IEEE P802.11  
Wireless LANs

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| **CC50 Comment Resolutions for 38.3.15.11.3 UHR-LTF for ELR PPDU** |
| **Date:** 2025-04-04 |
| **Author(s):** |

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Abstract

This submission proposes the resolutions for following 13 CIDs:

1643, 599, 949, 1962, 2312, 1961, 600, 1178, 343, 1179, 2313, 2779, and 2780.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: add the missing CID 2779 to the CID list

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 TGbn D1.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbn D1.0 Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

#### *CID 1643, 599, 949, 1962, 2312, 1961, 2779*

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1643 | 38.3.15.11.3 | 190.32 | Remove some duplication of UHR-LTF function descriptions in different cases | as in comment | Revised,  The similar description is included in the previous section 38.3.15.11.1 General. So, some duplicated descriptions can be omitted.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 599 | 38.3.15.11.3 | 190.32 | 4x 52 MRU is not defined. Define it or delete "or MRU". | See the comment. | Revised,  I agree with the commenter. The MRU is not used in the ELR PPDU.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-00-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 949 | 38.3.15.11.3 | 190.34 | MRU is not used in ELR PPDU. Remove "MRU" | Remove "or MRU" in section 38.3.15.11.3. | Revised,  I agree with the commenter. The MRU is not used in the ELR PPDU.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 1962 | 38.3.15.11.3 | 190.34 | ELR PPDU has nothing to do with MRU. | Delete 'or MRU' in the sentence 'In a UHR ELR PPDU, the transmitter provides training for one spatial streams used for the transmission of the PSDU(s) in four 52-tone RRUs or MRU.' | Revised,  I agree with the commenter. The MRU is not used in the ELR PPDU.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 2312 | 38.3.15.11.3 | 190.34 | Remove "or MRU". This is not applied for UHR ELR PPDU. | As in comment | Revised,  I agree with the commenter. The MRU is not used in the ELR PPDU.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 1961 | 38.3.15.11.3 | 190.34 | Wrong plural form for 'one spatial streams' | Change it to 'one spatial stream' | Accepted. |
| 2779 | 38.3.15.11.3 | 190.35 | Remove "or MRU" in line 35 and line 40 | see comments | Revised,  I agree with the commenter. The MRU is not used in the ELR PPDU.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |

***TGbn Editor: please modify the text in P190 from L32 to L35 of 11bn D0.1 as follows***

(#1643) In a UHR ELR PPDU, the transmitter provides training for one spatial stream used for the transmission of the PSDU(s) in four 52-tone RRUs.(#599, #949, #1962, #2312, #1961)

#### *CID 600, 1178*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 600 | 38.3.15.11.3 | 190.37 | Data tones are multiplied by P matrix and pilot tones are multiplied by R matrix. Correct the text "A UHR ELR transmission contains two 2x UHR-LTF symbols, where all tones of each ~." | See the comment. | Revised,  The UHR-LTF field for ELR PPDU also includes the pilot tones. so, the different matrix should be applied to data tones and pilot tones, respectively as defined in the spec.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 1178 | 38.3.15.11.3 | 190.38 | UHR LTF for ELR PPDU also includes the pilot. So, it is wrong to apply the Pmatrix to all tones for the LTF symbol. | Revise the text by considering the pilot tone or Rmatrix | Revised,  The UHR-LTF field for ELR PPDU also includes the pilot tones. so, the different Matrices should be applied to data tones or pilot tones, respectively as defined in the spec.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |

***TGbn Editor: please modify the text in P190 from L37 to L42 of 11bn D0.1 as follows***

… where data tones of each 2UHR-LTF symbol are multiplied by entries belonging to a matrix *P*UHR-LTF, to enable channel estimation at the receiver. The pilot tones of each 2x UHR-LTF symbol are multiplied by the entries of a matrix *R*UHR\_LTF.(#600,#1178) *P*UHR-LTFis defined such that each modulated spatial stream in an RU is active on all subcarriers in that RU for which the UHR-LTF sequence takes a nonzero value(#2779)

#### *CID 343,*

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 343 | 38.3.15.11.3 | 190.49 | "A UHR ELR transmission uses the same 2 UHR-LTF sequence in 20MHz". The same as what? | Clarify | Revised,  This sentence means a 2x UHR-LTF defined in 20MHz is used for ELR transmission. So, to clarify, we can modify the text.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |

***TGbn Editor: please modify the text in P190L49 of 11bn D0.1 as follows***

A UHR ELR transmission uses the 2× UHR-LTF sequence in 20MHz (#343)

#### *CID 1179,*

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1179 | 38.3.15.11.3 | 190.40 | We need to define how to apply the Pmatrix to PUHR-LTF for ELR PPDU because one spatial stream and two LTF symbols are used for ELR PPDU transmission. | The Commenter will provide the resolution for this. | Rejected,  The commenter withdrew the comment. |

#### *CID 2313,* *2780*

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 2313 | 38.3.15.11.3 | 191.02 | Please simplify equation (38-36) since UHR ELR PPDU only has one user, single stream. Otherwise just states it is the same equation as UHR MU PPDU. | As in comment | Revised,  Considering the SU and single spatial stream, the eq.38-36 can be optimized.  TGbn Editor: incorporate the changes in https://mentor.ieee.org/802.11/dcn/25/11-25-0550-01-00bn-cc50-cr-for-38.3.15.11.3 UHR-LTF for ELR PPDU.docx. |
| 2780 | 38.3.15.11.3 | 191.02 | Equation 38-36 should be merged with UHR-LTF expression for UHR MU as special case | see comments | Rejected.  It is better to keep the eq.38-36 because UHR-LTF transmission is different from UHR-MU when ELR PPDU is used. |

Discussion:

***TGbn Editor: please replace the eq.38-36 of 11bn D0.1 with follows.***

(#2313)