc. | REJECTED.This topic is still under discussion. Thus, no detailed resolution will be provided at this stage. |