IEEE P802.11  
Wireless LANs

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| CC50 CR for UHR-SIG User Specific Field – Part 2 | | | | |
| Date: 2025.05.13 | | | | |
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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.

14CIDs for subclause 38.3.15.9.6 (User Specific field) are resolved.

Resolved CID: **37, 38, 39, 40, 1092, 1168, 1353, 1354, 2292, 2293, 2294, 2786, 3507, 3508.**

In addition, one motion **(#Motion 217)** is added:

Move to add to the TGbn SFD the following:

* The maximum number of spatial streams transmitted by each AP in CSR is 4.

Revision Notes

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| R0 | Initial revision |

## 2 CIDs related to the NSS subfield in the non-MU-MIMO User field

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| 37 | 174.47 | 38.3.15.9.6 | Need to describe the Validate values in Co-SR, per motion #217. Add a new paragraph of "If the UL/DL Field in U-SIG is set to 0, the PPDU Type And Compression Mode Field in U-SIG is set to 1 and the Co-BF/Co-SR Indication Field in U-SIG is set to 0, values 4-7 are Validate." | Refer to the comment. | REVISED.  Agree with the commenter. The corresponding paragraph is added.  ***Instructions to the editor:***  **Please make the changes as shown under CID 38 in 11-25/0964r1.** |
| 38 | 174.53 | 38.3.15.9.6 | Remove the editor's note in a later draft, e.g., D0.2, as the conflict has been resolved in D0.1. | Refer to the comment. | ACCEPTED. |

***Instructions to the editor: please make the following changes to Page 184 in the subclause 38.3.15.9 (UHR-SIG) in D0.2 as shown below:***

The text in 802.11bn D0.2:

|  |  |  |  |
| --- | --- | --- | --- |
| B16–B18 | NSS | 3 | If the STA-ID subfield is not equal to 2046, it indicates the number of spatial streams for up to eight spatial streams.  Set to the number of spatial streams minus 1.  Set to an arbitrary value if the STA-ID subfield is equal to 2046.  If the UEQM subfield is equal to 1, values 0, 4-7 are Validate.  If the UL/DL subfield of the U-SIG field is set to 0:  If the value of STA-ID subfield does not match the user's STA-ID, all values are Disregard.If the PPDU Type And Compression Mode field in U-SIG is set to 1 and the Co-BF/Co-SR Indication field in U-SIG is set to 0 (Co-SR transmission), values 4-7 are Validate. (#37)  (#38) |

## 12 CIDs related to B19 and B20-B21 in the non-MU-MIMO User field

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| --- | --- | --- | --- | --- | --- |
| 39 | 175.31 | 38.3.15.9.6 | Add a blank line to separate two paragraphs. | Refer to the comment. | REVISED  ***Instructions to the Editor:***  The resolutions for CIDs 39 and 1353 are the same. See 1353. |
| 40 | 175.47 | 38.3.15.9.6 | Add a blank line to separate two paragraphs. Do not use indent for the paragraph beginning with "Set to an arbitrary value ...". | Refer to the comment. | ACCEPTED. |
| 3507 | 174.40  (should be 175.40) | 38.3.15.9.6 | explicit mention of txbf assumed? | Table 38-27 B20-B21 "LDPC is used and B20-B21 is ..." --> "LDPC is used, a beamforming steering matrix is applied and B20-B21 is ..." | ACCEPTED. |
| 3508 | 174.44  (should be 175.44) | 38.3.15.9.6 | Unclear undefined value definition | Table 38-27 B20-B21 "Undefined values of this field are Validate or Disregard" --> "Undefined values of this field are Validate" | ACCEPTED. |
| 1092 | 175.39 | 38.3.15.9.6 | "LDPC is used and B20-B21".. UEQM is only defined for LDPC and Beamformed transmission, since LDPC is mentioned here, should beamforming be mentioned as well? It also explains re-defining B20-21 from Coding and Beamforming bits in UEQM transmissions | Change to "LDPC is used and a beamforming steering matrix is applied to the waveform in a non-MU-MIMO allocation". | REVISED  ***Instructions to the Editor:***  The resolutions for CIDs 1092 and 3507 are the same. See 3507. |
| 1168 | 175.31 | 38.3.15.9.6 | Delete the blank before " If the UL/DL subfield of ~ " | As the comment. | REVISED  ***Instructions to the Editor:***  The resolutions for CIDs 1168 and 1353 are the same. See 1353. |
| 1353 | 175.32 | 38.3.15.9.6 | seem this paragraph" If the UL/DL subfield o the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user's STA-ID, all values of B20 and B21 are disregard" is not necessry here. | delete the paragraph: " If the UL/DL subfield o the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user's STA-ID, all values of B20 and B21 are disregard" | ACCEPTED. |
| 1354 | 175.47 | 38.3.15.9.6 | "Set to an arbitrary..." should be parallel to previous two bullets. | delete the space before " Set to..." to make it align with previous two bullets | ACCEPTED. |
| 2292 | 175.11 | 38.3.15.9.6 | "Set to an arbitrary value if the STA-ID subfield is equal to 2046." in multiple rows (B19, B20-B21) should not be a subbullet under "If the STA-ID subfield is not equal to 2046". Please use consistent style. | As in comment | REVISED.  Agree with the commenter.  ***Instructions to the editor:***  **Please make the changes as shown under CID 2786 in 11-25/0964r1.** |
| 2293 | 175.31 | 38.3.15.9.6 | "If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user's STA-ID, all values of B20 and B21 are Disregard." in B20-B21 row line 31-35 is redundant, should be removed. It is repeated in lines 50-52. | As in comment | REVISED  ***Instructions to the Editor:***  The resolutions for CIDs 2293 and 1353 are the same. See 1353. |
| 2294 | 175.46 | 38.3.15.9.6 | "Undefined values of this field are Validate or Disregard.". How can non-AP STA treat the undefined value for UEQM pattern as Disregard and continue reception? Please remove "or Disregard" | As in comment | ACCEPTED. |
| 2786 | 175.44 | 38.3.15.9.6 | In Table 38-27, need to resolve ambiguity of "Validate or Disregard" in describing B20-B21 | see comments | REVISED.  Agree with the commenter. Remove "or Disregard".  ***Instructions to the editor:***  **Please make the changes as shown under CID 2786 in 11-25/0964r1.** |

***Instructions to the editor: please make the following changes to Page 185 in the subclause 38.3.15.9.6 (User Specific field) in D0.2 as shown below:***

The text in 802.11bn D0.2:

**Table 38-27—User field format for a non-MU-MIMO allocation**

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| --- | --- | --- | --- |
| B19 | UEQM | 1 | If the STA-ID subfield is not equal to 2046, it indicates whether EQM or UEQM is used:  Set to 0 for EQM.  Set to 1 for UEQM.  Set to an arbitrary value if the STA-ID subfield is equal to 2046.(#2292)  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard. |
| B20-B21 | Beamformed And Coding/UEQM Pattern | 2 | If the STA-ID subfield is not equal to 2046, and the UEQM subfield is equal to 0:  B20 is the Beamformed subfield indicating transmit beamforming:  Set to 1 if a beamforming steering matrix is applied to the waveform in a non-MU-MIMO allocation.  Set to 0 otherwise.  B21 is the Coding subfield indicating whether BCC or LDPC is used:  Set to 0 for BCC.  Set to 1 for LDPC.  (#39)(#1168)(#1353)(#2293)  If the STA-ID subfield is not equal to 2046, and the UEQM subfield is equal to 1:  LDPC is used, a beamforming steering matrix is applied and B20-B21 is the UEQM Pattern subfield indicating the UEQM pattern for the corresponding number of spatial streams indicated in the NSS subfield (#1092)(#3507). See Table38-29 (UEQM pattern subfield encoding) for definition. Undefined values of this field are Validate. (#3508)(#2294)(#2786)  (#40)  Set to an arbitrary value if the STA-ID subfield is 2046. (#1354)(#2292)  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard. |

Discussion (related text in 802.11bn draft 0.2):

* User Specific field

The content of the common encoding block in the UHR-SIG field for a UHR SU transmission and non-OFDMA transmission to multiple users is defined in Table38-26 (The common encoding block in a UHR-SIG field for a UHR SU transmission and a non-OFDMA transmission to multiple users).

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| --- | --- | --- | --- |
| * The common encoding block in a UHR-SIG field for a UHR SU transmission and a non-OFDMA transmission to multiple users | | | |
| Bit | Subfield | Number of bits per subfield | Description |
| B0–B18 | Common field for a UHR SU transmission and non-OFDMA transmission to multiple users | 19 | The Common field for a UHR SU transmission and non-OFDMA transmission to multiple users is defined in Table38-25 (Common field for a UHR SU transmission and non-OFDMA transmission to multiple users). |
| B19–B41 | User field | 23 | The User field format for a non-MU-MIMO allocation is defined in Table38-28 (User field format for a non-MU-MIMO allocation). The User field format for an MU-MIMO allocation is defined in Table38-30 (User field format for an MU-MIMO allocation). |
| B42–B45 | CRC | 4 | The CRC is calculated over bits 0 to 41. The CRC computation uses the same polynomial as that in 27.3.11.7.3 (CRC computation). |
| B46–B51 | Tail | 6 | Used to terminate the trellis of the convolutional decoder. Set to 0. |

The user encoding block is defined in Table38-27 (The user encoding block). For non-OFDMA transmission to multiple users, the user encoding block is present if there are more than one User fields in the corresponding content channel.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| * The user encoding block | | | | |
| Bit | Subfield | Number of subfields | Number of bits per subfield | Description |
| B0–  B23*N*-1 | User field | *N* | 23 | *N* User fields are present, where:  *N*= 1 if it is the final user encoding block, and if there is only one user in the final user encoding block.  *N*= 2 otherwise.  The User field format for a non-MU-MIMO allocation is defined in Table38-28 (User field format for a non-MU-MIMO allocation). The User field format for an MU-MIMO allocation is defined in Table38-30 (User field format for an MU-MIMO allocation). |
| B23*N*–B23*N*+3 | CRC | 1 | 4 | The CRC is calculated over bits 0 to 21 for a user encoding block that contains one User field, and bits 0 to 43 for a user encoding block that contains two User fields. The CRC computation uses the same polynomial as that in 27.3.11.7.3 (CRC computation). |
| B23*N*+4–B23*N*+9 | Tail | 1 | 6 | Used to terminate the trellis of the convolutional decoder. Set to 0. |

The User field format for a non-MU-MIMO allocation is defined in Table38-28 (User field format for a non-MU-MIMO allocation).

|  |  |  |  |
| --- | --- | --- | --- |
| * User field format for a non-MU-MIMO allocation | | | |
| Bit | Subfield | Number of bits | Description |
| B0–B10 | STA-ID | 11 | Set to a value of the TXVECTOR parameter STA-ID (see 37.z (TBD) (STA\_ID)). |
| B11–B15 | MCS | 4 | If the STA-ID subfield is not equal to 2046, this subfield indicates the following modulation and coding scheme:  Set to *n* for UHR-MCS *n*, where , x1, x2, x3 and x4. Other values are Validate.  Set to an arbitrary value if the STA-ID subfield is equal to 2046.  If the UL/DL subfield of the U-SIG field is set to 0:  If the value of STA-ID subfield matches the user’s STA-ID, the value of UHR-MCS 14 or UHR-MCS 15 is Validate if the condition described in 38.1.1 (Introduction to the UHR PHY) is not met.  If the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard.  If the UL/DL subfield of the U-SIG field is set to 1, the value of UHR-MCS 14 or UHR-MCS 15 is Validate if the condition described in 38.1.1 (Introduction to the UHR PHY) is not met. |
| B16–B18 | NSS | 3 | If the STA-ID subfield is not equal to 2046, it indicates the number of spatial streams for up to eight spatial streams.  Set to the number of spatial streams minus 1.  Set to an arbitrary value if the STA-ID subfield is equal to 2046.  If the UEQM subfield is equal to 1, values 0, 4-7 are Validate.  If the UL/DL subfield of the U-SIG field is set to 0:  If the value of STA-ID subfield does not match the user's STA-ID, all values are Disregard.   * The editor takes the description in 11-24/1985r3 UEQM and new MCS PDT, which is slightly different from the description in 11-24/2009r6 PDT PHY UHR-SIG. |
| B19 | UEQM | 1 | If the STA-ID subfield is not equal to 2046, it indicates whether EQM or UEQM is used:  Set to 0 for EQM.  Set to 1 for UEQM.  Set to an arbitrary value if the STA-ID subfield is equal to 2046.  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard. |
| B20-B21 | Beamformed And Coding/UEQM Pattern | 2 | If the STA-ID subfield is not equal to 2046, and the UEQM subfield is equal to 0:  B20 is the Beamformed subfield indicating transmit beamforming:  Set to 1 if a beamforming steering matrix is applied to the waveform in a non-MU-MIMO allocation.  Set to 0 otherwise.  B21 is the Coding subfield indicating whether BCC or LDPC is used:  Set to 0 for BCC.  Set to 1 for LDPC.  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values of B20 and B21 are Disregard.  If the STA-ID subfield is not equal to 2046, and the UEQM subfield is equal to 1:  LDPC is used and B20-B21 is the UEQM Pattern subfield indicating the UEQM pattern for the corresponding number of spatial streams indicated in the NSS subfield. See Table38-29 (UEQM pattern subfield encoding) for definition. Undefined values of this field are Validate or Disregard.  Set to an arbitrary value if the STA-ID subfield is 2046.  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard. |
| B22 | 2xLDPC | 1 | If the STA-ID subfield is not equal to 2046, and either both the UEQM subfield is equal to 0 and the Coding subfield is equal to 1 or the UEQM subfield is equal to 1, this subfield indicates whether nominal LDPC codeword length of 3888 is used:  Set to 0 to indicate the nominal LDPC codeword length of 648, 1296 or 1944 is used.  Set to 1 to indicate the nominal LDPC codeword length of 3888 is used.  If the STA-ID subfield is not equal to 2046, the UEQM subfield is equal to 0 and the Coding subfield is equal to 0, this subfield is set to 1 and treat as Validate.  Set to an arbitrary value if the STA-ID subfield is 2046.  If the UL/DL subfield of the U-SIG field is set to 0 and if the value of STA-ID subfield does not match the user’s STA-ID, all values are Disregard. |

Discussion ends.