IEEE P802.11
Wireless LANs

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| D0.1 CID resolutions for Section 38.1 – Part 2 |
| Date: 2025-04-01 |
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Abstract

This submission contains proposed comment resolutions to comments pertaining to Clause 38.1 in P802.11bn D0.1. The proposed text edits as part of the resolutions will be with respect to Draft 0.2.

The submission provides resolutions to the following 37 CIDs :

* 2732, 2234, 2043, 616
* 1369, 2044, 2235
* 118, 136, 275, 291, 561, 760, 1072, 1103, 1370, 1753, 1928, 1973, 2045, 2046, 2236, 2437, 2704, 2733, 3293, 3530, 3967, 3294
* 2560, 562, 1104, 1105, 2734, 3531, 138, 2735

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: some revisions to CID resolutions
* Rev 2: deferred some CID resolutions for later, removed some CID resolutions so that they can be reassigned

# Part 1 – (Page 88 of D0.1)

## DRU paragraph CIDs 2732, 2234, 2043, 616

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| **CID** | **Clause** | **Page.Line****(of D0.1)** | **Comment** | **Proposed Change** | **Resolution** |
| 2732 | 38.1.1 | 88.01 | "Distributed RUs" | DRUs | Accepted |
| 2234 | 38.1.1 | 88.01 | Please change "Please change "Distributed RUsare specifically for use only with uplink UHR TB PPDUs" to "Distributed Rus are only allowed in a uplink UHR TB PPDU transmission". | As in comment | Revised.Agree to reword.Instruction to editor: see the Proposed Text Changes section of 11-25/0577r2 to see text resolution under CID tag #2234. |
| 2043 | 38.1.1 | 88.01 | "Distributed RUs" should be "Distributed-tone RUs" | As in comment | Revised.Duplicate of accepted CID 2732 and resolved through proposed change of that resolution. |
| 616 | 38.1.1 | 88.01 | "Distribute RUs" should be "Distributed-tone RUs". | As in comment | Revised.Duplicate of accepted CID 2732 and resolved through proposed change of that resolution. |

## ELR paragraph CIDs 1369, 2044, 2235, 2438, 3570, 3572

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| **CID** | **Clause** | **Page.Line****(of D0.1)** | **Comment** | **Proposed Change** | **Resolution** |
| 1369 | 38.1.1 | 88.05 | change "extended" to "enhanced" to make it consistent through the document | see comment | Revised.Agree with comment. Instruction to editor: see the Proposed Text Changes section of 11-25/0577r2 to see text resolution under CID tag #1369. |
| 2044 | 38.1.1 | 88.07 | It's more accurate to say "for both the downlink and uplink" | As in comment | Rejected.The sentence is pointing out that the downlink and uplink can have different link budgets, and are therefore imbalanced (which is what ELR is addressing).  |
| 2235 | 38.1.1 | 88.08 | Change "while they can only to be used for the uplink in 5 GHz and 6 GHz band operation." to "while they can only be used for the uplink in 5 GHz and 6 GHz band operation.". | As in comment | Revised.Agree that the sentence should be cleaned up.Instruction to editor: see the Proposed Text Changes section of 11-25/0577r2 to see text resolution under CID tag #2235. |

## COBF/COSR paragraph CIDs 118, 136, 275, 291, 561, 760, 1072, 1103, 1370, 1753, 1928, 1973, 2045, 2046, 2236, 2437, 2704, 2733, 3293, 3530, 3967, 3294

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| **CID** | **Clause** | **Page.Line****(of D0.1)** | **Comment** | **Proposed Change** | **Resolution** |
| 118 | 38.1.1 | 88.12 | Fix a typo of "coordinated rpatial reuse" | "coordinated spatial reuse" | Accepted |
| 136 | 38.1.1 | 88.12 | typo. coordinated 'rpatial' reuse should be coordinated 'spatial' reuse | correct typo | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 275 | 38.1.1 | 88.12 | A typo "rpatial" found in "coordinated rpatial reuse". | Fix the typo by replacing "rpatial" with "spatial". | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 291 | 38.1.1 | 88.12 | Typo "rpatial" | Change to "spatial" | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 561 | 38.1 | 88.12 | Typo. | Change "rpatial" to "spatial". | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 760 | 38.1.1 | 88.12 | There is a spelling mistake in 38.1.1 "The UHR PHY provides support for coordinated beamforming and coordinated rpatial reuse to improve spectrum efficiency ..." | please change the "rpatial reuse" to "spatial reuse" | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1072 | 38.1.1 | 88.12 | "coordinated beamforming and coordinated rpatial reuse" | typo, "coordinated spatial reusle" | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1103 | 38.1.1 | 88.12 | Fix typo, change 'rpatial" with "spatial" | As the comment. | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1370 | 38.1.1  | 88.12 | change "rpatial" to "spatial" | see comment | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1753 | 38.1.1 | 88.12 | There is a typo on "rpatial". | Change "rptial" to "spatial". | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1928 | 38.1.1 | 88.12 | Typo, "coordinated rpatial reuse" should be "coordinated spatial reuse". | Change "coordinated rpatial reuse" to "coordinated spatial reuse". | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 1973 | 38.1.1 | 88.12 | typo "rpatial" | "spatial" | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 2045 | 38.1.1 | 88.12 | "rpatial" should be "spatial" | As in comment | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 2046 | 38.1.1 | 88.12 | "multiple AP" should be "Multi-AP" | As in comment | Revised.Agree with commenterInstruction to editor: see the Proposed Text Changes section of 11-25/0577r2 to see text resolution under CID tag #2046. |
| 2236 | 38.1.1 | 88.12 | Fix typo "coordinated rpatial reuse". | As in comment | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 2437 | 38.1.1 | 88.12 | Typo: "rpatial" => "spatial | as in comment | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 2704 | 38.1.1 | 88.12 | Typo in a word "spatial" | Replace "rpatial" by "spatial" | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 2733 | 38.1.1 | 88.12 | "rpatial" | spatial | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 3293 | 38.1.1 | 88.12 | Change "rpatial" to "spatial" | as in comment | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 3530 | 38.1.1 | 88.12 | rpatial reuse | spatial reuse | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 3967 | 38.1.1 | 88.12 | Typo: "rpatial". | Change to "spatial". | Revised.Duplicate of accepted CID 118 and resolved through proposed change of that resolution. |
| 3294 | 38.1.1 | 88.13 | Remove "wide" | as in comment | Accepted. |

## 38.1.3 UHR PHY functions CIDs: 1616, 2560, 562, 1104, 1105, 2734, 3531, 138, 2735

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| **CID** | **Clause** | **Page.Line****(of D0.1)** | **Comment** | **Proposed Change** | **Resolution** |
| 2560 | 38.1.3.1 | 88.59 | The text in section 38.1.3.1 General is identical to the text in section 38.1.2 Scope, and looks like a copy paste error. The correct text for 38.1.3.1 General is contained in the original PDT. | Replace 38.1.3.1 General section text with the following text taken from the PDT: "The UHR PHY contains two functional entities: the PHY function, and the physical layer management function (i.e., the PLME). These functions are described in detail in 38.3 (UHR PHY) and 38.4 (UHR PLME). The UHR PHY service is provided to the MAC through the PHY service primitives defined in Clause 8 (PHY service specification). The UHR PHY service interface is described in 38.2 (UHR PHY service interface)." | Revised.Agree with adding text taken from PDT.Instruction to editor: see the Proposed Text Changes section of 11-25/0577r2 to see text resolution under CID tag #2560. |
| 562 | 38.1.3.1 | 88.59 | The text in 38.1.3.1 is the same as 38.1.2. It should be changed to a proper text. | See the comment. | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 1104 | 38.1.3.1 | 88.59 | The text included in 38.1.3.1 General is duplicated with 38.1.2 Scope. It does not need. So, please delete the text in 38.1.3.1 General | As the comment. | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 1105 | 38.1.3.1 | 88.59 | Add the suitable text based on the text in 36.1.3.1 General | Provide the suitable text for this subclause. | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 2734 | 38.1.3.1 | 88.59 | From line 59 to line 64, delete due to duplication | see comments | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 3531 | 38.1.3.1 | 88.59 | entire section is copy pasted from 38.1.2 and should be replaced by a different text | delete the entire subclause, and replace by a text that references the PLME, PHY service interface. | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 138 | 38.1.3.1 | 89.59 | text in 38.1.3.1 is different to PDT (24/2005r1) | please modify it based on the passed PDT. | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |
| 2735 | 38.1.3.1 | 89.01 | From line 1 to line 11, delete due to duplication | see comments | Revised.Agree with comment. Duplicate of CID 2560, see the proposed resolution of that comment in Proposed Text Changes section of 11-25/0577r2 under CID tag #2560.  |

# Proposed Text Changes

Under MS Word, view “All Markup” to view the detailed text additions, removals, edits. CID numbers in “[ ]” are in-lined with corresponding text changes.

**38 Ultra high reliability (UHR) PHY specification**

**38.1 Introduction**

**38.1.1 Introduction to the UHR PHY**

***[Starting at Line 1 of page 96 in Draft 0.2]***

DRUs [#2732, 2043, 616] are only allowed to be used in [#2234] uplink UHR TB PPDUs.

The UHR PHY provides support for a new enhanced [#1369] long range (ELR) PPDU format, designed to overcome link budget imbalances between the uplink and downlink, and to improve spectrum efficiency for STAs operating further away from APs. ELR PPDUs have a fixed bandwidth of 20 MHz and can be used for downlink and uplink in 2.4 GHz band operation, and only [#2235] for the uplink in 5 GHz and 6 GHz band operation.

The UHR PHY provides support for coordinated beamforming and coordinated spatial [#118, 136, 275, 291, 561, 760, 1072, 1103, 1370, 1753, 1928, 1973, 2045, 2236, 2437, 2704, 2733, 3293, 3530, 3967] reuse to improve spectrum efficiency and system [#3294] reliability through multi-AP [#2046] coordination.

The UHR PHY provides support for an interference mitigation mode to enable receivers to estimate interference and mitigate its impacts.

A UHR AP may support the following features:

* Full bandwidth and partial bandwidth UHR sounding as defined in 37.7 (UHR sounding operation).

A non-AP UHR STA shall support the following features:

* Responding with requested beamforming feedback in a UHR sounding procedure with up to 4 spatial streams in the EHT sounding NDP if the non-AP STA supports Co-BF, except for a 20 MHz-only non-AP STA with 20 MHz-Only Limited Capabilities Support subfield equal to 1.
* Full bandwidth UHR sounding as defined in 37.7 (UHR sounding operation) if the non-AP STA supports Co-BF.

**38.1.2 Scope**

The services provided to the MAC by the UHR PHY consist of the following protocol functions:

1. A function that maps the PSDU received from the MAC into a PPDU for transmission to one or more receiving STAs.
2. A function that defines the characteristics and method of transmitting and receiving data through a wireless medium between two or more STAs. Depending on the PPDU format, these STAs support a mixture of UHR, Clause 36 (Extremely high throughput (EHT) PHY specification), Clause 27 (High efficiency (HE) PHY specification), Clause 21 (Very high throughput (VHT) PHY specification), Clause 19 (High-throughput (HT) PHY specification), Clause 18 (Extended Rate PHY (ERP) specification), Clause 17 (Orthogonal frequency division multiplexing (OFDM) PHY specifica- tion), Clause 16 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), and Clause 15 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications) PHYs.

**38.1.3 UHR PHY functions**

**38.1.3.1 General**

The UHR PHY contains two functional entities: the PHY function, and the physical layer management function (i.e., the PLME). These functions are described in detail in 38.3 (UHR PHY) and 38.4 (UHR PLME). The UHR PHY service is provided to the MAC through the PHY service primitives defined in Clause 8 (PHY service specification). The UHR PHY service interface is described in 38.2 (UHR PHY service interface). [#2560, 562, 1104, 1105, 2734, 3531, 138, 2735]

**38.1.3.2 PHY management entity (PLME)**

The PLME performs management of the local PHY functions in conjunction with the MLME.

**38.1.3.3 Service specification method**

The models represented by figures and state diagrams are intended to be illustrations of the functions provided. It is important to distinguish between a model and a real implementation. The models are optimized for simplicity and clarity of presentation.

The service of a layer is the set of capabilities that it offers to a user in the next higher layer. Abstract services are specified here by describing the service primitives and parameters that characterize each service. This definition is independent of any particular implementation.

**38.1.4 PPDU formats**

The structure of the PPDU transmitted by a UHR STA is determined by the TXVECTOR parameters as defined in Table 38-1 (TXVECTOR and RXVECTOR parameters).

The FORMAT parameter determines the overall structure of the PPDU and can take on one of the following values:

* Non-HT format (NON\_HT), based on Clause 17 (Orthogonal frequency division multiplexing (OFDM) PHY specification) or Clause 18 (Extended Rate PHY (ERP) specification), and including non-HT duplicate format based on 38.3.18 (Non-HT duplicate transmission).
* HT-mixed format (HT\_MF) as specified in Clause 19 (High Throughput (HT) PHY specification).
* HT-greenfield format (HT\_GF) as specified in Clause 19 (High Throughput (HT) PHY specification).
* VHT format (VHT) as defined in Clause 21 (Very High Throughput (VHT) PHY specification).
* HE SU PPDU format (HE\_SU) as defined in Clause 27 (High Efficiency (HE) PHY specification).
* HE ER SU format (HE\_ER\_SU) as defined in Clause 27 (High Efficiency (HE) PHY specification).
* HE MU PPDU format (HE\_MU) as defined in Clause 27 (High Efficiency (HE) PHY specification).
* HE TB PPDU format (HE\_TB) as defined in Clause 27 (High Efficiency (HE) PHY specification).
* EHT MU PPDU format (EHT\_MU) as defined in Clause 36 (Extremely high throughput (EHT) PHY specification).
* EHT TB PPDU format (EHT\_TB) as defined in Clause 36 (Extremely high throughput (EHT) PHY specification).
* UHR MU PPDU format (UHR\_MU) that carries one or more PSDUs to one or more users as defined in 38.3.7 (UHR PPDU formats).
* UHR TB PPDU format (UHR\_TB) that carries a single PSDU and is sent in response to a PPDU that carries a triggering frame as defined in 38.3.7 (UHR PPDU formats).