IEEE P802.11
Wireless LANs

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| Comment Resolutions for Clause 28.3.11 (HE PHY Data field)  |
| Date: 2017-03-15 |
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Abstract

This submission proposes resolutions for the following 17 comments on Clause 28.3.11 of TGax D1.0:

4347, 4883, 5304, 5379, 9074, 9014, 9073, 9011, 9010, 9009, 9008, 9007, 9006, 8991, 10224, 10055, 9754

Revisions:

* Rev 0: Initial version of the document.

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** |
| 4347 | 28.3.11.8 | 323 .58 | BCC interleaver explanation needs further clarification. User "u"is reference once in this clause. | Rewrite first paragraph to read with clarity. | **Reject**—This paragraph is same as the explanation in clause 21. 3.10.8. “u” is defined as the user index in a MU transmission and “u” is used in many places in 802.11 spec. The commenter did not point out detailed problem of this pargraph and resolution to this CID.  |
| 4883 | 28.3.11.6 | 323.8 | In the equation, it shoud be k over upper-case S instead of lower-case s. | as in comment | **Reject**—In this equation, it indeed should be lower case s in. This also agrees with equation (21-73) in clause 21.3.10.6. |
| 5304 | 28.3.11.15 | 337 .5 | HE-MCS 2 and HE-SIG-B-MCS 2 are the QPSK modulation, but DCM can not be applied to these MCSs. | Delete "BPSK, QPSK and 16-QAM modulations" and specify the MCS indices as follows."DCM is only applied to the HE-MCSs and HE-SIG-B-MCSs with indices 0, 1, 3 and 4. | **Accept** |
| 5379 | 28.3.11.11 | 329 .47 | Error! Reference source not found. and Error! Reference source not found. | Correct the references | **Revised**—The missing references are equation numbers to define the frequency subblock index *l*. Since *l* is already clearly defined in 28.3.11.7 and also mentioned a number of times in this clause, the referenes are not necessary. Suggest removing the reference here. Also change the “frequency segments” to “frequency subblocks” and change “l” to italic format “*l*” to be consistant with previous definitions and avoid misleading.TGax Editor: Change to as in the resolution of CID 5379 in doc IEEE 802.11-17/0414r1. |
| 9074 | 28.3.11.12 | 330.28 | "l" in the right side of the equation 28-100 (second case) should actually be 1 (numeral one) | Change "l" to 1 (one) on the right side of equation 28-100 (second case) | **Accept** |
| 9014 | 28.3.11.11 | 329.47 | Error in reference | Fix reference | **Revised**—Duplicate as CID 5379. TGax Editor: Change to as in the resolution of CID 5379 in doc IEEE 802.11-17/0414r1. |
| 9073 | 28.3.11.12 | 330.00 | There should be no "l" in the subscript of lines 17, 26 (left side of equations) and lines 12, 32 | Remove "l" from the subscript in the lines mentioned | **Accept** |
| 9011 | 28.3.10.11.8 | 324.32 | "The interleaver parameters NCOL and NROW, for the HE-SIG-A and HE-SIG-B fields". Why is this paragraph in the data section? | Move HE-SIG-A and HE-SIG-B related requirements to the appropriate sections | **Reject**—In VHT, HT time, interleaver parameters for preamble are also described in this clause together with interleaver for data. Placing all interleaver parameters together is more clear and reader friendly.  |
| 9010 | 28.3.10.11.8 | 324.04 | "1 padding bit is added before the bits are interleaved.". Should this bit also be removed after interleaving? | Clarify | **Reject**—The 1 bit padding is to avoid non integer N\_DBPS problem. Same as all other padding bits, this bit will not be removed after interleaving. The padding bit will be modulated after interleaver. The description is already clear.  |
| 9009 | 28.3.10.11.7 | 323.33 | Change "frequency subblock" to "frequency segment" | See comment (also on lines 34, 39, 51 and 52) | **Reject**—The definition of frequency subblock here is different from frequency segment. Contiguous 160Mhz is one frequency segment but contains 2 frequency subblocks.  |
| 9008 | 28.3.10.11.7 | 323.24 | "output bits of each stream parser" should be "output bits of the segment parser" | Correct | **Revised**—Delete “of each stream parser”. TGax Editor: Change to as in the resolution of CID 9008 in doc IEEE 802.11-17/0414r1. |
| 9007 | 28.3.10.11.6 | 323.01 | "evenly allocated" is not clear. Does this mean "is always a multiple of N\_SS"? | Clarify | **Reject**—N\_CBPS is defined to be multiple of N\_SS. So evenly allocated seems clear.  |
| 9006 | 28.3.10.11.6 | 323.01 | Change "Note that for all RU sizes the coded bits of each OFDM symbol" to "Note that for all RU sizes the coded bits per OFDM symbol and per RU size" | See comment | **Revised**—This sentence means for all RU sizes, the coded bits per OFDM symbol is evenly allocated among all spatial streams. TGax Editor: Change to as in the resolution of CID 9006 in doc IEEE 802.11-17/0414r1. |
| 8991 | 28.3.10.11.1 | 314.12 | "The number of OFDM symbols in the Data field is determined by the Length field in L-SIG". Actually it's the other way around. The value in L-SIG is determined (among others things) by the number of OFDM symbols. The first sentence seems to describe receiver operation. | Delete sentence | **Reject**—This sentence is copied from 21.3.10.1. Although it is a description from receiver side but this sentence is clear and cause no ambiguity. It’s ok to keep it.  |
| 10224 | 28.3.11.11 | 329.49 | "BCC-coded streams" should be "BCC-coded spatial streams". | As in comment. | **Accept** |
| 10055 | 28.3.11.6 | 322.40 | Clarify the meaning of "the output of the FEC encoder" in the sentence. It could mislead to understand that output of the FEC encoder may not include post-FEC padding bit. | As in the comment. | **Revised**—Agree in principle. “After coding, scrambling, puncturing and post-FEC padding,” is clear enough. Suggest to delete “at the output of the FEC encoder” TGax Editor: Change to as in the resolution of CID 10055 in doc IEEE 802.11-17/0414r1. |
| 9754 | 28.3.11.8 | 324.23 | "N\_ROT(2<=N\_SS<=4)"When the N\_SS is equal to 1, the same N\_ROT parameter is used. | Change it as the following:"N\_ROT(N\_SS<=4)" | **Revised**—Since BCC only apply to N\_SS<=4, and DCM only apply to N\_SS <=2, so N\_ROT in this table can be applied to all the cases. Suggest to remove “(2<N\_SS<=4)” and “(N\_SS<=2)” from table 28-27. TGax Editor: Change to as in the resolution of CID 9754 in doc IEEE 802.11-17/0414r1. |

***TGax Editor: Please edit D1.0, Pg 337, ln 5 in section 28.3.11.15 (D1.1, Pg 345, ln 5) as follow:***

DCM is only applied to ~~BPSK, QPSK and 16-QAM modulations.~~ the HE-MCSs and HE-SIG-B-MCSs with indices 0, 1, 3 and 4. (#5304)

***TGax Editor: Please edit D1.0, Pg 329, ln 45 in section 28.3.11.11 (D1.1, Pg 337, ln 45) as follow:***

LDPC tone mapping is performed separately for the upper and lower 80 MHz frequency ~~segments~~subblocks of a 2×996-tone RU as indicated by the frequency subblock index ~~l~~ *l*. ~~in Error! Reference source not found. and Error! Reference source not found.~~ (#5379,

#9014)

***TGax Editor: Please edit D1.0, Pg 330, ln 12-17 in section 28.3.11.12 (D1.1, Pg 338, ln 12-17) as follow:***

For a 26-, 52-, 106-, 242-, 484- and 996-tone RU, the segment deparsing is not performed and ~~~~  (#9073) is specified in Equation (28-99).

 ~~~~  = ……

***TGax Editor: Please edit D1.0, Pg 330, ln 26-32 in section 28.3.11.12 (D1.1, Pg 338, ln 26-32) as follow:***

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(#9074)

For a 2×996-tone RU in an 80+80 MHz HE PPDU, the segment deparsing is not performed and ~~~~  (#9073) is specified in Equation (28-101).

***TGax Editor: Please edit D1.0, Pg 323, ln 24 in section 28.3.11.6 (D1.1, Pg 331, ln 24) as follow:***

the segment parser is bypassed and the output bits ~~of each stream parser~~ (#9008) are as specified in …..

***TGax Editor: Please edit D1.0, Pg 323, ln 1 in section 28.3.11.6 (D1.1, Pg 331, ln 1) as follow:***

Note that for all RU sizes the coded bits ~~of each~~ per (#9006) OFDM symbol are always evenly allocated to *NSS* spatial streams.

***TGax Editor: Please edit D1.0, Pg 329, ln 49 in section 28.3.11.11 (D1.1, Pg 337, ln 49) as follow:***

Since LDPC tone mapping is not performed on BCC-coded spatial streams (#10224), for BCC-coded spatial streams, Equation …

***TGax Editor: Please edit D1.0, Pg 322, ln 40 in section 28.3.11.6 (D1.1, Pg 330, ln 40) as follow:***

After coding, scrambling, puncturing and post-FEC padding, the data bits ~~streams at the output of the FEC encoder~~ (#10055) are processed in groups of *NCBPS* bits.

***TGax Editor: Please edit D1.0, Pg 324, ln 23, 28 in section 28.3.11.8 (D1.1, Pg 332, ln 23, 28) as follow:***

Please remove “(2<N\_SS<=4)” and “(N\_SS<=2)” from table 28-27.

*NROT* ~~(2 ≤~~ *~~NSS~~* ~~≤ 4)~~

*NROT* ~~(~~*~~NSS~~* ~~= 2)~~  (#9754)

**References:**

1. **IEEE P802.11axTM/D1.0, Nov 2016.**