IEEE P802.11
Wireless LANs

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| Comment Resolutions of Miscellaneous HE PHY comments |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D0.1 as follows:

* 1932, 2106, 2572, 2796

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Typos fixed
	+ 26.3.6.4 -> Section a, 2nd sentence: there should be another comma.
	+ 26.3.6.9 -> Section b. change Apple to apply.

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

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| **CID** | **Clause Number** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 1932 | 26.3.4 | 82.01 | Empty section | Section "Overview of the PPDU encoding process" is empty | Revised: Proposed resolution accounts for the suggested change.TGax Editor to make the changes shown in IEEE 802.11-16/1340r2 under all headings that include CID 1932. |
| 2106 | 26.3.11 | 154.16 | Wrong references | Missing references on lines 16, 26 and 30 | Revised: Proposed resolution accounts for the suggested change.TGax Editor to make the changes shown in IEEE 802.11-16/1340r2 under all headings that include CID 2106. |
| 2572 | 26.3.11 | 154.10 | References for NON-HT duplicate is incorrect. | Refer to 11n for non-HT 40 MHz, 11ac for non-HT 80/160 MHz. | Revised: Proposed resolution accounts for the suggested change.TGax Editor to make the changes shown in IEEE 802.11-16/1340r2 under all headings that include CID 2572. |
| 2796 | 26.3.9.10 | 131.44 | In Equation 26-59, two HE-LTF number is missing such as 5 and 7 | P6x6, NHELTF=5,6P8x8, NHELTF=7,8 | Revised: Proposed resolution accounts for the suggested change.TGax Editor to make the changes shown in IEEE 802.11-16/1340r2 under all headings that include CID 2796. |

**26.3.6 Overview of the PPDU encoding process**

**TGax Editor: *Insert new subclauses below as follows.***

**26.3.6.1 General**

This subclause provides an overview of the HE PPDU encoding process.

**26.3.6.2 Construction of L-STF**

Construct the L-STF field as defined in 26.3.10.3 (L-STF definition) with the following highlights:

1. Determine the CH\_BANDWIDTH from the TXVECTOR.
2. Sequence generation: Generate the L-STF sequence over the CH\_BANDWIDTH as described in 26.3.10.3 (L-STF definition).
3. Phase rotation: Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
4. IDFT: Compute the inverse discrete Fourier transform.
5. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
6. Insert GI and apply windowing: Prepend a GI ($T\_{GI,LegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
7. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE preamble) for details.

**26.3.6.3 Construction of L-LTF**

Construct the L-LTF field as defined in 26.3.10.4 (L-LTF definition) with the following highlights:

1. Determine the CH\_BANDWIDTH from the TXVECTOR.
2. Sequence generation: Generate the L-LTF sequence over the CH\_BANDWIDTH as described in 26.3.10.4 (L-LTF definition).
3. Phase rotation: Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
4. IDFT: Compute the inverse discrete Fourier transform.
5. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
6. Insert GI and apply windowing: Prepend a GI ($T\_{GI,L-LTF})$ and apply windowing as described in 26.3.9 (Mathematical description of signals).
7. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the carrier frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE preamble) for details.

**26.3.6.4 Construction of L-SIG**

Construct the L-SIG field as the SIGNAL field defined in 26.3.10.5 (L-SIG definition) with the following highlights:

1. In an HE PPDU set the RATE subfield in the SIGNAL field to 6 Mb/s. Set the Length, Parity, and Tail bits in the SIGNAL field as described in 26.3.10.5 (L-SIG definition).
2. BCC encoder: Encode the SIGNAL field by a convolutional encoder at the rate of R = ½ as described in 26.3.11.5.1 (Binary convolution coding and puncturing).
3. BCC interleaver: Interleave as described in 26.3.11.8 (BCC interleavers).
4. Constellation Mapper: BPSK modulate as described in 26.3.11.9 (Constellation Mapper).
5. Pilot insertion: Insert pilots as described in 26.3.10.5 (L-SIG).
6. Extra tone insertion: Four extra tones are inserted in subcarriers $k \in \{-28, -27, 27, 28\}$ for channel estimation purpose and the values on these four extra tones is$ \{-1,-1,-1, 1\}$, respectively.
7. Duplication and phase rotation: Duplicate the L-SIG field over each 20 MHz of the CH\_BANDWIDTH. Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
8. IDFT: Compute the inverse discrete Fourier transform.
9. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
10. Insert GI and apply windowing: Prepend a GI ($T\_{GI,LegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
11. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE Preamble) for details.

**26.3.6.5 Construction of RL-SIG**

Construct the RL-SIG field as the repeat SIGNAL field defined in 26.3.10.6 (RL-SIG definition) with the following highlights:

1. In an HE PPDU set the RATE subfield in the repeat SIGNAL field to 6 Mb/s. Set the Length Parity, and Tail bits in the repeat SIGNAL field as described in 26.3.10.6 (RL-SIG definition).
2. BCC encoder: Encode the repeat SIGNAL field by a convolutional encoder at the rate of R = ½ as described in 26.3.11.5.1 (Binary convolution coding and puncturing).
3. BCC interleaver: Interleave as described in 26.3.11.8 (BCC interleavers).
4. Constellation Mapper: BPSK modulate as described in 26.3.11.9 (Constellation Mapper).
5. Pilot insertion: Insert pilots as described in 26.3.10.6 (RL-SIG).
6. Extra tone insertion: Four extra tones are inserted in subcarriers $k \in \{-28, -27, 27, 28\}$ for channel estimation purpose and the values on these four extra tones is $\{-1,-1,-1, 1\}$, respectively.
7. Duplication and phase rotation: Duplicate the RL-SIG field over each 20 MHz of the CH\_BANDWIDTH. Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
8. IDFT: Compute the inverse discrete Fourier transform.
9. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
10. Insert GI and apply windowing: Prepend a GI ($T\_{GI,LegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
11. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE Preamble) for details.

**26.3.6.6 Construction of HE-SIG-A**

For an HE SU PPDU, HE MU PPDU, and HE trigger-based PPDU, the HE-SIG-A field consists of two symbols, HE-SIG-A1 and HE-SIG-A2 as defined in 26.3.10.7 (HE-SIG-A definition) and is constructed as follows:

1. Obtain the HE-SIG-A field values from the TXVECTOR. Add the reserved bits, append the calculated CRC, and then append the $N\_{tail}$ tail bits as shown in 26.3.10.7 (HE-SIG-A definition). This results in 52 uncoded bits.
2. BCC encoder: Encode the data by a convolution encoder at the rate of R = ½ as described in 17.3.5.6 (Convolution encoder).
3. BCC interleaver: Interleave as described in 17.3.5.7 (Data interleaving).
4. Constellation mapper: BPSK modulate the first 52 interleaved bits as described in 17.3.5.8 (Subcarrier modulation mapping) to form the first symbol of HE-SIG-A. BPSK modulate the second 52 interleaved bits to form the second symbol of HE-SIG-A.
5. Pilot insertion: Insert pilots as described in 17.3.5.9 (Pilot subcarriers).
6. Duplicate and phase rotation: Duplicate HE-SIG-A1 and HE-SIG-A2 over each 20 MHz of the CH\_BANDWIDTH. Apply the appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
7. IDFT: Compute the inverse Fourier transform.
8. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
9. Insert GI and apply windowing: Prepend a GI ($T\_{GI,LegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
10. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE preamble) for details.

For an HE extended range SU PPDU, the HE-SIG-A field consists of four symbols, HE-SIG-A1, HE-SIG-A2, HE-SIG-A3, and HE-SIG-A4. HE-SIG-A1 and HE-SIG-A2 have the same data bits while HE-SIG-A3 and HE-SIG-A4 have the same data bits as defined in 26.3.10.7 (HE-SIG-A definition). The HE-SIG-A is constructed as follows:

1. Obtain the HE-SIG-A fields from the TXVECTOR. Add the reserved bits, append the calculated CRC, and then append the $N\_{tail}$ tail bits as shown in 26.3.10.7 (HE-SIG-A definition). This results in 52 uncoded bits.
2. BCC encoder: Encode the data by a convolution encoder at the rate of R = ½ as described in 17.3.5.6 (Convolution encoder).
3. BCC interleaver: Interleave the data bits of HE-SIG-A1 and HE-SIG-A3 as described in 17.3.5.7 (Data interleaving). Data bits of HE-SIG-A2 and HE-SIG-A4 are not interleaved.
4. Constellation mapper: BPSK modulate the HE-SIG-A1, HE-SIG-A3, and HE-SIG-A4 data bits as described in 17.3.5.8 (Subcarrier modulation mapping) to form the first, third, and fourth symbol of HE-SIG-A, respectively. QBPSK modulate HE-SIG-A2 encoded data bits to form the second symbol of HE-SIG-A.
5. Pilot insertion: Insert pilots as described in 17.3.5.9 (Pilot subcarriers).
6. IDFT: Compute the inverse Fourier transform.
7. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
8. Insert GI and apply windowing: Prepend a GI ($T\_{GILegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
9. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE preamble) for details.

**26.3.6.7 Construction of HE-SIG-B**

For an HE MU PPDU, the HE-SIG-B field consists Common Block field followed by a User Specific field as defined in 26.3.10.8 (HE-SIG-B definition) and is constructed as follows:

1. Obtain the HE-SIG-B fields from the TXVECTOR. Add the reserved bits, append the calculated CRC, and then append the $N\_{tail}$ tail bits as shown in 26.3.10.8 (HE-SIG-B definition).
2. BCC encoder: Encode the Common Block field data and User Specific field data by a convolution encoder as described in 26.3.11.5.1 (BCC coding and puncturing).
3. BCC interleaver: Interleave as described in 17.3.5.7 (Data interleaving).
4. Constellation mapper: Obtain MCS\_SIG\_B from the TXVECTOR and use it to modulate the interleaved bits as described in 17.3.5.8 (Subcarrier modulation mapping) to form the HE-SIG-B symbols.
5. Pilot insertion: Insert pilots as described in 17.3.5.9 (Pilot subcarriers).
6. Duplicate and phase rotation: Duplicate HE-SIG-B symbols over each 20 MHz of the CH\_BANDWIDTH as described in 26.3.10.8.1 (Encoding and Modulation). Apply the appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
7. IDFT: Compute the inverse Fourier transform.
8. CSD: Apply CSD for each transmit chain and frequency segment as described in 26.3.10.2.1 (Cyclic shift for pre-HE modulated fields).
9. Insert GI and apply windowing: Prepend a GI ($T\_{GI,LegacyPreamble}$) and apply windowing as described in 26.3.9 (Mathematical description of signals).
10. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 26.3.10 (HE preamble) for details.

**26.3.6.8 Construction of HE-STF**

The HE-STF field is defined in 26.3.10.9 (HE-STF definition) and is constructed as follows:

1. Sequence generation: Generate the HE-STF in the frequency domain over the bandwidth indicated by CH\_BANDWIDTH as described in 26.3.10.9 (HE-STF definition).
2. Phase rotation: Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
3. CSD: Apply CSD for each space-time stream and frequency segment as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).
4. Spatial mapping: Apply the $Q$ matrix as described in 26.3.10.9 (HE-STF definition).
5. IDFT: Compute the inverse discrete Fourier transform.
6. Insert GI and apply windowing: Prepend a GI ($T\_{GI1,Data}$ for HE SU PPDU, HE extended range SU PPDU, and HE MU PPDU; $T\_{GI2,Data}$for HE trigger-based PPDU) and apply windowing as described in 26.3.9 (Mathematical description of signals)
7. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 21.3.10 (HE preamble) for details.

**26.3.6.9 Construction of HE-LTF**

The HE-LTF field is defined in 26.3.10.10 (HE-LTF definition) and is constructed as follows:

1. Sequence generation: Generate the HE-LTF sequence in frequency domain over the bandwidth indicated by CH\_BANDWIDTH as described in 26.3.10.10 (HE-LTF definition).
2. Phase rotation: Apply appropriate phase rotation for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
3. $A\_{HE-LTF}$ Matrix mapping: Apply the $P\_{HE-LTF}$ matrix to the data tones of the HE-LTF sequence and apply the $R\_{HE-LTF} $or $P\_{HE-LTF }$matrix to pilot tones as described in 26.3.10.10 (HE-LTF definition).
4. CSD: Apply CSD for each space-time stream and frequency segment as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).
5. Spatial mapping: Apply the $Q$ matrix as described in 26.3.10.10 (HE-LTF definition).
6. IDFT: Compute the inverse discrete Fourier transform.
7. Insert GI and apply windowing: Prepend a GI indicated by GI\_TYPE and apply windowing as described in 26.3.9 (Mathematical description of signals).
8. Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 21.3.10 (HE preamble) for details.

**26.3.6.10 Construction of the Data field in an HE SU PPDU, HE extended range SU PPDU, and HE trigger-based PPDU**

**26.3.6.10.1 Using BCC**

The construction of the Data field in an HE SU PPDU, HE extended range SU PPDU, and HE trigger-based PPDU with BCC encoding proceeds as follows:

1. The SERVICE field is described in 26.3.11.3 (SERVICE field) and append the PSDU to the SERVICE field.
2. Pre-FEC padding: Append the pre-FEC pad bits and tail bits as described in 26.3.11 (Data field).
3. Scrambler: Scramble the pre-FEC padded data.
4. BCC encoder: BCC encode as described in 26.3.11.5.1 (BCC coding and puncturing).
5. Post-FEC padding: Append the post-FEC pad bits and packet extension field as described in 26.3.11 (Data field).
6. Stream parser: Rearrange the output of BCC encoder into blocks as described in 26.3.11.6 (Stream parser).
7. Segment parser (if needed): This block is bypassed for 20 MHz transmissions.
8. BCC interleaver: Interleave as described in 26.3.11.8 (BCC interleaver).
9. Constellation mapper: Map to BPSK, QPSK, 16-QAM, 64-QAM, or 256-QAM constellation points as described in 26.3.11.9 (Constellation mapping).
10. Segment deparser (if needed): This block is bypassed for 20 MHz transmissions.
11. STBC: Apply STBC as described in 26.3.11.10 (Space-time block coding).
12. Pilot insertion: Insert pilots following the steps described in 26.3.11.13 (Pilot subcarriers).
13. CSD: Apply CSD for each space-time stream and frequency segment as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).
14. Spatial mapping: Apply the $Q$ matrix as described in 26.3.11.14 (OFDM modulation).
15. Phase rotation: Apply the appropriate phase rotations for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
16. IDFT: In an 80+80 MHz transmission, map each frequency subblock to a separate IDFT. Compute the inverse discrete Fourier transform.
17. Insert GI and apply windowing: Prepend a GI and apply windowing as described in 26.3.9 (Mathematical description of signals).
18. Analog and RF: Upconvert the resulting complex baseband waveform with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 21.3.10 (HE preamble) for details.

**26.3.6.10.2 Using LDPC**

The construction of the Data field in an HE SU PPDU, HE extended range SU PPDU, and HE trigger-based PPDU with LDPC encoding proceeds as follows:

1. The SERVICE field is described in 26.3.11.3 (SERVICE field) and append the PSDU to the SERVICE field.
2. Pre-FEC padding: Append the pre-FEC padding bits as described in 26.3.11 (Data field). There are no tail bits.
3. Scrambler: Scramble the pre-FEC padded data.
4. LDPC encoder: LDPC encode with APEP\_LENGTH in the TXVECTOR as described in 26.3.11.5.2 (LDPC coding and puncturing).
5. Post-FEC padding: Append the post-FEC pad bits and packet extension field as described in 26.3.11 (Data field).
6. Stream parser: Rearrange the output of LDPC encoder into blocks as described in 26.3.11.6 (Stream parser).
7. Segment parser (if needed): In a 160 MHz or 80+80 MHz transmission with a $2×996$-tone RU, divide the output of each stream parser into two frequency subblocks as described in 26.3.11.6 (Segment parser). This block is bypassed for 20 MHz, 40 MHz, and 80 MHz transmissions.
8. Constellation mapper: Map to BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, or 1024-QAM constellation points as described in 26.3.11.9 (Constellation mapping).
9. LDPC tone mapper: the LDPC tone mapping shall be performed on all LDPC encoded streams as described in 26.3.11.11 (LDPC tone mapper).
10. Segment deparser (if needed): In 160 MHz transmission, merge the two frequency subblocks into one frequency segment as described in 26.3.11.12 (Segment deparser). This block is bypassed for 20 MHz, 40 MHz, 80 MHz, and 80+80 MHz transmissions.
11. STBC: Apply STBC as described in 26.3.11.10 (Space-time block coding).
12. Pilot insertion: Insert pilots following the steps described in 26.3.11.13 (Pilot subcarriers).
13. CSD: Apply CSD for each space-time stream and frequency segment as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).
14. Spatial mapping: Apply the $Q$ matrix as described in 26.3.11.14 (OFDM modulation).
15. Phase rotation: Apply the appropriate phase rotations for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
16. IDFT: In an 80+80 MHz transmission, map each frequency subblock to a separate IDFT. Compute the inverse discrete Fourier transform.
17. Insert GI and apply windowing: Prepend a GI and apply windowing as described in 26.3.9 (Mathematical description of signals).
18. Analog and RF: Upconvert the resulting complex baseband waveform with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 21.3.10 (HE preamble) for details.

**26.3.6.11 Construction of the Data field in an HE MU PPDU**

**26.3.6.11.1 General**

In an HE MU transmission, the PPDU encoding process is performed independently in an RU on a per user basis up to the input of the Spatial Mapping block, except that CSD is performed with knowledge of the space time streams starting index for that user. All user data in an RU is combined and mapped to the transmit chains in the Spatial Mapping block.

**26.3.6.11.2 Using BCC**

A Data field with BCC encoding is constructed using steps (a) to (l) in 26.3.6.10.1 (Using BCC), then applying CSD for an HE MU PPDU as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).

**26.3.6.11.3 Using LDPC**

A Data field with LDPC encoding is constructed using steps (a) to (l) in 26.3.6.10.2 (Using LDPC), then applying CSD for an HE MU PPDU as described in 26.3.10.2.2 (Cyclic shift for HE modulated fields).

**26.3.6.11.4 Combining to form an HE MU PPDU**

The per-user data is combined as follows:

1. Spatial Mapping: The $Q$ matrix is applied as described in 26.3.11.14 (OFDM modulation). The combining of all user data of an RU is done in this block.
2. Phase rotation: Apply the appropriate phase rotations for each 20 MHz subchannel as described in 26.3.9 (Mathematical description of signals) and 21.3.7.5 (Definition of tone rotation).
3. IDFT: Compute the inverse discrete Fourier transform.
4. Insert GI and apply windowing: Prepend a GI\_TYPE and apply windowing as described in 26.3.9 (Mathematical description of signals).
5. Analog and RF: Upconvert the resulting complex baseband waveform with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 26.3.9 (Mathematical description of signals) and 21.3.10 (HE preamble) for details.

*Changes to D0.4 related to CID 2106 and 2572*

**26.3.13 Non-HT duplicate transmission**

**TGax Editor: *Edit the text below on Pg 222 ln 44-45.***

Non-HT duplicate transmission is used to transmit to non-HT OFDM STAs, HT STAs, VHT STAs, and HE STAs that may be present in a part of a 40 MHz, 80 MHz, or 160 MHz channel (see ~~Error! Reference source not found.~~ Table 21-2 (Interpretation of FORMAT, NON\_HT Modulation and CH\_BANDWIDTH parameters)).

**TGax Editor: *Edit the text below on Pg 222 ln 54-55.***

For 80 MHz and 160 MHz non-HT duplicate transmissions, the Data field shall be as defined by ~~Error! Reference source not found.~~ Equation (21-101).

**TGax Editor: *Edit the text below on Pg 222 ln 59-60.***

In a noncontiguous 80+80 MHz non-HT duplicate transmission, data transmission in each frequency segment shall be as defined for an 80 MHz non-duplicate transmission in ~~Error! Reference source not found..~~ Equation (21-101).

*Changes to D0.4 related to CID 2796*

**TGax Editor: *Replace the Equation 26-59 on Pg 195 ln 42 - 46 as follows.***

$$P\_{HE-LTF}=\left\{\begin{array}{c}P\_{4×4},N\_{HELTF}\leq 4\\P\_{6×6},N\_{HELTF}=6\\P\_{8×8},N\_{HELTF}= 8\end{array}\right.$$

$$P\_{HE-LTF}=\left\{\begin{array}{c}P\_{4×4},N\_{STS,total}\leq 4\\P\_{6×6},N\_{STS,total}=5, 6\\P\_{8×8},N\_{STS,total}=7, 8\end{array}\right.$$

**References:**

1. **IEEE P802.11axTM/D0.5, September 2016.**