IEEE P802.11
Wireless LANs

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| **TGbe D0.3 Comment Resolutions for 36.3.2.4 and 36.3.12.9 Pilot subcarriers** |
| **Date:** 2021-02-25 |
| **Author(s):** |

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Abstract

This submission proposes resolutions for comments of TGbe D0.3 with the following 5 CIDs:

1251, 1590, 1591, 1996, and 3042

Revisions:

* Rev 0: Initial version of the document.

#### *CIDs 1251, 1590, 1591, 1996, and 3042*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 1251 | 36.3.2.4 | 194.43 | "If pilot subcarriers are present in the EHT-LTF field of an EHT PPDU, then,". Need to explicitly states that no pilot for 1x EHT LTF | as in comment | RevisedTGbe Editor: Incorporate the changes in https://mentor.ieee.org/802.11/dcn/21/11-21-0310-00-00be-cr-for-36-3-2-4-and-36-3-12-9-pilot subcarriers.docx |
| 1590 | 36.3.12.9 | 304.11 | In Table 36-41 to Table 36-48, what is the purpose of "(OFDM/non-OFDMA)" in the first column and the first low? I don't see it is necessary. Delete it. | See the comment. | Accepted |
| 1591 | 36.3.12.9 | 306.48 | In 320MHz, there are four 996 RUs. | In Table 36-46, change "i=1,2,4" to "i=1:4". | Accepted |
| 1996 | 36.3.12.9 | 306.48 | The index i for 320MHz of Table 36-46-Pilot indices for a 996-tone RU transmission is wrong. i =1, 2, 4 should be changed as i = 1:4 to cover total four 996-tone RUs. Also for consistency with other Tables, suggest to change 160 MHz, i = 1,2 as 160 MHz, i = 1:2 in upper row of the same Table. | As in comment. | Accepted |
| 3042 | 36.3.2.4 | 194.43 | "If pilot subcarriers are present in the EHT-LTF field of an EHT PPDU, then," we don't need this sentence because pilot tones are always present for 4x and 2x EHT-LTF. | as commented | RevisedTGbe Editor: Incorporate the changes in https://mentor.ieee.org/802.11/dcn/21/11-21-0310-00-00be-cr-for-36-3-2-4-and-36-3-12-9-pilot subcarriers.docx |

*TGbe Editor: Please make the following changes in 194.43 of D0.3:*

For a 4x EHT-LTF and 2x EHT-LTF, the pilot subcarrier locations in the EHT-LTF field are the same as the pilot subcarrier locations in the Data field. There’s no pilot subcarriers in 1x EHT-LTF.

(#1251) (#3042)

*TGbe Editor: Please make the following changes in Table 36-41 to Table 36-46 of D0.3:*

**Table 36-41 – Pilot indices for a 26-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R26\_{i}}$$ |
| 80MHz, i=1:37 | {–494, –480}, {–468, –454}, {–440, –426}, {–414, –400}, {–386, –372}, {–360, –346}, {–334, –320}, {–306, –292}, {–280, –266}, {–246, –232}, {–220, –206}, {–192, –178}, {–166, –152}, {–140, –126}, {–112, –98}, {–86, –72}, {–58, –44}, {–32, –18}, {not defined}, {18, 32}, {44, 58}, {72, 86}, {98, 112}, {126, 140}, {152, 166}, {178, 192}, {206, 220}, {232, 246}, {266, 280}, {292, 306}, {320, 334},{346, 360}, {372, 386}, {400, 414}, {426, 440}, {454, 468},{480, 494} |
| 160MHz, i=1:74 | {pilot subcarrier indices in 80 MHz – 512, pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:148 | {pilot subcarrier indices in 160 MHz – 1024, pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-42 – Pilot indices for a 52-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R52\_{i}}$$ |
| 80MHz, i=1:16 | {–494, –480, –468, –454}, {–440, –426, –414, –400}, {–360, –346, –334, –320}, {–306, –292, –280, –266}, {–246, –232, –220, –206}, {–192, –178, –166, –152}, {–112, –98, –86, –72}, {–58, –44, –32, –18}, {18, 32, 44, 58}, {72, 86, 98, 112}, {152, 166, 178, 192}, {206, 220, 232, 246}, {266, 280, 292, 306}, {320, 334, 346, 360}, {400, 414, 426, 440}, {454, 468, 480, 494} |
| 160MHz, i=1:32 | {pilot subcarrier indices in 80 MHz – 512, pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:172 | {pilot subcarrier indices in 160 MHz – 1024, pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-43 – Pilot indices for a 106-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R106\_{i}}$$ |
| 80MHz, i=1:8 | {–494, –468, –426, –400}, {–360, –334, –292, –266}, {–246, –220, –178, –152}, {–112, –86, –44, –18}, {18, 44, 86, 112}, {152, 178, 220, 246}, {266, 292, 334, 360}, {400, 426, 468, 494} |
| 160MHz, i=1:16 | {pilot subcarrier indices in 80 MHz – 512, pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:32 | {pilot subcarrier indices in 160 MHz – 1024, pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-44 – Pilot indices for a 242-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R242\_{i}}$$ |
| 80MHz, i=1:4 | {–494, –468, –426, –400, –360, –334, –292, –266}, {–246, –220, –178, –152, –112, –86, –44, –18}, {18, 44, 86, 112, 152, 178, 220, 246}, {266, 292, 334, 360, 400, 426, 468, 494} |
| 160MHz, i=1:8 | {pilot subcarrier indices in 80 MHz – 512, pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:16 | {pilot subcarrier indices in 160 MHz – 1024, pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-45 – Pilot indices for a 484-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R484\_{i}}$$ |
| 80MHz, i=1:2 | {–494, –468, –426, –400, –360, –334, –292, –266, –246, –220, –178, –152, –112, –86, –44, –18}, {18, 44, 86, 112, 152, 178, 220, 246, 266, 292, 334, 360, 400, 426, 468, 494} |
| 160MHz, i=1:4 | {pilot subcarrier indices in 80 MHz – 512, pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:8 | {pilot subcarrier indices in 160 MHz – 1024, pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-46 – Pilot indices for a 996-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R996\_{i}}$$ |
| 80MHz, i=1 | {–468, –400, –334, –266, –220, –152, –86, –18, 18, 86, 152, 220, 266, 334, 400, 468} |
| 160MHz, i=1:2 | {pilot subcarrier indices in 80 MHz – 512}, {pilot subcarrier indices in 80 MHz + 512} |
| 320MHz, i=1:4 | {pilot subcarrier indices in 160 MHz – 1024},{pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-47 – Pilot indices for a 2**$×$**996-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R2×996\_{i}}$$ |
| 160MHz, i=1 | {–980, –912, –846, –778, –732, –664, –598, –530, –494, –426, –360, –292, –246, –178, –112, –44, 44, 112, 178, 246, 292, 360, 426, 494, 530, 598, 664, 732, 778, 846, 912, 980} |
| 320MHz, i=1:2 | {pilot subcarrier indices in 160 MHz – 1024}, {pilot subcarrier indices in 160 MHz + 1024} |

**Table 36-48 – Pilot indices for a 4**$×$**996-tone RU transmission**

|  |  |
| --- | --- |
| **PPDU BW** | $$K\_{R4×996\_{i}}$$ |
| 320MHz, i=1 | {–2004, –1936, –1870, –1802, –1756, –1688, –1622, –1554, –1518, –1450, –1384, –1316, –1270, –1202, –1136, –1068, –980, –912, –846, –778, –732, –664, –598, –530, –494, –426, –360, –292, –246, –178, –112, –44, 44, 112, 178, 246, 292, 360, 426, 494, 530, 598, 664, 732, 778, 846, 912, 980, 1068, 1136, 1202, 1270, 1316, 1384, 1450, 1518, 1554, 1622, 1688, 1756, 1802, 1870, 1936, 2004} |

**References:**

**[1] 802.11be D0.3**