IEEE P802.11
Wireless LANs

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| Proposed changes on STBC |
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Abstract

This document proposes the clarifications on Pre-FEC padding process for STBC in 11ax.

Revisions:

 R0: The initial version of the draft.

R1: editorial updates based on the feedback on the TC.

Discussions:

The FEC padding process in 11ax had detailed explanations for the case of non-STBC. However, not too many details are included for the STBC cases. There are also some inaccurate descriptions regarding STBC. This contribution provides clarifications and clean ups on the Pre-FEC padding portion of STBC.

-------------------------------------------------------------------------End of discussions--------------------------------------------------------------

To TGm editor: make the following changes based on 11me D1.3.

### *Page 4427 Line 41(add figure 27-36A after figure 27-36)*

Figure 27-36 (HE PPDU padding process in the last OFDM symbol (non-STBC) if a = 1(11ax)) illustrates these four possible symbol segments in the last OFDM symbol of a non-STBC case, and the general padding process assuming the desired pre-FEC padding boundary, represented by the pre-FEC padding factor, is 1. ~~In the case of STBC, the FEC output bits and post-FEC padding bits are modulated into the last two OFDM symbols by STBC encoding, each with the same pre-FEC padding boundary.~~

Figure 27-36A (HE PPDU padding process in the last two OFDM symbols (STBC) if a = 1) illustrates these four possible symbol segments in the last two OFDM symbols of an STBC case, and the general padding process assuming the desired pre-FEC padding boundary, represented by the pre-FEC padding factor, is 1. The FEC output bits are modulated into the last two OFDM symbols toward the pre-FEC padding boundary by STBC encoding, then the post-FEC padding bits are modulated into the last two OFDM symbols after the pre-FEC padding boundary by STBC encoding. The last two OFDM symbols have the same pre-FEC padding boundary.



Figure 27-36A HE PPDU padding process in the last two OFDM symbols (STBC) if a = 1

### *Page 4428 Line 34*

In an HE SU PPDU and HE ER SU PPDU transmission, the transmitter first computes the number of bits left in the last OFDM symbol (non-STBC) or in the last two OFDM symbols (STBC) based on Equation (27-60).

### *Page 4428 Line 52*

Based on *NExcess*, compute the initial number of symbol segments in the last OFDM symbol (non-STBC) or in the last two OFDM symbols (STBC), initial pre-FEC padding factor value or *ainit*, as shown in Equation (27-61).

### *Page 4429 Line 27*

Given the *ainit* values, the initial number of data bits per symbol and the initial number of coded bits per symbol in the last OFDM symbol (non-STBC) or in the last two OFDM symbols (STBC) are defined in Equation (27-62).

### *Page 4429 Line 58*

Among the pre-FEC padding bits, the MAC delivers a PSDU that fills the available octets in the Data field of the HE PPDU (see A-MPDU padding for HE PPDUs in 26.6.2.2 (A-MPDU padding in an HE SU PPDU, HE ER SU PPDU, and HE MU PPDU) and 26.6.2.3 (A-MPDU padding in an HE TB PPDU)), toward the desired initial pre-FEC padding boundary, represented by *ainit* value, in the last OFDM symbol (non-STBC) or in the last two OFDM symbols (STBC).