IEEE P802.11  
Wireless LANs

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| Resolution for comments received for CC on D0.1 for subclause 38.3.15.12 | | | | |
| Date: 2025-04-06 | | | | |
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Abstract

This submission contains proposed comment resolutions to comments on P802.11bn D0.1. The changes are based on P802.11bn D0.2.

The submission provides resolutions to the following 11 CIDs in the ELR-SIG subclause 38.3.15.12

1762 2316 2317 2319 2787 29 1357 2322 2788 30 1183

Revisions:

* Rev 0: Initial version of the document.

# CID #1762 2316

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| **CID** | **Commenter** | **Clause Number(C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
|  |  |  |  |  |  |  |
| 1762 | Yapu Li | 38.3.15.12.2 | 192.08 | The number of data symbols indicated by the current Length field may cause the length of the PPDU to exceed aPPDUMaxTime=5.484ms. The value indicated by Length field needs to be further restricted | Propose add the following text in the description of Length field. Note: Any Length selection that results in a number of ELR-Data symbols that is larger than 374 symbols is not allowed. | Revised  This is like the current length field, instead of setting constraint on the length field, we should have PPDU duration constraint.  Note to editor:  Add “10.13 PPDU duration constraint” subclause in D0.2 with the following paragraph in 10.13 subclause:  “***Insert the following paragraph at the end of the 10.13 subclause:*** A UHR STA shall not transmit a UHR PPDU that has a duration (as determined by the PLME-TXTIME.confirm primitive defined in 6.7.6 (PLME-TXTIME.confirm)) that is greater than aPPDUMax-Time defined in UHR PHY.”  And replace “UHR PHY” with “Table 38-xxx (UHR PHY)” later once UHR PHY subclause is added. |
| 2316 | Yan Zhang | 38.3.15.12.2 | 192.29 | Change "see 35.11.1.1 (STA\_ID)" to "(see 37.z (TBD) (STA\_ID))." to be consistent with other subclauses. | As in comment | Rejected |

**Note to editor:**

Please change the font size of “Indicates the number of ELR-Data symbols. Set to a value that is the number of ELR-Data symbols minus 1.” in table 38-36

* Content

The ELR-SIG field for a UHR ELR PPDU contains the fields listed in Table 38-36 (ELR-SIG field of a UHR ELR PPDU).

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| Table 38-36—ELR-SIG field of a UHR ELR PPDU (continued) | | | | |
| Two parts of ELR-SIG | Bit | Field | Number of bits | Description |
| ELR-SIG-1 | B0 | ELR Version Identifier | 3 | Differentiate between different ELR versions.  Set to 0 for UHR ELR PPDU.  Value 1 is Validate. |
|  | B1 | UL/DL | 1 | Indicates whether the UHR ELR PPDU is sent in UL or DL. Set to the TXVECTOR parameter UPLINK\_FLAG.  A value of 1 indicates the UHR ELR PPDU is addressed to an AP.  A value of 0 indicates the UHR ELR PPDU is addressed to a non-AP STA. |
|  | B2 | MCS | 1 | Indicates the MCS used for modulating the ELR-Data field:  Set to 0 for BPSK with coding rate of ½  Set to 1 for QPSK with coding rate of ½ |
|  | B3 | Coding | 1 | Indicates whether BCC or LDPC is used:  Set to 0 for BCC.  Set to 1 for LDPC with nominal codeword length of 648,1296 or 1944 |
|  | B4–B12 | Length | 9 | Indicates the number of ELR-Data symbols. Set to a value that is the number of ELR-Data symbols minus 1. |
|  | B13 | LDPC Extra OFDM Symbol | 1 | Indicates the presence of the LDPC extra symbol:  Set to 1 if an LDPC extra symbol is present.  Set to 0 if an LDPC extra symbol is not present |
|  | B14–B17 | CRC | 4 | CRC for bits 0–13 of the ELR-SIG-1 field. The CRC computation uses the same polynomial as that in 27.3.11.7.3 (CRC computation). |
|  | B18–B23 | Tail | 6 | Used to terminate the trellis of the convolutional decoder.  Set to 0. |
| U-SIG-2 | B0–B10 | STA-ID | 11 | Set to a value of the TXVECTOR parameter STA-ID (see 35.11.1.1 (STA\_ID)). |
|  | B11-B13 | Disregard | 1 | Set to all 1s |
|  | B14–B17 | CRC | 4 | CRC for bits 0–13 of the ELR-SIG-2 field. The CRC computation uses the same polynomial as that in 27.3.11.7.3 (CRC computation). |
|  | B18–B23 | Tail | 6 | Used to terminate the trellis of the convolutional decoder.  Set to 0. |

# CID #2317 2319 2787 29 1357 2322 2788 30 1183

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| **CID** | **Commenter** | **Clause Number(C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
|  |  |  |  |  |  |  |
| 2317 | Yan Zhang | 38.3.15.12.2 | 192.53 | Please change "tone rotation" to "phase rotation" to be consistent with the text in 38.3.16.7. "Tone rotation" can be confused with one defined for pre-UHR modulated fields. | As in comment | Accepted |
| 2319 | Yan Zhang | 38.3.15.12.2 | 193.17 | N\_ELR-SIG^Tone is not defined in Table 38-16, and it is not used in the equation. Please delete the sentence. | As in comment | Revised  K\_RU52\_r is subcarrier index set, replace the first “2sqrt(K\_RU52\_r)” as “sqrt(N\_ST)” and replace “N\_ELR-SIG^Tone” with “N\_ST”  Note to editor:  replace the first “2sqrt(K\_RU52\_r)” in eq 38-37 in D0.2 as “sqrt(N\_ST)” and replace “N\_ELR-SIG^Tone” with “N\_ST” on P203L17 in D0.2.  CID 2319 2787 29 1357 have the same related comment |
| 2787 | Rong Zhang | 38.3.15.12.2 | 193.06 | The factor 1/sqrt(|K\_RU52r|) should be put after the summation across "r" of Eq 38-37 | see comments | Revised  Note to editor  No change is needed  CID 2319 2787 29 1357 have the same related comment |
| 29 | Zheng Guo | 38.3.15.12.3 | 193.06 | need to correct the formulas in Eq (38-37) for the first term before summation. Please see "11-24-1968-00-00bn-detailed-text-proposal-on-enhanced-long-range-feature" page 18 for detailed correction. | need to correct the formulas in Eq (38-37) for the first term before summation. Please see "11-24-1968-00-00bn-detailed-text-proposal-on-enhanced-long-range-feature" page 18 for detailed correction. | Revised  Note to editor  CID 2319 2787 29 1357 have the same related comment |
| 1357 | Juan Fang | 38.3.15.12 | 193.17 | since N tone\_ELR-SIG is not shown in Equation 38-37, this setence can be deleted | see comment | Revised  Note to editor  No change is needed  CID 2319 2787 29 1357 have the same related comment |
| 2322 | Yan Zhang | 38.3.15.12.2 | 194.18 | "The subcarrier index k for the data subcarrier is first offset by the minimum value of subcarrier index (for the lower edge subcarrier) in this RU and number of the unoccupied tones, and then subtracted by the number of pilot subcarriers falling in between the data subcarrier and the edge subcarrier." What is the number of unoccupied tones within each 52 tone RRU? Please remove number of the unoccupied tones in the sentence. edge subcarrier can be either side of RRU52, please clarify it is the lower edge subcarrier. | As in comment | Rejected  There are unoccupied tones between two adjacent 52 tone RRU52s. the pilot subcarrier is located between the data subcarrier and the edge subcarrier (including both the lower and higher edge subcarrier).  We use the same description in EHT data OFDM modulcaiton (eq. 36-89). |
| 2788 | Rong Zhang | 38.3.15.12.2 | 193.10 | Change Q\_k,u to Q\_k,0 of Eq 38-37 | see comments | revised  Add explanation that u=0.  Note to editor:  Apply the change @P203L35 in D0.2 before D\_k,n,r marked as [#2788] in 11-25/0608r0 |
| 30 | Zheng Guo | 38.3.15.12.3 | 193.06 | need to add description of Q\_{k,u} followng Eq (38-37). | need to add description of Q\_{k,u} following Eq (38-37). | Accepted  Note to editor:  Apply the change @P203L35 in D0.2 before D\_k,n,r marked as [#30] in 11-25/0608r0 |
| 1183 | Dong Guk Lim | 38.3.15.12.3 | 193.03 | In eq(38-37), add the eta\_field term and related description. | As the comment. | Rejected  Since eta-field is equal to 1 in ELR-SIG |

**Note to editor:**

Please apply the following changes in 38.3.15.12.3.

* Encoding and modulation

For a UHR ELR PPDU, the ELR-SIG field is composed of two parts, the ELR-SIG-1 and ELR-SIG-2 subfields, each containing 24 uncoded data bits as described in Table38.3.15.12.2 (Content). The ELR-SIG-1 field is transmitted before the ELR-SIG-2 field. The data bits of the ELR-SIG OFDM symbols shall be BCC encoded separately for each of the OFDM symbols at rate R=1/2, interleaved, mapped to a BPSK constellation, and have pilots inserted following steps described in 38.3.10.11 (Construction of ELR-SIG).

ELR-SIG is transmitted using the same tone plan, same frequency domain duplication, and phase[#2317] rotation as the Data field in UHR ELR PPDU, as shown in 38.3.16.7 (Frequency domain duplication).

The time domain waveform for the ELR-SIG field of a UHR ELR PPDU, transmitted on transmit chain , , shall be as specified in Equation (38-37).



where

is defined in Table 38-16 (Timing-related constants)

[#2319 2787 1357 29] is defined in Table 38-16 (Subcarrier allocation related constants for the UHR ELR PPDU)

 is the data and pilot subcarrier index sets for the *r*-th 52-tone RU and is defined in Table 27-8 (Data and pilot subcarrier indices for RUs in a 20 MHz HE PPDU and in a non-OFDMA 20 MHz HE PPDU(11ax)) based on the PPDU BW, which is 20 MHz.

 is defined in 17.3.5.10 (OFDM modulation)

 is the pilot mapping for subcarrier *k* for symbol *n* as defined in Equation (27-102).

 is the guard interval duration as defined in Table 38-16 (Timing-related constants)[#3545].

is defined in 38.3.14.4 (transmitted signal) [#30] and since UHR ELR PPDU supports only one user [#2788]. Note to editor: is not defined in 38.3.14.4 yet. It is defined in 36.3.11.4(transmitted signal) in EHT

 is the transmitted constellation in the *r*-th 52-tone RU at subcarrier *k* and ELR-SIG field OFDM symbol *n* and is defined byEquation (38-38)



where  is defined in Table 27-40 (Pilot indices for 52-tone RU transmission) based on the PPDU BW, which is 20 MHz.







where 

 is defined in Equation (38-39)





where

* 

NOTE—  translates a subcarrier index () into the index of data symbols in a transmission over r-th 52-tone RU, (). The subcarrier index *k* for the data subcarrier is first offset by the minimum value of subcarrier index (for the lower edge subcarrier) in this RU and number of the unoccupied tones, and then subtracted by the number of pilot subcarriers falling in between the data subcarrier and the edge subcarrier.