IEEE P802.11  
Wireless LANs

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| Comment Resolution for Overview of the PPDU encoding process (Section 32.3.4) | | | | |
| Date: 2021-03-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | Email |
| Rui Cao | NXP | 350 Holger Way, San Jose,CA |  | [rui.cao\_2@nxp.com](mailto:rui.cao_2@nxp.com) |

Abstract

This submission proposes resolutions for comments received on Section 32.3.11 Receiver Specification in TGbd D1.0. The following is the list of 9 CIDs:

* 1079, 1576, 1654, 1769, 1806, 1807, 1808, 1809, 1810

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| **CID** | **Clause** | **Page.Line** | **Comment** | **Proposed Change** | **Resolution** |
| 1576 | 32.3.4.2 | 50.50 | Threre is only one frequenct segment in NGV. The phrase "... each ... frequency segment ..." doesn't apply. There are several same incidents throughtout this document. | As in the comment. | Revised.  11bd Editor: please see the changes in <https://mentor.ieee.org/802.11/dcn/21/11-21-0017-01-00bd-comment-resolution-for-overview-of-the-ppdu-encoding-process.docx>. |
| 1654 | 32.3.4.4 | 55.22 | "In a NGV PPDU set the RATE subfield in the SIGNAL field to 6 Mb/s": it is unclear to which bandwidth the 6 Mb/s mode in Table 17-6 referes. In 32.3.8.2.4 it reads "the RATE field shall be set to the value representing 3 Mb/s in the 10 MHz channel spacing column of Table 17-6 (Contents of the SIGNAL field)". | Replace "6 Mb/s" with "3 Mb/s in the 10 MHz channel spacing column of Table 17-6 (Contents of the SIGNAL field)" | Accepted. |
| 1806 | 32.3.4.4 | 55.22 | value in Rate subfield in the SIGNAL field should be 3 Mb/s | 6 Mb/s should be 3 Mb/s | Accepted.  The same comment as CID 1654. |
| 1807 | 32.3.4.6 | 56.28 | space is needed between "in" and "Clause" | as in comment | Accepted. |
| 1808 | 32.3.4.6 | 56.38 | Q should be in Italic | as in comment | Accepted. |
| 1809 | 32.3.4.7 | 56.60 | A\_NGV-LTF, P\_NGV-LTF, and R\_NGV-LTF should be in Italic | as in comment | Accepted. |
| 1810 | 32.3.4.7 | 57.1 | Q should be in Italic | as in comment | Accepted. |
| 1079 | 32.3.4.8 | 57.35 | Construction of NGV-STF and NGV-LTF includes the step of "Apply the Q matrix". Does the data field also need to apply Q matrix? | as in comment | Revised.  11bd Editor: please see the changes in <https://mentor.ieee.org/802.11/dcn/21/11-21-0017-01-00bd-comment-resolution-for-overview-of-the-ppdu-encoding-process.docx>. |
| 1769 | 32.3.4.8 | 57.38 | Spatial mapping block is missing in 32.3.4.8 Construction of the Data field in an NGV PPDU | Please add spatial mapping in the construction steps. | Revised.  The same comment as CID1079.  11bd Editor: please see the changes in <https://mentor.ieee.org/802.11/dcn/21/11-21-0017-01-00bd-comment-resolution-for-overview-of-the-ppdu-encoding-process.docx>. |

*TGbd Editor: Please make the following changes in Section 32.3.4 of D1.0.*

32.3.4 Overview of the PPDU encoding process

32.3.4.2 Construction of L-STF

Construct the L-STF field as defined in Clause 32.3.8.2.2 (L-STF definition) with the following highlights:

1. CSD: Apply CSD for each transmit chain as described in Clause 32.3.8.2.1 (Cyclic shift for pre-NGV modulated fields). (#1576)

32.3.4.3 Construction of the L-LTF

Construct the L-LTF field as defined in Clause 32.3.8.2.3 (L-LTF definition) with the following highlights:

1. CSD: Apply CSD for each transmit chain as described in Clause 32.3.8.2.1 (Cyclic shift for pre-NGV modulated fields). (#1576)

32.3.4.4 Construction of the L-SIG and RL-SIG

Construct the L-SIG field as the SIGNAL field defined in Clause 32.3.8.2.4 (L-SIG definition) with the following highlights

1. CSD: Apply CSD for each transmit chain as described in Clause 32.3.8.2.1 (Cyclic shift for pre-NGV modulated fields). (#1576)

32.3.4.5 Construction of the NGV-SIG and RNGV-SIG

The NGV-SIG field consists of one symbol as defined in Clause 32.3.8.3.3 (NGV-SIG definition) and is constructed as follows:

1. In a NGV PPDU set the RATE subfield in the SIGNAL field to 3 Mb/s. Set the Length, Parity, and Tail bits in the SIGNAL field as described in Clause 32.3.8.2.4 (L-SIG definition). (#1654, #1806)
2. CSD: Apply CSD for each transmit chain as described in Clause 32.3.8.2.1 (Cyclic shift for pre-NGV modulated fields). (#1576)

32.3.4.6 Construction of NGV-STF

The NGV-STF field is defined in Clause 32.3.8.3.5 (NGV-STF definition) and is constructed as follows: (#1807)

1. Spatial mapping: Apply the *Q* matrix as described in Clause 32.3.9.8.1 (Transmission in NGV format). (#1808)

32.3.4.7 Construction of NGV-LTF

The NGV-LTF field is defined in Clause 32.3.8.3.6 (NGV-LTF definition) and constructed as follows:

1. *ANGV-LTF* matrix mapping: Apply the *PNGV-LTF* matrix to the data tones of the NGV-LTF sequence and apply the *RNGV-LTF* matrix to the pilot tones as described in Clause 32.3.8.3.6 (NGV-LTF definition). (#1809)
2. Spatial mapping: Apply the *Q* matrix as described in Clause 32.3.9.8.1 (Transmission in NGV format). (#1810)

32.3.4.8 Construction of the Data field in an NGV PPDU

The construction of the Data field in an NGV PPDU proceeds as follows:

1. CSD: Apply CSD for each spatial stream as described in Clause 32.3.8.3.2 (Cyclic shift for NGV modulated fields).
2. Spatial mapping: Apply the *Q* matrix as described in Clause 32.3.9.8.1 (Transmission in NGV format). (#1079, #1769)
3. IDFT: Compute the inverse discrete Fourier transform.
4. Insert GI and apply windowing: Prepend a GI and apply windowing as described in Clause 32.3.7.3 (Transmitted signal).
5. 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 Clause 32.3.7.3 (Transmitted signal) and Clause 32.3.8 (NGV preamble) for details.