IEEE P802.11
Wireless LANs

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| CC50 CR for Packet Extension |
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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.

All 6 comments in subclause 38.3.17 (Packet extension) are resolved.

Resolved CIDs: **69, 1191, 1669, 1763, 2349, and 2351.**

Also, a newly passed motion is reflected:

**Motion 308**

**Move to add to the TGbn SFD the following:**

* For Co-BF and Co-SR transmissions using UHR MU PPDU, TPE is fixed as 20us.
	+ nominal\_packet\_padding =20us and a factor =4.

Revision Notes

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| R0 | Initial revision |

## CID 69 & 1191 & 1669 & 1763 & 2349 & 2351

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| --- | --- | --- | --- | --- | --- |
| CID | Page.Line | Clause Number | Comment | Proposed Change | Resolution |
| 69 | 204.09 | 38.3.17 | Change the color of "TBD" to red. | Refer to the comment. | REVISED.The TBD has been deleted in the updated version.***Instructions to the editor:*** **Please make the changes as shown under CID 2351 in 11-25/0580r1.** |
| 1191 | 204.09 | 38.3.17 | Define cases where 20us of PE is used and delete the TBD. | As the comment. | REVISED.All the cases supporting 20us PE are mentioned.***Instructions to the editor:*****Please make the changes as shown under CID 2351 in 11-25/0580r1.** |
| 1669 | 204.06 | 38.3.17 | Define PE mechanism for 11bn | as in comment | REVISED.The PE mechanism is defined.***Instructions to the editor:*****Please make the changes as shown under CID 2351 in 11-25/0580r1.** |
| 1763 | 204.17 | 38.3.17 | The RUs means RRU or DRU? If it only applys in RRU, how about DRU case? Please clarfy. | As in comment | REVISED.The DRU and RRU are all included.***Instructions to the editor:*****Please make the changes as shown under CID 2351 in 11-25/0580r1.** |
| 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 11-25/0580r1.** |
| 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 | REVISED.***Instructions to the Editor:*** **The resolutions for CIDs 2349 and 2351 are the same.** **See CID 2349 in 11-25/0580r1.** |

***Instructions to the editor: please make the following changes to Page 214, Line 6 in the subclause 38.3.17 (Packet extension) in D0.2 as shown below:***

**38.3.17 Packet extension (#1169)**

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 LDPC codeword length equal to 3888, (#2349), (#2351)
* a UHR MU PPDU with the Co-BF or Co-SR transmission, (#Motion 308)
* a UHR TB PPDU.

A non-AP UHR STA shall support transmission of a UHR TB PPDU with a PE field of duration up to 20 µs, and reception of a UHR MU PPDU with a PE field of duration up to 20 µs. The PE field provides additional receive processing time at the end of the UHR PPDU. The PE field, if present, shall be transmitted with the same average power as the Data field. Other than that, its content is arbitrary. The spectrum used by the PE field shall be commensurate with the locations and sizes of the occupied RU(s) (including both the RRU and DRU) (#1763) or MRU(s) in the Data field to minimize power leakage outside of the spectrum used by the Data field.

The duration of the PE field for a UHR MU PPDU is determined by both the pre-FEC padding factor value in the last OFDM symbol of the Data field, and the TXVECTOR parameter NOMINAL\_PACKET\_PADDING as described in 37.6 (Nominal packet padding values selection rules).

For a UHR MU PPDU, the nominal value () is given by Equation (36-91) in 36.3.14 (Packet extension). The relationship among the pre-FEC padding factor , the nominal packet padding value and the nominal value is the same as described in 36.3.14 (Packet extension). The duration of the PE field, , may take values of 0 µs, 4 µs, 8 µs, 12 µs, 16 µs, or 20 µs. for a UHR MU PPDU shall not be less than . for a UHR MU PPDU should be equal to to minimize the packet extension overhead. The similar examples are shown in the examples of the PE field duration in an EHT MU PPDU if the maximum value of TXVECTOR parameters NOMINAL\_PACKET\_PADDING[*u*] is 8 µs, 16 µs, and 20 µs, respectively (See 36.3.14 (Packet extension) ).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 shall be equal to 4. This leads to a fixed value equal to 20 µs. (#Motion 308)

The duration of the PE field for a UHR ELR PPDU is 8 μs.

Regarding the PE field for TB PPDUs, the descriptions related to EHT TB PPDUs also apply to UHR TB PPDUs, including the calculation of and of UHR TB PPDUs, and the PE Disambigulty subfield in the Common Info field of the Trigger frame (See 36.3.14 (Packet extension) ).

Regarding the PE field of the received UHR MU PPDU at the receiver, the descriptions related to EHT MU PPDUs also apply to UHR MU PPDUs, including the calculation of and of UHR MU PPDUs, and the PE Disambiguity field of the UHR-SIG field for a UHR MU PPDU (See 36.3.14 (Packet extension) ).